Draft Environmental Impact Report

for the

West Area Specific Plan

Volume II (Appendices)

February 27, 2019

Prepared for:

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

Prepared by:

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

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A Land Use Planning, Design, and Environmental Firm

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APPENDIX A – NOTICE OF PREPARATION/INITIAL STUDY & COMMENTS

Initial Study and Notice of Preparation

for the

West Area Specific Plan (WASP) EIR

October 14, 2015

Prepared for:

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

Prepared by:

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INITIAL STUDY AND NOTICE OF PREPARATION

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OCTOBER 14, 2015

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INITIAL STUDY CHECKLIST

PROJECT TITLE

West Area Specific Plan (WASP)

LEAD AGENCY NAME AND ADDRESS

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

CONTACT PERSON AND PHONE NUMBER

Gabriel Elliott, Project Manager
Community Development Department
City of Salinas
65 West Alisal Street (Second Floor)
Salinas, CA 93901
Telephone: (831) 775-4246
Fax: (831) 775-4258
Email: gabriel.elliott@ci.salinas.ca.us

PROJECT SPONSOR'S NAME AND ADDRESS

Rexford Title, Inc.; Harden Foundation; Patricia J. Bondesen; Andrew C. Madolora, and Al Mortensen.
C/o Ray Harrod, Jr.
Harrod Builders
365 Victor Street, Suite S
Salinas, CA 93907
Tel: 831-758-4368
Fax: (831) 422-1407
Cell: (831) 596-7021
E-mail: razrazorharrod1@comcast.net

PROJECT ENTITLEMENTS

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

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

An application for rezoning of the Specific Plan Area from New Urbanism Interim (NI) with a Specific Plan Overlay to Neighborhood Edge (NE)/Low Density Residential, Neighborhood General 1 (NG-1)/Medium Density Residential, Neighborhood General 2 (NG-2)/High Density Residential, Village Center (VC), Public/Semipublic (PS), Parks (P) and Open Space (OS), with the applicable Specific Plan Overlay District has not been filed at this time, but is required to be filed. A Development Agreement application, Tentative Parcel Map application, and Vesting Tentative Tract Map application would also need to be filed.

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

INTRODUCTION

The proposed West Area Specific Plan (hereinafter referred to as Specific Plan, West Area or WASP) will establish the land use planning and regulatory guidance including the land use and zoning designations and policies, development regulations and design standards for the approximately 797-acre Specific Plan Area. The Specific Plan will serve as a bridge between the Salinas General Plan and individual development applications in the Specific Plan Area, applying—and adding greater specificity to—the goals, policies and concepts of the General Plan for that area. The Specific Plan provides a complete blueprint for development of the Specific Plan Area, including:

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

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

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

- The context for the Specific Plan by describing New Urbanism and other design principles, purpose, relationship to and conformance with the General Plan policies, the preparation process, and the content of the Plan.
- The proposed land use plan, General Plan Land Use and Zoning Designations, development intensities, and organization of land uses used to meet the objectives of the Specific Plan.
- The use classifications and development regulations to implement the land uses contained in the Specific Plan which will create a New Urbanism style community.
- The standards that guide design and planning of residential and mixed-use commercial development, as well as parks and other amenities.
- The location and classification of roadways and the circulation infrastructure needed to link the Specific Plan Area to the vicinity road network.
- Public services and provides a framework for expansion of infrastructure systems.

- The plans for low impact development features and supplemental storm water collection system that are being incorporated into the project to comply with the City's National Pollutant Discharge Elimination System (NPDES) Permit, Storm Water Development Standards (SWDS) and Storm Water Standard Plans (SWSP).
- The proposed financing plan, project phasing, public facility cost summaries, and funding sources.
- The project review process, actions, and approvals needed to implement and amend the Specific Plan.

PROJECT LOCATION AND SETTING

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

The Specific Plan Area is located within the Salinas incorporated city limits. It is bounded by San Juan Grade Road on the west, East Boronda Road (herein referred to as "Boronda Road") on the south, Natividad Road on the east, and Rogge Road and the future extension of Russell Road on the north. Gabilan Creek is located east of the Specific Plan Area, while U.S. 101 and North Main Street are located to the west (Figure 2). Unincorporated land under the jurisdiction of the County of Monterey abuts the Specific Plan Area on the north and northeast. The City and County General Plan land use designations for the surrounding areas are illustrated in Figure 3.

ASSESSOR PARCEL NUMBERS (APNS) AND PROPERTY OWNERSHIP

The Specific Plan Area includes 13 parcels and several property owners (see Table 1 and Figure 4) as follows:

TABLE 1: WEST AREA SPECIFIC PLAN PROPERTY OWNERSHIP

APN	PROPERTY IDENTIFICATION	PARTICIPATING OWNER/REPRESENTATIVE	APPROXIMATE LAND AREA (ACRES)
21123160 21123161	Cloverfield	Mark Kelton	138.36
21101101	Piffero	None	0.78
2112316	Harden	Ray Harrod	72.56
21101102	Sbrana	None	117.95
21123112 21123113	Bondesen	Patricia Bondesen	99.55
21101103	Kantro	None	154.04
21101109	Madalora	Joseph Rivani	108.32
21123159	Santa Rita	None	11.46
21101111	Salinas Union	None	38.97

APN	PROPERTY IDENTIFICATION	PARTICIPATING OWNER/REPRESENTATIVE	APPROXIMATE LAND AREA (ACRES)
21101108	Mortensen	Al Mortensen, Gary Mortensen	52.85
21101110	Glover	None	1.71
Total			**796.55**

PLAN AREA PHYSICAL CHARACTERISTICS

The topography of the Specific Plan Area is nearly flat, with little change in elevation. The overall slope from northeast to southwest is approximately 0.3%, and there are no natural streams or water bodies present. However, a portion of the northwestern corner of the Specific Plan Area, at the junction of San Juan Grade Road and Russell Road, has been designated a 100-year floodplain area by the Federal Emergency Management Agency (FEMA). This area is currently located in FEMA Flood Zone A. The remainder of the site is located in FEMA Flood Zone C. (See FIRM Map #06053C0207G dated April 2, 2009, for the boundaries of the flood zones.)

Although this area is currently being farmed, it contains limited development. Most agricultural activity on-site and in the immediate vicinity has consisted of cultivation of various types of row crops. Figure 5 provides and aerial view of the Specific Plan Area. The site has been heavily disturbed for years from agricultural practices. None of the parcels have Williamson Act contracts or other encumbrances protecting agricultural activities. According to maps produced by the State of California Farmland Mapping and Monitoring Program (FMMP), the site is considered prime farmland, or farmland of statewide importance. The loss of farmland has been addressed as part of the Environmental Impact Report for the Salinas General Plan and findings of over-siding considerations were adopted by the City Council. There is no native habitat or sensitive or endangered species known to exist on the site. The Specific Plan Area is not within an adopted Habitat Conservation Plan or other Natural Community Conservation Plan.

Urban development consists of McKinnon Elementary School which is part of the Santa Rita Union School District. The school provides education to students in the north Salinas area from kindergarten to 5th grade. McKinnon Elementary is located in the southern portion of the Specific Plan Area, near the intersection of East Boronda Road and McKinnon Street. A few residences and farm structures are clustered within the eastern portion of the area, adjacent to Natividad Road. Other residences with accessory farm structures are located in the northern portion, adjacent to Rogge Road, and in the western portion near the intersection of San Juan Grade Road and Boronda Road.

In addition, there is evidence of structures or development that formerly existed. Close to Natividad Road is an area of bare ground that could have served as a location for activities associated with agricultural operations. Along San Juan Grade Road in the western portion is an area of bare ground with some trees along its northern edge. This was likely at one time the location of a residence that no longer exists.

Existing infrastructure is currently located along Boronda Road including water, sewer, electricity (12kV underground primary line), storm drainage and dry utilities. PG&E also operates a 60 kV overhead power line transmission (easement) which runs generally in a north/south direction through the site. Monterey-Salinas Transit (MST) currently provides transit access to the site from existing bus stops located along Boronda Road.

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

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

ADJACENT LAND USE

North: The Bolsa Knolls residential area is located to the north of the Specific Plan Area, on the northeastern corner of the intersection of Russell Road and San Juan Grade Road. Scattered residences and other non-residential uses are also located along Rogge Road to the north. Further to the north is a mix of agricultural land, rural residences, and the Club at Crazy Horse Ranch formerly known as the Salinas Golf and Country Club. These land uses are all located in the unincorporated area of Monterey County.

East: Land to the east of the Specific Plan Area is currently used primarily for agricultural production and is zoned New Urbanism Interim (NI) with a Specific Plan Overlay District. This area is located in the North of Boronda Future Growth Area (FGA) and a specific plan (referred to as the Central Area Specific Plan [CASP]) has been submitted to the City and is currently being processed for this area. The CASP proposes a mix of urban land uses, similar to those proposed for the WASP.

South: Across Boronda Road directly to the south, is the Harden Ranch Specific Plan. The portion of the Harden Ranch Specific Plan which abuts the West Area is primarily residential. Most of the residences are of the type associated with low density residential uses, mainly single-family detached homes. However, some medium density and high density (apartment) units are located in this area as well. These residential uses are zoned R-L-5.5 (Residential Low Density), R-M-2.9 (Residential Medium Density) and R-H-1.8 (Residential High Density). Single-family detached homes (zoned R-L 5.5) are also located to the southeast of the Specific Plan (east of Natividad Road). Other land uses in the Harden Ranch Specific Plan Area include a commercial shopping center (Shaker Square) located at the southwest corner of Natividad Road and Boronda Road which is zoned Retail Commercial (RC) and the New Republic Elementary School (Santa Rita Union School District) which is zoned Public/Semipublic (PS). Extensive commercial development is located generally west and southwest of the Specific Plan Area, along both North Main Street and U.S. 101. This is the location of some of the major retail centers in Salinas, including the Northridge Shopping Center, Santa Rita Shopping Center and Harden Ranch Plaza. These areas are zoned Commercial Retail (RC).

West: The area directly to the west is residential consisting of low, medium and high density residential uses. These uses are zoned R-L-5.5 (Residential Low Density), R-M-2.9 (Residential Medium Density) and R-H-2.1 (Residential High Density). Also located farther to the west is Santa Rita Elementary School (Santa Rita Union School District) which is zoned Public/Semipublic (PS).

The City and County General Plan land use designations for the above areas are illustrated in Figure 3.

PLANNING BACKGROUND

SPHERE OF INFLUENCE AMENDMENT, PRE-ZONING AND ANNEXATION

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

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

The North of Boronda FGA (which includes the West Area Specific Plan) was formally annexed to the incorporated City of Salinas on September 8, 2008 and zoned New Urbanism Interim (NI) with a Specific Plan Overlay District.

SPECIFIC PLAN INITIATION

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

For planning purposes, the North of Boronda FGA has been generally divided by the City into three separate proposed Specific Plan Areas – the West Area (WASP), the Central Area (CASP) and East Area (EASP). A fourth Specific Plan (consisting of approximately 20 acres) known as the Gateway Center Specific Plan (GCSP) was carved out of the proposed WASP to facilitate the development of a large commercial center. The GCSP was approved by the City in 2011 and further details are provided under the heading of The Gateway Center Specific Plan, below.

These Specific Plan Areas are illustrated in Figure 3. To date, applications for Specific Plans have been submitted to the City for the WASP and CASP; no entitlement application has been submitted for the EASP. Infrastructure development and Circulation improvements have been coordinated among the three Specific Plan Areas through the overall planning process.

PLANNING PROCESS

A majority of the WASP property owners and developers have been involved with and worked in a collaborative fashion since approximately 2004 to plan the proposed Specific Plan. The General Plan identifies the level of development that would be allowable within the FGA (including the North of Boronda FGA and the West Area Specific Plan). Given this fact, the General Plan land uses, densities, goals and policies, the number of total housing units and mixed use/commercial floor areas and other factors were the starting point for the specific plan planning process.

The General Plan requires that new development in the FGA be based on New Urbanism as well as other design principles to promote walkability and the use of alternative modes of transportation, provide a variety of housing choices, ensure access to parks and open space, promote sustainability, etc. To ensure preservation of agricultural land and to achieve the other benefits of compact urban design, the General Plan mandates that new residential development have a minimum average density of 9 dwelling units per net residential acre and that this density not be achieved through an exclusive mix of low and high density units. As a method of ensuring a variety of housing choices, the General Plan further requires that 15% of the housing units fall within the density range of 16-24 units per net residential acre and 35% to 45% of the housing units fall within the density range of 7-14 units per net residential acre. These factors were also addressed in the planning of the Specific Plan.

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

THE GATEWAY CENTER SPECIFIC PLAN

In 2011, the City of Salinas approved "The Gateway Center Specific Plan". This 20.23-acre specific plan is located at the northeast corner of Boronda Road and San Juan Grade Road. This area was originally envisioned to be part of the West Area Specific Plan but was subsequently removed and approved as a separate Specific Plan Area. This area is not included as part of the proposed West Area Specific Plan and is shown as "Not a Part" on the figures and maps. However, the two specific plans have been coordinated with respect to buffers, pathway connections, supplemental detention/retention basin design, and other plan features.

PROJECT DESCRIPTION

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

PROJECT GOALS AND OBJECTIVES

The principal objective of the proposed project is the approval and subsequent implementation of the proposed West Area Specific Plan and related entitlements. Proposed land uses in the 797-acre Specific Plan Area include residential, mixed use commercial, community park, neighborhood parks, small parks and open space (including supplemental storm water detention/retention basins). Implementation will involve development of the site under the New Urbanism Zoning districts of Neighborhood Edge (NE)/Low Density Residential, Neighborhood General 1 (NG-1)/Low/medium Density Residential, Neighborhood General 2 (NG-2)/High Density Residential, Village Center (VC) as well as the Public and Semipublic (PS), Parks (P), and Open Space (OS) zoning districts. A Specific Plan Overlay district will also apply to each zoning districts. These Zoning Districts are further described below.

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

- Create a community with a compact form that promotes sustainable neighborhood design and is pedestrian, bicycle, and transit friendly.
- Provide a variety of land uses in easy walking distance of housing including a mixed use village, parks, and schools to reduce vehicle miles travelled.
- Provide parks and other public green space in accordance with General Plan standards that are designed to be safe and easily accessible to residents.
- Provide public services and infrastructure improvements that achieve and maintain City service standards.
- Provide an inviting tree-lined street system which incorporates traffic calming and other measures.
- Establish an interconnected sidewalk/pathway and open space system throughout the development which links to the greater North of Boronda FGA and the City as a whole.
- Create a sense of place and unique identity through the use of entry treatments, landscaping, streetscapes, public art, decorative street lighting, pedestrian amenities and other elements.

LAND USE CONCEPT

The above-noted goals, design principles and requirements are reflected in the following key features of the Specific Plan:

- Four neighborhoods, each organized around a neighborhood park to provide a public gathering space for residents, and pathways that connect from residential areas to these parks.
- Each neighborhood contains a mix of residential densities meeting General Plan requirements (for medium and high densities) and housing types.
- Location of parks such that all residents will be within an approximately five-minute walking time of a neighborhood or small park and ten minutes from the community park.
- A central core of public facilities and services that serve all four neighborhoods and residents of the surrounding area. The central core comprises the Village Center with retail and professional services, an approximately 30-acre community park, a middle school, a high school, and medium and high density residential uses.
- A network of pathways and pedestrian-friendly streets that connect all of the public facilities in the Specific Plan Area including the Village centers, parks and schools. An east/west off-street pedestrian and bicycle shared-use pathway will be provided along the entire length of the Specific Plan to link the WASP to the remainder of the North of Boronda FGA (including the proposed CASP) and to other areas of the City. Bike lanes, sidewalks and pathway connections will also be provided within the Specific Plan and to off-site areas.
- A Village Center that is easily accessible to the surrounding residential neighborhoods by local streets and pedestrian pathways as well as to vehicular traffic on Boronda Road.
- The Village Center which includes housing and a central green space/plaza that will be one of the primary focus points in the area.

- Providing traffic calming methods at key intersections and other locations near parks, schools and other areas to calm traffic and enhance pedestrian and bicycle safety.
- Incorporation of decorative street lighting consisting of Light-Emitting Diode (LED) lighting fixtures and pedestrian amenities throughout the Specific Plan to promote a sense of place.
- Incorporation of Low Impact Development (LID) features throughout the development to reduce and eliminate the need for large, unattractive, industrial-looking detention/retention basins. Instead, supplemental storm water facilities where provided or needed will include varied slopes through grading and the use of plants and trees and other elements to create a more natural appearance.
- Inclusion of numerous Leadership in Energy and Environmental Design (LEED) measures and design principles.

SPECIFIC PLAN OVERLAY

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

GENERAL PLAN LAND USES

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

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

LAND USE COMPONENTS

The quantifiable objectives of the proposed project include the development of up to 4,340 residential dwelling units (with a minimum of 3,553 required under the General Plan), up to 571,500 square feet of commercial/mixed use building area, and up to 177 acres of public facilities (including three elementary schools, a high school, middle school, supplemental detention/retention basins and 11 parks). It is anticipated that the Specific Plan Area will have up to 15,928 residents at project build-out.

Tables 2 and 3 (below) summarize the net acreages of each land use, the maximum and minimum number of units, average residential density by neighborhood/district and the maximum mixed use/commercial square footage.

The Specific Plan proposes housing in a variety of densities that correspond with residential land use designations included in the General Plan as shown below. Residential development will include single-family dwellings in relatively low densities of 6 to 8 (minimum 6 du) dwelling units per net residential acre (Neighborhood Edge), medium density housing in the range of 9 to 15 units (minimum 9) per net residential acre (Neighborhood General-

1), and relatively high density multifamily development in the range of 16 to 24 (minimum 16) units per net residential acre (Neighborhood General-2). The Village Center (VC) will include residential units, offices, retail, and professional services. As used in the Specific Plan "Net residential acres are the private lands zoned for residential uses exclusive of streets, parks, and all other uses." In addition, to encourage affordable housing choices, it is proposed that any portion of the planning area which is designated as NG-2 may be built at a density of 30 dwelling units per net residential acre as long as the total number of units allowed in the Planning area is not exceeded and the required percentage of medium and high density units meet General Plan requirements.

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

Proposed Zoning Districts*	**Existing General Plan Land Use Designations**
Neighborhood Edge (NE)	Residential Low Density
Neighborhood General 1 (NG-1)	Residential Medium Density
Neighborhood General 2 (NG-2)	Residential High Density
Village Center (VC)	Mixed Use
Open Space (OS)	Open Space
Park (P)	Park
Public/Semipublic (PS)	Public/Semipublic

***A Specific Plan Overlay District applies to each Zoning district.**

The proposed residential land uses and zoning districts are further described below:

Neighborhood Edge (NE)

The NE residential areas provide for the development of single-family detached and attached homes. The designation allows a minimum of 6.0 dwelling units per net residential acre and a maximum density of 8.0 dwelling units per net residential acre or 10 dwelling units per net residential acre with an affordable housing density bonus of 25%.

Neighborhood General 1 (NG-1)

The NG-1 district provides for the development of small-lot single-family detached homes, single-family attached (townhomes, rowhouses, triplexes), and duplexes. Allowable multifamily uses include condominiums, as well as apartment units. The designation allows a maximum of 14.0 dwelling units per net residential acre or 17.5 dwelling units per net residential acre with a density bonus of 25%.

Neighborhood General 2 (NG-2)

The NG-2 district provides for the development of single-family attached (rowhouses, triplexes), and multifamily (condominiums, and apartments) units. The designation allows a maximum of 24.0 dwelling units per net residential acre or up to 30.0 dwelling units per net acre, as long as the maximum unit count for the Planning Area is not exceeded.

DESCRIPTION OF NEIGHBORHOODS

The Specific Plan proposes four residential neighborhoods, each with an identifiable public gathering place, a mix of land uses, and a mix of residential densities (Figure 6). The neighborhoods are each centered around a distinct neighborhood center or public gathering place. The neighborhood centers are located in easily accessible locations for both local pedestrians and the automobile circulation system. The neighborhood centers, and the Specific Plan as a whole, would be designed to provide convenient and easy access for pedestrians and bicyclists, while accommodating vehicular trips.

As of the writing of this document, the neighborhoods and neighborhood subareas did not have names; therefore, they are referenced by number below.

Neighborhood 1

Neighborhood 1 is proposed in the southwestern portion of the Specific Plan Area (Figure 6). It is the location of the current McKinnon Elementary School, which is not proposed to be altered as a part of the Specific Plan. McKinnon Elementary School currently serves residential areas south of Boronda Road and west of San Juan Grade Road. McKinnon Elementary School, as well as the neighborhood park, would provide a central public gathering space for Neighborhood 1. The Specific Plan also proposes one small park within Neighborhood 1. This neighborhood has an estimate of 961 housing units.

Adjacent to the southwest corner of Neighborhood 1 is The GCSP. This area was subject to a separate planning process and the specific plan for that property was approved by the City of Salinas in 2011; therefore, it is not a part of the WASP. However, the plans for The GCSP and the WASP are integrated in two important ways: (1) a pathway connects the two areas, allowing WASP residents to access the retail services in the GCSP by walking and bicycling; (2) a supplemental detention/water quality and retention basin, designed as part of The GCSP, is planned to be expanded to provide additional capacity to support the WASP development to supplement the site/parcel based LID requirements per the City Storm Water Development Standards (SWDS). Additionally, an 80-foot wide noise attenuation setback including a 10-foot landscaped area and walkway connection to San Juan Grade Road will be provided along the southern boundary of The GCSP.

Neighborhood 2

Neighborhood 2 is proposed in the northwestern portion of the Specific Plan Area (Figure 6). The neighborhood is focused on a linear park oriented roughly east to west. The linear park extends through the neighborhood and connects the community park in the center of the Specific Plan Area with the neighborhood park proposed in the northwestern portion of the neighborhood. This neighborhood has an estimate of 1,328 housing units. Most of the neighborhood's medium and higher density residential areas are near the proposed linear park/community park areas.

Neighborhood 3

Neighborhood 3 will encompass the southeastern portion of the Specific Plan Area (Figure 6). The neighborhood includes an elementary school, a neighborhood park, and one small park, which together are the focal points of the neighborhood. This neighborhood has an estimate of 1,504 housing units.

Neighborhood 4

Neighborhood 4 will encompass the northeastern portion of the Specific Plan Area (Figure 6). The neighborhood includes a neighborhood park that is connected to the surrounding residential units and the other neighborhoods by pathways and safe crossings at key intersections. The high school is located west of Neighborhood 4. This neighborhood has an estimate of 540 housing units.

The Village Center

The proposed Village Center is the mixed use commercial and activity focus of the entire Specific Plan Area. The mix of neighborhood-serving commercial and entertainment opportunities are intended to help the Specific Plan Area to function as a mostly self-reliant community, with many necessary goods and services being available within walking or bicycling distance of residences. The mix of uses in the Village Center may include a grocery store, and a complement of shops, restaurants, residential units, offices, retail, and professional services. On the north side of the Village Center is the town square or public plaza. The Village Center may have a development intensity of up to 1.0 floor-area ratio (FAR) plus 10 dwelling units per net acre. Conversion of commercial FAR to residential units is also permitted in accordance the General Plan and Zoning Code to increase the number of residential units. In addition to the 571,500 square feet of mixed use commercial floor area, a minimum of 91 dwelling units will also be provided. Housing over commercial is encouraged, but not required, within the Village Center, and the Village Center as currently proposed, would be surrounded by higher density housing types, such as multifamily (apartments, condominiums), single-family attached (townhomes, rowhouses) and live/work units.

Table 2 depicts the proposed residential development program for the WASP. Table 3 depicts the proposed non-residential development program for the WASP.

TABLE 2: WEST AREA SPECIFIC PLAN RESIDENTIAL DEVELOPMENT PROGRAM

	PLANNING AREA NET ACRES	AVERAGE RESIDENTIAL DENSITY (UNITS/ACRE)	PROJECTED RESIDENTIAL UNITS				TOTAL
			NE	VC	NG-1	NG-2	
Neighborhood 1	101.77	9.4	211	31	563	156	961
Neighborhood 2	155.49	8.5	471	0	415	442	1,328
Neighborhood 3	151.09	9.9	400	60	601	443	1,504
Neighborhood 4	72.30	7.5	272	0	224	44	540
Miscellaneous	1.00	7.0	7	0	0	0	7
Total	**481.65**	**9.0**	**1,361**	**91**	**1,803**	**1,085**	**4,340***

*The minimum number of residential units required in the West Area is 3,553 (on approximately 385 net residential acres).

TABLE 3: WASP NON-RESIDENTIAL DEVELOPMENT PROGRAM

Mixed Use Commercial Summary	
DESCRIPTION	MAXIMUM COMMERCIAL SQUARE FEET
Village Center (Cloverfield)	171,500*
Village Center (Harden)	400,000*
Total Square Feet	**571,500***
Public Facilities Summary	
DESCRIPTION	NET ACRES
High School	39.19
Middle School	20.78
Elementary School (1)	10.98
Elementary School (2)	10.00
Elementary School (3)	10.00
Community Park	30.83
Neighborhood Parks	12.52
Small Parks	6.41
Supplemental Det./Ret. Basins	35.03
Water Wells/Water Treatment	1.5
Total Acres	**177.02**

*The Mixed Use Commercial areas (Village Center) are located on 24.7 net acres.

Public Facilities Summary

Public land uses are those uses that serve the general public and are operated and maintained by public or quasi-public agencies. Land designated for public or semipublic uses such as schools, parks, open space and utility systems are crucial to the Specific Plan's land use concept, and will be subject to the requirements of Article III, Division 7-Public/Semipublic (PS) District of the Salinas Zoning Code except as otherwise required by the Specific Plan or State Law. Public and semipublic land uses in the Specific Plan Area include five schools and three water well sites. Parks and Open Space are further addressed below.

Schools

A total of five schools will be located within the Specific Plan – three elementary schools, one middle school and one high school. The elementary and middle schools are located within the boundaries of the Santa Rita Union School District. The high school is located within the boundaries of the Salinas Union High School District.

One of the three elementary schools—McKinnon Elementary—has already been constructed in Neighborhood 1. The second elementary school will be located on a 10.0-acre site in Neighborhood 2, while the other will be located on a 10.0-acre site in Neighborhood 3. McKinnon Elementary School currently serves residents of the Harden Ranch area south of Boronda Road and may continue to do so in the future. The two new elementary schools will serve primarily students residing in the Specific Plan Area, specifically those living in the residential neighborhoods adjacent to the schools.

A site is also provided for one middle school in the WASP. The middle school site, approximately 20 acres in size, is proposed adjacent to and north of the community park and would primarily serve students residing in the Specific Plan Area.

The high school site is located in the northern portion of the Specific Plan Area adjacent to Rogge Road. The site is approximately 38 acres and it has already been acquired by the Salinas Union High School District. The District has previously approved a new high school facility for the site and is moving forward (separate from the WASP) with construction plans for the new facility. The high school, which would include sports fields, a stadium and parking areas, would serve students both within and outside of the Specific Plan Area.

Water Well Sites

Three water well sites are proposed within the WASP. The locations are denoted on Figure 6: *Specific Plan/Illustrative Plan*. These proposed facilities will be subject to the approval of a Conditional Use Permit by the City and may be subject to further environmental review in accordance with the requirements of CEQA.

Parks and Open Space Land Use

A total of 11 parks consisting of a total of 49.76 net acres of public parkland are proposed within the Specific Plan. This acreage slightly exceeds the City's Parkland (Quimby Act) requirements of 3 acres per 1,000 persons which requires 47.78 net acres. Three types of public parks are proposed: community, neighborhood, and small parks.

Except as otherwise provided in the Specific Plan, the parks and open space land uses shall be subject to the requirements of Article III, Division 6 –Parks (P) and Open Space (OS) District of the Salinas Zoning Code, respectively. Further details of the proposed parks are described below:

Community Park: The approximately 30-acre community park will be the focal point of the residential neighborhoods and the entire WASP and would provide a wide variety of amenities and significant open space to both residents of the community and surrounding areas. As the largest park in the City's FGA, it would contain a significant concentration of sports fields as well as passive recreational amenities. The community park would be adjacent to an approximately 10-acre open space area for periodic supplemental storm water detention and retention. This combined area of park and open space totals approximately 40 acres.

Neighborhood Parks: Four neighborhood parks, which vary from approximately 2.35 acres to 3.63 acres in size are proposed. They would serve as focal points within each of the four residential neighborhoods and would provide a variety of amenities and open space to the residents of the WASP and surrounding areas. Proposed features of these parks would include open space for active recreation and areas for passive recreation. Special features may be located within these parks to further enhance the character and identity of the neighborhood that each park serves.

Small Parks: Six small parks, which are 1.86 acres or less in size, and average approximately 1.1 acres, are proposed. These parks will not be characterized by large sports fields that may be found in the community park and some neighborhood parks, but they would provide passive open space and recreation, and would include seating areas, picnic areas, sports courts, and children's tot lots or playgrounds.

INFRASTRUCTURE, PUBLIC SERVICES, AND UTILITIES

Circulation Network

The WASP circulation system would include a roadway network, a pedestrian and bicycle network, and public transit. Emphasis would be placed on ensuring connectivity between uses and on creating a safe and efficient circulation system that complies with City and/or Specific Plan designs and policies. City street standards adopted for use in development of the FGA would be the basis for street development standards in the WASP. However, the plan would also emphasize facilitating increased daily pedestrian trips by connecting residential neighborhoods to public facilities such as schools and parks, and to retail and employment areas. As such, the street standards for the FGA are supplemented in the Specific Plan with wide sidewalks, landscaped parkways, and other pedestrian-friendly circulation features.

The circulation system would be designed to link with existing City and regional systems. It would also provide standards for potential connections to development in the CASP located to the east of the WASP and the extension of existing vehicular, pedestrian, and bicycle circulation systems to the south, west, and north. Figure 7 depicts the proposed vehicular circulation plan for the Specific Plan.

Storm Drainage

The WASP storm water drainage system will need to meet a number of requirements from the City of Salinas, the County of Monterey, and the State of California. These requirements include LID requirements, water quality treatment requirements, and hydro-modification mitigation requirements. In addition, the approach to mitigating storm water impacts will utilize site/parcel- based Post Construction Best Management Practices (PCBMPs) to the maximum extent practicable (MEP) to maximize infiltration and groundwater recharge, filter any storm water runoff to meet water quality requirements, reduce the cost of "grey" infrastructure in favor of "green" infrastructure and mitigate both the post-project peak storm water runoff rates and the post-project storm water runoff volumes, in order to not have a negative impact on any downstream facility.

The storm water conveyance and retention system would include an integrated network of open waterways and drains, underground storm drain pipes, retention basins, supplemental detention/water quality basins, and a wide range of PCBMPs and LID features.

Water Supply

The California Water Company (Cal Water) is a private water company that supplies water to the City of Salinas and could supply potable water to the entire WASP properties. Cal Water is a California Public Utilities Commission (CPUC) regulated water utility which has been providing water service in the area since 1962. A single distribution system provides services to the City of Salinas and Bolsa Knolls while small hydraulically-isolated distribution systems provide services to the other communities. In compliance with Senate Bill (SB) 610, Cal Water will be submitting a "Will Serve" letter indicating that they will provide water service to the proposed Specific Plan Area. As development of the Specific Plan occurs, existing agricultural wells will be taken out of production.

The Project proposes to construct three wells with a minimum capacity of 1.72 million gallons per day (mgd) each to meet a maximum day demand at full plan development of 2,257.6 acre feet/year with two wells in operation and one well in reserve as a backup. Well locations are chosen on the basis of water quality and potential production capabilities. According to Cal Water's Assessment Report, it is expected that the proposed wells within the WASP have a high probability of meeting drinking water quality standards. As a hedge against possible future changes in water quality, Cal Water may make provisions for on-site treatment with the design of the wells for the WASP development.

The proposed on-site water distribution system would be looped to maintain water quality and would be sized for minimum system pressures of 20 pounds per square inch (psi) at maximum day demand plus fire flow. The fire flow requirement for the WASP is 1,500 gallons per minute (gpm) for a minimum of two hours. Under peak day demand, the system would deliver the required flows with a minimum of 40 pounds per square inch (psi) residual pressure. The proposed system would tie into Cal Water's existing system on San Juan Grade Road, Russell Road, Rogge Road, Natividad Road, and East Boronda Road. The West Area would be served by 12-inch diameter and 16-inch diameter main trunk lines and 8-inch diameter distribution lines branching off the trunk lines and serving individual streets.

Utilizing site/parcel-based post construction BMPs to enhance storm water infiltration to the maximum extent practicable will enhance groundwater recharge and in turn, future available supply of potable water. Extensive use of native and naturalizing species is proposed where appropriate to reduce water demands and adapt well to the soil and wind conditions. The WASP will implement a Water Conservation program requiring the use of low-flow toilets and shower heads, demand controlled irrigation systems, and other measures as required by the City. All landscaping and irrigation in the WASP shall comply with the City's Water Conservation Ordinance, Water Efficient Landscape Ordinance and other requirements. Table 4 provides a water demand estimate for the proposed project.

TABLE 4: WATER DEMAND ESTIMATE (ACRE FEET PER YEAR)

USE	CALCULATION[1]	ACRE FEET PER YEAR
Retail/Services	571,500 s.f. @ 0.335 gal/s.f./day = 191,453 gpd	214.4
Residential	87.57 gal/resident @ 3.67 residents/unit = 321.4 gal/unit/day	1,562.3
Schools	90.95 acres @ 3,500 gal/acre/day = 318,325 gpd	356.5
Parks	49.76 acres @ 2,232 gal/acre/day = 111,064 gpd	124.4
TOTAL		**2,257.6**

[1] Final Supplement for the Salinas General Plan Program EIR, Appendix E, Water Supply Assessment – Cal Water

Sanitary Sewer System

The City of Salinas provides its residents with sewer collection facilities and maintenance. The Monterey Regional Water Pollution Control Agency (MRWPCA) provides regional wastewater conveyance, treatment, disposal, and wastewater recycling services to customers in northern Monterey County including the City of Salinas. The MRWPCA serves the City with the Salinas Pump Station and the Salinas interceptor. Sewage trunk line conveyance, treatment, and disposal for the West Area will be provided by the MRWPCA.

The sewer collection system for the Specific Plan Area will be connected to the existing 24-inch sewer trunk line on McKinnon Street at the intersection with East Boronda Road. However, the elevation at the connection point on McKinnon Street and the lowest point of the northwest area of the Specific Plan Area are very similar, making it difficult to connect the proposed sewer collection system for the northwest area to the existing 24-inch sewer system on McKinnon Street. Therefore, the proposed sewer collection system for the northwest area of the Specific Plan Area may need to be connected to the existing 10-inch sewer system on Van Buren Avenue near San Juan Grade Road. The proposed sewer collection system for the remainder of the Specific Plan Area would connect to the aforementioned existing 24-inch sewer trunk line on McKinnon Street. The City would provide and maintain sewer collection once the West Area development is established. All the proposed sanitary sewer collection system would convey flow to the City's existing sewers by gravity without the need of any sewer pump station. Table 5 provides a sewer generation estimate for the proposed project.

TABLE 5: SEWER GENERATION ESTIMATE

USE	CALCULATION	ACRE FEET PER YEAR	AVERAGE GPD
Retail/Services	214.4 af/yr. @ 90%(1)	193.0	172,321
Residential	1,562.3 af/yr. @ 50%(2)	781.2	697,464
Schools	356.5 af/yr. @ 50%(2)	178.3	159,188
TOTAL		**1,152.5**	**1,028,973**

(1) A typical estimate for retail/services sewer demand is 90% of water demand

(2) A typical estimate for residential and school sewer demand is 50% of water demand. Approximately 50% of residential and school water is used for landscape irrigation.

Monterey Salinas Transit (MST)

MST will provide transit service to the West area from bus stops located within the Specific Plan and along its perimeter. Existing bus stops along Boronda Road currently provide service to the site.

Electricity and Natural Gas

Pacific Gas and Electric Company (PG& E) provides electrical services to the City of Salinas and will provide this service to the Plan Area. PG&E indicates that sufficient primary line power service exists in proximity of the proposed site. A 12kV underground primary line exists along Boronda Road which will be extended into the project. PG&E also currently operates a 60kV overhead power line easement that extends through the WASP area.

PG&E also provides natural gas service for the City and will provide gas service to the site. PG&E will need to extend their existing gas service from existing lines located on Boronda Road into the project. Table 6 provides an electricity demand estimate for the proposed project. Table 7 provides a natural gas demand estimate for the proposed project.

TABLE 6: ESTIMATED ELECTRICITY DEMAND

USE	USAGE FACTOR (KWY/MONTH)	PROJECT	ESTIMATED MONTHLY USAGE (KWH)
Retail/Services	15.5 per s.f.(1))	571,500 s.f.	738,188
Residential	909 per du(2)	4,340 du	3,945,060
Schools	17,736 per acre(3)	90.95 acres	1,613,089
TOTAL			**6,296,337**

(1) 2003 U.S. Energy Information Administration Commercial Building Energy Consumption Survey

(2) Average annual electricity consumption per residential customer, U.S. Energy Information Administration

(3) SUHSD New High School #5 Construction, Subsequent EIR

TABLE 7: ESTIMATED NATURAL GAS DEMAND

USE	USAGE FACTOR (THERMS)	PROJECT	ESTIMATED MONTHLY USAGE (THERMS)
Retail/Services	0.0225/s.f./month(1)	571,000	12,848
Residential	40.25/unit/month(2)	4,340	174,685
Schools	0.0225/s.f./month(3)	495,000(3)	11,138
TOTAL			**198,671**

(1) 2003 U.S. Energy Information Administration, Commercial Building Energy Consumption Survey

(2) California Residential Natural Gas Consumption, California Energy Commission

(3) School Estimated square feet: 85,000 s.f. for Elementary School, 125,000 s.f. for Middle School and 200,000 s.f. for High School

Telecommunications

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

Solid Waste Management and Recycling

Solid Waste generated within the Specific Plan Area is collected by Republic Services of Salinas and delivered to the Salinas Valley Solid Waste Authority (SVSWA) Transfer Station that then transports the collected refuse to the Johnson Canyon Landfill which SVSWA owns and operates by contract. It is estimated that the landfill has 30 years of disposal capacity to meet the need of current jurisdiction served by the landfill. SVSWA has proposed a comprehensive approach to providing for solid waste disposal needs of its member jurisdictions for approximately 70 years which includes increased waste division and materials recovery as well as the application of advanced technologies for processing solid waste. In addition to providing sufficient long-term capacity, the SVSWA facility improvements would increase the ability of SVSWA's member jurisdictions to achieve their Assembly Bill (AB) 939 diversion mandates. Table 8 provides a solid waste generation estimate for the proposed project.

TABLE 8: ESTIMATED SOLID WASTE GENERATION

LAND USE	GENERATION FACTOR(1)	PROJECT	ESTIMATED SOLID WASTE GENERATION (LB./DAY)
Retail/Services	6 lb./1,000 s.f./day	571,000 s.f.	3,426
Residential	10 lb./unit/day	4,340 units	43,400
Schools	0.5 lb./student/day	4,191 students	2,096
TOTAL			**48,922**

(1) Cal Recycle

PHASING

The Specific Plan Area is owned by 11 individual entities, as identified in Figure 4 and Table 1. Two of these owners are school districts, the remaining are individual private owners. All of these ownerships border one or more existing public streets that contain, or are planned to contain, most of the utility infrastructure necessary to support development. The Specific Plan is designed such that each current institutional or individual owner may develop their property independent of development by other property owners. An agreement among the property owners allows for this independent development by permitting any developing ownership to obtain from adjoining ownerships the access and easements necessary for roadways or utilities to support development of their individual property.

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

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

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

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

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

- Certification of the Environmental Impact Report (EIR) and adoption of the MMRP.
- Approval of the proposed West Area Specific Plan.
- Rezoning of the Specific Plan area from New Urbanism Interim (NI) with a Specific Plan Overlay to Neighborhood Edge (NE)/Low Density Residential, Neighborhood General 1 (NG-1)/Medium Density Residential), Neighborhood General 2 (NG-2)/High Density Residential, Village Center (VC), Public/Semipublic (PS), Parks (P) and Open Space (OS). A Specific Plan Overlay District is also applicable to each Zoning District.
- Tentative Parcel Map.
- Vesting Tentative Tract Map.
- Development Agreement.

A list of other public agencies whose approvals may be required is included at the end of this document.

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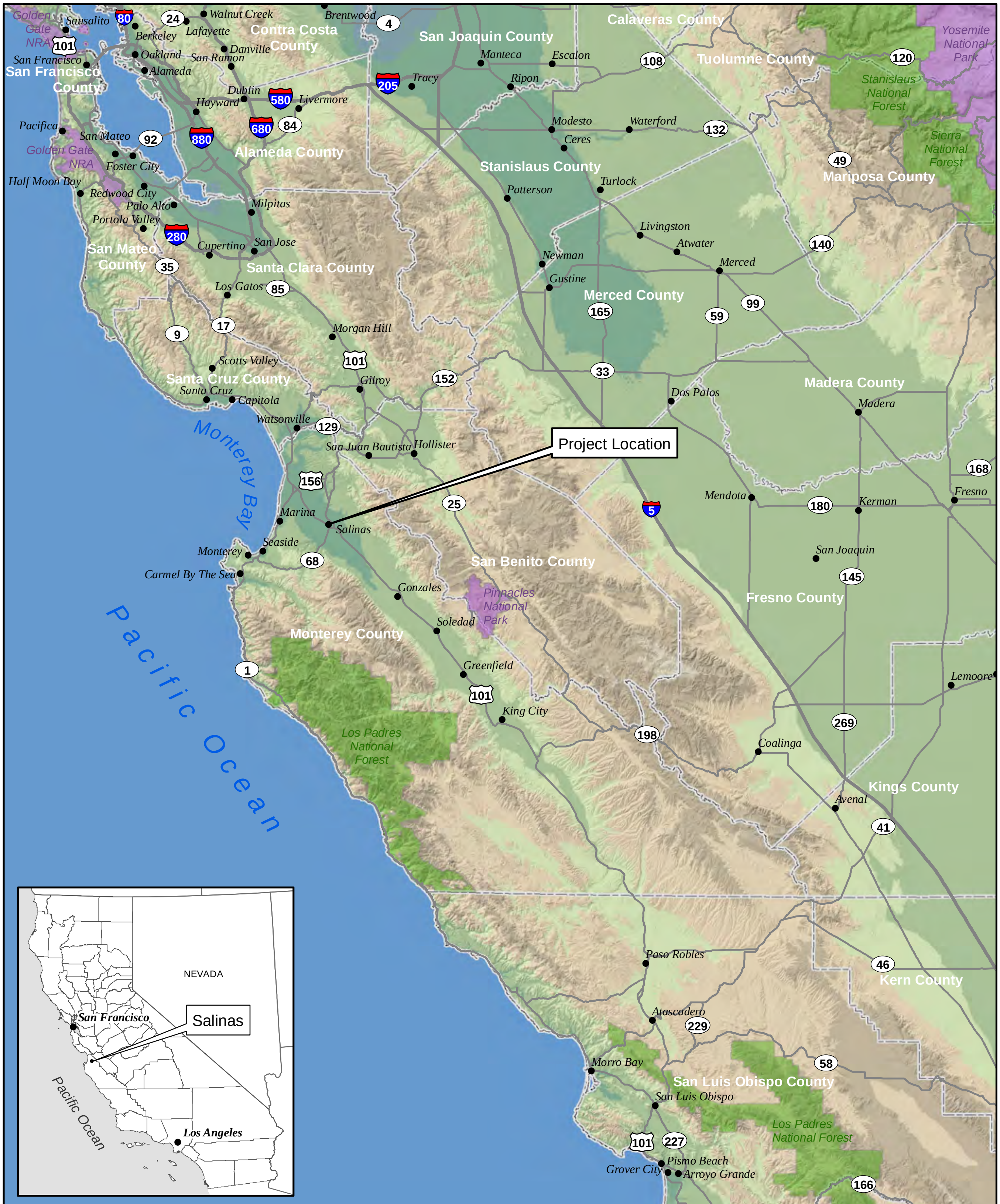

CITY OF SALINAS WEST AREA SPECIFIC PLAN EIR

Figure 1: Regional Map

Sources: California Spatial Information Library; National Park Service. Map date: June 24, 2015.

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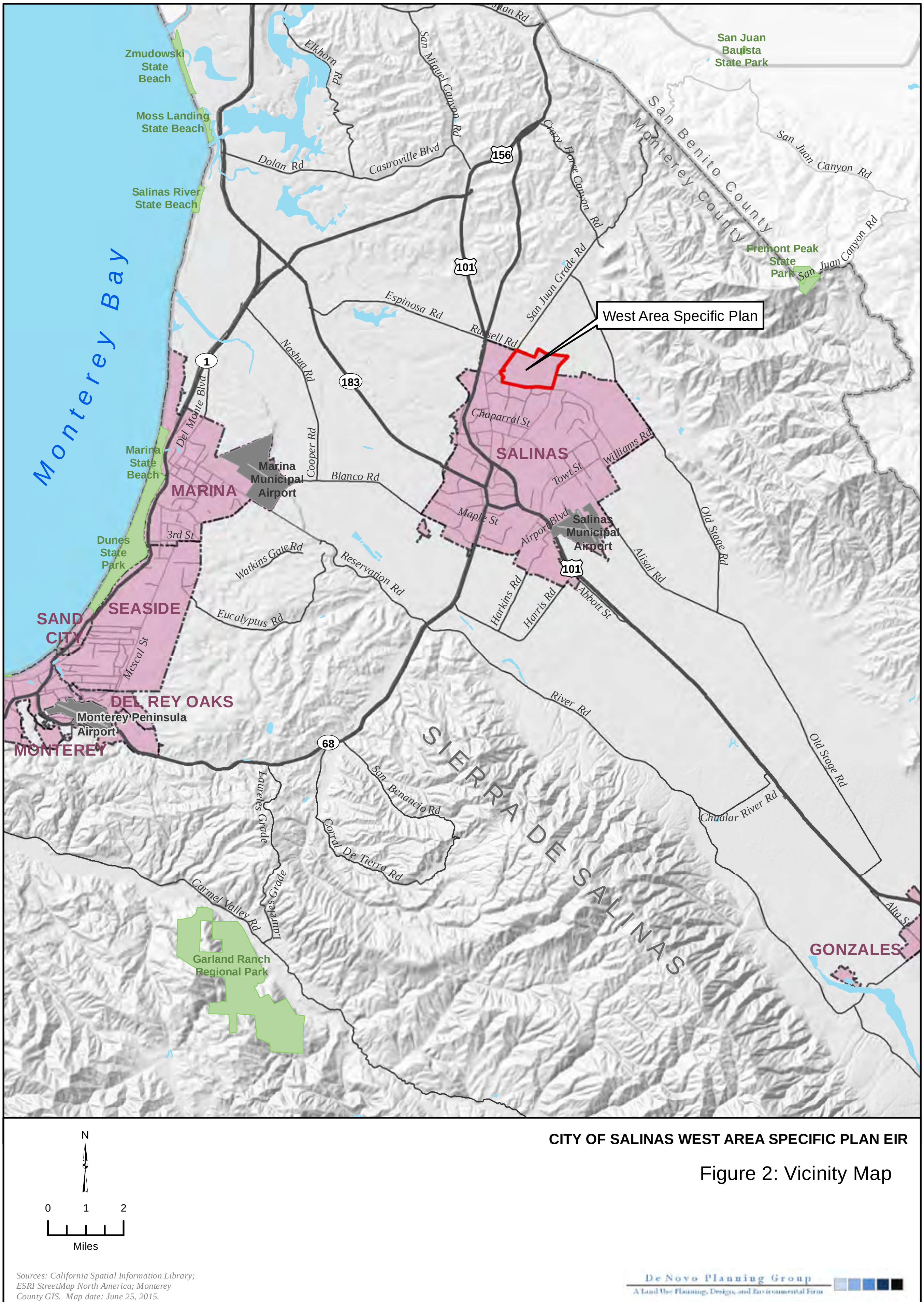

CITY OF SALINAS WEST AREA SPECIFIC PLAN EIR

Figure 2: Vicinity Map

Sources: California Spatial Information Library; ESRI StreetMap North America; Monterey County GIS. Map date: June 25, 2015.

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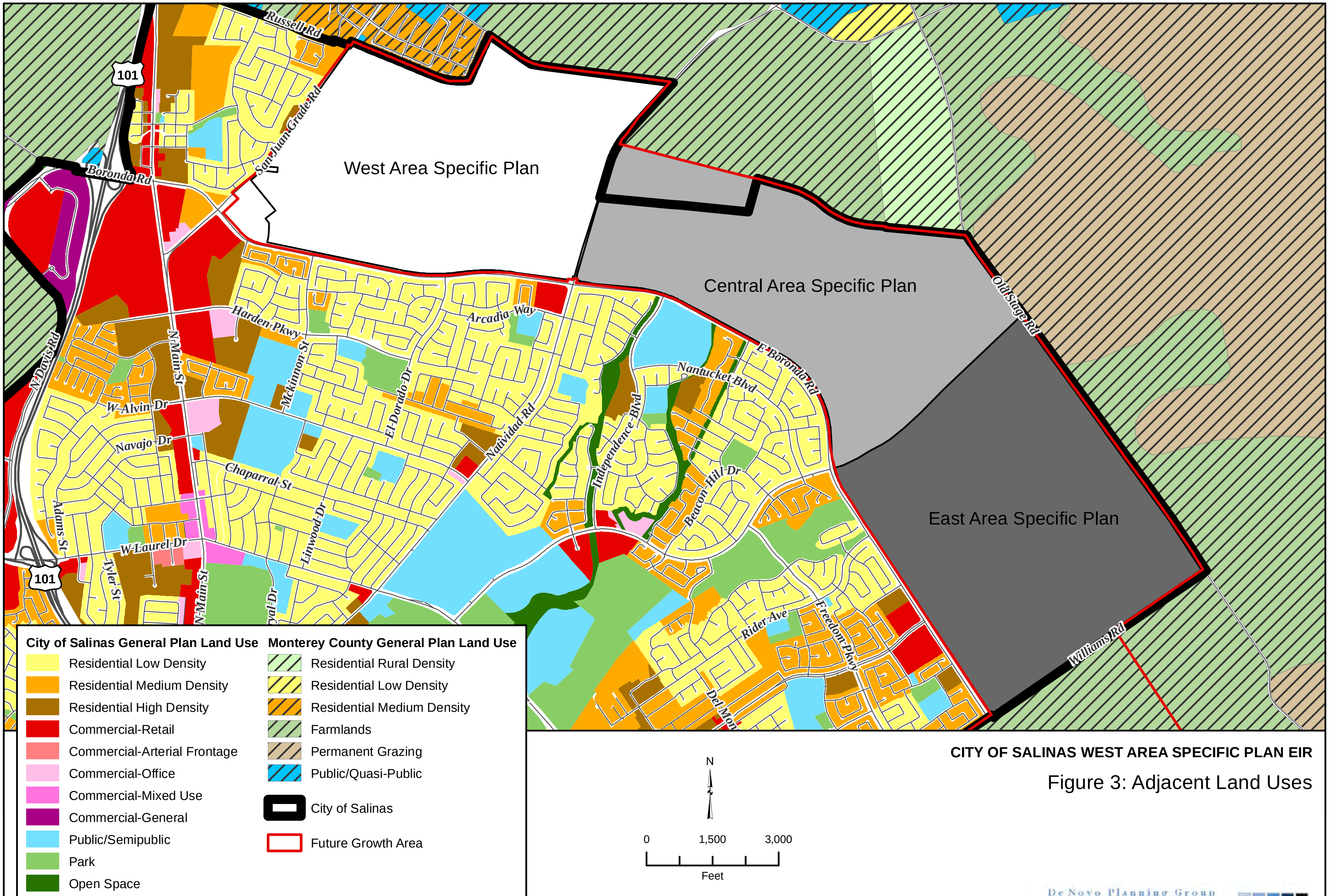

Sources: City of Salinas; Monterey County GIS. Map date: June 30, 2015.

CITY OF SALINAS WEST AREA SPECIFIC PLAN EIR

Figure 3: Adjacent Land Uses

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CITY OF SALINAS WEST AREA SPECIFIC PLAN EIR

Figure 4: Existing Conditions

Source: City of Salinas, AECOM.

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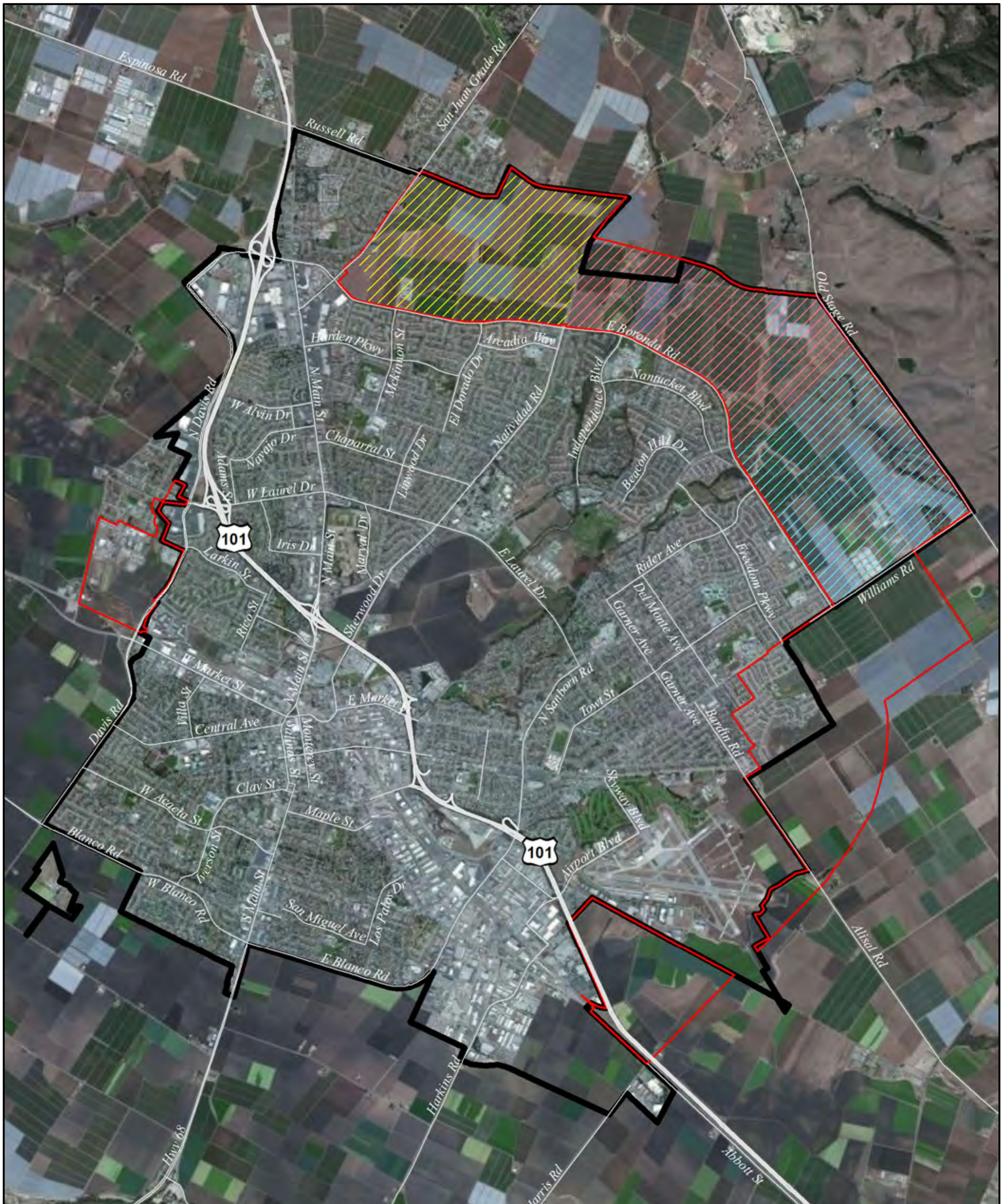

City of Salinas

Future Growth Area

West Area Specific Plan

Central Area Specific Plan

East Area Specific Plan

N

0 0.5 1

Miles

CITY OF SALINAS WEST AREA SPECIFIC PLAN EIR

Figure 5: Aerial View

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Sources: Monterey County GIS. Map date: June 30, 2015.

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CITY OF SALINAS WEST AREA SPECIFIC PLAN EIR

Figure 6: Specific Plan/Illustrative Plan

Source: City of Salinas, AECOM.

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CITY OF SALINAS WEST AREA SPECIFIC PLAN EIR

Figure 7: Vehicular Circulation Plan

Source: City of Salinas, AECOM.

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

DETERMINATION:

On the basis of this initial evaluation:

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

Gabriel Elliott October 14, 2015

Signature Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

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

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

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

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

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

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

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

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

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ENVIRONMENTAL CHECKLIST

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

I. AESTHETICS

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

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

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

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

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

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

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

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

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that aesthetic impacts associated with the Future Growth Areas (FGAs), which includes the Specific Plan

Area, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002).

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

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

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

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

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

II. AGRICULTURE AND FOREST RESOURCES

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

Associates 2002) notes that a significant impact associated with the conversion of agricultural land in the Future Growth Areas (FGAs) to residential and other urban uses and potential compatibility issues are anticipated.

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

The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) concluded that with the implementation of Mitigation Measures AG1 through AG4, the impacts on potential compatibility issues would be reduced to a **less than significant** level; however, while the impacts on agricultural conversion would be reduced to the extent feasible, a **significant and unavoidable** impact would remain related to the loss of important farmland. Mitigation AG5 specifically addressed Agricultural Land Conservation Easement Program, which states that the City will work with the County of Monterey, and other local jurisdictions, to create and implement an agricultural land conservation easement program including such measures as securing the dedication of easements or by paying a mitigation fee that could be used to purchase easements through a mitigation bank. Additionally, in 2006, the City Council adopted Resolution No. 19422, approving the Agricultural Land Preservation Program. The resolution adopted a $750.00 per acre mitigation fee for agricultural lands currently designated by the California Department of Conservation's Farmland Mapping Program as "Prime" or "of Statewide Importance."

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

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

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above-referenced regulations, policies, and standards.

Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

Responses b): The Specific Plan Area is currently zoned New Urbanism Interim (NI), therefore, there are no conflicts with land zoned as farmland. The Specific Plan Area is not under a Williamson Act contract; therefore, there are no conflicts with Williamson Act contracts. These topics do not warrant additional analysis and will not be addressed further in the EIR.

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

III. AIR QUALITY

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

- A description of regional and local air quality as well meteorological conditions that could affect air pollutant dispersal or transport in the vicinity of the WASP. Applicable air quality regulatory framework, standards, and significance thresholds will be discussed.
- Short-term (i.e., construction) increases in regional criteria air pollutants will be quantitatively assessed. The California Air Resources Board (ARB)-approved California Emissions Estimator Model (CalEEMod) computer model will be used to estimate regional mobile source and particulate matter emissions associated with the construction of the proposed project.

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

IV. BIOLOGICAL RESOURCES

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

RESPONSES TO CHECKLIST QUESTIONS

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

The EIR will provide a summary of local biological resources, including descriptions and mapping of plant communities, the associated plant and wildlife species, special status species, and sensitive biological resources known to occur, or with the potential to occur in the project vicinity. This section will discuss the methodology, thresholds of significance, and a summary of local biological resources (terrestrial and aquatic), including descriptions and mapping of plant communities, the associated plant and wildlife species, and sensitive biological resources known to occur based on past or present observations, or with the potential to occur in the project vicinity based on habitat conditions. The information in this section will be based on field investigation(s), biological database searches, including a search of the California Natural Diversity Database (CNDDB), the California Native Plant Society's Electronic Inventory, the California Wildlife-Habitat Relationships database, an inventory of rare and endangered plants (California Native Plant Society, 2015), and the United States Fish and Wildlife Service's list of special-status species with potential to occur in the region. The analysis will conclude with a consistency analysis, cumulative impact analysis, and a discussion of feasible mitigation measures that should be implemented in order to reduce impacts on biological resources and to ensure compliance with the Federal and State regulations.

V. CULTURAL RESOURCES

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

VI. GEOLOGY AND SOILS

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

RESPONSES TO CHECKLIST QUESTIONS

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

Liquefaction typically requires a significant sudden decrease of shearing resistance in cohesionless soils and a sudden increase in water pressure, which is typically associated with an earthquake of high magnitude. According to the *Custom Soils Report* (Natural Resources Conservation Service 2015), the soils in the Specific Plan Area have sand content in the soils ranging from 44-67 percent. Given the high sandy soils, combined with the region being seismically active, the potential for liquefaction is present within the Specific Plan Area.

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

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

Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

Responses a-iv): The topography of the Specific Plan Area is nearly flat, with little change in elevation. The overall slope from northeast to southwest is approximately 0.3%, and there are no natural streams or water bodies present. Absent any significant slopes, the potential for landslides is highly unlikely. Implementation of the proposed project would have no impact relative to this topic, does not warrant additional analysis and will not be addressed further in the EIR.

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

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

Any future development under the proposed project would be required to comply with the above referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

Response d): Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of certain varieties of clay-type soils. Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections.

According to the *Custom Soils Report* (Natural Resources Conservation Service 2015), the soils in the Specific Plan Area have a low shrink-swell potential. This potential is directly related to the linear extensibility of the soils, which is 1.5 percent. The soil content within the WASP consists of a mixture of sandy and clayey soil.

Regardless of the low likelihood of expansive soils based on the linear extensibility of the soils, the City of Salinas requires a final geotechnical evaluation to be performed at a design-level to ensure that the foundations, structures, roadway sections, sidewalks, and other improvements can accommodate the specific soils, including expansive soils. The final geotechnical evaluation would include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures. Any future development under the approved General Plan, which includes all development under the proposed project, would be required to comply with the above referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

Responses e): The proposed project would not result in the construction or installation of septic tanks or alternative waste water disposal systems. Instead, the proposed project would be served by wastewater collection, conveyance, treatment, disposal, and recycling services through the City of Salinas and Monterey Regional Water Pollution Control Agency (MRWPCA). The sewer collection system for the WASP will be connected to the existing 24-inch sewer trunk line on McKinnon Street at the intersection with East Boronda Road. The proposed sewer collection system for the northwest portion of the Specific Plan Area may need to be connected to the existing 10-inch sewer system on Van Buren Avenue near San Juan Grade Road. All the proposed sanitary sewer collection systems would convey flow to the City's existing sewers by gravity without the need of any sewer pump station.

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

VII. GREENHOUSE GAS EMISSIONS

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

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

VIII. HAZARDS AND HAZARDOUS MATERIALS

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

RESPONSES TO CHECKLIST QUESTIONS

Responses a-c): The proposed project includes the approval and subsequent implementation of a 797-acre Specific Plan Area that includes residential, mixed use commercial, a community park, neighborhood parks, small parks and open space which included supplemental storm water detention/retention basins. These uses are not expected to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Additionally, these uses are not expected to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. While the proposed project includes five schools within the boundary of the Specific Plan Area, the land uses are not expected to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste. Implementation of the proposed project would have no impact relative to these topics and they do not warrant additional analysis and will not be addressed further in the EIR.

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

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

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

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

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

IX. HYDROLOGY AND WATER QUALITY

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

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

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

X. LAND USE AND PLANNING

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

The quantifiable objectives of the proposed project include the development of up to 4,340 residential dwelling units (with a minimum of 3,553 required under the General Plan), up to 571,500 square feet of commercial/mixed use building area, and up to 177 acres of public facilities (including three elementary schools, a high school, middle school, supplemental detention/retention basins and 11 parks). It is anticipated that Specific Plan Area will have up to 15,928 residents at project build-out. This is consistent with the expected intensity of development within the Specific Plan Area under General Plan buildout conditions as analyzed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002).

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

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

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

Subsequently, the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) indicated that impacts associated with the FGAs, which includes the WASP, would not be different from those discussed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002). Mitigation AG5 specifically addressed Agricultural Land Conservation Easement Program, which states that the City will work with the County of Monterey, and other local jurisdictions, to create and implement an agricultural land conservation easement program including such measures as securing the dedication of easements or by paying a mitigation fee that could be used to purchase easements through a mitigation bank. Additionally, in 2006, the City Council adopted Resolution No. 19422, approving the Agricultural Land Preservation Program. The resolution adopted a $750.00 per acre mitigation fee for agricultural lands currently designated by the California Department of Conservation’s Farmland Mapping Program as “Prime” or “of Statewide Importance.”

The City certified this EIR and approved annexation of the North of Boronda Future Growth Area, which includes the Specific Plan Area.

The Specific Plan Area is currently zoned New Urbanism Interim (NI) with a Specific Plan Overlay. The proposed project includes a rezone to Neighborhood Edge (NE)/Low Density Residential, Neighborhood General 1 (NG-1)/Medium Density Residential), Neighborhood General 2 (NG-2)/High Density Residential, Village Center (VC), Public/Semipublic (PS), Parks (P) and Open Space (OS). A Specific Plan Overlay District is also applicable to each Zoning District. The purpose of the rezone is to ensure consistency between the proposed General Plan Land Use Designations and Zoning. With the approval of the rezoning application, the Specific Plan would be consistent with the Salinas Zoning Code.

Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

Greater Salinas Area Plan: The *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) noted that implementation of General Plan will result in development outside the existing City limits, into the Greater Salinas Planning Area. Development occurring outside of the City limits is subject to the Greater Salinas Area Plan. The implementation of the General Plan may conflict with the Greater Salinas Area Plan, resulting in a significant impact.

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

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

The project as proposed is consistent with the Greater Salinas Area Plan. All development under the proposed project would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

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

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

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

The project as proposed is consistent with the GSA-MOU. All development under the proposed project would be required to comply with the above-referenced regulations, policies, and standards. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the *Final*

Environmental Impact Report, Salinas General Plan (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

Responses c): The Specific Plan Area is not within an area governed by an adopted habitat conservation plan or natural community conservation plan; therefore, there are no conflicts with a habitat conservation plan or natural community conservation plan. This topic does not warrant additional analysis and will not be addressed further in the EIR.

XI. MINERAL RESOURCES

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

RESPONSES TO CHECKLIST QUESTIONS

Response a-b): There is a quarry located in the northeastern portion of the Salinas Planning Area near the FGA, but outside of the Specific Plan Area. The quarry is designated by the State Division of Mines and Geology as an Aggregate Resource Area and has been mined for Dolomite deposits for many years. Mining activities are ongoing at this quarry facility, and are anticipated to continue for at least fifty (50) years. The proposed project does not conflict with the mining activities at this quarry and there are no other designated mineral resources or mining activities proximate to the Specific Plan Area. Furthermore, it was determined in the *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007) that development of the Future Growth Area, including the Specific Plan Area, would not have a significant impact on mineral resources or mining activities. As such, implementation of the proposed project would have no impact on mineral resources and this topic does not warrant additional analysis and will not be addressed further in the EIR.

XII. NOISE

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

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

XIII. POPULATION AND HOUSING

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

RESPONSES TO CHECKLIST QUESTIONS

Response a): The quantifiable objectives of the proposed project include the development of up to 4,340 residential dwelling units (with a minimum of 3,553 required under the General Plan), up to 571,500 square feet of commercial/mixed use building area, and up to 177 acres of public facilities (including three elementary schools, a high school, middle school, supplemental detention/retention basins and 11 parks). It is anticipated that Specific Plan Area will have up to 15,928 residents at project build-out. This is consistent with the expected intensity of development within the Specific Plan Area under General Plan buildout conditions as analyzed in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002). The EIR will provide an analysis of the potential growth inducing impacts caused by the proposed project.

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

The proposed project would necessitate the removal of some existing houses within the Specific Plan Area; however, any individual units that require removal would be offset by the increase in housing by the development of approximately 4,340 additional dwelling units at Specific Plan buildout. As such, the proposed project would not displace substantial numbers of existing housing or people. Implementation of the proposed project would not result in any new significant adverse impacts beyond those addressed in the in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

XIV. PUBLIC SERVICES

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

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

XV. RECREATION

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

RESPONSES TO CHECKLIST QUESTIONS

Response a-b): The proposed project includes a total of 11 parks, consisting of 49.76 net acres of public parkland proposed within the Specific Plan Area. This acreage slightly exceeds the City's Parkland (Quimby Act) requirements of 3 acres per 1,000 persons, which requires 47.78 net acres. The Specific Plan includes three types of public parks: community, neighborhood, and small parks. Further details of each park type are provided below:

- **Community Park**: The approximately 30-acre community park will be the focal point of the residential neighborhoods and the entire WASP. It would provide a wide variety of amenities and significant open space to both residents of the community and surrounding areas. As the largest park in the Future Growth Area, it would contain a significant concentration of sports fields as well as passive recreational amenities. The community park would be adjacent to an approximately 10-acre open space area for periodic supplemental storm water detention and retention. This combined area of park and open space totals approximately 40 acres.
- **Neighborhood Parks**: Four neighborhood parks are proposed. These parks will vary from approximately 2.35 to 3.63 acres in size. They would serve as focal points within each of the four residential neighborhoods. These parks would provide a variety of amenities and open space to the residents of the Specific Plan Area and surrounding areas. Proposed features of these parks would include open space for active recreation and areas for passive recreation. Special features may be located within these parks to further enhance the character and identity of the neighborhood that each park serves.
- **Small Parks**: Six small parks are proposed. Small parks are 1.86 acres or less in size, and average approximately 1.1 acres. These parks will not be characterized by large sports fields that may be found in the community park and some neighborhood parks, but they would provide passive open space and recreation. Potential amenities include seating areas, picnic areas, sports courts, and children's tot lots or playgrounds.

In addition to the parkland described above, open space areas, which include LID features, will also be incorporated throughout the Specific Plan Area to reduce and eliminate the need for large, unattractive, industrial-looking detention/retention basins. Instead, supplemental storm water facilities, where provided or needed, will include varied slopes through grading and the use of plants and trees and other elements to create a natural appearance.

Except as otherwise provided in the Specific Plan, the parks and open space land uses will be subject to the requirements of Article III, Division 6 –Parks (P) and Open Space (OS) District of the Salinas Zoning Code, respectively.

While the proposed project would increase the demand for parks or other recreational facilities based on the population growth, the amount of parkland and open space provided within the Specific Plan Area sufficiently meets the City's parkland requirements. Construction of the parkland would not result in any new significant adverse impacts beyond those addressed in the in the *Final Environmental Impact Report, Salinas General Plan* (Cotton Bridges Associates 2002) and *Final Supplemental for the Salinas General Plan Final Program EIR* (EDAW/AECOM 2007). This topic does not warrant additional analysis and will not be addressed further in the EIR.

XVI. TRANSPORTATION/TRAFFIC

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

RESPONSES TO CHECKLIST QUESTIONS

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

The EIR will include a Traffic Impact Analysis (TIA) to address the impacts of the WASP on the surrounding transportation system including the roadways, transit service, pedestrian facilities, and bicycle facilities. The TIA will be conducted to address compliance with the City's General Plan and other requirements under CEQA. It will be prepared following applicable guidelines of the City of Salinas, Monterey County, and Caltrans. The EIR will describe existing and future traffic conditions and will identify the trips that will be generated by the project and the projected distribution of those trips on the roadway system. The EIR will also analyze traffic impacts associated with the project under existing and cumulative conditions. Potential impacts associated with site access, on-site circulation, and parking will be addressed in the EIR, as well as the following facilities under existing facilities:

Intersections	
1. US 101 SB Ramps & Crazy Horse Canyon Road 2. US 101 NB Ramps & Crazy Horse Canyon Road 3. US 101 & Sala Road (Both ramps) 4. Harrison Road & Sala Road 5. Crazy Horse Canyon Road & San Juan Grade Road 6. Hebert Road & San Juan Grade Road 7. Old Stage Road & Hebert Road/Old Stage Road 8. N. Main Street/Harrison Road & Russell Road 9. Van Buren Avenue & Russell Road 10. San Juan Grade Road & Rogge Road 11. Old Stage Road & Natividad Road 12. San Juan Grade Road & Russell Road 13. Natividad Road & Rogge Road 14. Natividad Road & Russell Road (future extension) 15. San Juan Grade Road & Van Buren Avenue 16. US 101 SB ramps & Boronda Road 17. US 101 NB ramps& Boronda Road 18. N. Main Street & Boronda Road 19. N. Main Street & San Juan Grade Road 20. San Juan Grade Road & Boronda Road 21. McKinnon Street & E. Boronda Road 22. El Dorado Drive & E. Boronda Road	23. Natividad Road & E. Boronda Road 24. Independence Boulevard & E. Boronda Road 25. Hemingway Drive & E. Boronda Road 26. Old Stage Road & Constitution Boulevard (future extension) 27. N. Main Street & W./E. Alvin Drive 28. Natividad Road & E. Alvin Drive 29. Independence Boulevard & Constitution Boulevard 30. E. Boronda Road & Constitution Boulevard 31. US 101 SB Ramp & W. Laurel Drive 32. US 101 NB Ramps & W. Laurel Drive 33. N. Main Street & W./E. Laurel Drive 34. Natividad Road & E. Laurel Drive 35. E. Laurel Drive & Constitution Boulevard 36. N. Sanborn Road & E. Boronda Road 37. Old Stage Road & Williams Road 38. N. Main Street & W./E. Bernal Drive 39. Natividad Road/Sherwood Drive & E. Bernal Drive 40. E. Laurel Drive & N. Sanborn Road 41. E. Boronda Road & Williams Road 42. E. Laurel Drive & Williams Road 43. to 45. To Be Determined (3 intersections)
Highway Segments	
1. US 101 from San Juan Road to Crazy Horse Canyon Road 2. US 101 from Crazy Horse Canyon Road to San Miguel Canyon Road 3. US 101 from San Miguel Canyon Road to SR 156 4. US 101 from SR 156 to Sala Road 5. US 101 from Sala Road to Boronda Road	6. US 101 from Boronda Road to W. Laurel Drive 7. US 101 from W. Laurel Drive to N. Main Street/SR 183 8. US 101 from N. Main Street/SR 183 to E. Market Street 9. US 101 from SR 68/John Street to S. Sanborn Road 10. US 101 from S. Sanborn Road to Abbott Street

The operations of the study intersections will be evaluated during the weekday morning (AM) and weekday evening (PM) peak hours for the following scenarios:

Scenario 1	*Existing Conditions – Existing traffic volumes*
Scenario 2	*Project Conditions – Existing volumes plus traffic generated by WASP*
Scenario 3	*Project with Central Area Specific Plan (CASP) Conditions – Existing volumes plus traffic generated by the WASP and the CASP*

Scenario 4	*Cumulative Conditions – Projected traffic volumes and planned transportation infrastructure projects for 2035 including traffic generated by pending developments (WASP, CASP, EASP, EDE, Gateway Retail Center, Northridge Mall Expansion, etc.)*
Scenario 5	*Cumulative with Project Conditions – Scenario 4 volumes plus traffic generated by the WASP and the CASP*
Scenario 6	*Cumulative with Project and CASP Conditions – Scenario 4 volumes plus traffic generated by the WASP and the CASP*

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

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

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

XVII. UTILITIES AND SERVICE SYSTEMS

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

RESPONSES TO CHECKLIST QUESTIONS

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

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

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

The EIR will include an assessment of project water demand and supply. Information from the 2007 Final Supplement for the Salinas General Plan Final Program EIR and Cal Water's 2010 or later Urban Water Management Plan (UWMP) will be used in determining the available water supplies to meet the demands under normal, single-dry, and multiple-dry year conditions. The EIR will identify whether the City has sufficient supplies and supply reliability to meet the water demand associated with the proposed project.

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

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

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

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

RESPONSES TO CHECKLIST QUESTIONS

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

REPORT PREPARERS

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

- Steve McMurtry, *Principal Planner*;
- Ben Ritchie, *Principal Planner*;
- Beth Thompson, *Principal Planner*;
- Josh Smith, *Associate Planner*

*OTHER GOVERNMENTAL AGENCIES THAT **MAY** REQUIRE APPROVAL INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:*

- Monterey Bay Unified Air Pollution Control District: Demolition permit
- Central Coast Region - Regional Water Quality Control Board: National Pollution Discharge Elimination System (NPDES) general construction permit
- Monterey Regional Water Pollution Control Agency
- Monterey County
- Monterey County Water Resources Agency
- Central Coast Regional Water Quality Control Board
- Salinas Valley Solid Waste Authority

REFERENCES

The Greater Salinas Area Memorandum of Understanding

City of Salinas Draft Economic Development Element

AECOM, 2013. Draft West Area Specific Plan. July 16, 2013.

City of Salinas, 2010. City of Salinas Municipal Service Review and Sphere of Influence Plan.

City of Salinas, 2015. City Website.

City of Salinas, 2002. City of Salinas General Plan. Adopted September 17, 2002. Housing Element updated August, 2015. Available at: http://www.ci.salinas.ca.us/services/commdev/generalplan/GeneralPlan.pdf.

City of Salinas, 2007. Final Supplement for the Salinas General Plan Final Program EIR. Prepared by EDAW. November 19, 2007.

City of Salinas Zoning Code

Monterey Bay Unified Air Pollution Control District

Governor's Office of Planning and Research. 2001. The Planner's Guide to Specific Plans.

Salinas –AG Industrial Center EIR, December 2009

Gateway Specific Plan Mitigated Negative Declaration and IS

United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2015. Web Soil Survey. Accessed on September 23, 2015. Information is available at the following web address: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

NORTHERN SALINAS VALLEY
MOSQUITO ABATEMENT DISTRICT

348 Airport Blvd• Salinas, CA 93905• Phone: (831) 422-6438 • Fax: (831) 422-3331
E-Mail: Info@MontereyCountyMosquito.com Web: MontereyCountyMosquito.com

DATE: Oct 21, 2015

TO: Gabriel Elliot, Project Manager,

FROM: Ken Klemme, Manager-Biologist

RE: NOP for WASP

We received the NOP for the WASP and want to be sure the following is addressed:

Follow State Guidelines as it pertains Mosquito Best Management Practices, which can be found:

https://www.cdph.ca.gov/HealthInfo/discond/Documents/CDPHBMPMosquitoControl6_08.pdf

Manage sprinklers and irrigation systems avoiding runoff into storm drains.

Utilization of aeration systems in ponds/fountains and use of mosquito fish should be implemented.

Manage vegetation in bio swales, ponds, dry detention basins, or other aquatic areas.

Ensure proper drainage for bio swales, dry detention basins, aquatic or other open areas.

Maintain any LID's for Water Management to prevent future land/homeowner costs

Maintain storm drains and juxtaposed lateral lines so they flow and are not blocked or obstructed. Trash and debris should be removed on a regular basis.

Construct and Maintain Storm Water BMP's and underground electrical boxes in a way that is not conducive to mosquito breeding.

Backyard Drainage pipes on new construction must not be corrugated and must have appropriate screening small enough to prevent mosquito entrance/exit. These backyard drainage systems have become major sources for the invasive mosquito species in CA.

All cistern's/rainwater capture systems must be sealed in a way to prevent mosquito entrance/exit.

Best regards,

Ken Klemme
District Manager- Biologist

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3101
FAX (805) 549-3329
TTY 711
http://www.dot.ca.gov/dist05/

Serious drought
Help save water!

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NOV 02 2015

COMMUNITY DEVELOPMENT
DEPARTMENT

October 28, 2015

MON-101-91.01
SCH# 2006021072

Gabriel Elliot
City of Salinas Planning Department
65 West Alisal Street, 2nd Floor
Salinas, CA 93901

Dear Mr. Elliot:

COMMENTS TO WEST AREA SPECIFIC PLAN NOTICE OF PREPARATION

The California Department of Transportation (Caltrans), District 5, Development Review, has reviewed the above referenced project and offers the following comments.

1. Caltrans supports local planning efforts that are consistent with State planning priorities intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety. We accomplish this by working with local jurisdictions to achieve a shared vision of how the transportation system should and can accommodate interregional and local travel.

2. To ensure the traffic study in the Draft EIR includes the information needed to analyze the impacts (both cumulative and project-specific) of this effort, it is recommended that the analysis be prepared in accordance with the Department's *"Guide for the Preparation of Traffic Impact Studies."* An alternative methodology that produces technically comparable results can also be used.

3. Because we are responsible for the safety, operations, and maintenance of the State transportation system, our Level of Service (LOS) standards should be used to determine the significance of the project's impact. We endeavor to maintain a target LOS at the transition between LOS C and LOS D on all State transportation facilities.

4. Our future comments to this, and any subsequent EIR for the project, will stress the importance of using the Association of Monterey Bay Area Governments Model for traffic analysis, and to include all impacted transportation agencies early and often in the discussions.

5. The traffic study should include information on existing traffic volumes within the study area, including the State transportation system, and should be based on recent traffic volumes less than two years old. Counts older than two years cannot be used as a baseline. Feel free to contact us for assistance in acquiring the most recent data available.

6. The methodologies used to calculate the LOS should be consistent with the methods in the current version of the Highway Capacity Manual. All LOS calculations should also be included in the Draft EIR as an appendix made available for review.

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

8. Any work within the State right-of-way will require an encroachment permit issued from Caltrans. Detailed information such as complete drawings, biological and cultural resource findings, hydraulic calculations, environmental reports, traffic study, etc., may need to be submitted as part of the encroachment permit process.

If you have any questions, or need further clarification on items discussed above, please don't hesitate to call me at (805) 542-4751.

Sincerely,

JOHN J. OLEJNIK
Associate Transportation Planner
District 5 Development Review Coordinator
john.olejnik@dot.ca.gov

MST
MONTEREY-SALINAS TRANSIT

November 16, 2015

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

RE: Initial Study and Notice of Preparation for the West Area Specific Plan

Dear Mr. Elliot:

Thank you for the opportunity to comment on the Initial Study and Notice of Preparation for the West Area Specific Plan dated October 14, 2015. We provide the following comments to help the project proponent address transit-related items while the EIR is being prepared.

On page 17 under the heading of Monterey-Salinas Transit (MST), please note that MST **may** provide transit service within the interior of the proposed development in the future if funding is available. Please replace the word "will" with "may". If the project proponent desires to add transit service beyond what is currently available along Boronda Road, the developer should identify funding to pay for the additional service. Without funding, MST would be required to take away service from another route in order to add service within the development.

Although funding would be needed to provide transit service within the West Area Specific Plan proposed project, robust transit service is one of many options available to achieve greenhouse gas emissions reductions (Section VII. Greenhouse Gas Emissions). MST recommends that a strong transit component be incorporated into the proposed project designs to accomplish greenhouse gas reductions.

Under the Population and Housing section of the Initial Study (page 66), please note that successful public transit is best supported by higher density housing connected to employment centers. As you continue your planning process, please incorporate this concept into the design.

Regarding Traffic/Transportation (page 70), we strongly recommend that you schedule a meeting with MST Director of Planning and Development, Lisa Rheinheimer, to help you adequately address transit service impacts in the EIR.

In order to help developments plan better for transit services, MST prepared a Designing for Transit document which is available on our website at http://www.mst.org/wp-content/media/DesigningForTransit-web.pdf. The document helps developments address ADA bus stop geometrics as well as bus turning radii and street width.

If you have questions regarding these comments, please contact me at (831) 393-8124.

Sincerely,

Lisa Rheinheimer
Director of Planning and Development

MONTEREY COUNTY
RESOURCE MANAGEMENT AGENCY

Carl P. Holm, AICP, Acting Director
John Guertin, Acting Deputy Director

Daniel Dobrilovic, Acting Building Official
Michael Novo, AICP, Director of Planning
Robert K. Murdoch, P.E., Director of Public Works

168 W. Alisal Street, 2nd Floor
Salinas, CA 93901
http://www.co.monterey.ca.us/rma

November 16, 2015

Gabriel Elliott, Project Manager
City of Salinas
Community Development Department
65 West Alisal Street
Salinas, CA 93901

Subject: NOP – West Area Specific Plan EIR

Dear Mr. Elliott;

Thank you for the opportunity to comment on the subject NOP. The Monterey County land use departments/agency have the following comments:

Water Resources Agency

Monterey County Water Resources Agency is responsible for conveying storm water runoff draining into the Reclamation Ditch from a 157 square-mile watershed area. The Ditch accepts the majority of the stormwater runoff created within the City's jurisdiction.

The Agency completed the Zone 9 and Reclamation Ditch Drainage System Operation Study (1999) and determined that the Ditch has inadequate capacity to safely convey current and future storm water runoff and volumes from a 100 year storm event, due to new impervious surfacing. Any potential impacts from a 100 year storm event on the function of the Ditch and Carr Lake (Floodway) should be considered. Please provide a drainage report when completed. See attached Agency drainage study.

Sincerely,

Bob Schubert

Bob Schubert, AICP
Senior Planner

State of California • Natural Resources Agency
Department of Conservation
Division of Land Resource Protection
801 K Street • MS 18-01
Sacramento, CA 95814
(916) 324-0850 • FAX (916) 327-3430

Edmund G. Brown Jr., *Governor*
John M. Lowrie, *Assistant Director*

November 10, 2015

VIA EMAIL: GABRIEL.ELLIOTT@CI.SALINAS.CA.US
Mr. Gabriel Elliott
Project Manager, Community Development Department
City of Salinas
65 West Alisal Street (Second Floor)
Salinas, CA 93901

Dear Mr. Elliott:

INITIAL STUDY AND NOTICE OF PREPARATION FOR THE WEST AREA SPECIFIC PLAN (WASP) ENVIRONMENTAL IMPACT REPORT, SCH#2006021072

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Initial Study and Notice of Preparation for the West Area Specific Plan Environmental Impact Report submitted by the City of Salinas (City). The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. We offer the following comments and recommendations with respect to the proposed project.

Project Description

The principal objective of the proposed project is the approval and subsequent implementation of the proposed West Area Specific Plan and related entitlements. Proposed land uses in the 797 acre Specific Plan Area include residential, mixed use commercial, community park, neighborhood parks, small parks and open space (including supplemental storm water detention/retention basins). The Specific Plan will serve as a bridge between the Salinas General Plan and individual development applications in the Specific Plan Area, applying and adding greater specificity to the goals, policies and concepts of the General Plan for that area.

The Specific Plan Area is located within the Salinas incorporated city limits. It is bounded by San Juan Grade Road on the west, East Boronda Road on the south, Natividad Road on the east, and Rogge Road on the north. Most agricultural activity on-site and in the immediate vicinity has consisted of cultivation of various types of row crops. Currently, the Department of Conservation's Farmland Mapping and Monitoring Programs designates the area as either Prime Farmland or Farmland of Statewide Importance.

Agricultural Impacts and Mitigation Measures

Although direct conversion of agricultural land is often an unavoidable impact under CEQA analysis, mitigation measures must be considered. In some cases, the argument is made that mitigation cannot reduce impacts to below the level of significance because agricultural land will still be converted by the project, and therefore, mitigation is not required. However, reduction to a level below significance is not a criterion for mitigation under CEQA. Rather, the criterion is feasible mitigation that lessens a project's impacts. A Statement of Overriding Considerations is not a substitute for the requirement to prepare findings (CEQA Guidelines § 15091)[1]. CEQA states that the Lead Agency shall describe the specific reasons for rejecting identified mitigation measures. Therefore, all mitigation measures that are potentially feasible should be included in the Environmental Impact Report (EIR). A measure brought to the attention of the Lead Agency should not be left out unless it is infeasible based on its elements.

The City of Salinas 2002 General Plan (GP) includes: goals, objectives, policies, and programs; all of which are designed to protect and preserve the areas important agricultural lands. An example of such a policy is COS-12; which states, "The City will work with the County of Monterey, and other local jurisdictions to create and implement an agricultural land conservation easement program including such measures as securing the dedication of easements or by paying a mitigation fee that could be used to purchase easements through a mitigation bank"[2].

The Department supports this type of mitigation and advises the use of permanent agricultural conservation easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land. A source that has proven helpful for regional and statewide agricultural mitigation banks is the California Council of Land Trusts. They provide helpful insight into farmland mitigation policies and implementation strategies, including a guidebook with model policies and a model local ordinance. The guidebook can be found at:

http://www.calandtrusts.org/resources/conserving-californias-harvest/

Another source is the Division's California Farmland Conservancy Program (CFCP), which has participated in bringing about conservation easements throughout the State of California involving many California land trusts. Of course, the use of conservation easements is only one form of mitigation that should be considered. Any other feasible mitigation measures should also be considered.

Department Comments

The Department recommends the following discussion under the Agricultural Resources section of the DEIR:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the West Area Specific Plan.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.
- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.
- Proposed mitigation measure that would lessen the impact on agricultural lands within the proposed project area.

---

[1] 2015 CEQA Statute and Guidelines. Palm Desert: Association of Environmental Professionals, 2015. 158-159. Print.

[2] City of Salinas General Plan, September 2002, Conservation/Open Space Element, COS-12.

Thank you for giving us the opportunity to comment on the Initial Study and Notice of Preparation for the West Area Specific Plan Environmental Impact Report. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Environmental Planner at (916) 324-7347 or via email at Farl.Grundy@conservation.ca.gov.

Sincerely,

Molly A. Penberth

Molly A. Penberth, Manager
Division of Land Resource Protection
Conservation Support Unit

cc: State Clearinghouse

Salinas Union High School District

Timothy J. Vanoli
Superintendent
tim.vanoli@salinasuhsd.org

Dan Burns
Associate Superintendent
Instructional Services
dan.burns@salinasuhsd.org

Randy Bangs
Assistant Superintendent
Human Resources
randall.bangs@salinasuhsd.org

Ana V. Aguillon
Interim Manager of
Business Services/CBO
ana.aguillon@salinasuhsd.org

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NOV 10 2015

COMMUNITY DEVELOPMENT
DEPARTMENT

November 10, 2015

City of Salinas
Community Development Department
Gabriel Elliott, Project Manager
65 West Alisal Street
Salinas, CA 93901

SUBJECT: RESPONSE TO NOTICE OF PREPARATION WEST AREA SPECIFIC PLAN

Dear Mr. Elliott:

The Salinas Union High School District has reviewed the Initial Study and Notice of Preparation for the West Area Specific Plan and offers the following responses:

Page 14 – First paragraph, last sentence refers to students both within and outside of the Specific Plan Area would be served by the new high school. I need to point out that there is no attendance area adopted by the Board of Trustees for this area, therefore no guarantees can be made that all students in the Plan Area will be served by the New High School.

Page 18 – Phasing paragraph. The SUHSD does not have an "Agreement", as part of the property owners that allows for independent development by permitting any developing ownership to obtain from adjoin ownerships the access and easements necessary for roadways or utilities to support development of their individual property. Requests for Easements are required to be approved by the Board of Trustees.

Page 67 – Potentially Significant Impacts – the demand on public schools of Salinas Union High School District is a significant impact. While Attendance Areas have not been adopted by the Board of Trustees they are estimated to serve students in areas inside and outside of the Plan area. The District's projected enrollment, 9-12 grade students, is an additional 1,061 students by fall of 2019. Currently there are 3,315 student capacity added to existing high school through the use of relocatable classrooms.

The new High School capacity, when built out is for 1,534. Phase I of the High School project is planned to open, in the Fall of 2018, with a capacity for 1,296 students.

The District is very interested in the discussions regarding mitigation of the significant impact to public schools through the EIR process. I may be reached at Karen.Luna@salinasuhsd.org.

Sincerely,

Karen L Luna

Karen L. Luna
Manager of Facilities and Planning

/kll

C: Mgr. Business Services/CBO

Ohlone/Costanoan-Esselen Nation

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

www.ohlonecostanoanesselennation.org.

January 11, 2016

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

Re: West Area Specific Plan (WASP)

Saleki Atsa,

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

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

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

We request consultation on projects affecting our aboriginal homeland. We look forward to hearing more information about this project; please feel free to contact me at (408) 629-5189. Nimasianexelpasaleki. Thank you for your attention to this matter.

Sincerely and Respectfully Yours,

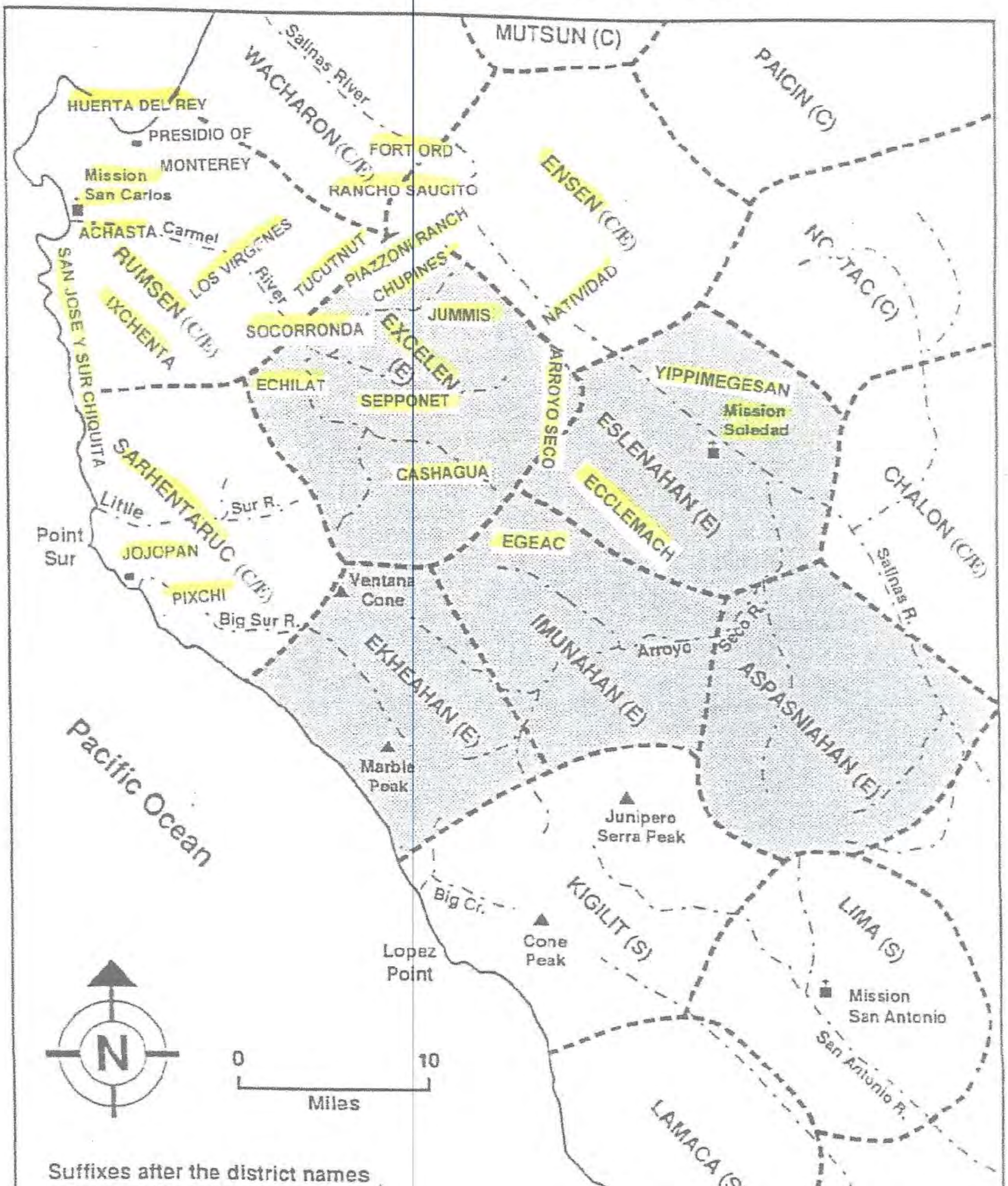
Louise J. Miranda Ramirez

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

Cc: OCEN Tribal Council

Distribution of Ohlone/Costanoan-Esselen Nation Tribal Rancherias, Districts, Landgrants and Historic Landmarks

OCEN DIRECT LINEAL DESCENT



Suffixes after the district names represent the following groups:

C	= Costanoan/Ohlone
C/E	= Costanoan/Ohlone/Esselen
E	= Esselen
S	= Salinan

Figure 2:

Map after Taylor 1856; Levy 1973; Hester 1978; Milliken 1990

Santa Rita

Union School District

57 Russell Road, Salinas CA 93906 (831) 443-7200 Fax (831) 442-1729
www.santaritaschools.org

January 29, 2016

RECEIVED
FEB 03 2016
COMMUNITY DEVELOPMENT DEPARTMENT

City of Salinas
Attn.: Gabriel Elliott
65 W. Alisal
Salinas, CA 93901

Re: West Area Specific Plan

Dear Mr. Elliott:

As Superintendent of the Santa Rita Union School District ("District") I wish to submit the following comments and concerns regarding the proposed West Area Specific Plan ("Specific Plan"). We appreciate your department sharing the draft documents and ask that a number of issues be addressed in the Specific Plan so they may be appropriately considered as well as addressed in the Environmental Impact Report ("EIR") before the Specific Plan or EIR are released for comment. The concerns noted herein apply equally to the EIR now being prepared, and the District requests that resulting potential impacts be addressed in the EIR.

The District's major areas of concern regarding the Specific Plan are: funding for schools needed by this project, safety of children (during school hours and while traveling to and from school sites), and design features that will impact the schools and future residents of the project. The 4,340 new homes included in the Specific Plan will generate enough students to completely fill two elementary schools and one middle school. Responsibility for constructing these schools is not shared by other parties or the community at large, and the potential cost for these schools in current dollars is at least \$70 to \$100 million dollars. The influx of students resulting from this project will also lead to impacts on schools that should be addressed in the Specific Plan. The impact of the project must be emphasized and cannot be deferred until after the Specific Plan is approved. This project <u>alone</u> causes the impact, and the Specific Plan needs to guarantee that the needed schools will be funded and built.

With respect to the EIR currently being prepared, it is vital to recognize that a developer's payment of the statutory developer fee does not satisfy all obligations to consider and mitigate school-related impacts. The law does not excuse a lead agency from conducting environmental review of impacts other than those that are direct impacts on school facilities. As such, an EIR must take into account impacts on schools. This includes a host of impacts other than overcrowding, including but not limited to increased traffic, air quality, noise, and other reasonably foreseeable impacts connected to the construction of additional school facilities needed to serve students from the new development. The current Specific Plan is lacking. As will be discussed below, there are several policy and planning issues that need be to addressed in greater detail and improved upon in the Specific Plan.

Lack of Specific Funding for Schools

The Specific Plan addresses funding for schools in a vague and non-committal way. Section 8.6, Policy 5, provides the following detail for funding of schools: "Development will pay City and School development impact fees in effect at time of building permit issuance . . . ." Based on the District's experience, however, development fees are generally insufficient to cover all of the costs associated with the necessary infrastructure around schools and other impacts to schools caused by the development, let alone the construction of the additional schools themselves. The remainder of the Specific Plan does little more than suggest that funding will be determined as the need arises and will be obtained through unspecified "financing mechanisms." The Specific Plan does reference a Public Facilities Impact Fee (PFIF), but these fees are used to guarantee City-related infrastructure items such as streets, traffic lights, and fires stations, and do not address schools. The Specific Plan should, but does not, provide the same guarantee for the District as it does for the City.

This lack of clear funding called for in the Specific Plan is of utmost concern for the District. While the District will aggressively pursue State facility funding, at this time there is no such funding available for any project. If future state funding becomes available, the share of development based funding needed for construction may be reduced, but relying solely on development based funding at this point is extremely short-sighted. It would be harmful to the citizens to approve this Specific Plan, opening the door to substandard development, absent a funding mechanism and appropriate consideration of school impacts; and it can be disastrous for a community when students do not have an adequate, well-thought-out and appropriately built school available when new homes are sold. The District does not have any room for growth in its existing schools. The lack of schools will not only affect parents and existing families, but the community at large.

To alleviate these concerns, the District requests that the Specific Plan, particularly, Section 8.6, Policy 5, be substantially revised to include additional mechanisms to ensure funding for construction of the three needed school facilities, necessary infrastructure around the schools, and other costs for school-related impacts caused by the project. District recommends a Community Facilities District (Mello-Roos District or "CFD"), which approach has already been suggested in Policy 16 of the Specific Plan to pay for other infrastructure. The District also requests confirmation that school projects will not pay the PFIF, a point that should be stated explicitly in Section 8.5 of the Specific Plan.

Lighting and Landscaping Maintenance District

City staff has stated that the District will participate in assessment for the Lighting and Landscape Maintenance District ("LLMD"). The LLMD cost allocation model is lacking, and should be addressed in more detail within the Specific Plan.

Timing of Infrastructure & Improvements

The timing of infrastructure and related improvements is a concern to the District. Although the Specific Plan does provide for a "phasing" approach to the development, including the two elementary schools and one middle school, the Specific Plan should include additional language confirming the need for necessary infrastructure before schools are constructed. The District requests that the Specific Plan be revised to provide a clear mechanism for the construction of streets, sidewalks, lighting and other improvements needed to accommodate schools prior to occupancy of any homes, safe access be provided to schools and all other facilities, and that necessary infrastructure is in place prior to occupancy of the new schools.

Infrastructure Funding for Streets

The District shared with City Staff that the District will not be responsible for construction of streets, sidewalks and other street frontage improvements and the land thereunder. The District would like this addressed in the Specific Plan to avoid any future misunderstandings.

Acreage
The District concurs with the latest land use diagram showing elementary schools with a minimum size of ten net acres and the middle school with twenty net acres.

Student Generation Rates
The elementary and middle school Student Generation Rates in the Specific Plan need to be updated. Please use the following student generation rates for Single Family Detached (SFD), Single Family Attached (SFA) and Multifamily (MF), which are based on the District's most recent data:

School Level	SFD Student Generation Rates	MF Student Generation Rates	SFA Student Generation Rates
Elementary School (Grade K-5)	0.4383	0.7238	0.1943
Middle School (Grades 6-8)	0.2050	0.2856	0.0810
Total	0.6433	1.0094	0.2753

Specific Plan Requirements for Design
Under Chapter Four, Design Standards, please clarify if the District is expected to comply with any of the design standards in the Specific Plan. The District is willing to make reasonable efforts to design the school to complement the surrounding development, but may not be compelled to achieve that result as the District is a political subdivision of the State and its facility design approval subject to the Division of the State Architect, not city planning.

School Development Standards
Section 2.6.1 of the Specific Plan encourages "a cooperative arrangement" between the City and District for the joint use of school facilities. The District's experience with these types of arrangements have not been positive, and just recently the District was forced to dissolve a joint use agreement at New Republic Elementary School. The issue of joint use facilities should be left to future discussions by the agencies rather than be addressed in the Specific Plan or counted upon.

Overhead Power Lines
The Specific Plan provides that PG&E will provide electrical services and natural gas to the Specific Plan area. (Section 6.4.2.) An overhead power line above Boronda Road will be the primary source of electrical power, and as development of the Specific Plan area proceeds, this overhead power line will be realigned to follow the future alignment of El Dorado Drive. California Code of Regulations, Title 5, Section 14010(c) requires that a school site be located at least 100 feet or more, depending on the voltage of the line, from the edge of the power line easement. The Specific Plan should provide that development, particularly including schools, will comply with all required setbacks from overhead power lines. This overhead line and the requisite setback may also affect the middle school site which is adjacent to El Dorado Road, and should be discussed in more detail in the Specific Plan. The EIR should likewise acknowledge safety impacts of the overhead line and the mitigation measures taken for locating the overhead line a sufficient distance from school sites to comply with State regulations, including Title 5, Section 14010(c).

Natural Gas Pipeline
The District is informed that there is a large, high-pressure natural gas pipeline buried along the west side of Natividad Road, adjacent to all or part of the Specific Plan area. California Code of Regulations, Title 5, Sections 14010 (d) and (h), place specific limits on selection of school sites near underground gas pipelines that may pose a safety hazard or may be ruptured in the event of a railroad derailment. The Specific Plan, which does not acknowledge the pipeline, should address the need to locate all school sites at a safe distance from the pipeline in compliance with applicable State regulations, including Title 5,

Section 14010. The EIR should also address the specific details regarding the pipeline, including its precise location, and should also acknowledge the safety impacts and necessary mitigation measures for the locations of the schools respective to the pipeline.

Water Wells

Three water well sites are proposed within the Specific Plan area. Two of the water well sites are immediately adjacent to proposed school sites, with one being directly uphill from the proposed middle school site. These water well sites raise serious concerns regarding hazardous materials, potential water flow from the water well sites to the schools, and noise. The Specific Plan only identifies the existence of the wells, and does nothing more to address safety concerns or potential noise issues. The Specific Plan should address these water well sites in further detail and describe how they will be kept from disturbing school operations and how students will be kept away from (or out of) the water well sites. The EIR should also provide specific information regarding equipment and chemicals to be used at the water well sites (if any), safety and noise impacts, and meaningful mitigation measures to be taken for locating these water well sites adjacent to school sites.

Vegetated Swales

Section 7.3.1.1 of the Specific Plan provides that the site plan was developed to include right-of-way for linear stormwater conveyance features, such as vegetated swales. The Specific Plan further notes that such vegetated swales are feasible along the edges of school sites. District is concerned that vegetated swales in this area could impede pedestrian movement, specifically, students being dropped off or picked up at school. It is not by happenstance that most elementary and middle schools in the State are primarily on flat ground surrounded by additional flat ground and streets. Use of capped swales or other methods may be more appropriate along school sites, and the Specific Plan should address alternative methods and note that swales impeding pedestrian traffic at schools should be avoided or limited. Any planned use of swales along school edges should also be discussed and reviewed in conjunction with the District, and further addressed in the EIR.

Increased Traffic, Traffic Safety Patterns & Pedestrian Safety

Additional students traveling to existing schools will invariably impact the roadways and traffic before students set foot on school grounds. Both El Dorado Street and McKinnon Street have the potential of becoming traffic arteries for the entire 4,000 home development, as both of these streets functions as collectors. All three planned schools, in addition to McKinnon Elementary (already built) and the High School (in construction), are located on or near these two streets and will have school peak-hour issues. Section 5.3.1 of the Specific Plan also provides that "[c]ollector and residential streets will be constructed on a subdivision-by-subdivision bases within individual residential neighborhoods." What this statement implies is a long-term system of incomplete and unlinked street segments which can quickly become a traffic nightmare and safety hazard, which is a major concern of the District. Complete routes should be built first to ensure adequate and safe routes to schools. Section 5.4.3.1 of the Specific Plan also calls for narrowing streets within the Specific Plan area. Narrowing streets, however, do not function well when schools are located nearby, as school buses may not be able to safely traverse these narrowed lanes causing additional traffic issues. The addition of necessary staff may also contribute to traffic impacts around the school sites.

The District is also concerned with safety of students traveling to and from school, and pedestrian safety in and around each school site. The District will have two elementary schools and one middle school on El Dorado Street and McKinnon Street, and many other students will have to cross one of these major streets to get to school. Neighborhood four does not have a planned school, and students living in this neighborhood must cross a major street to reach any school in the Specific Plan. Heightened consideration for safety of students in these areas must be considered. The locations of proposed roundabouts, bulb-outs, narrowing of streets and other design features mentioned in the Specific Plan also raise serious concerns for the District. Traffic circles and roundabouts are simply not safe for children using crosswalks—children cannot be expected to use a center-of-the-street refuge, are not typically able to adequately gauge the speed in which cars are traveling, and will not know which direction the oncoming cars will actually take.

In light of these serious traffic and safety concerns, the District requests the Specific Plan be revised to require District's involvement in the design of the intersections and streets at or near any of the school sites. This would ensure that the buses can drive through, traffic is limited, and student and pedestrian safety receives first consideration. At the very least, the Specific Plan should describe how student safety will be achieved given the likely impacts of traffic and current design issues (use of roundabouts, etc.). The EIR should also address all traffic-related impacts to the schools and necessary mitigation measures.

Parking

Section 2.4.2 of the Specific Plan notes that "use of on-street parking for visitor parking will be encouraged for duplexes, triplexes, single-family attached (townhomes, rowhouses), and apartments . . . ." Each of the three planned schools, in addition to McKinnon Elementary, are adjacent to residential areas where multifamily and single-family residences are likely planned. It is the District's experience that this type of planning results in an overflow of vehicles from residential areas that take up all on-street parking at or around the school, and often leads to conflicts when people visiting schools (parents, volunteers, community groups, etc.) cannot find a place to park. The converse can also be true, with school events taking up street parking, thus impacting the surrounding neighborhood. Additional consideration should be given to this issue in the Specific Plan, including ways in which the City will prevent overflow parking from impeding upon school functions and accessibility, and where adequate parking for schools will be located. The EIR should also address the impact of overflow parking and related mitigation measures.

Impacts of Additions to Existing Schools

The Specific Plan does not guarantee that new schools will be constructed prior to residential development, and in turn, an influx of students into the District. The Specific Plan should contemplate this occurrence and should provide additional instruction and detail on how the City and District will accommodate additional students if the planned schools have not been constructed prior to significant population growth, including the need for additional teachers and/or staff. One way to address this issue is to ensure that phasing of residential development coincides with the availability of school facilities.

If significant population growth does occur before construction of the planned schools, it is very likely that existing schools (specifically, McKinnon Elementary) will require construction of additional facilities and/or expansion of existing facilities. The EIR should address this impact on school children and surrounding neighborhoods, as portable classrooms or permanent construction are added to existing schools to accommodate student overflow. This should include issues like student safety, ADA accessibility for students and employees, access for emergency services, air quality and noise levels, and loss of play space and fields where portable classrooms are in place.

District Involvement

LU-19 of the Salinas General Plan provides the following land use implementation policy: "Continue to work with the school districts to the extent allowed by State law to ensure adequate school and recreational facilities are provided and maintained by the community. The City will cooperate in expediting construction of schools. School districts will consult with the City at the earliest possible time." The District appreciates this language and asks that the City consider clarifying in the specific plan that the City will seek out such consultation with the District at the earliest possible time. In furtherance of this policy, the District desires to be integrally involved in the discussions and decisions regarding school-related issues, and requests that the following language also be added to Specific Plan:

To the extent allowed by State law, residential development described in the Specific Plan shall not proceed unless public school facilities and all necessary supporting infrastructure are or will be available to safely serve such residential development at the time the development is sending children into the District's school system. The City and Developer(s) shall work closely with the District in furtherance of this goal and for the provision of new school facilities as described in the Specific Plan. This shall include consulting with the District on all school-related issues, especially those that pertain to school operations and the safety of students, staff, and visitors.

Additional Comments to the Specific Plan
In addition to this letter, more detailed comments on the Specific Plan will be forthcoming shortly from the District.

The District is interested in being an active and cooperative partner in this endeavor. To that end, the District would like to propose a meeting to review the Specific Plan, provide clarification that may be needed, and address the numerous impacts the Specific Plan will have on schools and will need to be addressed in the EIR. We sincerely appreciate the opportunity to be included in the planning process.

Sincerely,

Dr. Shelly Morr
Superintendent

TAMC
TRANSPORTATION AGENCY
FOR MONTEREY COUNTY

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

March 31, 2016

Gabriel Elliott, Project Manager
City of Salinas
65 West Alisal Street (Second Floor)
Salinas, California 93901

SUBJECT: Comments on the Notice of Preparation for the West Area Specific Plan (WASP) Initial Study and Notice of Preparation

Dear Mr. Elliott:

The Transportation Agency for Monterey County is the Regional Transportation Planning Agency and Congestion Management Agency for Monterey County. Transportation Agency staff has reviewed the Notice of Preparation for the West Area Specific Plan (WASP).

The WASP will establish the land use planning and regulatory guidance for development of a 797 acre area of cultivated cropland in the City of Salinas' northern future growth area. The future development would be a master-planned community consisting of approximately 4,340 residential units in four residential neighborhoods and a minimum of 91 residential units within the Village Center. The overall average residential density within the Specific Plan area must equal or exceed 9 dwelling units per net residential developable acre (4,340 units). In addition, approximately 571,500 square feet of commercial development is proposed within the Village Center area. Approximately 250,000 square feet of the commercial square footage could be converted to residential units. Also proposed is a 30.80-acre community park, four neighborhood parks totaling 12.52 acres, six small parks totaling 6.41 acres, 35.03 acres of detention/retention basin, a 1.50-acre water well/treatment facility, three elementary schools on a combined 30.98 acres, a middle school on a 20.78 acre parcel, and high school on 39.19 acres.

Transportation Agency staff offers the following comments for your consideration:

Regional Road and Highway Impacts

1. Given the project's impacts to the local and regional transportation network, our agency supports the collection of Regional Development Impact Fees and City of Salinas' Traffic Fees as mitigation for the adjustable cumulative and project specific impacts for this development proposal. Additionally, project-specific impacts may still need to be addressed through another mechanism, such as direct fair-share payments towards the planned improvements at the impacted facilities.

2. The traffic analysis should clearly define the study area including the significant regional roadways outside of the city limits that would potentially be impacted by this development. All state highways and principal arterials within this study area should be identified.

In addition to the road and highway segments listed in the initial study, the traffic analysis should consider the impacts to the larger regional roadway network. With respect to the existing regional travel patterns, the analysis should include segments of Davis Road, Blanco Road, Reservation Road, Imjin Road, Espinosa Road, and State Routes 1, 68, 183, and 156.

3. Consider implementing Park and Ride facilities as a condition of approval. Well designed and placed Park and Ride facilities can improve the transportation network by encouraging carpooling and transit use, thereby reducing the number of trips on the roadways, and subsequently, reducing overall Greenhouse Gas (GHG) emissions. As such, incorporating Park and Ride facilities may help mitigate the project's total number of Vehicle Miles Traveled (VMT) and GHG emissions. Guidelines for Park and Ride facilities are available from Caltrans' *Park and Ride Resource Guide 2010.*

New Urbanism

4. The NOP and Initial Study note that the proposed development would be consistent with the principles of New Urbanism, as required by the Salinas General Plan. The Agency strongly supports these efforts, and encourages the city and developer to consider enhancing the New Urbanism principles further. To that end, the Agency recommends:

a) Implementing the design guidelines of the Monterey County Complete Streets Guidebook. (http://www.tamcmonterey.org/programs/complete-streets/)

b) Use the Caltrans Smart Mobility Framework. TAMC's 2014 Regional Transportation Plan derives its policy guidance from the Smart Mobility Framework, and reflects the County's desire for a more sustainable transportation network.

c) Consider increasing the minimum density requirement and the total project density. Higher density is shown to improve walkability, biking, and transit use. A higher density also allows the city to realize a higher level of efficiency and benefit for its future growth area.

d) Consider increasing the level of commercial / professional space. Congruent with higher density, an improved jobs to housing balance will improve the potential for trip reduction by having homes within walking distance to high quality employment, thereby improving the transportation network by reducing the need of residents to commute far distances to work.

To this end, the Agency recommends the city reconsider the possibility of converting 250,000 square feet of the commercial square footage into residential units, and this would likely reduce the jobs to housing balance and lead to further impacts on the transportation network.

Greenhouse Gas Emissions

5. Our agency supports the use of light-colored pavement for pedestrian areas to cut down on the heat island effect. In addition, the development should explore the use of gray granite pavement for parking areas, roadways, and bicycle / pedestrian facilities, which has the benefit over traditional blacktop of increasing nighttime visibility and is permeable to aid in the control of on-site water run-off.

6. Where appropriate, light-emitting diode (LED) lighting should be used for external lighting to reduce the site's electricity consumption.

7. Consideration should be given to including preferred parking spaces for carpools, alternative fuel vehicles, and electric vehicle charging stations. New construction provides the perfect opportunity to install electric vehicle charging stations. Installing charging stations will increase the area's electric vehicle charging station network, encourage electric vehicle travel to this regionally significant location, and reduce greenhouse gas emissions from this project. We strongly encourage the city and the applicant to work together on including electric vehicle charging stations in this plan.

Transit

8. Our agency supports and encourages that transit-oriented elements be included in the development, such as mixed-use and high-density buildings and connectivity to the proposed transit station for pedestrians and bicyclists. Our Agency encourages the project proponents to meet with MST staff to plan early for transit services to the proposed project, as securing funding for new transit service is difficult.

Thank you for the opportunity to review this document. If you have any questions, please contact Grant Leonard of my staff at (831) 775-0903.

Sincerely,

Debra L. Hale
Executive Director

CC: John J. Olejnik, California Department of Transportation (Caltrans) District 5

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

Salinas WASP Model 20% Buildout - 2016.3.2

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	28.60	1000sqft	0.66	28,600.00	0
Elementary School	269.90	1000sqft	6.20	269,900.00	0
High School	341.42	1000sqft	7.84	341,420.00	0
Junior High School	181.04	1000sqft	4.16	181,040.00	0
City Park	12.50	Acre	12.50	544,500.00	0
Apartments Mid Rise	18.20	Dwelling Unit	0.48	18,200.00	52
Condo/Townhouse	577.60	Dwelling Unit	36.10	577,600.00	1652
Single Family Housing	272.20	Dwelling Unit	88.38	489,960.00	778
Regional Shopping Center	74.20	1000sqft	1.70	74,200.00	0
Supermarket	11.40	1000sqft	0.26	11,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use Types and sizes provided by project applicant (note: under this scenario, all land uses are ony 20% of total).

Construction Phase - No construction emissions under this scenario (modelled to show operational emissions at 20% of buildout only).

Off-road Equipment -

Trips and VMT -

Grading -

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42

tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.72
tblVehicleTrips	ST_TR	4.37	0.26

tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2493	2.5494	1.3302	2.3700e-003	1.0926	0.1319	1.2245	0.5981	0.1214	0.7195	0.0000	208.7471	208.7471	0.0652	0.0000	210.3778
Maximum	**0.2493**	**2.5494**	**1.3302**	**2.3700e-003**	**1.0926**	**0.1319**	**1.2245**	**0.5981**	**0.1214**	**0.7195**	**0.0000**	**208.7471**	**208.7471**	**0.0652**	**0.0000**	**210.3778**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2493	2.5494	1.3301	2.3700e-003	0.4964	0.1319	0.6283	0.2704	0.1214	0.3918	0.0000	208.7469	208.7469	0.0652	0.0000	210.3775
Maximum	**0.2493**	**2.5494**	**1.3301**	**2.3700e-003**	**0.4964**	**0.1319**	**0.6283**	**0.2704**	**0.1214**	**0.3918**	**0.0000**	**208.7469**	**208.7469**	**0.0652**	**0.0000**	**210.3775**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**54.57**	**0.00**	**48.69**	**54.79**	**0.00**	**45.55**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	1.5165	1.5165
2	4-1-2020	6-30-2020	1.2825	1.2825
		Highest	1.5165	1.5165

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	16.8409	0.3288	18.6407	0.0190		1.4144	1.4144		1.4144	1.4144	132.2513	149.7188	281.9701	0.1765	0.0111	289.6997
Energy	0.1855	1.6305	1.0090	0.0101		0.1281	0.1281		0.1281	0.1281	0.0000	5,103.3303	5,103.3303	0.1829	0.0642	5,127.0420
Mobile	4.2711	16.3763	41.4958	0.0912	6.3905	0.1087	6.4992	1.7168	0.1021	1.8189	0.0000	8,339.4296	8,339.4296	0.5174	0.0000	8,352.3650
Waste						0.0000	0.0000		0.0000	0.0000	368.7006	0.0000	368.7006	21.7896	0.0000	913.4401
Water						0.0000	0.0000		0.0000	0.0000	29.0080	261.9888	290.9968	2.9912	0.0728	387.4725
Total	**21.2975**	**18.3356**	**61.1455**	**0.1203**	**6.3905**	**1.6512**	**8.0418**	**1.7168**	**1.6447**	**3.3614**	**529.9599**	**13,854.4676**	**14,384.4275**	**25.6576**	**0.1482**	**15,070.0193**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	8.8090	0.2780	9.0670	1.5800e-003		0.0635	0.0635		0.0635	0.0635	0.0000	216.1807	216.1807	0.0182	3.6900e-003	217.7363
Energy	0.1855	1.6305	1.0090	0.0101		0.1281	0.1281		0.1281	0.1281	0.0000	5,103.3303	5,103.3303	0.1829	0.0642	5,127.0420
Mobile	4.0899	15.2260	37.7627	0.0794	5.4639	0.0955	5.5594	1.4679	0.0897	1.5575	0.0000	7,266.2828	7,266.2828	0.4678	0.0000	7,277.9771
Waste						0.0000	0.0000		0.0000	0.0000	368.7006	0.0000	368.7006	21.7896	0.0000	913.4401
Water						0.0000	0.0000		0.0000	0.0000	23.2064	226.0013	249.2077	2.3937	0.0584	326.4526
Total	**13.0844**	**17.1345**	**47.8387**	**0.0911**	**5.4639**	**0.2871**	**5.7510**	**1.4679**	**0.2813**	**1.7492**	**391.9070**	**12,811.7952**	**13,203.7021**	**24.8522**	**0.1263**	**13,862.6482**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**38.56**	**6.55**	**21.76**	**24.26**	**14.50**	**82.61**	**28.49**	**14.50**	**82.90**	**47.96**	**26.05**	**7.53**	**8.21**	**3.14**	**14.75**	**8.01**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	6/16/2020	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0840	0.0000	1.0840	0.5958	0.0000	0.5958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2446	2.5450	1.2908	2.2800e-003		0.1318	0.1318		0.1213	0.1213	0.0000	200.5841	200.5841	0.0649	0.0000	202.2059
Total	**0.2446**	**2.5450**	**1.2908**	**2.2800e-003**	**1.0840**	**0.1318**	**1.2158**	**0.5958**	**0.1213**	**0.7171**	**0.0000**	**200.5841**	**200.5841**	**0.0649**	**0.0000**	**202.2059**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7300e-003	4.3900e-003	0.0393	9.0000e-005	8.5800e-003	8.0000e-005	8.6600e-003	2.2800e-003	7.0000e-005	2.3500e-003	0.0000	8.1631	8.1631	3.5000e-004	0.0000	8.1719
Total	**4.7300e-003**	**4.3900e-003**	**0.0393**	**9.0000e-005**	**8.5800e-003**	**8.0000e-005**	**8.6600e-003**	**2.2800e-003**	**7.0000e-005**	**2.3500e-003**	**0.0000**	**8.1631**	**8.1631**	**3.5000e-004**	**0.0000**	**8.1719**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4878	0.0000	0.4878	0.2681	0.0000	0.2681	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2446	2.5450	1.2908	2.2800e-003		0.1318	0.1318		0.1213	0.1213	0.0000	200.5838	200.5838	0.0649	0.0000	202.2057
Total	**0.2446**	**2.5450**	**1.2908**	**2.2800e-003**	**0.4878**	**0.1318**	**0.6196**	**0.2681**	**0.1213**	**0.3894**	**0.0000**	**200.5838**	**200.5838**	**0.0649**	**0.0000**	**202.2057**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7300e-003	4.3900e-003	0.0393	9.0000e-005	8.5800e-003	8.0000e-005	8.6600e-003	2.2800e-003	7.0000e-005	2.3500e-003	0.0000	8.1631	8.1631	3.5000e-004	0.0000	8.1719
Total	**4.7300e-003**	**4.3900e-003**	**0.0393**	**9.0000e-005**	**8.5800e-003**	**8.0000e-005**	**8.6600e-003**	**2.2800e-003**	**7.0000e-005**	**2.3500e-003**	**0.0000**	**8.1631**	**8.1631**	**3.5000e-004**	**0.0000**	**8.1719**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0899	15.2260	37.7627	0.0794	5.4639	0.0955	5.5594	1.4679	0.0897	1.5575	0.0000	7,266.2828	7,266.2828	0.4678	0.0000	7,277.9771
Unmitigated	4.2711	16.3763	41.4958	0.0912	6.3905	0.1087	6.4992	1.7168	0.1021	1.8189	0.0000	8,339.4296	8,339.4296	0.5174	0.0000	8,352.3650

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	121.03	116.30	106.65	207,264	177,211
City Park	23.63	284.38	209.25	126,054	107,776
Condo/Townhouse	3,355.86	3,274.99	2795.58	5,719,068	4,889,803
Elementary School	464.23	464.23	464.23	636,265	544,007
General Office Building	315.46	70.36	30.03	386,893	330,793
High School	88.77	88.77	88.77	139,861	119,581
Junior High School	260.70	260.70	260.70	357,309	305,499
Regional Shopping Center	3,168.34	3,707.77	1872.81	3,800,883	3,249,755
Single Family Housing	2,591.34	2,697.50	2346.36	4,505,349	3,852,073
Supermarket	1,165.54	2,024.53	1897.42	1,158,602	990,605
Total	11,554.88	12,989.52	10,071.80	17,037,547	14,567,103

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
City Park	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Condo/Townhouse	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Elementary School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Junior High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Regional Shopping Center	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Supermarket	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,267.903 9	3,267.903 9	0.1478	0.0306	3,280.708 5
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,267.903 9	3,267.903 9	0.1478	0.0306	3,280.708 5
NaturalGas Mitigated	0.1855	1.6305	1.0090	0.0101		0.1281	0.1281		0.1281	0.1281	0.0000	1,835.426 4	1,835.426 4	0.0352	0.0337	1,846.333 5
NaturalGas Unmitigated	0.1855	1.6305	1.0090	0.0101		0.1281	0.1281		0.1281	0.1281	0.0000	1,835.426 4	1,835.426 4	0.0352	0.0337	1,846.333 5

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	157238	8.5000e-004	7.2500e-003	3.0800e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	8.3908	8.3908	1.6000e-004	1.5000e-004	8.4407
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.08144e+007	0.0583	0.4983	0.2121	3.1800e-003		0.0403	0.0403		0.0403	0.0403	0.0000	577.0981	577.0981	0.0111	0.0106	580.5275
Elementary School	4.97696e+006	0.0268	0.2440	0.2049	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	265.5893	265.5893	5.0900e-003	4.8700e-003	267.1676
General Office Building	468182	2.5200e-003	0.0230	0.0193	1.4000e-004		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	24.9840	24.9840	4.8000e-004	4.6000e-004	25.1324
High School	6.29578e+006	0.0340	0.3086	0.2592	1.8500e-003		0.0235	0.0235		0.0235	0.0235	0.0000	335.9671	335.9671	6.4400e-003	6.1600e-003	337.9635
Junior High School	3.33838e+006	0.0180	0.1637	0.1375	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	178.1485	178.1485	3.4100e-003	3.2700e-003	179.2072
Regional Shopping Center	175854	9.5000e-004	8.6200e-003	7.2400e-003	5.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004	0.0000	9.3842	9.3842	1.8000e-004	1.7000e-004	9.4400
Single Family Housing	7.91152e+006	0.0427	0.3646	0.1551	2.3300e-003		0.0295	0.0295		0.0295	0.0295	0.0000	422.1887	422.1887	8.0900e-003	7.7400e-003	424.6976
Supermarket	256272	1.3800e-003	0.0126	0.0106	8.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.6757	13.6757	2.6000e-004	2.5000e-004	13.7569
Total		**0.1855**	**1.6305**	**1.0090**	**0.0101**		**0.1281**	**0.1281**		**0.1281**	**0.1281**	**0.0000**	**1,835.4264**	**1,835.4264**	**0.0352**	**0.0337**	**1,846.3335**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	157238	8.5000e-004	7.2500e-003	3.0800e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	8.3908	8.3908	1.6000e-004	1.5000e-004	8.4407
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.08144e+007	0.0583	0.4983	0.2121	3.1800e-003		0.0403	0.0403		0.0403	0.0403	0.0000	577.0981	577.0981	0.0111	0.0106	580.5275
Elementary School	4.97696e+006	0.0268	0.2440	0.2049	1.4600e-003		0.0185	0.0185		0.0185	0.0185	0.0000	265.5893	265.5893	5.0900e-003	4.8700e-003	267.1676
General Office Building	468182	2.5200e-003	0.0230	0.0193	1.4000e-004		1.7400e-003	1.7400e-003		1.7400e-003	1.7400e-003	0.0000	24.9840	24.9840	4.8000e-004	4.6000e-004	25.1324
High School	6.29578e+006	0.0340	0.3086	0.2592	1.8500e-003		0.0235	0.0235		0.0235	0.0235	0.0000	335.9671	335.9671	6.4400e-003	6.1600e-003	337.9635
Junior High School	3.33838e+006	0.0180	0.1637	0.1375	9.8000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	178.1485	178.1485	3.4100e-003	3.2700e-003	179.2072
Regional Shopping Center	175854	9.5000e-004	8.6200e-003	7.2400e-003	5.0000e-005		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004	0.0000	9.3842	9.3842	1.8000e-004	1.7000e-004	9.4400
Single Family Housing	7.91152e+006	0.0427	0.3646	0.1551	2.3300e-003		0.0295	0.0295		0.0295	0.0295	0.0000	422.1887	422.1887	8.0900e-003	7.7400e-003	424.6976
Supermarket	256272	1.3800e-003	0.0126	0.0106	8.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	13.6757	13.6757	2.6000e-004	2.5000e-004	13.7569
Total		**0.1855**	**1.6305**	**1.0090**	**0.0101**		**0.1281**	**0.1281**		**0.1281**	**0.1281**	**0.0000**	**1,835.4264**	**1,835.4264**	**0.0352**	**0.0337**	**1,846.3335**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	75136	21.8579	9.9000e-004	2.0000e-004	21.9436
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.91424e+006	847.7859	0.0383	7.9300e-003	851.1078
Elementary School	1.45476e+006	423.2067	0.0191	3.9600e-003	424.8649
General Office Building	509938	148.3468	6.7100e-003	1.3900e-003	148.9281
High School	1.84025e+006	535.3509	0.0242	5.0100e-003	537.4486
Junior High School	975806	283.8730	0.0128	2.6600e-003	284.9853
Regional Shopping Center	793198	230.7504	0.0104	2.1600e-003	231.6545
Single Family Housing	2.20225e+006	640.6607	0.0290	5.9900e-003	643.1710
Supermarket	467742	136.0715	6.1500e-003	1.2700e-003	136.6047
Total		**3,267.9039**	**0.1478**	**0.0306**	**3,280.7085**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	75136	21.8579	9.9000e-004	2.0000e-004	21.9436
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.91424e+006	847.7859	0.0383	7.9300e-003	851.1078
Elementary School	1.45476e+006	423.2067	0.0191	3.9600e-003	424.8649
General Office Building	509938	148.3468	6.7100e-003	1.3900e-003	148.9281
High School	1.84025e+006	535.3509	0.0242	5.0100e-003	537.4486
Junior High School	975806	283.8730	0.0128	2.6600e-003	284.9853
Regional Shopping Center	793198	230.7504	0.0104	2.1600e-003	231.6545
Single Family Housing	2.20225e+006	640.6607	0.0290	5.9900e-003	643.1710
Supermarket	467742	136.0715	6.1500e-003	1.2700e-003	136.6047
Total		**3,267.9039**	**0.1478**	**0.0306**	**3,280.7085**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.8090	0.2780	9.0670	1.5800e-003		0.0635	0.0635		0.0635	0.0635	0.0000	216.1807	216.1807	0.0182	3.6900e-003	217.7363
Unmitigated	16.8409	0.3288	18.6407	0.0190		1.4144	1.4144		1.4144	1.4144	132.2513	149.7188	281.9701	0.1765	0.0111	289.6997

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.3097					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.7861					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.4705	0.2248	9.6477	0.0186		1.3650	1.3650		1.3650	1.3650	132.2513	135.0741	267.3254	0.1622	0.0111	274.6970
Landscaping	0.2746	0.1040	8.9930	4.7000e-004		0.0494	0.0494		0.0494	0.0494	0.0000	14.6448	14.6448	0.0143	0.0000	15.0027
Total	**16.8409**	**0.3288**	**18.6407**	**0.0190**		**1.4144**	**1.4144**		**1.4144**	**1.4144**	**132.2513**	**149.7188**	**281.9701**	**0.1765**	**0.0111**	**289.6997**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.3097					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.2044					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0204	0.1740	0.0741	1.1100e-003		0.0141	0.0141		0.0141	0.0141	0.0000	201.5360	201.5360	3.8600e-003	3.6900e-003	202.7336
Landscaping	0.2746	0.1040	8.9930	4.7000e-004		0.0494	0.0494		0.0494	0.0494	0.0000	14.6448	14.6448	0.0143	0.0000	15.0027
Total	**8.8090**	**0.2780**	**9.0670**	**1.5800e-003**		**0.0635**	**0.0635**		**0.0635**	**0.0635**	**0.0000**	**216.1807**	**216.1807**	**0.0182**	**3.6900e-003**	**217.7363**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	249.2077	2.3937	0.0584	326.4526
Unmitigated	290.9968	2.9912	0.0728	387.4725

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.1858 / 0.747572	3.0040	0.0388	9.4000e-004	4.2521
City Park	0 / 14.8935	15.1644	6.9000e-004	1.4000e-004	15.2239
Condo/Townhouse	37.633 / 23.7251	95.3348	1.2300	0.0297	134.9469
Elementary School	7.82627 / 20.1247	35.2932	0.2565	6.3300e-003	43.5916
General Office Building	5.08319 / 3.1155	12.7864	0.1661	4.0200e-003	18.1365
High School	11.3367 / 29.1516	51.1239	0.3716	9.1700e-003	63.1446
Junior High School	3.73323 / 9.59973	16.8353	0.1224	3.0200e-003	20.7938
Regional Shopping Center	5.49618 / 3.36863	13.8253	0.1796	4.3400e-003	19.6101
Single Family Housing	17.7349 / 11.1807	44.9275	0.5797	0.0140	63.5951
Supermarket	1.40526 / 0.0434616	2.7021	0.0459	1.1000e-003	4.1779
Total		**290.9968**	**2.9912**	**0.0728**	**387.4725**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	0.948643 / 0.70197	2.5090	0.0310	7.5000e-004	3.5079
City Park	0 / 13.985	14.2394	6.4000e-004	1.3000e-004	14.2952
Condo/Townhouse	30.1064 / 22.2779	79.6256	0.9842	0.0238	111.3284
Elementary School	6.26101 / 18.8971	31.0828	0.2053	5.0900e-003	37.7327
General Office Building	4.06655 / 2.92546	10.6700	0.1329	3.2200e-003	14.9519
High School	9.06938 / 27.3733	45.0249	0.2974	7.3700e-003	54.6576
Junior High School	2.98658 / 9.01414	14.8269	0.0980	2.4300e-003	17.9990
Regional Shopping Center	4.39694 / 3.16314	11.5370	0.1437	3.4800e-003	16.1667
Single Family Housing	14.1879 / 10.4987	37.5244	0.4638	0.0112	52.4647
Supermarket	1.12421 / 0.0408104	2.1679	0.0367	8.8000e-004	3.3485
Total		**249.2077**	**2.3937**	**0.0584**	**326.4526**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	368.7006	21.7896	0.0000	913.4401
Unmitigated	368.7006	21.7896	0.0000	913.4401

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	8.37	1.6990	0.1004	0.0000	4.2093
City Park	1.07	0.2172	0.0128	0.0000	0.5381
Condo/Townhouse	265.7	53.9347	3.1875	0.0000	133.6209
Elementary School	350.87	71.2234	4.2092	0.0000	176.4531
General Office Building	26.6	5.3996	0.3191	0.0000	13.3772
High School	443.85	90.0975	5.3246	0.0000	223.2128
Junior High School	235.35	47.7739	2.8234	0.0000	118.3579
Regional Shopping Center	77.91	15.8150	0.9346	0.0000	39.1811
Single Family Housing	342.32	69.4879	4.1066	0.0000	172.1533
Supermarket	64.3	13.0523	0.7714	0.0000	32.3366
Total		**368.7006**	**21.7896**	**0.0000**	**913.4402**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	8.37	1.6990	0.1004	0.0000	4.2093
City Park	1.07	0.2172	0.0128	0.0000	0.5381
Condo/Townhouse	265.7	53.9347	3.1875	0.0000	133.6209
Elementary School	350.87	71.2234	4.2092	0.0000	176.4531
General Office Building	26.6	5.3996	0.3191	0.0000	13.3772
High School	443.85	90.0975	5.3246	0.0000	223.2128
Junior High School	235.35	47.7739	2.8234	0.0000	118.3579
Regional Shopping Center	77.91	15.8150	0.9346	0.0000	39.1811
Single Family Housing	342.32	69.4879	4.1066	0.0000	172.1533
Supermarket	64.3	13.0523	0.7714	0.0000	32.3366
Total		**368.7006**	**21.7896**	**0.0000**	**913.4402**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model 20% Buildout - 2016.3.2

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	28.60	1000sqft	0.66	28,600.00	0
Elementary School	269.90	1000sqft	6.20	269,900.00	0
High School	341.42	1000sqft	7.84	341,420.00	0
Junior High School	181.04	1000sqft	4.16	181,040.00	0
City Park	12.50	Acre	12.50	544,500.00	0
Apartments Mid Rise	18.20	Dwelling Unit	0.48	18,200.00	52
Condo/Townhouse	577.60	Dwelling Unit	36.10	577,600.00	1652
Single Family Housing	272.20	Dwelling Unit	88.38	489,960.00	778
Regional Shopping Center	74.20	1000sqft	1.70	74,200.00	0
Supermarket	11.40	1000sqft	0.26	11,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use Types and sizes provided by project applicant (note: under this scenario, all land uses are ony 20% of total).

Construction Phase - No construction emissions under this scenario (modelled to show operational emissions at 20% of buildout only).

Off-road Equipment -

Trips and VMT -

Grading -

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42

tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.72
tblVehicleTrips	ST_TR	4.37	0.26

tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1560	42.4813	22.2053	0.0396	18.2141	2.1987	20.4128	9.9699	2.0228	11.9927	0.0000	3,844.342 2	3,844.342 2	1.1986	0.0000	3,874.308 1
Maximum	**4.1560**	**42.4813**	**22.2053**	**0.0396**	**18.2141**	**2.1987**	**20.4128**	**9.9699**	**2.0228**	**11.9927**	**0.0000**	**3,844.342 2**	**3,844.342 2**	**1.1986**	**0.0000**	**3,874.308 1**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1560	42.4813	22.2053	0.0396	8.2777	2.1987	10.4764	4.5080	2.0228	6.5308	0.0000	3,844.342 2	3,844.342 2	1.1986	0.0000	3,874.308 1
Maximum	**4.1560**	**42.4813**	**22.2053**	**0.0396**	**8.2777**	**2.1987**	**10.4764**	**4.5080**	**2.0228**	**6.5308**	**0.0000**	**3,844.342 2**	**3,844.342 2**	**1.1986**	**0.0000**	**3,874.308 1**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**54.55**	**0.00**	**48.68**	**54.78**	**0.00**	**45.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	234.2438	6.3156	307.2538	0.4566		33.6882	33.6882		33.6882	33.6882	3,555.661 3	3,760.697 5	7,316.358 8	4.4857	0.2993	7,517.706 4
Energy	1.0162	8.9341	5.5286	0.0554		0.7021	0.7021		0.7021	0.7021		11,086.08 94	11,086.08 94	0.2125	0.2032	11,151.96 85
Mobile	29.1148	98.7524	252.8776	0.5921	40.7970	0.6701	41.4672	10.9296	0.6294	11.5590		59,712.42 82	59,712.42 82	3.5303		59,800.68 56
Total	**264.3748**	**114.0021**	**565.6599**	**1.1042**	**40.7970**	**35.0604**	**75.8575**	**10.9296**	**35.0197**	**45.9493**	**3,555.661 3**	**74,559.21 52**	**78,114.87 65**	**8.2285**	**0.5026**	**78,470.36 05**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	49.3457	5.0763	73.7497	0.0309		0.7386	0.7386		0.7386	0.7386	0.0000	5,547.568 1	5,547.568 1	0.2301	0.0993	5,582.923 9
Energy	1.0162	8.9341	5.5286	0.0554		0.7021	0.7021		0.7021	0.7021		11,086.08 94	11,086.08 94	0.2125	0.2032	11,151.96 85
Mobile	27.9743	92.1515	227.7491	0.5160	34.8815	0.5884	35.4699	9.3448	0.5525	9.8973		52,043.07 87	52,043.07 87	3.1772		52,122.50 93
Total	**78.3363**	**106.1618**	**307.0274**	**0.6023**	**34.8815**	**2.0291**	**36.9106**	**9.3448**	**1.9932**	**11.3380**	**0.0000**	**68,676.73 63**	**68,676.73 63**	**3.6198**	**0.3026**	**68,857.40 17**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	70.37	6.88	45.72	45.45	14.50	94.21	51.34	14.50	94.31	75.32	100.00	7.89	12.08	56.01	39.79	12.25

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	6/16/2020	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0795	0.0640	0.6916	1.6000e-003	0.1479	1.2800e-003	0.1491	0.0392	1.1800e-003	0.0404		159.2406	159.2406	6.8000e-003		159.4106
Total	**0.0795**	**0.0640**	**0.6916**	**1.6000e-003**	**0.1479**	**1.2800e-003**	**0.1491**	**0.0392**	**1.1800e-003**	**0.0404**		**159.2406**	**159.2406**	**6.8000e-003**		**159.4106**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0795	0.0640	0.6916	1.6000e-003	0.1479	1.2800e-003	0.1491	0.0392	1.1800e-003	0.0404		159.2406	159.2406	6.8000e-003		159.4106
Total	**0.0795**	**0.0640**	**0.6916**	**1.6000e-003**	**0.1479**	**1.2800e-003**	**0.1491**	**0.0392**	**1.1800e-003**	**0.0404**		**159.2406**	**159.2406**	**6.8000e-003**		**159.4106**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	27.9743	92.1515	227.7491	0.5160	34.8815	0.5884	35.4699	9.3448	0.5525	9.8973		52,043.07 87	52,043.07 87	3.1772		52,122.50 93
Unmitigated	29.1148	98.7524	252.8776	0.5921	40.7970	0.6701	41.4672	10.9296	0.6294	11.5590		59,712.42 82	59,712.42 82	3.5303		59,800.68 56

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	121.03	116.30	106.65	207,264	177,211
City Park	23.63	284.38	209.25	126,054	107,776
Condo/Townhouse	3,355.86	3,274.99	2795.58	5,719,068	4,889,803
Elementary School	464.23	464.23	464.23	636,265	544,007
General Office Building	315.46	70.36	30.03	386,893	330,793
High School	88.77	88.77	88.77	139,861	119,581
Junior High School	260.70	260.70	260.70	357,309	305,499
Regional Shopping Center	3,168.34	3,707.77	1872.81	3,800,883	3,249,755
Single Family Housing	2,591.34	2,697.50	2346.36	4,505,349	3,852,073
Supermarket	1,165.54	2,024.53	1897.42	1,158,602	990,605
Total	11,554.88	12,989.52	10,071.80	17,037,547	14,567,103

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
City Park	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Condo/Townhouse	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Elementary School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Junior High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Regional Shopping Center	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Supermarket	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.0162	8.9341	5.5286	0.0554		0.7021	0.7021		0.7021	0.7021		11,086.0894	11,086.0894	0.2125	0.2032	11,151.9685
NaturalGas Unmitigated	1.0162	8.9341	5.5286	0.0554		0.7021	0.7021		0.7021	0.7021		11,086.0894	11,086.0894	0.2125	0.2032	11,151.9685

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	430.789	4.6500e-003	0.0397	0.0169	2.5000e-004		3.2100e-003	3.2100e-003		3.2100e-003	3.2100e-003		50.6811	50.6811	9.7000e-004	9.3000e-004	50.9822
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	29628.5	0.3195	2.7305	1.1619	0.0174		0.2208	0.2208		0.2208	0.2208		3,485.7085	3,485.7085	0.0668	0.0639	3,506.4223
Elementary School	13635.5	0.1471	1.3368	1.1229	8.0200e-003		0.1016	0.1016		0.1016	0.1016		1,604.1760	1,604.1760	0.0308	0.0294	1,613.7088
General Office Building	1282.69	0.0138	0.1258	0.1056	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9048	150.9048	2.8900e-003	2.7700e-003	151.8015
High School	17248.7	0.1860	1.6911	1.4205	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.2618	2,029.2618	0.0389	0.0372	2,041.3207
Junior High School	9146.24	0.0986	0.8967	0.7532	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.0282	1,076.0282	0.0206	0.0197	1,082.4225
Regional Shopping Center	481.792	5.2000e-003	0.0472	0.0397	2.8000e-004		3.5900e-003	3.5900e-003		3.5900e-003	3.5900e-003		56.6814	56.6814	1.0900e-003	1.0400e-003	57.0182
Single Family Housing	21675.4	0.2338	1.9975	0.8500	0.0128		0.1615	0.1615		0.1615	0.1615		2,550.0459	2,550.0459	0.0489	0.0468	2,565.1996
Supermarket	702.115	7.5700e-003	0.0688	0.0578	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003		82.6018	82.6018	1.5800e-003	1.5100e-003	83.0926
Total		**1.0162**	**8.9341**	**5.5286**	**0.0554**		**0.7021**	**0.7021**		**0.7021**	**0.7021**		**11,086.0894**	**11,086.0894**	**0.2125**	**0.2032**	**11,151.9685**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0.430789	4.6500e-003	0.0397	0.0169	2.5000e-004		3.2100e-003	3.2100e-003		3.2100e-003	3.2100e-003		50.6811	50.6811	9.7000e-004	9.3000e-004	50.9822
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	29.6285	0.3195	2.7305	1.1619	0.0174		0.2208	0.2208		0.2208	0.2208		3,485.7085	3,485.7085	0.0668	0.0639	3,506.4223
Elementary School	13.6355	0.1471	1.3368	1.1229	8.0200e-003		0.1016	0.1016		0.1016	0.1016		1,604.1760	1,604.1760	0.0308	0.0294	1,613.7088
General Office Building	1.28269	0.0138	0.1258	0.1056	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9048	150.9048	2.8900e-003	2.7700e-003	151.8015
High School	17.2487	0.1860	1.6911	1.4205	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.2618	2,029.2618	0.0389	0.0372	2,041.3207
Junior High School	9.14624	0.0986	0.8967	0.7532	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.0282	1,076.0282	0.0206	0.0197	1,082.4225
Regional Shopping Center	0.481792	5.2000e-003	0.0472	0.0397	2.8000e-004		3.5900e-003	3.5900e-003		3.5900e-003	3.5900e-003		56.6814	56.6814	1.0900e-003	1.0400e-003	57.0182
Single Family Housing	21.6754	0.2338	1.9975	0.8500	0.0128		0.1615	0.1615		0.1615	0.1615		2,550.0459	2,550.0459	0.0489	0.0468	2,565.1996
Supermarket	0.702115	7.5700e-003	0.0688	0.0578	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003		82.6018	82.6018	1.5800e-003	1.5100e-003	83.0926
Total		**1.0162**	**8.9341**	**5.5286**	**0.0554**		**0.7021**	**0.7021**		**0.7021**	**0.7021**		**11,086.0894**	**11,086.0894**	**0.2125**	**0.2032**	**11,151.9685**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	49.3457	5.0763	73.7497	0.0309		0.7386	0.7386		0.7386	0.7386	0.0000	5,547.568 1	5,547.568 1	0.2301	0.0993	5,582.923 9
Unmitigated	234.2438	6.3156	307.2538	0.4566		33.6882	33.6882		33.6882	33.6882	3,555.661 3	3,760.697 5	7,316.358 8	4.4857	0.2993	7,517.706 4

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.1763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	42.6637					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	182.2070	5.4837	235.3102	0.4529		33.2928	33.2928		33.2928	33.2928	3,555.6613	3,631.5529	7,187.2143	4.3595	0.2993	7,385.4050
Landscaping	2.1968	0.8319	71.9436	3.7900e-003		0.3954	0.3954		0.3954	0.3954		129.1446	129.1446	0.1263		132.3014
Total	**234.2438**	**6.3156**	**307.2538**	**0.4566**		**33.6882**	**33.6882**		**33.6882**	**33.6882**	**3,555.6613**	**3,760.6975**	**7,316.3588**	**4.4857**	**0.2993**	**7,517.7064**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.1763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	39.4760					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4967	4.2444	1.8061	0.0271		0.3432	0.3432		0.3432	0.3432	0.0000	5,418.4235	5,418.4235	0.1039	0.0993	5,450.6225
Landscaping	2.1968	0.8319	71.9436	3.7900e-003		0.3954	0.3954		0.3954	0.3954		129.1446	129.1446	0.1263		132.3014
Total	**49.3457**	**5.0763**	**73.7497**	**0.0309**		**0.7386**	**0.7386**		**0.7386**	**0.7386**	**0.0000**	**5,547.5681**	**5,547.5681**	**0.2301**	**0.0993**	**5,582.9239**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model 20% Buildout - 2016.3.2

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	28.60	1000sqft	0.66	28,600.00	0
Elementary School	269.90	1000sqft	6.20	269,900.00	0
High School	341.42	1000sqft	7.84	341,420.00	0
Junior High School	181.04	1000sqft	4.16	181,040.00	0
City Park	12.50	Acre	12.50	544,500.00	0
Apartments Mid Rise	18.20	Dwelling Unit	0.48	18,200.00	52
Condo/Townhouse	577.60	Dwelling Unit	36.10	577,600.00	1652
Single Family Housing	272.20	Dwelling Unit	88.38	489,960.00	778
Regional Shopping Center	74.20	1000sqft	1.70	74,200.00	0
Supermarket	11.40	1000sqft	0.26	11,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use Types and sizes provided by project applicant (note: under this scenario, all land uses are ony 20% of total).

Construction Phase - No construction emissions under this scenario (modelled to show operational emissions at 20% of buildout only).

Off-road Equipment -

Trips and VMT -

Grading -

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42

tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.72
tblVehicleTrips	ST_TR	4.37	0.26

tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1630	42.4979	22.1942	0.0395	18.2141	2.1987	20.4128	9.9699	2.0228	11.9927	0.0000	3,834.2011	3,834.2011	1.1983	0.0000	3,864.1590
Maximum	**4.1630**	**42.4979**	**22.1942**	**0.0395**	**18.2141**	**2.1987**	**20.4128**	**9.9699**	**2.0228**	**11.9927**	**0.0000**	**3,834.2011**	**3,834.2011**	**1.1983**	**0.0000**	**3,864.1590**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1630	42.4979	22.1942	0.0395	8.2777	2.1987	10.4764	4.5080	2.0228	6.5308	0.0000	3,834.2011	3,834.2011	1.1983	0.0000	3,864.1590
Maximum	**4.1630**	**42.4979**	**22.1942**	**0.0395**	**8.2777**	**2.1987**	**10.4764**	**4.5080**	**2.0228**	**6.5308**	**0.0000**	**3,834.2011**	**3,834.2011**	**1.1983**	**0.0000**	**3,864.1590**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**54.55**	**0.00**	**48.68**	**54.78**	**0.00**	**45.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	234.2438	6.3156	307.2538	0.4566		33.6882	33.6882		33.6882	33.6882	3,555.6613	3,760.6975	7,316.3588	4.4857	0.2993	7,517.7064
Energy	1.0162	8.9341	5.5286	0.0554		0.7021	0.7021		0.7021	0.7021		11,086.0894	11,086.0894	0.2125	0.2032	11,151.9685
Mobile	26.9765	104.8015	279.3397	0.5603	40.7970	0.6818	41.4789	10.9296	0.6406	11.5702		56,450.5122	56,450.5122	3.6798		56,542.5080
Total	**262.2365**	**120.0512**	**592.1220**	**1.0724**	**40.7970**	**35.0721**	**75.8692**	**10.9296**	**35.0309**	**45.9605**	**3,555.6613**	**71,297.2991**	**74,852.9604**	**8.3780**	**0.5026**	**75,212.1829**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	49.3457	5.0763	73.7497	0.0309		0.7386	0.7386		0.7386	0.7386	0.0000	5,547.5681	5,547.5681	0.2301	0.0993	5,582.9239
Energy	1.0162	8.9341	5.5286	0.0554		0.7021	0.7021		0.7021	0.7021		11,086.0894	11,086.0894	0.2125	0.2032	11,151.9685
Mobile	25.8442	97.3580	255.8870	0.4881	34.8815	0.6001	35.4816	9.3448	0.5637	9.9085		49,165.5955	49,165.5955	3.3420		49,249.1444
Total	**76.2061**	**111.3684**	**335.1653**	**0.5744**	**34.8815**	**2.0408**	**36.9223**	**9.3448**	**2.0044**	**11.3492**	**0.0000**	**65,799.2530**	**65,799.2530**	**3.7846**	**0.3026**	**65,984.0367**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	70.94	7.23	43.40	46.44	14.50	94.18	51.33	14.50	94.28	75.31	100.00	7.71	12.10	54.83	39.79	12.27

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	6/16/2020	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0865	0.0806	0.6806	1.5000e-003	0.1479	1.2800e-003	0.1491	0.0392	1.1800e-003	0.0404		149.0995	149.0995	6.4800e-003		149.2615
Total	**0.0865**	**0.0806**	**0.6806**	**1.5000e-003**	**0.1479**	**1.2800e-003**	**0.1491**	**0.0392**	**1.1800e-003**	**0.0404**		**149.0995**	**149.0995**	**6.4800e-003**		**149.2615**

3.2 Site Preparation - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0865	0.0806	0.6806	1.5000e-003	0.1479	1.2800e-003	0.1491	0.0392	1.1800e-003	0.0404		149.0995	149.0995	6.4800e-003		149.2615
Total	**0.0865**	**0.0806**	**0.6806**	**1.5000e-003**	**0.1479**	**1.2800e-003**	**0.1491**	**0.0392**	**1.1800e-003**	**0.0404**		**149.0995**	**149.0995**	**6.4800e-003**		**149.2615**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	25.8442	97.3580	255.8870	0.4881	34.8815	0.6001	35.4816	9.3448	0.5637	9.9085		49,165.5955	49,165.5955	3.3420		49,249.1444
Unmitigated	26.9765	104.8015	279.3397	0.5603	40.7970	0.6818	41.4789	10.9296	0.6406	11.5702		56,450.5122	56,450.5122	3.6798		56,542.5080

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	121.03	116.30	106.65	207,264	177,211
City Park	23.63	284.38	209.25	126,054	107,776
Condo/Townhouse	3,355.86	3,274.99	2795.58	5,719,068	4,889,803
Elementary School	464.23	464.23	464.23	636,265	544,007
General Office Building	315.46	70.36	30.03	386,893	330,793
High School	88.77	88.77	88.77	139,861	119,581
Junior High School	260.70	260.70	260.70	357,309	305,499
Regional Shopping Center	3,168.34	3,707.77	1872.81	3,800,883	3,249,755
Single Family Housing	2,591.34	2,697.50	2346.36	4,505,349	3,852,073
Supermarket	1,165.54	2,024.53	1897.42	1,158,602	990,605
Total	11,554.88	12,989.52	10,071.80	17,037,547	14,567,103

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
City Park	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Condo/Townhouse	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Elementary School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
General Office Building	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Junior High School	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Regional Shopping Center	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Single Family Housing	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905
Supermarket	0.533135	0.030877	0.202665	0.141212	0.024955	0.006027	0.018072	0.025901	0.004150	0.002959	0.007890	0.001253	0.000905

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.0162	8.9341	5.5286	0.0554		0.7021	0.7021		0.7021	0.7021		11,086.0894	11,086.0894	0.2125	0.2032	11,151.9685
NaturalGas Unmitigated	1.0162	8.9341	5.5286	0.0554		0.7021	0.7021		0.7021	0.7021		11,086.0894	11,086.0894	0.2125	0.2032	11,151.9685

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	430.789	4.6500e-003	0.0397	0.0169	2.5000e-004		3.2100e-003	3.2100e-003		3.2100e-003	3.2100e-003		50.6811	50.6811	9.7000e-004	9.3000e-004	50.9822
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	29628.5	0.3195	2.7305	1.1619	0.0174		0.2208	0.2208		0.2208	0.2208		3,485.7085	3,485.7085	0.0668	0.0639	3,506.4223
Elementary School	13635.5	0.1471	1.3368	1.1229	8.0200e-003		0.1016	0.1016		0.1016	0.1016		1,604.1760	1,604.1760	0.0308	0.0294	1,613.7088
General Office Building	1282.69	0.0138	0.1258	0.1056	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9048	150.9048	2.8900e-003	2.7700e-003	151.8015
High School	17248.7	0.1860	1.6911	1.4205	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.2618	2,029.2618	0.0389	0.0372	2,041.3207
Junior High School	9146.24	0.0986	0.8967	0.7532	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.0282	1,076.0282	0.0206	0.0197	1,082.4225
Regional Shopping Center	481.792	5.2000e-003	0.0472	0.0397	2.8000e-004		3.5900e-003	3.5900e-003		3.5900e-003	3.5900e-003		56.6814	56.6814	1.0900e-003	1.0400e-003	57.0182
Single Family Housing	21675.4	0.2338	1.9975	0.8500	0.0128		0.1615	0.1615		0.1615	0.1615		2,550.0459	2,550.0459	0.0489	0.0468	2,565.1996
Supermarket	702.115	7.5700e-003	0.0688	0.0578	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003		82.6018	82.6018	1.5800e-003	1.5100e-003	83.0926
Total		**1.0162**	**8.9341**	**5.5286**	**0.0554**		**0.7021**	**0.7021**		**0.7021**	**0.7021**		**11,086.0894**	**11,086.0894**	**0.2125**	**0.2032**	**11,151.9685**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0.430789	4.6500e-003	0.0397	0.0169	2.5000e-004		3.2100e-003	3.2100e-003		3.2100e-003	3.2100e-003		50.6811	50.6811	9.7000e-004	9.3000e-004	50.9822
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	29.6285	0.3195	2.7305	1.1619	0.0174		0.2208	0.2208		0.2208	0.2208		3,485.7085	3,485.7085	0.0668	0.0639	3,506.4223
Elementary School	13.6355	0.1471	1.3368	1.1229	8.0200e-003		0.1016	0.1016		0.1016	0.1016		1,604.1760	1,604.1760	0.0308	0.0294	1,613.7088
General Office Building	1.28269	0.0138	0.1258	0.1056	7.5000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003		150.9048	150.9048	2.8900e-003	2.7700e-003	151.8015
High School	17.2487	0.1860	1.6911	1.4205	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.2618	2,029.2618	0.0389	0.0372	2,041.3207
Junior High School	9.14624	0.0986	0.8967	0.7532	5.3800e-003		0.0682	0.0682		0.0682	0.0682		1,076.0282	1,076.0282	0.0206	0.0197	1,082.4225
Regional Shopping Center	0.481792	5.2000e-003	0.0472	0.0397	2.8000e-004		3.5900e-003	3.5900e-003		3.5900e-003	3.5900e-003		56.6814	56.6814	1.0900e-003	1.0400e-003	57.0182
Single Family Housing	21.6754	0.2338	1.9975	0.8500	0.0128		0.1615	0.1615		0.1615	0.1615		2,550.0459	2,550.0459	0.0489	0.0468	2,565.1996
Supermarket	0.702115	7.5700e-003	0.0688	0.0578	4.1000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003		82.6018	82.6018	1.5800e-003	1.5100e-003	83.0926
Total		**1.0162**	**8.9341**	**5.5286**	**0.0554**		**0.7021**	**0.7021**		**0.7021**	**0.7021**		**11,086.0894**	**11,086.0894**	**0.2125**	**0.2032**	**11,151.9685**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	49.3457	5.0763	73.7497	0.0309		0.7386	0.7386		0.7386	0.7386	0.0000	5,547.5681	5,547.5681	0.2301	0.0993	5,582.9239
Unmitigated	234.2438	6.3156	307.2538	0.4566		33.6882	33.6882		33.6882	33.6882	3,555.6613	3,760.6975	7,316.3588	4.4857	0.2993	7,517.7064

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.1763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	42.6637					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	182.2070	5.4837	235.3102	0.4529		33.2928	33.2928		33.2928	33.2928	3,555.6613	3,631.5529	7,187.2143	4.3595	0.2993	7,385.4050
Landscaping	2.1968	0.8319	71.9436	3.7900e-003		0.3954	0.3954		0.3954	0.3954		129.1446	129.1446	0.1263		132.3014
Total	**234.2438**	**6.3156**	**307.2538**	**0.4566**		**33.6882**	**33.6882**		**33.6882**	**33.6882**	**3,555.6613**	**3,760.6975**	**7,316.3588**	**4.4857**	**0.2993**	**7,517.7064**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.1763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	39.4760					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4967	4.2444	1.8061	0.0271		0.3432	0.3432		0.3432	0.3432	0.0000	5,418.423 5	5,418.423 5	0.1039	0.0993	5,450.622 5
Landscaping	2.1968	0.8319	71.9436	3.7900e-003		0.3954	0.3954		0.3954	0.3954		129.1446	129.1446	0.1263		132.3014
Total	**49.3457**	**5.0763**	**73.7497**	**0.0309**		**0.7386**	**0.7386**		**0.7386**	**0.7386**	**0.0000**	**5,547.568 1**	**5,547.568 1**	**0.2301**	**0.0993**	**5,582.923 9**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model Full Buildout - 2016.3.2

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
City Park	50.00	Acre	50.00	2,178,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	217.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO2 Factor: 290 lb/MWh), adjusted for 2035 based on the increased effect of the RPS by 2035 (CO2 Factor : 217.5022)

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - Maximum of 797 acres graded (total area of the site)

Trips and VMT -

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	880.00	3,917.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	12,400.00	4,152.00
tblConstructionPhase	PhaseEndDate	11/13/2079	2/6/2035
tblConstructionPhase	PhaseEndDate	8/4/2025	6/28/2019
tblConstructionPhase	PhaseEndDate	6/29/2076	12/31/2019

tblConstructionPhase	PhaseEndDate	11/2/2020	3/29/2019
tblConstructionPhase	PhaseEndDate	2/13/2073	11/30/2035
tblConstructionPhase	PhaseStartDate	6/30/2076	2/1/2020
tblConstructionPhase	PhaseStartDate	11/3/2020	3/31/2019
tblConstructionPhase	PhaseStartDate	2/14/2073	9/2/2019
tblConstructionPhase	PhaseStartDate	8/5/2025	1/2/2020
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42

tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3651	3.9020	2.5058	4.3800e-003	1.2114	0.1899	1.4013	0.4750	0.1747	0.6497	0.0000	394.0761	394.0761	0.1208	0.0000	397.0950
2020	8.8575	31.4256	39.6932	0.1316	7.9632	0.3563	8.3195	2.1485	0.3370	2.4856	0.0000	12,162.2708	12,162.2708	0.6028	0.0000	12,177.3416
2021	8.8030	28.7237	36.4635	0.1298	8.0577	0.2666	8.3242	2.1737	0.2515	2.4251	0.0000	11,996.3648	11,996.3648	0.5648	0.0000	12,010.4845
2022	8.4317	26.7998	33.2652	0.1264	8.0269	0.2332	8.2601	2.1654	0.2199	2.3853	0.0000	11,688.0723	11,688.0723	0.5283	0.0000	11,701.2793
2023	8.0173	22.4854	30.2167	0.1229	8.0271	0.1809	8.2079	2.1654	0.1701	2.3355	0.0000	11,373.0901	11,373.0901	0.4603	0.0000	11,384.5987
2024	7.8360	21.8548	28.1755	0.1209	8.0889	0.1660	8.2550	2.1821	0.1560	2.3382	0.0000	11,200.3416	11,200.3416	0.4401	0.0000	11,211.3431
2025	7.5978	21.0502	26.1058	0.1177	8.0582	0.1501	8.2083	2.1738	0.1409	2.3148	0.0000	10,902.9962	10,902.9962	0.4182	0.0000	10,913.4506
2026	7.4281	20.5577	24.3347	0.1149	8.0582	0.1467	8.2050	2.1739	0.1378	2.3117	0.0000	10,656.9587	10,656.9587	0.3996	0.0000	10,666.9481
2027	7.2707	20.1106	22.8234	0.1127	8.0583	0.1428	8.2011	2.1739	0.1341	2.3080	0.0000	10,458.8884	10,458.8884	0.3838	0.0000	10,468.4836
2028	7.0872	19.6521	21.4422	0.1104	8.0275	0.1380	8.1655	2.1656	0.1296	2.2952	0.0000	10,244.9660	10,244.9660	0.3682	0.0000	10,254.1706
2029	6.9516	19.3753	20.2843	0.1091	8.0584	0.1346	8.1930	2.1739	0.1265	2.3004	0.0000	10,129.8207	10,129.8207	0.3563	0.0000	10,138.7282
2030	6.7791	18.4338	19.1851	0.1081	8.0585	0.0775	8.1359	2.1740	0.0737	2.2476	0.0000	10,035.3709	10,035.3709	0.2860	0.0000	10,042.5218
2031	6.6108	18.1509	18.1173	0.1068	8.0585	0.0742	8.1327	2.1740	0.0707	2.2446	0.0000	9,918.1998	9,918.1998	0.2746	0.0000	9,925.0650
2032	6.4863	17.9731	17.2618	0.1061	8.0894	0.0716	8.1610	2.1823	0.0682	2.2505	0.0000	9,855.6880	9,855.6880	0.2655	0.0000	9,862.3262
2033	6.3100	17.6239	16.3535	0.1043	8.0277	0.0683	8.0960	2.1657	0.0652	2.2309	0.0000	9,695.3202	9,695.3202	0.2551	0.0000	9,701.6974
2034	6.2053	17.4457	15.6418	0.1035	8.0277	0.0659	8.0936	2.1657	0.0630	2.2286	0.0000	9,622.5886	9,622.5886	0.2474	0.0000	9,628.7732
2035	1.8922	15.6786	12.3910	0.0885	6.4972	0.0460	6.5432	1.7563	0.0437	1.8000	0.0000	8,244.6699	8,244.6699	0.2126	0.0000	8,249.9852
Maximum	**8.8575**	**31.4256**	**39.6932**	**0.1316**	**8.0894**	**0.3563**	**8.3242**	**2.1823**	**0.3370**	**2.4856**	**0.0000**	**12,162.2708**	**12,162.2708**	**0.6028**	**0.0000**	**12,177.3416**

2.1 Overall Construction

Mitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3651	3.9020	2.5058	4.3800e-003	0.5533	0.1899	0.7433	0.2159	0.1747	0.3907	0.0000	394.0757	394.0757	0.1208	0.0000	397.0945
2020	8.8575	31.4256	39.6932	0.1316	7.9632	0.3563	8.3195	2.1485	0.3370	2.4856	0.0000	12,162.2704	12,162.2704	0.6028	0.0000	12,177.3412
2021	8.8030	28.7237	36.4635	0.1298	8.0577	0.2666	8.3242	2.1737	0.2515	2.4251	0.0000	11,996.3644	11,996.3644	0.5648	0.0000	12,010.4841
2022	8.4317	26.7998	33.2652	0.1264	8.0269	0.2332	8.2601	2.1654	0.2199	2.3853	0.0000	11,688.0719	11,688.0719	0.5283	0.0000	11,701.2789
2023	8.0173	22.4854	30.2167	0.1229	8.0271	0.1809	8.2079	2.1654	0.1701	2.3355	0.0000	11,373.0898	11,373.0898	0.4603	0.0000	11,384.5983
2024	7.8360	21.8548	28.1755	0.1209	8.0889	0.1660	8.2550	2.1821	0.1560	2.3382	0.0000	11,200.3412	11,200.3412	0.4401	0.0000	11,211.3427
2025	7.5978	21.0502	26.1058	0.1177	8.0582	0.1501	8.2083	2.1738	0.1409	2.3148	0.0000	10,902.9959	10,902.9959	0.4182	0.0000	10,913.4501
2026	7.4281	20.5577	24.3347	0.1149	8.0582	0.1467	8.2050	2.1739	0.1378	2.3117	0.0000	10,656.9583	10,656.9583	0.3996	0.0000	10,666.9477
2027	7.2707	20.1105	22.8234	0.1127	8.0583	0.1428	8.2011	2.1739	0.1341	2.3080	0.0000	10,458.8880	10,458.8880	0.3838	0.0000	10,468.4832
2028	7.0872	19.6521	21.4421	0.1104	8.0275	0.1380	8.1655	2.1656	0.1296	2.2952	0.0000	10,244.9656	10,244.9656	0.3682	0.0000	10,254.1702
2029	6.9516	19.3753	20.2843	0.1091	8.0584	0.1346	8.1930	2.1739	0.1265	2.3004	0.0000	10,129.8203	10,129.8203	0.3563	0.0000	10,138.7278
2030	6.7791	18.4338	19.1851	0.1081	8.0585	0.0775	8.1359	2.1740	0.0737	2.2476	0.0000	10,035.3704	10,035.3704	0.2860	0.0000	10,042.5214
2031	6.6108	18.1509	18.1173	0.1068	8.0585	0.0742	8.1327	2.1740	0.0707	2.2446	0.0000	9,918.1994	9,918.1994	0.2746	0.0000	9,925.0645
2032	6.4863	17.9731	17.2618	0.1061	8.0894	0.0716	8.1610	2.1823	0.0682	2.2505	0.0000	9,855.6876	9,855.6876	0.2655	0.0000	9,862.3257
2033	6.3100	17.6239	16.3535	0.1043	8.0277	0.0683	8.0960	2.1657	0.0652	2.2309	0.0000	9,695.3197	9,695.3197	0.2551	0.0000	9,701.6969
2034	6.2053	17.4457	15.6418	0.1035	8.0277	0.0659	8.0936	2.1657	0.0630	2.2286	0.0000	9,622.5882	9,622.5882	0.2474	0.0000	9,628.7727
2035	1.8922	15.6786	12.3910	0.0885	6.4972	0.0460	6.5432	1.7563	0.0437	1.8000	0.0000	8,244.6695	8,244.6695	0.2126	0.0000	8,249.9848
Maximum	**8.8575**	**31.4256**	**39.6932**	**0.1316**	**8.0894**	**0.3563**	**8.3242**	**2.1823**	**0.3370**	**2.4856**	**0.0000**	**12,162.2704**	**12,162.2704**	**0.6028**	**0.0000**	**12,177.3412**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.51	0.00	0.50	0.74	0.00	0.70	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	1.5956	1.5956
2	4-1-2019	6-30-2019	1.8893	1.8893
3	7-1-2019	9-30-2019	0.1743	0.1743
4	10-1-2019	12-31-2019	0.5538	0.5538
5	1-1-2020	3-31-2020	9.7259	9.7259
6	4-1-2020	6-30-2020	9.9647	9.9647
7	7-1-2020	9-30-2020	10.0742	10.0742
8	10-1-2020	12-31-2020	10.4390	10.4390
9	1-1-2021	3-31-2021	9.3915	9.3915
10	4-1-2021	6-30-2021	9.1857	9.1857
11	7-1-2021	9-30-2021	9.2866	9.2866
12	10-1-2021	12-31-2021	9.6002	9.6002
13	1-1-2022	3-31-2022	8.8436	8.8436
14	4-1-2022	6-30-2022	8.6671	8.6671
15	7-1-2022	9-30-2022	8.7623	8.7623
16	10-1-2022	12-31-2022	9.0401	9.0401
17	1-1-2023	3-31-2023	7.6637	7.6637
18	4-1-2023	6-30-2023	7.5122	7.5122
19	7-1-2023	9-30-2023	7.5948	7.5948
20	10-1-2023	12-31-2023	7.8340	7.8340
21	1-1-2024	3-31-2024	7.4781	7.4781
22	4-1-2024	6-30-2024	7.2632	7.2632

23	**7-1-2024**	**9-30-2024**	7.3430	7.3430
24	**10-1-2024**	**12-31-2024**	7.5603	7.5603
25	**1-1-2025**	**3-31-2025**	7.1577	7.1577
26	**4-1-2025**	**6-30-2025**	7.0406	7.0406
27	**7-1-2025**	**9-30-2025**	7.1180	7.1180
28	**10-1-2025**	**12-31-2025**	7.3168	7.3168
29	**1-1-2026**	**3-31-2026**	6.9867	6.9867
30	**4-1-2026**	**6-30-2026**	6.8832	6.8832
31	**7-1-2026**	**9-30-2026**	6.9588	6.9588
32	**10-1-2026**	**12-31-2026**	7.1419	7.1419
33	**1-1-2027**	**3-31-2027**	6.8303	6.8303
34	**4-1-2027**	**6-30-2027**	6.7395	6.7395
35	**7-1-2027**	**9-30-2027**	6.8135	6.8135
36	**10-1-2027**	**12-31-2027**	6.9821	6.9821
37	**1-1-2028**	**3-31-2028**	6.7647	6.7647
38	**4-1-2028**	**6-30-2028**	6.6112	6.6112
39	**7-1-2028**	**9-30-2028**	6.6839	6.6839
40	**10-1-2028**	**12-31-2028**	6.8391	6.8391
41	**1-1-2029**	**3-31-2029**	6.5562	6.5562
42	**4-1-2029**	**6-30-2029**	6.4885	6.4885
43	**7-1-2029**	**9-30-2029**	6.5598	6.5598
44	**10-1-2029**	**12-31-2029**	6.7019	6.7019
45	**1-1-2030**	**3-31-2030**	6.2747	6.2747
46	**4-1-2030**	**6-30-2030**	6.2163	6.2163
47	**7-1-2030**	**9-30-2030**	6.2846	6.2846
48	**10-1-2030**	**12-31-2030**	6.4141	6.4141
49	**1-1-2031**	**3-31-2031**	6.1560	6.1560

50	**4-1-2031**	**6-30-2031**	6.1090	6.1090
51	**7-1-2031**	**9-30-2031**	6.1761	6.1761
52	**10-1-2031**	**12-31-2031**	6.2928	6.2928
53	**1-1-2032**	**3-31-2032**	6.1191	6.1191
54	**4-1-2032**	**6-30-2032**	6.0148	6.0148
55	**7-1-2032**	**9-30-2032**	6.0809	6.0809
56	**10-1-2032**	**12-31-2032**	6.1864	6.1864
57	**1-1-2033**	**3-31-2033**	5.9624	5.9624
58	**4-1-2033**	**6-30-2033**	5.9338	5.9338
59	**7-1-2033**	**9-30-2033**	5.9990	5.9990
60	**10-1-2033**	**12-31-2033**	6.0949	6.0949
61	**1-1-2034**	**3-31-2034**	5.8878	5.8878
62	**4-1-2034**	**6-30-2034**	5.8659	5.8659
63	**7-1-2034**	**9-30-2034**	5.9304	5.9304
64	**10-1-2034**	**12-31-2034**	6.0187	6.0187
65	**1-1-2035**	**3-31-2035**	5.0910	5.0910
66	**4-1-2035**	**6-30-2035**	4.5833	4.5833
67	**7-1-2035**	**9-30-2035**	4.6337	4.6337
		Highest	10.4390	10.4390

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	84.1655	1.6392	92.8935	0.0952		7.0729	7.0729		7.0729	7.0729	661.1846	748.5780	1,409.7626	0.8802	0.0557	1,448.3584
Energy	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	14,718.3121	14,718.3121	0.9147	0.3211	14,836.8702
Mobile	8.7335	47.0007	79.1827	0.3245	31.8386	0.1807	32.0193	8.5409	0.1678	8.7087	0.0000	29,989.3137	29,989.3137	1.2464	0.0000	30,020.4740
Waste						0.0000	0.0000		0.0000	0.0000	1,843.4563	0.0000	1,843.4563	108.9452	0.0000	4,567.0851
Water						0.0000	0.0000		0.0000	0.0000	145.0398	439.0965	584.1363	14.9555	0.3639	1,066.4555
Total	**93.8263**	**56.7922**	**177.1210**	**0.4702**	**31.8386**	**7.8943**	**39.7329**	**8.5409**	**7.8814**	**16.4223**	**2,649.6808**	**45,895.3003**	**48,544.9810**	**126.9420**	**0.7406**	**51,939.2432**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	44.0057	1.3852	45.0280	7.9200e-003		0.3188	0.3188		0.3188	0.3188	0.0000	1,080.8953	1,080.8953	0.0892	0.0185	1,088.6306
Energy	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	14,718.3121	14,718.3121	0.9147	0.3211	14,836.8702
Mobile	8.3158	45.2174	71.3978	0.2842	27.2220	0.1598	27.3817	7.3024	0.1483	7.4508	0.0000	26,283.3440	26,283.3440	1.1341	0.0000	26,311.6952
Waste						0.0000	0.0000		0.0000	0.0000	1,843.4563	0.0000	1,843.4563	108.9452	0.0000	4,567.0851
Water						0.0000	0.0000		0.0000	0.0000	116.0318	378.3883	494.4202	11.9680	0.2918	880.5888
Total	**53.2488**	**54.7549**	**121.4707**	**0.3427**	**27.2220**	**1.1192**	**28.3412**	**7.3024**	**1.1078**	**8.4102**	**1,959.4882**	**42,460.9398**	**44,420.4280**	**123.0512**	**0.6314**	**47,684.8699**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**43.25**	**3.59**	**31.42**	**27.11**	**14.50**	**85.82**	**28.67**	**14.50**	**85.94**	**48.79**	**26.05**	**7.48**	**8.50**	**3.07**	**14.75**	**8.19**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	3/29/2019	5	64	
2	Grading	Grading	3/31/2019	6/28/2019	5	65	
3	Building Construction	Building Construction	1/2/2020	11/30/2035	5	4152	
4	Paving	Paving	9/2/2019	12/31/2019	5	87	
5	Architectural Coating	Architectural Coating	2/1/2020	2/6/2035	5	3917	
6	Underground Utilities	Trenching	7/1/2019	8/30/2019	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5781	0.0000	0.5781	0.3178	0.0000	0.3178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1387	1.4583	0.7060	1.2200e-003		0.0765	0.0765		0.0704	0.0704	0.0000	109.3398	109.3398	0.0346	0.0000	110.2046
Total	**0.1387**	**1.4583**	**0.7060**	**1.2200e-003**	**0.5781**	**0.0765**	**0.6546**	**0.3178**	**0.0704**	**0.3882**	**0.0000**	**109.3398**	**109.3398**	**0.0346**	**0.0000**	**110.2046**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7800e-003	2.6500e-003	0.0237	5.0000e-005	4.5800e-003	4.0000e-005	4.6200e-003	1.2200e-003	4.0000e-005	1.2600e-003	0.0000	4.4890	4.4890	2.2000e-004	0.0000	4.4944
Total	**2.7800e-003**	**2.6500e-003**	**0.0237**	**5.0000e-005**	**4.5800e-003**	**4.0000e-005**	**4.6200e-003**	**1.2200e-003**	**4.0000e-005**	**1.2600e-003**	**0.0000**	**4.4890**	**4.4890**	**2.2000e-004**	**0.0000**	**4.4944**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2602	0.0000	0.2602	0.1430	0.0000	0.1430	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1387	1.4583	0.7060	1.2200e-003		0.0765	0.0765		0.0704	0.0704	0.0000	109.3397	109.3397	0.0346	0.0000	110.2045
Total	**0.1387**	**1.4583**	**0.7060**	**1.2200e-003**	**0.2602**	**0.0765**	**0.3366**	**0.1430**	**0.0704**	**0.2134**	**0.0000**	**109.3397**	**109.3397**	**0.0346**	**0.0000**	**110.2045**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7800e-003	2.6500e-003	0.0237	5.0000e-005	4.5800e-003	4.0000e-005	4.6200e-003	1.2200e-003	4.0000e-005	1.2600e-003	0.0000	4.4890	4.4890	2.2000e-004	0.0000	4.4944
Total	**2.7800e-003**	**2.6500e-003**	**0.0237**	**5.0000e-005**	**4.5800e-003**	**4.0000e-005**	**4.6200e-003**	**1.2200e-003**	**4.0000e-005**	**1.2600e-003**	**0.0000**	**4.4890**	**4.4890**	**2.2000e-004**	**0.0000**	**4.4944**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6183	0.0000	0.6183	0.1532	0.0000	0.1532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1540	1.7719	1.0847	2.0200e-003		0.0774	0.0774		0.0712	0.0712	0.0000	181.0293	181.0293	0.0573	0.0000	182.4612
Total	**0.1540**	**1.7719**	**1.0847**	**2.0200e-003**	**0.6183**	**0.0774**	**0.6958**	**0.1532**	**0.0712**	**0.2245**	**0.0000**	**181.0293**	**181.0293**	**0.0573**	**0.0000**	**182.4612**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1400e-003	2.9900e-003	0.0267	6.0000e-005	5.1600e-003	5.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4200e-003	0.0000	5.0657	5.0657	2.4000e-004	0.0000	5.0718
Total	**3.1400e-003**	**2.9900e-003**	**0.0267**	**6.0000e-005**	**5.1600e-003**	**5.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0657**	**5.0657**	**2.4000e-004**	**0.0000**	**5.0718**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2783	0.0000	0.2783	0.0690	0.0000	0.0690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1540	1.7719	1.0847	2.0200e-003		0.0774	0.0774		0.0712	0.0712	0.0000	181.0291	181.0291	0.0573	0.0000	182.4610
Total	**0.1540**	**1.7719**	**1.0847**	**2.0200e-003**	**0.2783**	**0.0774**	**0.3557**	**0.0690**	**0.0712**	**0.1402**	**0.0000**	**181.0291**	**181.0291**	**0.0573**	**0.0000**	**182.4610**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1400e-003	2.9900e-003	0.0267	6.0000e-005	5.1600e-003	5.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4200e-003	0.0000	5.0657	5.0657	2.4000e-004	0.0000	5.0718
Total	**3.1400e-003**	**2.9900e-003**	**0.0267**	**6.0000e-005**	**5.1600e-003**	**5.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0657**	**5.0657**	**2.4000e-004**	**0.0000**	**5.0718**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5038	2.1987	3.5100e-003		0.1458	0.1458		0.1371	0.1371	0.0000	302.2510	302.2510	0.0737	0.0000	304.0945
Total	**0.2766**	**2.5038**	**2.1987**	**3.5100e-003**		**0.1458**	**0.1458**		**0.1371**	**0.1371**	**0.0000**	**302.2510**	**302.2510**	**0.0737**	**0.0000**	**304.0945**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9109	25.3332	6.9369	0.0580	1.3434	0.1381	1.4815	0.3882	0.1321	0.5203	0.0000	5,532.469 5	5,532.469 5	0.2557	0.0000	5,538.861 5
Worker	3.0813	2.8631	25.6432	0.0590	5.5953	0.0500	5.6453	1.4879	0.0461	1.5340	0.0000	5,322.455 6	5,322.455 6	0.2291	0.0000	5,328.183 2
Total	**3.9922**	**28.1963**	**32.5802**	**0.1170**	**6.9387**	**0.1881**	**7.1268**	**1.8761**	**0.1782**	**2.0543**	**0.0000**	**10,854.92 51**	**10,854.92 51**	**0.4848**	**0.0000**	**10,867.04 47**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5038	2.1987	3.5100e-003		0.1458	0.1458		0.1371	0.1371	0.0000	302.2507	302.2507	0.0737	0.0000	304.0941
Total	**0.2766**	**2.5038**	**2.1987**	**3.5100e-003**		**0.1458**	**0.1458**		**0.1371**	**0.1371**	**0.0000**	**302.2507**	**302.2507**	**0.0737**	**0.0000**	**304.0941**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9109	25.3332	6.9369	0.0580	1.3434	0.1381	1.4815	0.3882	0.1321	0.5203	0.0000	5,532.469 5	5,532.469 5	0.2557	0.0000	5,538.861 5
Worker	3.0813	2.8631	25.6432	0.0590	5.5953	0.0500	5.6453	1.4879	0.0461	1.5340	0.0000	5,322.455 6	5,322.455 6	0.2291	0.0000	5,328.183 2
Total	**3.9922**	**28.1963**	**32.5802**	**0.1170**	**6.9387**	**0.1881**	**7.1268**	**1.8761**	**0.1782**	**2.0543**	**0.0000**	**10,854.92 51**	**10,854.92 51**	**0.4848**	**0.0000**	**10,867.04 47**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7534	23.1832	6.0948	0.0575	1.3436	0.0712	1.4148	0.3883	0.0681	0.4564	0.0000	5,488.016 0	5,488.016 0	0.2447	0.0000	5,494.132 8
Worker	2.8414	2.5554	23.3078	0.0570	5.5953	0.0483	5.6436	1.4879	0.0446	1.5324	0.0000	5,144.110 7	5,144.110 7	0.2041	0.0000	5,149.213 0
Total	**3.5948**	**25.7386**	**29.4026**	**0.1145**	**6.9388**	**0.1195**	**7.0583**	**1.8761**	**0.1127**	**1.9888**	**0.0000**	**10,632.12 67**	**10,632.12 67**	**0.4488**	**0.0000**	**10,643.34 57**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7534	23.1832	6.0948	0.0575	1.3436	0.0712	1.4148	0.3883	0.0681	0.4564	0.0000	5,488.0160	5,488.0160	0.2447	0.0000	5,494.1328
Worker	2.8414	2.5554	23.3078	0.0570	5.5953	0.0483	5.6436	1.4879	0.0446	1.5324	0.0000	5,144.1107	5,144.1107	0.2041	0.0000	5,149.2130
Total	**3.5948**	**25.7386**	**29.4026**	**0.1145**	**6.9388**	**0.1195**	**7.0583**	**1.8761**	**0.1127**	**1.9888**	**0.0000**	**10,632.1267**	**10,632.1267**	**0.4488**	**0.0000**	**10,643.3457**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

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

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6878	21.8495	5.5003	0.0568	1.3385	0.0617	1.4003	0.3868	0.0590	0.4459	0.0000	5,420.931 3	5,420.931 3	0.2359	0.0000	5,426.829 7
Worker	2.6242	2.2811	21.1689	0.0548	5.5738	0.0464	5.6202	1.4822	0.0428	1.5249	0.0000	4,944.074 3	4,944.074 3	0.1817	0.0000	4,948.616 4
Total	**3.3120**	**24.1305**	**26.6692**	**0.1115**	**6.9124**	**0.1081**	**7.0205**	**1.8690**	**0.1018**	**1.9708**	**0.0000**	**10,365.00 56**	**10,365.00 56**	**0.4176**	**0.0000**	**10,375.44 61**

Mitigated Construction On-Site

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

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6878	21.8495	5.5003	0.0568	1.3385	0.0617	1.4003	0.3868	0.0590	0.4459	0.0000	5,420.931 3	5,420.931 3	0.2359	0.0000	5,426.829 7
Worker	2.6242	2.2811	21.1689	0.0548	5.5738	0.0464	5.6202	1.4822	0.0428	1.5249	0.0000	4,944.074 3	4,944.074 3	0.1817	0.0000	4,948.616 4
Total	**3.3120**	**24.1305**	**26.6692**	**0.1115**	**6.9124**	**0.1081**	**7.0205**	**1.8690**	**0.1018**	**1.9708**	**0.0000**	**10,365.00 56**	**10,365.00 56**	**0.4176**	**0.0000**	**10,375.44 61**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5188	17.9927	4.7549	0.0558	1.3387	0.0268	1.3655	0.3869	0.0256	0.4125	0.0000	5,325.6387	5,325.6387	0.1923	0.0000	5,330.4466
Worker	2.4354	2.0444	19.2627	0.0527	5.5738	0.0449	5.6187	1.4822	0.0414	1.5236	0.0000	4,760.9078	4,760.9078	0.1620	0.0000	4,764.9571
Total	**2.9543**	**20.0371**	**24.0177**	**0.1085**	**6.9125**	**0.0717**	**6.9842**	**1.8690**	**0.0670**	**1.9361**	**0.0000**	**10,086.5466**	**10,086.5466**	**0.3543**	**0.0000**	**10,095.4037**

Mitigated Construction On-Site

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5188	17.9927	4.7549	0.0558	1.3387	0.0268	1.3655	0.3869	0.0256	0.4125	0.0000	5,325.638 7	5,325.638 7	0.1923	0.0000	5,330.446 6
Worker	2.4354	2.0444	19.2627	0.0527	5.5738	0.0449	5.6187	1.4822	0.0414	1.5236	0.0000	4,760.907 8	4,760.907 8	0.1620	0.0000	4,764.957 1
Total	**2.9543**	**20.0371**	**24.0177**	**0.1085**	**6.9125**	**0.0717**	**6.9842**	**1.8690**	**0.0670**	**1.9361**	**0.0000**	**10,086.54 66**	**10,086.54 66**	**0.3543**	**0.0000**	**10,095.40 37**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4944	17.7110	4.4653	0.0558	1.3491	0.0251	1.3742	0.3899	0.0240	0.4139	0.0000	5,327.8118	5,327.8118	0.1911	0.0000	5,332.5879
Worker	2.2876	1.8526	17.7965	0.0510	5.6167	0.0439	5.6606	1.4936	0.0404	1.5340	0.0000	4,612.9424	4,612.9424	0.1461	0.0000	4,616.5947
Total	**2.7820**	**19.5636**	**22.2619**	**0.1068**	**6.9658**	**0.0690**	**7.0347**	**1.8835**	**0.0644**	**1.9479**	**0.0000**	**9,940.7542**	**9,940.7542**	**0.3371**	**0.0000**	**9,949.1826**

Mitigated Construction On-Site

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4944	17.7110	4.4653	0.0558	1.3491	0.0251	1.3742	0.3899	0.0240	0.4139	0.0000	5,327.8118	5,327.8118	0.1911	0.0000	5,332.5879
Worker	2.2876	1.8526	17.7965	0.0510	5.6167	0.0439	5.6606	1.4936	0.0404	1.5340	0.0000	4,612.9424	4,612.9424	0.1461	0.0000	4,616.5947
Total	**2.7820**	**19.5636**	**22.2619**	**0.1068**	**6.9658**	**0.0690**	**7.0347**	**1.8835**	**0.0644**	**1.9479**	**0.0000**	**9,940.7542**	**9,940.7542**	**0.3371**	**0.0000**	**9,949.1826**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

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

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4683	17.2694	4.1863	0.0552	1.3440	0.0232	1.3673	0.3884	0.0222	0.4106	0.0000	5,271.1868	5,271.1868	0.1876	0.0000	5,275.8757
Worker	2.1380	1.6700	16.3207	0.0488	5.5953	0.0428	5.6380	1.4879	0.0394	1.5273	0.0000	4,413.3318	4,413.3318	0.1314	0.0000	4,416.6163
Total	**2.6062**	**18.9394**	**20.5071**	**0.1040**	**6.9393**	**0.0660**	**7.0053**	**1.8763**	**0.0616**	**1.9379**	**0.0000**	**9,684.5186**	**9,684.5186**	**0.3189**	**0.0000**	**9,692.4921**

Mitigated Construction On-Site

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

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4683	17.2694	4.1863	0.0552	1.3440	0.0232	1.3673	0.3884	0.0222	0.4106	0.0000	5,271.1868	5,271.1868	0.1876	0.0000	5,275.8757
Worker	2.1380	1.6700	16.3207	0.0488	5.5953	0.0428	5.6380	1.4879	0.0394	1.5273	0.0000	4,413.3318	4,413.3318	0.1314	0.0000	4,416.6163
Total	**2.6062**	**18.9394**	**20.5071**	**0.1040**	**6.9393**	**0.0660**	**7.0053**	**1.8763**	**0.0616**	**1.9379**	**0.0000**	**9,684.5186**	**9,684.5186**	**0.3189**	**0.0000**	**9,692.4921**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

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

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4501	16.9624	4.0006	0.0549	1.3441	0.0220	1.3661	0.3885	0.0210	0.4095	0.0000	5,243.958 6	5,243.958 6	0.1852	0.0000	5,248.588 1
Worker	2.0117	1.5155	14.9996	0.0468	5.5953	0.0410	5.6363	1.4879	0.0378	1.5256	0.0000	4,230.985 1	4,230.985 1	0.1179	0.0000	4,233.931 6
Total	**2.4618**	**18.4779**	**19.0002**	**0.1017**	**6.9394**	**0.0630**	**7.0024**	**1.8763**	**0.0588**	**1.9351**	**0.0000**	**9,474.943 7**	**9,474.943 7**	**0.3030**	**0.0000**	**9,482.519 8**

Mitigated Construction On-Site

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

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4501	16.9624	4.0006	0.0549	1.3441	0.0220	1.3661	0.3885	0.0210	0.4095	0.0000	5,243.958 6	5,243.958 6	0.1852	0.0000	5,248.588 1
Worker	2.0117	1.5155	14.9996	0.0468	5.5953	0.0410	5.6363	1.4879	0.0378	1.5256	0.0000	4,230.985 1	4,230.985 1	0.1179	0.0000	4,233.931 6
Total	**2.4618**	**18.4779**	**19.0002**	**0.1017**	**6.9394**	**0.0630**	**7.0024**	**1.8763**	**0.0588**	**1.9351**	**0.0000**	**9,474.943 7**	**9,474.943 7**	**0.3030**	**0.0000**	**9,482.519 8**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

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

3.4 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4345	16.6812	3.8331	0.0546	1.3442	0.0209	1.3650	0.3885	0.0199	0.4084	0.0000	5,220.2317	5,220.2317	0.1829	0.0000	5,224.8036
Worker	1.8935	1.3772	13.8798	0.0452	5.5953	0.0386	5.6339	1.4879	0.0355	1.5234	0.0000	4,085.6944	4,085.6944	0.1066	0.0000	4,088.3605
Total	**2.3279**	**18.0584**	**17.7128**	**0.0998**	**6.9395**	**0.0595**	**6.9989**	**1.8764**	**0.0555**	**1.9319**	**0.0000**	**9,305.9261**	**9,305.9261**	**0.2895**	**0.0000**	**9,313.1641**

Mitigated Construction On-Site

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

3.4 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4345	16.6812	3.8331	0.0546	1.3442	0.0209	1.3650	0.3885	0.0199	0.4084	0.0000	5,220.2317	5,220.2317	0.1829	0.0000	5,224.8036
Worker	1.8935	1.3772	13.8798	0.0452	5.5953	0.0386	5.6339	1.4879	0.0355	1.5234	0.0000	4,085.6944	4,085.6944	0.1066	0.0000	4,088.3605
Total	**2.3279**	**18.0584**	**17.7128**	**0.0998**	**6.9395**	**0.0595**	**6.9989**	**1.8764**	**0.0555**	**1.9319**	**0.0000**	**9,305.9261**	**9,305.9261**	**0.2895**	**0.0000**	**9,313.1641**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

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

3.4 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4199	16.3829	3.6996	0.0542	1.3391	0.0198	1.3589	0.3870	0.0189	0.4059	0.0000	5,180.509 5	5,180.509 5	0.1796	0.0000	5,184.999 3
Worker	1.7673	1.2495	12.8474	0.0436	5.5738	0.0358	5.6096	1.4822	0.0329	1.5151	0.0000	3,941.595 8	3,941.595 8	0.0966	0.0000	3,944.010 7
Total	**2.1872**	**17.6323**	**16.5470**	**0.0978**	**6.9129**	**0.0556**	**6.9685**	**1.8692**	**0.0518**	**1.9211**	**0.0000**	**9,122.105 4**	**9,122.105 4**	**0.2762**	**0.0000**	**9,129.010 0**

Mitigated Construction On-Site

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

3.4 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4199	16.3829	3.6996	0.0542	1.3391	0.0198	1.3589	0.3870	0.0189	0.4059	0.0000	5,180.5095	5,180.5095	0.1796	0.0000	5,184.9993
Worker	1.7673	1.2495	12.8474	0.0436	5.5738	0.0358	5.6096	1.4822	0.0329	1.5151	0.0000	3,941.5958	3,941.5958	0.0966	0.0000	3,944.0107
Total	**2.1872**	**17.6323**	**16.5470**	**0.0978**	**6.9129**	**0.0556**	**6.9685**	**1.8692**	**0.0518**	**1.9211**	**0.0000**	**9,122.1054**	**9,122.1054**	**0.2762**	**0.0000**	**9,129.0100**

3.4 Building Construction - 2029

Unmitigated Construction On-Site

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

3.4 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4108	16.2315	3.6133	0.0542	1.3443	0.0189	1.3632	0.3885	0.0181	0.4066	0.0000	5,183.319 1	5,183.319 1	0.1782	0.0000	5,187.775 2
Worker	1.6473	1.1392	11.9469	0.0425	5.5953	0.0334	5.6287	1.4879	0.0308	1.5186	0.0000	3,842.224 3	3,842.224 3	0.0876	0.0000	3,844.413 9
Total	**2.0581**	**17.3707**	**15.5602**	**0.0967**	**6.9396**	**0.0524**	**6.9919**	**1.8764**	**0.0489**	**1.9253**	**0.0000**	**9,025.543 4**	**9,025.543 4**	**0.2658**	**0.0000**	**9,032.189 0**

Mitigated Construction On-Site

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

3.4 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4108	16.2315	3.6133	0.0542	1.3443	0.0189	1.3632	0.3885	0.0181	0.4066	0.0000	5,183.3191	5,183.3191	0.1782	0.0000	5,187.7752
Worker	1.6473	1.1392	11.9469	0.0425	5.5953	0.0334	5.6287	1.4879	0.0308	1.5186	0.0000	3,842.2243	3,842.2243	0.0876	0.0000	3,844.4139
Total	**2.0581**	**17.3707**	**15.5602**	**0.0967**	**6.9396**	**0.0524**	**6.9919**	**1.8764**	**0.0489**	**1.9253**	**0.0000**	**9,025.5434**	**9,025.5434**	**0.2658**	**0.0000**	**9,032.1890**

3.4 Building Construction - 2030

Unmitigated Construction On-Site

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

3.4 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4021	16.0485	3.5382	0.0541	1.3443	0.0182	1.3625	0.3886	0.0174	0.4059	0.0000	5,170.2142	5,170.2142	0.1760	0.0000	5,174.6152
Worker	1.5216	1.0317	11.0869	0.0413	5.5953	0.0311	5.6264	1.4879	0.0286	1.5165	0.0000	3,740.7848	3,740.7848	0.0791	0.0000	3,742.7617
Total	**1.9236**	**17.0802**	**14.6251**	**0.0954**	**6.9396**	**0.0493**	**6.9889**	**1.8764**	**0.0460**	**1.9224**	**0.0000**	**8,910.9990**	**8,910.9990**	**0.2551**	**0.0000**	**8,917.3769**

Mitigated Construction On-Site

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

3.4 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4021	16.0485	3.5382	0.0541	1.3443	0.0182	1.3625	0.3886	0.0174	0.4059	0.0000	5,170.214 2	5,170.214 2	0.1760	0.0000	5,174.615 2
Worker	1.5216	1.0317	11.0869	0.0413	5.5953	0.0311	5.6264	1.4879	0.0286	1.5165	0.0000	3,740.784 8	3,740.784 8	0.0791	0.0000	3,742.761 7
Total	**1.9236**	**17.0802**	**14.6251**	**0.0954**	**6.9396**	**0.0493**	**6.9889**	**1.8764**	**0.0460**	**1.9224**	**0.0000**	**8,910.999 0**	**8,910.999 0**	**0.2551**	**0.0000**	**8,917.376 9**

3.4 Building Construction - 2031

Unmitigated Construction On-Site

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

3.4 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3949	15.8909	3.4752	0.0540	1.3444	0.0175	1.3619	0.3886	0.0168	0.4053	0.0000	5,160.6210	5,160.6210	0.1745	0.0000	5,164.9827
Worker	1.3873	0.9274	10.2495	0.0403	5.5953	0.0290	5.6242	1.4879	0.0266	1.5145	0.0000	3,651.1338	3,651.1338	0.0709	0.0000	3,652.9053
Total	**1.7821**	**16.8183**	**13.7247**	**0.0943**	**6.9397**	**0.0465**	**6.9861**	**1.8764**	**0.0434**	**1.9198**	**0.0000**	**8,811.7548**	**8,811.7548**	**0.2453**	**0.0000**	**8,817.8880**

Mitigated Construction On-Site

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

3.4 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3949	15.8909	3.4752	0.0540	1.3444	0.0175	1.3619	0.3886	0.0168	0.4053	0.0000	5,160.6210	5,160.6210	0.1745	0.0000	5,164.9827
Worker	1.3873	0.9274	10.2495	0.0403	5.5953	0.0290	5.6242	1.4879	0.0266	1.5145	0.0000	3,651.1338	3,651.1338	0.0709	0.0000	3,652.9053
Total	**1.7821**	**16.8183**	**13.7247**	**0.0943**	**6.9397**	**0.0465**	**6.9861**	**1.8764**	**0.0434**	**1.9198**	**0.0000**	**8,811.7548**	**8,811.7548**	**0.2453**	**0.0000**	**8,817.8880**

3.4 Building Construction - 2032

Unmitigated Construction On-Site

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

3.4 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3904	15.8128	3.4413	0.0541	1.3496	0.0170	1.3666	0.3901	0.0163	0.4063	0.0000	5,174.652 9	5,174.652 9	0.1736	0.0000	5,178.993 1
Worker	1.2727	0.8406	9.5574	0.0396	5.6167	0.0271	5.6438	1.4936	0.0249	1.5185	0.0000	3,586.143 7	3,586.143 7	0.0640	0.0000	3,587.742 7
Total	**1.6631**	**16.6534**	**12.9986**	**0.0937**	**6.9663**	**0.0441**	**7.0103**	**1.8836**	**0.0412**	**1.9248**	**0.0000**	**8,760.796 6**	**8,760.796 6**	**0.2376**	**0.0000**	**8,766.735 8**

Mitigated Construction On-Site

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

3.4 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3904	15.8128	3.4413	0.0541	1.3496	0.0170	1.3666	0.3901	0.0163	0.4063	0.0000	5,174.652 9	5,174.652 9	0.1736	0.0000	5,178.993 1
Worker	1.2727	0.8406	9.5574	0.0396	5.6167	0.0271	5.6438	1.4936	0.0249	1.5185	0.0000	3,586.143 7	3,586.143 7	0.0640	0.0000	3,587.742 7
Total	**1.6631**	**16.6534**	**12.9986**	**0.0937**	**6.9663**	**0.0441**	**7.0103**	**1.8836**	**0.0412**	**1.9248**	**0.0000**	**8,760.796 6**	**8,760.796 6**	**0.2376**	**0.0000**	**8,766.735 8**

3.4 Building Construction - 2033

Unmitigated Construction On-Site

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

3.4 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3829	15.5710	3.3785	0.0537	1.3393	0.0163	1.3557	0.3871	0.0156	0.4027	0.0000	5,132.080 6	5,132.080 6	0.1711	0.0000	5,136.359 1
Worker	1.1612	0.7585	8.8677	0.0385	5.5738	0.0251	5.5989	1.4822	0.0231	1.5053	0.0000	3,490.381 1	3,490.381 1	0.0574	0.0000	3,491.816 5
Total	**1.5440**	**16.3294**	**12.2462**	**0.0922**	**6.9131**	**0.0414**	**6.9546**	**1.8693**	**0.0387**	**1.9080**	**0.0000**	**8,622.461 7**	**8,622.461 7**	**0.2286**	**0.0000**	**8,628.175 6**

Mitigated Construction On-Site

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

3.4 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3829	15.5710	3.3785	0.0537	1.3393	0.0163	1.3557	0.3871	0.0156	0.4027	0.0000	5,132.080 6	5,132.080 6	0.1711	0.0000	5,136.359 1
Worker	1.1612	0.7585	8.8677	0.0385	5.5738	0.0251	5.5989	1.4822	0.0231	1.5053	0.0000	3,490.381 1	3,490.381 1	0.0574	0.0000	3,491.816 5
Total	**1.5440**	**16.3294**	**12.2462**	**0.0922**	**6.9131**	**0.0414**	**6.9546**	**1.8693**	**0.0387**	**1.9080**	**0.0000**	**8,622.461 7**	**8,622.461 7**	**0.2286**	**0.0000**	**8,628.175 6**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

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

3.4 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3787	15.4664	3.3436	0.0536	1.3393	0.0159	1.3552	0.3871	0.0152	0.4023	0.0000	5,130.943 4	5,130.943 4	0.1701	0.0000	5,135.195 1
Worker	1.0774	0.6971	8.3037	0.0379	5.5738	0.0235	5.5973	1.4822	0.0216	1.5038	0.0000	3,430.717 3	3,430.717 3	0.0519	0.0000	3,432.014 5
Total	**1.4561**	**16.1635**	**11.6473**	**0.0915**	**6.9132**	**0.0393**	**6.9525**	**1.8693**	**0.0367**	**1.9060**	**0.0000**	**8,561.660 7**	**8,561.660 7**	**0.2220**	**0.0000**	**8,567.209 5**

Mitigated Construction On-Site

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

3.4 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3787	15.4664	3.3436	0.0536	1.3393	0.0159	1.3552	0.3871	0.0152	0.4023	0.0000	5,130.943 4	5,130.943 4	0.1701	0.0000	5,135.195 1
Worker	1.0774	0.6971	8.3037	0.0379	5.5738	0.0235	5.5973	1.4822	0.0216	1.5038	0.0000	3,430.717 3	3,430.717 3	0.0519	0.0000	3,432.014 5
Total	**1.4561**	**16.1635**	**11.6473**	**0.0915**	**6.9132**	**0.0393**	**6.9525**	**1.8693**	**0.0367**	**1.9060**	**0.0000**	**8,561.660 7**	**8,561.660 7**	**0.2220**	**0.0000**	**8,567.209 5**

3.4 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1460	0.8594	1.9341	3.7100e-003		0.0109	0.0109		0.0109	0.0109	0.0000	315.4332	315.4332	0.0118	0.0000	315.7269
Total	**0.1460**	**0.8594**	**1.9341**	**3.7100e-003**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**0.0000**	**315.4332**	**315.4332**	**0.0118**	**0.0000**	**315.7269**

3.4 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3462	14.1968	3.0590	0.0495	1.2363	0.0143	1.2506	0.3574	0.0137	0.3710	0.0000	4,736.300 0	4,736.300 0	0.1563	0.0000	4,740.207 9
Worker	0.9262	0.5987	7.2114	0.0344	5.1451	0.0203	5.1654	1.3682	0.0187	1.3868	0.0000	3,119.318 1	3,119.318 1	0.0435	0.0000	3,120.404 2
Total	**1.2724**	**14.7955**	**10.2705**	**0.0839**	**6.3814**	**0.0346**	**6.4160**	**1.7255**	**0.0323**	**1.7578**	**0.0000**	**7,855.618 1**	**7,855.618 1**	**0.1998**	**0.0000**	**7,860.612 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1460	0.8594	1.9341	3.7100e-003		0.0109	0.0109		0.0109	0.0109	0.0000	315.4329	315.4329	0.0118	0.0000	315.7266
Total	**0.1460**	**0.8594**	**1.9341**	**3.7100e-003**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**0.0000**	**315.4329**	**315.4329**	**0.0118**	**0.0000**	**315.7266**

3.4 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3462	14.1968	3.0590	0.0495	1.2363	0.0143	1.2506	0.3574	0.0137	0.3710	0.0000	4,736.3000	4,736.3000	0.1563	0.0000	4,740.2079
Worker	0.9262	0.5987	7.2114	0.0344	5.1451	0.0203	5.1654	1.3682	0.0187	1.3868	0.0000	3,119.3181	3,119.3181	0.0435	0.0000	3,120.4042
Total	**1.2724**	**14.7955**	**10.2705**	**0.0839**	**6.3814**	**0.0346**	**6.4160**	**1.7255**	**0.0323**	**1.7578**	**0.0000**	**7,855.6181**	**7,855.6181**	**0.1998**	**0.0000**	**7,860.6121**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0633	0.6631	0.6379	9.9000e-004		0.0359	0.0359		0.0330	0.0330	0.0000	89.0670	89.0670	0.0282	0.0000	89.7715
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0633**	**0.6631**	**0.6379**	**9.9000e-004**		**0.0359**	**0.0359**		**0.0330**	**0.0330**	**0.0000**	**89.0670**	**89.0670**	**0.0282**	**0.0000**	**89.7715**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1500e-003	3.0000e-003	0.0268	6.0000e-005	5.1800e-003	5.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	5.0852	5.0852	2.5000e-004	0.0000	5.0914
Total	**3.1500e-003**	**3.0000e-003**	**0.0268**	**6.0000e-005**	**5.1800e-003**	**5.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0852**	**5.0852**	**2.5000e-004**	**0.0000**	**5.0914**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0633	0.6631	0.6379	9.9000e-004		0.0359	0.0359		0.0330	0.0330	0.0000	89.0669	89.0669	0.0282	0.0000	89.7714
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0633**	**0.6631**	**0.6379**	**9.9000e-004**		**0.0359**	**0.0359**		**0.0330**	**0.0330**	**0.0000**	**89.0669**	**89.0669**	**0.0282**	**0.0000**	**89.7714**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1500e-003	3.0000e-003	0.0268	6.0000e-005	5.1800e-003	5.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	5.0852	5.0852	2.5000e-004	0.0000	5.0914
Total	**3.1500e-003**	**3.0000e-003**	**0.0268**	**6.0000e-005**	**5.1800e-003**	**5.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0852**	**5.0852**	**2.5000e-004**	**0.0000**	**5.0914**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9956					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0289	0.2012	0.2189	3.6000e-004		0.0133	0.0133		0.0133	0.0133	0.0000	30.5114	30.5114	2.3600e-003	0.0000	30.5704
Total	**4.0245**	**0.2012**	**0.2189**	**3.6000e-004**		**0.0133**	**0.0133**		**0.0133**	**0.0133**	**0.0000**	**30.5114**	**30.5114**	**2.3600e-003**	**0.0000**	**30.5704**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5642	0.5243	4.6955	0.0108	1.0245	9.1600e-003	1.0337	0.2724	8.4500e-003	0.2809	0.0000	974.5833	974.5833	0.0420	0.0000	975.6320
Total	**0.5642**	**0.5243**	**4.6955**	**0.0108**	**1.0245**	**9.1600e-003**	**1.0337**	**0.2724**	**8.4500e-003**	**0.2809**	**0.0000**	**974.5833**	**974.5833**	**0.0420**	**0.0000**	**975.6320**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9956					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0289	0.2012	0.2189	3.6000e-004		0.0133	0.0133		0.0133	0.0133	0.0000	30.5114	30.5114	2.3600e-003	0.0000	30.5704
Total	**4.0245**	**0.2012**	**0.2189**	**3.6000e-004**		**0.0133**	**0.0133**		**0.0133**	**0.0133**	**0.0000**	**30.5114**	**30.5114**	**2.3600e-003**	**0.0000**	**30.5704**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5642	0.5243	4.6955	0.0108	1.0245	9.1600e-003	1.0337	0.2724	8.4500e-003	0.2809	0.0000	974.5833	974.5833	0.0420	0.0000	975.6320
Total	**0.5642**	**0.5243**	**4.6955**	**0.0108**	**1.0245**	**9.1600e-003**	**1.0337**	**0.2724**	**8.4500e-003**	**0.2809**	**0.0000**	**974.5833**	**974.5833**	**0.0420**	**0.0000**	**975.6320**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**4.3919**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5682	0.5110	4.6607	0.0114	1.1189	9.6600e-003	1.1285	0.2975	8.9100e-003	0.3064	0.0000	1,028.6315	1,028.6315	0.0408	0.0000	1,029.6518
Total	**0.5682**	**0.5110**	**4.6607**	**0.0114**	**1.1189**	**9.6600e-003**	**1.1285**	**0.2975**	**8.9100e-003**	**0.3064**	**0.0000**	**1,028.6315**	**1,028.6315**	**0.0408**	**0.0000**	**1,029.6518**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**4.3919**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5682	0.5110	4.6607	0.0114	1.1189	9.6600e-003	1.1285	0.2975	8.9100e-003	0.3064	0.0000	1,028.6315	1,028.6315	0.0408	0.0000	1,029.6518
Total	**0.5682**	**0.5110**	**4.6607**	**0.0114**	**1.1189**	**9.6600e-003**	**1.1285**	**0.2975**	**8.9100e-003**	**0.3064**	**0.0000**	**1,028.6315**	**1,028.6315**	**0.0408**	**0.0000**	**1,029.6518**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**4.3732**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5247	0.4561	4.2330	0.0110	1.1146	9.2800e-003	1.1238	0.2964	8.5500e-003	0.3049	0.0000	988.6316	988.6316	0.0363	0.0000	989.5399
Total	**0.5247**	**0.4561**	**4.2330**	**0.0110**	**1.1146**	**9.2800e-003**	**1.1238**	**0.2964**	**8.5500e-003**	**0.3049**	**0.0000**	**988.6316**	**988.6316**	**0.0363**	**0.0000**	**989.5399**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**4.3732**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5247	0.4561	4.2330	0.0110	1.1146	9.2800e-003	1.1238	0.2964	8.5500e-003	0.3049	0.0000	988.6316	988.6316	0.0363	0.0000	989.5399
Total	**0.5247**	**0.4561**	**4.2330**	**0.0110**	**1.1146**	**9.2800e-003**	**1.1238**	**0.2964**	**8.5500e-003**	**0.3049**	**0.0000**	**988.6316**	**988.6316**	**0.0363**	**0.0000**	**989.5399**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**4.3716**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4870	0.4088	3.8518	0.0105	1.1146	8.9800e-003	1.1235	0.2964	8.2800e-003	0.3047	0.0000	952.0051	952.0051	0.0324	0.0000	952.8148
Total	**0.4870**	**0.4088**	**3.8518**	**0.0105**	**1.1146**	**8.9800e-003**	**1.1235**	**0.2964**	**8.2800e-003**	**0.3047**	**0.0000**	**952.0051**	**952.0051**	**0.0324**	**0.0000**	**952.8148**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**4.3716**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4870	0.4088	3.8518	0.0105	1.1146	8.9800e-003	1.1235	0.2964	8.2800e-003	0.3047	0.0000	952.0051	952.0051	0.0324	0.0000	952.8148
Total	**0.4870**	**0.4088**	**3.8518**	**0.0105**	**1.1146**	**8.9800e-003**	**1.1235**	**0.2964**	**8.2800e-003**	**0.3047**	**0.0000**	**952.0051**	**952.0051**	**0.0324**	**0.0000**	**952.8148**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**4.4037**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4574	0.3704	3.5586	0.0102	1.1231	8.7700e-003	1.1319	0.2987	8.0800e-003	0.3067	0.0000	922.4175	922.4175	0.0292	0.0000	923.1478
Total	**0.4574**	**0.3704**	**3.5586**	**0.0102**	**1.1231**	**8.7700e-003**	**1.1319**	**0.2987**	**8.0800e-003**	**0.3067**	**0.0000**	**922.4175**	**922.4175**	**0.0292**	**0.0000**	**923.1478**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**4.4037**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4574	0.3704	3.5586	0.0102	1.1231	8.7700e-003	1.1319	0.2987	8.0800e-003	0.3067	0.0000	922.4175	922.4175	0.0292	0.0000	923.1478
Total	**0.4574**	**0.3704**	**3.5586**	**0.0102**	**1.1231**	**8.7700e-003**	**1.1319**	**0.2987**	**8.0800e-003**	**0.3067**	**0.0000**	**922.4175**	**922.4175**	**0.0292**	**0.0000**	**923.1478**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.6 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4275	0.3340	3.2635	9.7600e-003	1.1189	8.5500e-003	1.1274	0.2975	7.8800e-003	0.3054	0.0000	882.5028	882.5028	0.0263	0.0000	883.1596
Total	**0.4275**	**0.3340**	**3.2635**	**9.7600e-003**	**1.1189**	**8.5500e-003**	**1.1274**	**0.2975**	**7.8800e-003**	**0.3054**	**0.0000**	**882.5028**	**882.5028**	**0.0263**	**0.0000**	**883.1596**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.6 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4275	0.3340	3.2635	9.7600e-003	1.1189	8.5500e-003	1.1274	0.2975	7.8800e-003	0.3054	0.0000	882.5028	882.5028	0.0263	0.0000	883.1596
Total	**0.4275**	**0.3340**	**3.2635**	**9.7600e-003**	**1.1189**	**8.5500e-003**	**1.1274**	**0.2975**	**7.8800e-003**	**0.3054**	**0.0000**	**882.5028**	**882.5028**	**0.0263**	**0.0000**	**883.1596**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.6 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4023	0.3031	2.9994	9.3600e-003	1.1189	8.2000e-003	1.1271	0.2975	7.5500e-003	0.3051	0.0000	846.0402	846.0402	0.0236	0.0000	846.6294
Total	**0.4023**	**0.3031**	**2.9994**	**9.3600e-003**	**1.1189**	**8.2000e-003**	**1.1271**	**0.2975**	**7.5500e-003**	**0.3051**	**0.0000**	**846.0402**	**846.0402**	**0.0236**	**0.0000**	**846.6294**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.6 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4023	0.3031	2.9994	9.3600e-003	1.1189	8.2000e-003	1.1271	0.2975	7.5500e-003	0.3051	0.0000	846.0402	846.0402	0.0236	0.0000	846.6294
Total	**0.4023**	**0.3031**	**2.9994**	**9.3600e-003**	**1.1189**	**8.2000e-003**	**1.1271**	**0.2975**	**7.5500e-003**	**0.3051**	**0.0000**	**846.0402**	**846.0402**	**0.0236**	**0.0000**	**846.6294**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.6 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3786	0.2754	2.7754	9.0300e-003	1.1189	7.7200e-003	1.1266	0.2975	7.1100e-003	0.3046	0.0000	816.9875	816.9875	0.0213	0.0000	817.5206
Total	**0.3786**	**0.2754**	**2.7754**	**9.0300e-003**	**1.1189**	**7.7200e-003**	**1.1266**	**0.2975**	**7.1100e-003**	**0.3046**	**0.0000**	**816.9875**	**816.9875**	**0.0213**	**0.0000**	**817.5206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.6 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3786	0.2754	2.7754	9.0300e-003	1.1189	7.7200e-003	1.1266	0.2975	7.1100e-003	0.3046	0.0000	816.9875	816.9875	0.0213	0.0000	817.5206
Total	**0.3786**	**0.2754**	**2.7754**	**9.0300e-003**	**1.1189**	**7.7200e-003**	**1.1266**	**0.2975**	**7.1100e-003**	**0.3046**	**0.0000**	**816.9875**	**816.9875**	**0.0213**	**0.0000**	**817.5206**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2376
Total	**4.3688**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2376**

3.6 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3534	0.2499	2.5690	8.7100e-003	1.1146	7.1600e-003	1.1217	0.2964	6.5900e-003	0.3030	0.0000	788.1731	788.1731	0.0193	0.0000	788.6560
Total	**0.3534**	**0.2499**	**2.5690**	**8.7100e-003**	**1.1146**	**7.1600e-003**	**1.1217**	**0.2964**	**6.5900e-003**	**0.3030**	**0.0000**	**788.1731**	**788.1731**	**0.0193**	**0.0000**	**788.6560**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2375
Total	**4.3688**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2375**

3.6 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3534	0.2499	2.5690	8.7100e-003	1.1146	7.1600e-003	1.1217	0.2964	6.5900e-003	0.3030	0.0000	788.1731	788.1731	0.0193	0.0000	788.6560
Total	**0.3534**	**0.2499**	**2.5690**	**8.7100e-003**	**1.1146**	**7.1600e-003**	**1.1217**	**0.2964**	**6.5900e-003**	**0.3030**	**0.0000**	**788.1731**	**788.1731**	**0.0193**	**0.0000**	**788.6560**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.6 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3294	0.2278	2.3889	8.4900e-003	1.1189	6.6900e-003	1.1255	0.2975	6.1500e-003	0.3037	0.0000	768.3025	768.3025	0.0175	0.0000	768.7403
Total	**0.3294**	**0.2278**	**2.3889**	**8.4900e-003**	**1.1189**	**6.6900e-003**	**1.1255**	**0.2975**	**6.1500e-003**	**0.3037**	**0.0000**	**768.3025**	**768.3025**	**0.0175**	**0.0000**	**768.7403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.6 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3294	0.2278	2.3889	8.4900e-003	1.1189	6.6900e-003	1.1255	0.2975	6.1500e-003	0.3037	0.0000	768.3025	768.3025	0.0175	0.0000	768.7403
Total	**0.3294**	**0.2278**	**2.3889**	**8.4900e-003**	**1.1189**	**6.6900e-003**	**1.1255**	**0.2975**	**6.1500e-003**	**0.3037**	**0.0000**	**768.3025**	**768.3025**	**0.0175**	**0.0000**	**768.7403**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3200	33.3200	1.3500e-003	0.0000	33.3537
Total	**4.3804**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3200**	**33.3200**	**1.3500e-003**	**0.0000**	**33.3537**

3.6 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3043	0.2063	2.2170	8.2700e-003	1.1189	6.2200e-003	1.1251	0.2975	5.7200e-003	0.3032	0.0000	748.0183	748.0183	0.0158	0.0000	748.4136
Total	**0.3043**	**0.2063**	**2.2170**	**8.2700e-003**	**1.1189**	**6.2200e-003**	**1.1251**	**0.2975**	**5.7200e-003**	**0.3032**	**0.0000**	**748.0183**	**748.0183**	**0.0158**	**0.0000**	**748.4136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3199	33.3199	1.3500e-003	0.0000	33.3536
Total	**4.3804**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3199**	**33.3199**	**1.3500e-003**	**0.0000**	**33.3536**

3.6 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3043	0.2063	2.2170	8.2700e-003	1.1189	6.2200e-003	1.1251	0.2975	5.7200e-003	0.3032	0.0000	748.0183	748.0183	0.0158	0.0000	748.4136
Total	**0.3043**	**0.2063**	**2.2170**	**8.2700e-003**	**1.1189**	**6.2200e-003**	**1.1251**	**0.2975**	**5.7200e-003**	**0.3032**	**0.0000**	**748.0183**	**748.0183**	**0.0158**	**0.0000**	**748.4136**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3200	33.3200	1.3500e-003	0.0000	33.3537
Total	**4.3804**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3200**	**33.3200**	**1.3500e-003**	**0.0000**	**33.3537**

3.6 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2774	0.1854	2.0495	8.0700e-003	1.1189	5.7900e-003	1.1246	0.2975	5.3200e-003	0.3028	0.0000	730.0914	730.0914	0.0142	0.0000	730.4457
Total	**0.2774**	**0.1854**	**2.0495**	**8.0700e-003**	**1.1189**	**5.7900e-003**	**1.1246**	**0.2975**	**5.3200e-003**	**0.3028**	**0.0000**	**730.0914**	**730.0914**	**0.0142**	**0.0000**	**730.4457**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3199	33.3199	1.3500e-003	0.0000	33.3536
Total	**4.3804**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3199**	**33.3199**	**1.3500e-003**	**0.0000**	**33.3536**

3.6 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2774	0.1854	2.0495	8.0700e-003	1.1189	5.7900e-003	1.1246	0.2975	5.3200e-003	0.3028	0.0000	730.0914	730.0914	0.0142	0.0000	730.4457
Total	**0.2774**	**0.1854**	**2.0495**	**8.0700e-003**	**1.1189**	**5.7900e-003**	**1.1246**	**0.2975**	**5.3200e-003**	**0.3028**	**0.0000**	**730.0914**	**730.0914**	**0.0142**	**0.0000**	**730.4457**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1122	0.2355	3.9000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	33.4476	33.4476	1.3500e-003	0.0000	33.4815
Total	**4.3972**	**0.1122**	**0.2355**	**3.9000e-004**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**33.4476**	**33.4476**	**1.3500e-003**	**0.0000**	**33.4815**

3.6 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2545	0.1681	1.9111	7.9200e-003	1.1231	5.4100e-003	1.1286	0.2987	4.9800e-003	0.3036	0.0000	717.0958	717.0958	0.0128	0.0000	717.4156
Total	**0.2545**	**0.1681**	**1.9111**	**7.9200e-003**	**1.1231**	**5.4100e-003**	**1.1286**	**0.2987**	**4.9800e-003**	**0.3036**	**0.0000**	**717.0958**	**717.0958**	**0.0128**	**0.0000**	**717.4156**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1122	0.2355	3.9000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	33.4476	33.4476	1.3500e-003	0.0000	33.4814
Total	**4.3972**	**0.1122**	**0.2355**	**3.9000e-004**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**33.4476**	**33.4476**	**1.3500e-003**	**0.0000**	**33.4814**

3.6 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2545	0.1681	1.9111	7.9200e-003	1.1231	5.4100e-003	1.1286	0.2987	4.9800e-003	0.3036	0.0000	717.0958	717.0958	0.0128	0.0000	717.4156
Total	**0.2545**	**0.1681**	**1.9111**	**7.9200e-003**	**1.1231**	**5.4100e-003**	**1.1286**	**0.2987**	**4.9800e-003**	**0.3036**	**0.0000**	**717.0958**	**717.0958**	**0.0128**	**0.0000**	**717.4156**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2259
Total	**4.3636**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2259**

3.6 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2322	0.1517	1.7732	7.7100e-003	1.1146	5.0200e-003	1.1196	0.2964	4.6100e-003	0.3010	0.0000	697.9469	697.9469	0.0115	0.0000	698.2339
Total	**0.2322**	**0.1517**	**1.7732**	**7.7100e-003**	**1.1146**	**5.0200e-003**	**1.1196**	**0.2964**	**4.6100e-003**	**0.3010**	**0.0000**	**697.9469**	**697.9469**	**0.0115**	**0.0000**	**698.2339**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2258
Total	**4.3636**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2258**

3.6 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2322	0.1517	1.7732	7.7100e-003	1.1146	5.0200e-003	1.1196	0.2964	4.6100e-003	0.3010	0.0000	697.9469	697.9469	0.0115	0.0000	698.2339
Total	**0.2322**	**0.1517**	**1.7732**	**7.7100e-003**	**1.1146**	**5.0200e-003**	**1.1196**	**0.2964**	**4.6100e-003**	**0.3010**	**0.0000**	**697.9469**	**697.9469**	**0.0115**	**0.0000**	**698.2339**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2259
Total	**4.3636**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2259**

3.6 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2154	0.1394	1.6604	7.5700e-003	1.1146	4.6900e-003	1.1193	0.2964	4.3100e-003	0.3007	0.0000	686.0163	686.0163	0.0104	0.0000	686.2757
Total	**0.2154**	**0.1394**	**1.6604**	**7.5700e-003**	**1.1146**	**4.6900e-003**	**1.1193**	**0.2964**	**4.3100e-003**	**0.3007**	**0.0000**	**686.0163**	**686.0163**	**0.0104**	**0.0000**	**686.2757**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2258
Total	**4.3636**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2258**

3.6 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2154	0.1394	1.6604	7.5700e-003	1.1146	4.6900e-003	1.1193	0.2964	4.3100e-003	0.3007	0.0000	686.0163	686.0163	0.0104	0.0000	686.2757
Total	**0.2154**	**0.1394**	**1.6604**	**7.5700e-003**	**1.1146**	**4.6900e-003**	**1.1193**	**0.2964**	**4.3100e-003**	**0.3007**	**0.0000**	**686.0163**	**686.0163**	**0.0104**	**0.0000**	**686.2757**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4514					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0102	0.0242	4.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	3.4469	3.4469	1.3000e-004	0.0000	3.4501
Total	**0.4530**	**0.0102**	**0.0242**	**4.0000e-005**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**3.4469**	**3.4469**	**1.3000e-004**	**0.0000**	**3.4501**

3.6 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0208	0.0135	0.1622	7.7000e-004	0.1157	4.6000e-004	0.1162	0.0308	4.2000e-004	0.0312	0.0000	70.1717	70.1717	9.8000e-004	0.0000	70.1961
Total	**0.0208**	**0.0135**	**0.1622**	**7.7000e-004**	**0.1157**	**4.6000e-004**	**0.1162**	**0.0308**	**4.2000e-004**	**0.0312**	**0.0000**	**70.1717**	**70.1717**	**9.8000e-004**	**0.0000**	**70.1961**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4514					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0102	0.0242	4.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	3.4469	3.4469	1.3000e-004	0.0000	3.4501
Total	**0.4530**	**0.0102**	**0.0242**	**4.0000e-005**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**3.4469**	**3.4469**	**1.3000e-004**	**0.0000**	**3.4501**

3.6 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0208	0.0135	0.1622	7.7000e-004	0.1157	4.6000e-004	0.1162	0.0308	4.2000e-004	0.0312	0.0000	70.1717	70.1717	9.8000e-004	0.0000	70.1961
Total	**0.0208**	**0.0135**	**0.1622**	**7.7000e-004**	**0.1157**	**4.6000e-004**	**0.1162**	**0.0308**	**4.2000e-004**	**0.0312**	**0.0000**	**70.1717**	**70.1717**	**9.8000e-004**	**0.0000**	**70.1961**

3.7 Underground Utilities - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Underground Utilities - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.3158	45.2174	71.3978	0.2842	27.2220	0.1598	27.3817	7.3024	0.1483	7.4508	0.0000	26,283.3440	26,283.3440	1.1341	0.0000	26,311.6952
Unmitigated	8.7335	47.0007	79.1827	0.3245	31.8386	0.1807	32.0193	8.5409	0.1678	8.7087	0.0000	29,989.3137	29,989.3137	1.2464	0.0000	30,020.4740

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
City Park	94.50	1,137.50	837.00	504,217	431,106
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Condo/Townhouse	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Elementary School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
General Office Building	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
High School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Junior High School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Regional Shopping Center	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Single Family Housing	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Supermarket	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
City Park	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,541.189 8	5,541.189 8	0.7388	0.1529	5,605.212 8
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,541.189 8	5,541.189 8	0.7388	0.1529	5,605.212 8
NaturalGas Mitigated	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	9,177.122 3	9,177.122 3	0.1759	0.1683	9,231.657 4
NaturalGas Unmitigated	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	9,177.122 3	9,177.122 3	0.1759	0.1683	9,231.657 4

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	786190	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9541	41.9541	8.0000e-004	7.7000e-004	42.2034
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.40721e+007	0.2916	2.4916	1.0602	0.0159		0.2014	0.2014		0.2014	0.2014	0.0000	2,885.4907	2,885.4907	0.0553	0.0529	2,902.6377
Elementary School	2.48846e+007	0.1342	1.2198	1.0247	7.3200e-003		0.0927	0.0927		0.0927	0.0927	0.0000	1,327.9368	1,327.9368	0.0255	0.0244	1,335.8281
General Office Building	2.34091e+006	0.0126	0.1148	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003	0.0000	124.9199	124.9199	2.3900e-003	2.2900e-003	125.6622
High School	3.14793e+007	0.1697	1.5431	1.2962	9.2600e-003		0.1173	0.1173		0.1173	0.1173	0.0000	1,679.8549	1,679.8549	0.0322	0.0308	1,689.8375
Junior High School	1.66915e+007	0.0900	0.8182	0.6873	4.9100e-003		0.0622	0.0622		0.0622	0.0622	0.0000	890.7230	890.7230	0.0171	0.0163	896.0162
Regional Shopping Center	879270	4.7400e-003	0.0431	0.0362	2.6000e-004		3.2800e-003	3.2800e-003		3.2800e-003	3.2800e-003	0.0000	46.9212	46.9212	9.0000e-004	8.6000e-004	47.2000
Single Family Housing	3.95576e+007	0.2133	1.8228	0.7756	0.0116		0.1474	0.1474		0.1474	0.1474	0.0000	2,110.9435	2,110.9435	0.0405	0.0387	2,123.4878
Supermarket	1.28136e+006	6.9100e-003	0.0628	0.0528	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3783	68.3783	1.3100e-003	1.2500e-003	68.7846
Total		**0.9273**	**8.1523**	**5.0448**	**0.0506**		**0.6407**	**0.6407**		**0.6407**	**0.6407**	**0.0000**	**9,177.1223**	**9,177.1223**	**0.1759**	**0.1683**	**9,231.6574**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	786190	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9541	41.9541	8.0000e-004	7.7000e-004	42.2034
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.40721e+007	0.2916	2.4916	1.0602	0.0159		0.2014	0.2014		0.2014	0.2014	0.0000	2,885.4907	2,885.4907	0.0553	0.0529	2,902.6377
Elementary School	2.48846e+007	0.1342	1.2198	1.0247	7.3200e-003		0.0927	0.0927		0.0927	0.0927	0.0000	1,327.9368	1,327.9368	0.0255	0.0244	1,335.8281
General Office Building	2.34091e+006	0.0126	0.1148	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003	0.0000	124.9199	124.9199	2.3900e-003	2.2900e-003	125.6622
High School	3.14793e+007	0.1697	1.5431	1.2962	9.2600e-003		0.1173	0.1173		0.1173	0.1173	0.0000	1,679.8549	1,679.8549	0.0322	0.0308	1,689.8375
Junior High School	1.66915e+007	0.0900	0.8182	0.6873	4.9100e-003		0.0622	0.0622		0.0622	0.0622	0.0000	890.7230	890.7230	0.0171	0.0163	896.0162
Regional Shopping Center	879270	4.7400e-003	0.0431	0.0362	2.6000e-004		3.2800e-003	3.2800e-003		3.2800e-003	3.2800e-003	0.0000	46.9212	46.9212	9.0000e-004	8.6000e-004	47.2000
Single Family Housing	3.95576e+007	0.2133	1.8228	0.7756	0.0116		0.1474	0.1474		0.1474	0.1474	0.0000	2,110.9435	2,110.9435	0.0405	0.0387	2,123.4878
Supermarket	1.28136e+006	6.9100e-003	0.0628	0.0528	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3783	68.3783	1.3100e-003	1.2500e-003	68.7846
Total		**0.9273**	**8.1523**	**5.0448**	**0.0506**		**0.6407**	**0.6407**		**0.6407**	**0.6407**	**0.0000**	**9,177.1223**	**9,177.1223**	**0.1759**	**0.1683**	**9,231.6574**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	375680	37.0632	4.9400e-003	1.0200e-003	37.4914
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.45712e+007	1,437.5415	0.1917	0.0397	1,454.1508
Elementary School	7.27375e+006	717.6017	0.0957	0.0198	725.8929
General Office Building	2.54969e+006	251.5431	0.0335	6.9400e-003	254.4494
High School	9.20138e+006	907.7742	0.1210	0.0250	918.2626
Junior High School	4.87892e+006	481.3364	0.0642	0.0133	486.8978
Regional Shopping Center	3.96599e+006	391.2701	0.0522	0.0108	395.7908
Single Family Housing	1.10113e+007	1,086.3312	0.1448	0.0300	1,098.8827
Supermarket	2.33871e+006	230.7286	0.0308	6.3600e-003	233.3944
Total		**5,541.1898**	**0.7388**	**0.1529**	**5,605.2128**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	375680	37.0632	4.9400e-003	1.0200e-003	37.4914
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.45712e+007	1,437.5415	0.1917	0.0397	1,454.1508
Elementary School	7.27375e+006	717.6017	0.0957	0.0198	725.8929
General Office Building	2.54969e+006	251.5431	0.0335	6.9400e-003	254.4494
High School	9.20138e+006	907.7742	0.1210	0.0250	918.2626
Junior High School	4.87892e+006	481.3364	0.0642	0.0133	486.8978
Regional Shopping Center	3.96599e+006	391.2701	0.0522	0.0108	395.7908
Single Family Housing	1.10113e+007	1,086.3312	0.1448	0.0300	1,098.8827
Supermarket	2.33871e+006	230.7286	0.0308	6.3600e-003	233.3944
Total		**5,541.1898**	**0.7388**	**0.1529**	**5,605.2128**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	44.0057	1.3852	45.0280	7.9200e-003		0.3188	0.3188		0.3188	0.3188	0.0000	1,080.8953	1,080.8953	0.0892	0.0185	1,088.6306
Unmitigated	84.1655	1.6392	92.8935	0.0952		7.0729	7.0729		7.0729	7.0729	661.1846	748.5780	1,409.7626	0.8802	0.0557	1,448.3584

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.5484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	38.9255					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	37.3529	1.1241	48.2357	0.0928		6.8245	6.8245		6.8245	6.8245	661.1846	675.3546	1,336.539 2	0.8104	0.0557	1,373.387 8
Landscaping	1.3388	0.5151	44.6578	2.3700e-003		0.2484	0.2484		0.2484	0.2484	0.0000	73.2234	73.2234	0.0699	0.0000	74.9706
Total	**84.1655**	**1.6392**	**92.8935**	**0.0952**		**7.0729**	**7.0729**		**7.0729**	**7.0729**	**661.1846**	**748.5780**	**1,409.762 6**	**0.8802**	**0.0557**	**1,448.358 4**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.5484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	36.0167					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1018	0.8701	0.3703	5.5500e-003		0.0704	0.0704		0.0704	0.0704	0.0000	1,007.6719	1,007.6719	0.0193	0.0185	1,013.6600
Landscaping	1.3388	0.5151	44.6578	2.3700e-003		0.2484	0.2484		0.2484	0.2484	0.0000	73.2234	73.2234	0.0699	0.0000	74.9706
Total	**44.0057**	**1.3852**	**45.0280**	**7.9200e-003**		**0.3188**	**0.3188**		**0.3188**	**0.3188**	**0.0000**	**1,080.8953**	**1,080.8953**	**0.0892**	**0.0185**	**1,088.6306**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	494.4202	11.9680	0.2918	880.5888
Unmitigated	584.1363	14.9555	0.3639	1,066.455 5

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.92902 / 3.73786	6.3368	0.1938	4.6800e-003	12.5776
City Park	0 / 59.5741	20.5708	2.7400e-003	5.7000e-004	20.8084
Condo/Townhouse	188.165 / 118.626	201.1051	6.1502	0.1487	399.1656
Elementary School	39.131 / 100.623	68.0485	1.2825	0.0316	109.5405
General Office Building	25.4159 / 15.5775	27.0099	0.8307	0.0201	53.7607
High School	56.6843 / 145.76	98.5735	1.8578	0.0458	158.6778
Junior High School	18.6657 / 47.9976	32.4595	0.6118	0.0151	52.2514
Regional Shopping Center	27.4809 / 16.8431	29.2044	0.8982	0.0217	58.1286
Single Family Housing	88.6746 / 55.9036	94.7728	2.8984	0.0701	188.1109
Supermarket	7.02629 / 0.217308	6.0550	0.2295	5.5100e-003	13.4340
Total		**584.1363**	**14.9555**	**0.3639**	**1,066.4555**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.74321 / 3.50985	5.2488	0.1551	3.7500e-003	10.2435
City Park	0 / 55.94	19.3159	2.5800e-003	5.3000e-004	19.5391
Condo/Townhouse	150.532 / 111.389	166.5776	4.9209	0.1191	325.0918
Elementary School	31.3048 / 94.4847	59.2683	1.0267	0.0255	92.5177
General Office Building	20.3327 / 14.6273	22.3556	0.6647	0.0161	43.7649
High School	45.3474 / 136.868	85.8547	1.4872	0.0369	134.0190
Junior High School	14.9326 / 45.0697	28.2713	0.4897	0.0121	44.1315
Regional Shopping Center	21.9847 / 15.8157	24.1720	0.7187	0.0174	47.3207
Single Family Housing	70.9397 / 52.4935	78.5014	2.3190	0.0561	153.2029
Supermarket	5.62103 / 0.204052	4.8544	0.1836	4.4100e-003	10.7577
Total		**494.4201**	**11.9681**	**0.2918**	**880.5888**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1,843.4563	108.9452	0.0000	4,567.0851
Unmitigated	1,843.4563	108.9452	0.0000	4,567.0851

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	41.86	8.4972	0.5022	0.0000	21.0515
City Park	4.3	0.8729	0.0516	0.0000	2.1625
Condo/Townhouse	1328.48	269.6694	15.9370	0.0000	668.0946
Elementary School	1754.34	356.1152	21.0458	0.0000	882.2603
General Office Building	132.99	26.9958	1.5954	0.0000	66.8809
High School	2219.26	450.4897	26.6232	0.0000	1,116.0692
Junior High School	1176.73	238.8656	14.1166	0.0000	591.7793
Regional Shopping Center	389.55	79.0751	4.6732	0.0000	195.9053
Single Family Housing	1712.48	347.6180	20.5436	0.0000	861.2088
Supermarket	321.48	65.2575	3.8566	0.0000	161.6728
Total		**1,843.4563**	**108.9451**	**0.0000**	**4,567.0851**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	41.86	8.4972	0.5022	0.0000	21.0515
City Park	4.3	0.8729	0.0516	0.0000	2.1625
Condo/Townhouse	1328.48	269.6694	15.9370	0.0000	668.0946
Elementary School	1754.34	356.1152	21.0458	0.0000	882.2603
General Office Building	132.99	26.9958	1.5954	0.0000	66.8809
High School	2219.26	450.4897	26.6232	0.0000	1,116.0692
Junior High School	1176.73	238.8656	14.1166	0.0000	591.7793
Regional Shopping Center	389.55	79.0751	4.6732	0.0000	195.9053
Single Family Housing	1712.48	347.6180	20.5436	0.0000	861.2088
Supermarket	321.48	65.2575	3.8566	0.0000	161.6728
Total		**1,843.4563**	**108.9451**	**0.0000**	**4,567.0851**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model Full Buildout - 2016.3.2

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
City Park	50.00	Acre	50.00	2,178,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	217.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO_2 Factor: 290 lb/MWh), adjusted for 2035 based on the increased effect of the RPS by 2035 (CO_2 Factor : 217.5022)

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - Maximum of 797 acres graded (total area of the site)

Trips and VMT -

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	880.00	3,917.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	12,400.00	4,152.00
tblConstructionPhase	PhaseEndDate	11/13/2079	2/6/2035
tblConstructionPhase	PhaseEndDate	8/4/2025	6/28/2019
tblConstructionPhase	PhaseEndDate	6/29/2076	12/31/2019

tblConstructionPhase	PhaseEndDate	11/2/2020	3/29/2019
tblConstructionPhase	PhaseEndDate	2/13/2073	11/30/2035
tblConstructionPhase	PhaseStartDate	6/30/2076	2/1/2020
tblConstructionPhase	PhaseStartDate	11/3/2020	3/31/2019
tblConstructionPhase	PhaseStartDate	2/14/2073	9/2/2019
tblConstructionPhase	PhaseStartDate	8/5/2025	1/2/2020
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42

tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8364	54.6007	34.2408	0.0638	19.1898	2.3917	21.5739	9.9699	2.2004	12.1703	0.0000	6,322.4438	6,322.4438	1.9513	0.0000	6,371.2269
2020	71.2172	235.3878	317.4609	1.0555	63.7694	2.7346	66.5040	17.1533	2.5867	19.7401	0.0000	107,424.3587	107,424.3587	5.1662	0.0000	107,553.5147
2021	67.5583	215.0785	288.7727	1.0322	63.7704	2.0323	65.8027	17.1537	1.9171	19.0708	0.0000	105,131.3494	105,131.3494	4.7995	0.0000	105,251.3372
2022	64.9504	201.7286	264.7922	1.0086	63.7714	1.7840	65.5554	17.1540	1.6825	18.8365	0.0000	102,794.9271	102,794.9271	4.4994	0.0000	102,907.4126
2023	61.7673	169.3784	241.2801	0.9806	63.7723	1.3885	65.1608	17.1544	1.3058	18.4601	0.0000	100,002.3342	100,002.3342	3.9324	0.0000	100,100.6429
2024	59.8898	163.5918	223.4662	0.9573	63.7733	1.2650	65.0383	17.1547	1.1887	18.3434	0.0000	97,689.7324	97,689.7324	3.7246	0.0000	97,782.8462
2025	58.2762	158.3576	207.9295	0.9345	63.7741	1.1481	64.9222	17.1550	1.0780	18.2330	0.0000	95,417.3034	95,417.3034	3.5474	0.0000	95,505.9880
2026	56.9504	154.8400	193.8047	0.9124	63.7746	1.1226	64.8972	17.1552	1.0541	18.2093	0.0000	93,220.9984	93,220.9984	3.3838	0.0000	93,305.5931
2027	55.7229	151.6454	181.8167	0.8946	63.7752	1.0922	64.8674	17.1554	1.0257	18.1811	0.0000	91,455.9388	91,455.9388	3.2458	0.0000	91,537.0841
2028	54.5132	148.9088	171.4858	0.8790	63.7756	1.0601	64.8357	17.1555	0.9958	18.1513	0.0000	89,900.3234	89,900.3234	3.1215	0.0000	89,978.3620
2029	53.2553	146.3917	161.6282	0.8651	63.7760	1.0303	64.8063	17.1557	0.9680	18.1238	0.0000	88,523.7023	88,523.7023	3.0051	0.0000	88,598.8299
2030	51.9238	139.3461	152.8846	0.8570	63.7764	0.5925	64.3689	17.1558	0.5635	17.7193	0.0000	87,664.6051	87,664.6051	2.4079	0.0000	87,724.8034
2031	50.6279	137.3410	144.4056	0.8465	63.7767	0.5677	64.3444	17.1559	0.5405	17.6965	0.0000	86,622.2510	86,622.2510	2.3076	0.0000	86,679.9418
2032	49.4770	135.5937	137.0759	0.8375	63.7770	0.5451	64.3221	17.1561	0.5195	17.6756	0.0000	85,731.5673	85,731.5673	2.2191	0.0000	85,787.0456
2033	48.4945	134.0840	130.8644	0.8298	63.7773	0.5248	64.3020	17.1561	0.5007	17.6568	0.0000	84,971.6412	84,971.6412	2.1449	0.0000	85,025.2630
2034	47.6748	132.8148	125.1615	0.8232	63.7775	0.5062	64.2837	17.1562	0.4834	17.6397	0.0000	84,322.5242	84,322.5242	2.0768	0.0000	84,374.4438
2035	46.8447	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
Maximum	**71.2172**	**235.3878**	**317.4609**	**1.0555**	**63.7777**	**2.7346**	**66.5040**	**17.1563**	**2.5867**	**19.7401**	**0.0000**	**107,424.3587**	**107,424.3587**	**5.1662**	**0.0000**	**107,553.5147**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8364	54.6007	34.2408	0.0638	8.7258	2.3917	11.1099	4.5080	2.2004	6.7084	0.0000	6,322.4438	6,322.4438	1.9513	0.0000	6,371.2269
2020	71.2172	235.3878	317.4609	1.0555	63.7694	2.7346	66.5040	17.1533	2.5867	19.7401	0.0000	107,424.3587	107,424.3587	5.1662	0.0000	107,553.5147
2021	67.5583	215.0785	288.7727	1.0322	63.7704	2.0323	65.8027	17.1537	1.9171	19.0708	0.0000	105,131.3494	105,131.3494	4.7995	0.0000	105,251.3372
2022	64.9504	201.7286	264.7922	1.0086	63.7714	1.7840	65.5554	17.1540	1.6825	18.8365	0.0000	102,794.9271	102,794.9271	4.4994	0.0000	102,907.4126
2023	61.7673	169.3784	241.2801	0.9806	63.7723	1.3885	65.1608	17.1544	1.3058	18.4601	0.0000	100,002.3342	100,002.3342	3.9324	0.0000	100,100.6429
2024	59.8898	163.5918	223.4662	0.9573	63.7733	1.2650	65.0383	17.1547	1.1887	18.3434	0.0000	97,689.7324	97,689.7324	3.7246	0.0000	97,782.8462
2025	58.2762	158.3576	207.9295	0.9345	63.7741	1.1481	64.9222	17.1550	1.0780	18.2330	0.0000	95,417.3034	95,417.3034	3.5474	0.0000	95,505.9880
2026	56.9504	154.8400	193.8047	0.9124	63.7746	1.1226	64.8972	17.1552	1.0541	18.2093	0.0000	93,220.9984	93,220.9984	3.3838	0.0000	93,305.5931
2027	55.7229	151.6454	181.8167	0.8946	63.7752	1.0922	64.8674	17.1554	1.0257	18.1811	0.0000	91,455.9388	91,455.9388	3.2458	0.0000	91,537.0841
2028	54.5132	148.9088	171.4858	0.8790	63.7756	1.0601	64.8357	17.1555	0.9958	18.1513	0.0000	89,900.3234	89,900.3234	3.1215	0.0000	89,978.3620
2029	53.2553	146.3917	161.6282	0.8651	63.7760	1.0303	64.8063	17.1557	0.9680	18.1238	0.0000	88,523.7023	88,523.7023	3.0051	0.0000	88,598.8299
2030	51.9238	139.3461	152.8846	0.8570	63.7764	0.5925	64.3689	17.1558	0.5635	17.7193	0.0000	87,664.6051	87,664.6051	2.4079	0.0000	87,724.8034
2031	50.6279	137.3410	144.4056	0.8465	63.7767	0.5677	64.3444	17.1559	0.5405	17.6965	0.0000	86,622.2510	86,622.2510	2.3076	0.0000	86,679.9417
2032	49.4770	135.5937	137.0759	0.8375	63.7770	0.5451	64.3221	17.1561	0.5195	17.6756	0.0000	85,731.5673	85,731.5673	2.2191	0.0000	85,787.0455
2033	48.4945	134.0840	130.8644	0.8298	63.7773	0.5248	64.3020	17.1561	0.5007	17.6568	0.0000	84,971.6412	84,971.6412	2.1449	0.0000	85,025.2630
2034	47.6748	132.8148	125.1615	0.8232	63.7775	0.5062	64.2837	17.1562	0.4834	17.6397	0.0000	84,322.5242	84,322.5242	2.0768	0.0000	84,374.4438
2035	46.8447	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
Maximum	**71.2172**	**235.3878**	**317.4609**	**1.0555**	**63.7777**	**2.7346**	**66.5040**	**17.1563**	**2.5867**	**19.7401**	**0.0000**	**107,424.3587**	**107,424.3587**	**5.1662**	**0.0000**	**107,553.5147**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	1.01	0.00	0.99	1.92	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,170.928 1	31.5376	1,533.742 8	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.37 29	18,803.06 11	36,579.43 40	22.4031	1.4967	37,585.53 89
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	61.1457	291.1898	488.9853	2.0990	202.7332	1.1187	203.8518	54.2354	1.0387	55.2741		213,798.5 492	213,798.5 492	8.4005		214,008.5 610
Total	**1,237.154 9**	**367.3978**	**2,050.370 9**	**4.6591**	**202.7332**	**173.0683**	**375.8015**	**54.2354**	**172.9883**	**227.2237**	**17,776.37 29**	**288,031.9 980**	**305,808.3 709**	**31.8660**	**2.5130**	**307,353.8 827**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	246.4272	25.3426	366.2928	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.62 58	27,737.62 58	1.1356	0.4967	27,914.02 74
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	58.5663	280.9723	437.0925	1.8398	173.3369	0.9896	174.3264	46.3713	0.9186	47.2899		187,486.8 618	187,486.8 618	7.6229		187,677.4 348
Total	**310.0746**	**350.9853**	**831.0281**	**2.2713**	**173.3369**	**8.2033**	**181.5401**	**46.3713**	**8.1323**	**54.5036**	**0.0000**	**270,654.8 753**	**270,654.8 753**	**9.8209**	**1.5129**	**271,351.2 450**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	74.94	4.47	59.47	51.25	14.50	95.26	51.69	14.50	95.30	76.01	100.00	6.03	11.50	69.18	39.80	11.71

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	3/29/2019	5	64	
2	Grading	Grading	3/31/2019	6/28/2019	5	65	
3	Building Construction	Building Construction	1/2/2020	11/30/2035	5	4152	
4	Paving	Paving	9/2/2019	12/31/2019	5	87	
5	Architectural Coating	Architectural Coating	2/1/2020	2/6/2035	5	3917	
6	Underground Utilities	Trenching	7/1/2019	8/30/2019	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.452 9	3,766.452 9	1.1917		3,796.244 5
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.452 9**	**3,766.452 9**	**1.1917**		**3,796.244 5**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0877	0.0725	0.7776	1.6500e-003	0.1479	1.3300e-003	0.1492	0.0392	1.2300e-003	0.0405		164.1819	164.1819	7.8200e-003		164.3774
Total	**0.0877**	**0.0725**	**0.7776**	**1.6500e-003**	**0.1479**	**1.3300e-003**	**0.1492**	**0.0392**	**1.2300e-003**	**0.0405**		**164.1819**	**164.1819**	**7.8200e-003**		**164.3774**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.452 9	3,766.452 9	1.1917		3,796.244 5
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.1298**	**2.3904**	**10.5202**	**4.4688**	**2.1991**	**6.6679**	**0.0000**	**3,766.452 9**	**3,766.452 9**	**1.1917**		**3,796.244 5**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0877	0.0725	0.7776	1.6500e-003	0.1479	1.3300e-003	0.1492	0.0392	1.2300e-003	0.0405		164.1819	164.1819	7.8200e-003		164.3774
Total	**0.0877**	**0.0725**	**0.7776**	**1.6500e-003**	**0.1479**	**1.3300e-003**	**0.1492**	**0.0392**	**1.2300e-003**	**0.0405**		**164.1819**	**164.1819**	**7.8200e-003**		**164.3774**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.0255	0.0000	19.0255	4.7143	0.0000	4.7143			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**19.0255**	**2.3827**	**21.4081**	**4.7143**	**2.1920**	**6.9063**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0975	0.0805	0.8640	1.8400e-003	0.1643	1.4800e-003	0.1658	0.0436	1.3600e-003	0.0449		182.4243	182.4243	8.6900e-003		182.6415
Total	**0.0975**	**0.0805**	**0.8640**	**1.8400e-003**	**0.1643**	**1.4800e-003**	**0.1658**	**0.0436**	**1.3600e-003**	**0.0449**		**182.4243**	**182.4243**	**8.6900e-003**		**182.6415**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.5615	0.0000	8.5615	2.1214	0.0000	2.1214			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.5615**	**2.3827**	**10.9441**	**2.1214**	**2.1920**	**4.3135**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0975	0.0805	0.8640	1.8400e-003	0.1643	1.4800e-003	0.1658	0.0436	1.3600e-003	0.0449		182.4243	182.4243	8.6900e-003		182.6415
Total	**0.0975**	**0.0805**	**0.8640**	**1.8400e-003**	**0.1643**	**1.4800e-003**	**0.1658**	**0.0436**	**1.3600e-003**	**0.0449**		**182.4243**	**182.4243**	**8.6900e-003**		**182.6415**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8242	191.4942	49.9880	0.4497	10.5788	1.0468	11.6257	3.0447	1.0014	4.0461		47,307.4577	47,307.4577	2.0759		47,359.3540
Worker	23.8302	19.1871	207.3339	0.4799	44.3269	0.3832	44.7100	11.7576	0.3534	12.1110		47,736.7994	47,736.7994	2.0382		47,787.7539
Total	**30.6545**	**210.6812**	**257.3219**	**0.9296**	**54.9057**	**1.4300**	**56.3357**	**14.8023**	**1.3548**	**16.1571**		**95,044.2571**	**95,044.2571**	**4.1140**		**95,147.1078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8242	191.4942	49.9880	0.4497	10.5788	1.0468	11.6257	3.0447	1.0014	4.0461		47,307.4577	47,307.4577	2.0759		47,359.3540
Worker	23.8302	19.1871	207.3339	0.4799	44.3269	0.3832	44.7100	11.7576	0.3534	12.1110		47,736.7994	47,736.7994	2.0382		47,787.7539
Total	**30.6545**	**210.6812**	**257.3219**	**0.9296**	**54.9057**	**1.4300**	**56.3357**	**14.8023**	**1.3548**	**16.1571**		**95,044.2571**	**95,044.2571**	**4.1140**		**95,147.1078**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

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

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6278	175.5670	43.7565	0.4460	10.5798	0.5354	11.1152	3.0451	0.5121	3.5571		46,933.3719	46,933.3719	1.9827		46,982.9392
Worker	21.9799	17.1277	188.8587	0.4636	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		46,137.3964	46,137.3964	1.8180		46,182.8455
Total	**27.6077**	**192.6947**	**232.6152**	**0.9096**	**54.9067**	**0.9056**	**55.8123**	**14.8026**	**0.8534**	**15.6561**		**93,070.7683**	**93,070.7683**	**3.8007**		**93,165.7847**

Mitigated Construction On-Site

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

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6278	175.5670	43.7565	0.4460	10.5798	0.5354	11.1152	3.0451	0.5121	3.5571		46,933.37 19	46,933.37 19	1.9827		46,982.93 92
Worker	21.9799	17.1277	188.8587	0.4636	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		46,137.39 64	46,137.39 64	1.8180		46,182.84 55
Total	**27.6077**	**192.6947**	**232.6152**	**0.9096**	**54.9067**	**0.9056**	**55.8123**	**14.8026**	**0.8534**	**15.6561**		**93,070.76 83**	**93,070.76 83**	**3.8007**		**93,165.78 47**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

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

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.1556	166.2855	39.5780	0.4421	10.5808	0.4652	11.0459	3.0454	0.4449	3.4903		46,544.8800	46,544.8800	1.9173		46,592.8112
Worker	20.3744	15.3496	172.5363	0.4471	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		44,513.2628	44,513.2628	1.6266		44,553.9286
Total	**25.5300**	**181.6351**	**212.1143**	**0.8893**	**54.9077**	**0.8220**	**55.7296**	**14.8030**	**0.7738**	**15.5768**		**91,058.1428**	**91,058.1428**	**3.5439**		**91,146.7399**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.1556	166.2855	39.5780	0.4421	10.5808	0.4652	11.0459	3.0454	0.4449	3.4903		46,544.8800	46,544.8800	1.9173		46,592.8112
Worker	20.3744	15.3496	172.5363	0.4471	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		44,513.2628	44,513.2628	1.6266		44,553.9286
Total	**25.5300**	**181.6351**	**212.1143**	**0.8893**	**54.9077**	**0.8220**	**55.7296**	**14.8030**	**0.7738**	**15.5768**		**91,058.1428**	**91,058.1428**	**3.5439**		**91,146.7399**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8860	137.1784	34.3866	0.4342	10.5817	0.2034	10.7851	3.0457	0.1945	3.2402		45,731.0409	45,731.0409	1.5646		45,770.1565
Worker	18.9016	13.7605	157.3702	0.4304	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		42,863.5200	42,863.5200	1.4526		42,899.8345
Total	**22.7876**	**150.9389**	**191.7568**	**0.8647**	**54.9086**	**0.5489**	**55.4575**	**14.8033**	**0.5129**	**15.3161**		**88,594.5609**	**88,594.5609**	**3.0172**		**88,669.9910**

Mitigated Construction On-Site

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8860	137.1784	34.3866	0.4342	10.5817	0.2034	10.7851	3.0457	0.1945	3.2402		45,731.0409	45,731.0409	1.5646		45,770.1565
Worker	18.9016	13.7605	157.3702	0.4304	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		42,863.5200	42,863.5200	1.4526		42,899.8345
Total	**22.7876**	**150.9389**	**191.7568**	**0.8647**	**54.9086**	**0.5489**	**55.4575**	**14.8033**	**0.5129**	**15.3161**		**88,594.5609**	**88,594.5609**	**3.0172**		**88,669.9910**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6756	134.0778	32.0292	0.4310	10.5827	0.1890	10.7717	3.0461	0.1807	3.2268		45,397.76 56	45,397.76 56	1.5417		45,436.30 79
Worker	17.6058	12.3766	144.5546	0.4137	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		41,213.62 28	41,213.62 28	1.3023		41,246.17 93
Total	**21.2814**	**146.4544**	**176.5837**	**0.8447**	**54.9095**	**0.5239**	**55.4334**	**14.8036**	**0.4892**	**15.2928**		**86,611.38 84**	**86,611.38 84**	**2.8440**		**86,682.48 72**

Mitigated Construction On-Site

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6756	134.0778	32.0292	0.4310	10.5827	0.1890	10.7717	3.0461	0.1807	3.2268		45,397.7656	45,397.7656	1.5417		45,436.3079
Worker	17.6058	12.3766	144.5546	0.4137	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		41,213.6228	41,213.6228	1.3023		41,246.1793
Total	**21.2814**	**146.4544**	**176.5837**	**0.8447**	**54.9095**	**0.5239**	**55.4334**	**14.8036**	**0.4892**	**15.2928**		**86,611.3884**	**86,611.3884**	**2.8440**		**86,682.4872**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

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

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4955	131.3009	30.1373	0.4279	10.5835	0.1758	10.7593	3.0464	0.1681	3.2145		45,084.4801	45,084.4801	1.5189		45,122.4535
Worker	16.5063	11.2016	133.2528	0.3972	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		39,580.3066	39,580.3066	1.1768		39,609.7272
Total	**20.0017**	**142.5025**	**163.3901**	**0.8251**	**54.9103**	**0.5035**	**55.4138**	**14.8039**	**0.4699**	**15.2738**		**84,664.7867**	**84,664.7867**	**2.6958**		**84,732.1807**

Mitigated Construction On-Site

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

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4955	131.3009	30.1373	0.4279	10.5835	0.1758	10.7593	3.0464	0.1681	3.2145		45,084.4801	45,084.4801	1.5189		45,122.4535
Worker	16.5063	11.2016	133.2528	0.3972	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		39,580.3066	39,580.3066	1.1768		39,609.7272
Total	**20.0017**	**142.5025**	**163.3901**	**0.8251**	**54.9103**	**0.5035**	**55.4138**	**14.8039**	**0.4699**	**15.2738**		**84,664.7867**	**84,664.7867**	**2.6958**		**84,732.1807**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

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

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3605	129.0254	28.7955	0.4256	10.5841	0.1664	10.7505	3.0466	0.1591	3.2057		44,850.8255	44,850.8255	1.4996		44,888.3156
Worker	15.5138	10.1665	122.5999	0.3807	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		37,944.7140	37,944.7140	1.0566		37,971.1291
Total	**18.8743**	**139.1919**	**151.3955**	**0.8063**	**54.9109**	**0.4807**	**55.3916**	**14.8041**	**0.4485**	**15.2526**		**82,795.5396**	**82,795.5396**	**2.5562**		**82,859.4448**

Mitigated Construction On-Site

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

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3605	129.0254	28.7955	0.4256	10.5841	0.1664	10.7505	3.0466	0.1591	3.2057		44,850.8255	44,850.8255	1.4996		44,888.3156
Worker	15.5138	10.1665	122.5999	0.3807	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		37,944.7140	37,944.7140	1.0566		37,971.1291
Total	**18.8743**	**139.1919**	**151.3955**	**0.8063**	**54.9109**	**0.4807**	**55.3916**	**14.8041**	**0.4485**	**15.2526**		**82,795.5396**	**82,795.5396**	**2.5562**		**82,859.4448**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

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

3.4 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2438	126.9442	27.5840	0.4236	10.5846	0.1581	10.7426	3.0468	0.1511	3.1979		44,647.87 29	44,647.87 29	1.4811		44,684.89 91
Worker	14.5881	9.2386	113.6193	0.3676	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		36,642.91 80	36,642.91 80	0.9571		36,666.84 50
Total	**17.8319**	**136.1828**	**141.2033**	**0.7912**	**54.9114**	**0.4540**	**55.3654**	**14.8043**	**0.4234**	**15.2278**		**81,290.79 09**	**81,290.79 09**	**2.4381**		**81,351.74 42**

Mitigated Construction On-Site

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

3.4 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2438	126.9442	27.5840	0.4236	10.5846	0.1581	10.7426	3.0468	0.1511	3.1979		44,647.8729	44,647.8729	1.4811		44,684.8991
Worker	14.5881	9.2386	113.6193	0.3676	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		36,642.9180	36,642.9180	0.9571		36,666.8450
Total	**17.8319**	**136.1828**	**141.2033**	**0.7912**	**54.9114**	**0.4540**	**55.3654**	**14.8043**	**0.4234**	**15.2278**		**81,290.7909**	**81,290.7909**	**2.4381**		**81,351.7442**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

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

3.4 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1476	125.1950	26.7242	0.4219	10.5850	0.1506	10.7355	3.0469	0.1439	3.1908		44,477.97 56	44,477.97 56	1.4602		44,514.47 94
Worker	13.6602	8.4158	105.7264	0.3559	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		35,488.117 3	35,488.117 3	0.8709		35,509.89 07
Total	**16.8078**	**133.6108**	**132.4506**	**0.7779**	**54.9119**	**0.4260**	**55.3378**	**14.8045**	**0.3973**	**15.2018**		**79,966.09 29**	**79,966.09 29**	**2.3311**		**80,024.37 01**

Mitigated Construction On-Site

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

3.4 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1476	125.1950	26.7242	0.4219	10.5850	0.1506	10.7355	3.0469	0.1439	3.1908		44,477.9756	44,477.9756	1.4602		44,514.4794
Worker	13.6602	8.4158	105.7264	0.3559	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		35,488.1173	35,488.1173	0.8709		35,509.8907
Total	**16.8078**	**133.6108**	**132.4506**	**0.7779**	**54.9119**	**0.4260**	**55.3378**	**14.8045**	**0.3973**	**15.2018**		**79,966.0929**	**79,966.0929**	**2.3311**		**80,024.3701**

3.4 Building Construction - 2029

Unmitigated Construction On-Site

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

3.4 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0678	123.6012	26.0000	0.4205	10.5854	0.1437	10.7291	3.0471	0.1374	3.1845		44,331.3228	44,331.3228	1.4438		44,367.4171
Worker	12.6784	7.6464	98.1150	0.3456	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		34,463.1121	34,463.1121	0.7876		34,482.8007
Total	**15.7462**	**131.2476**	**124.1150**	**0.7661**	**54.9123**	**0.4000**	**55.3122**	**14.8046**	**0.3731**	**15.1778**		**78,794.4349**	**78,794.4349**	**2.2313**		**78,850.2179**

Mitigated Construction On-Site

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

3.4 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0678	123.6012	26.0000	0.4205	10.5854	0.1437	10.7291	3.0471	0.1374	3.1845		44,331.32 28	44,331.32 28	1.4438		44,367.41 71
Worker	12.6784	7.6464	98.1150	0.3456	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		34,463.112 1	34,463.112 1	0.7876		34,482.80 07
Total	**15.7462**	**131.2476**	**124.1150**	**0.7661**	**54.9123**	**0.4000**	**55.3122**	**14.8046**	**0.3731**	**15.1778**		**78,794.43 49**	**78,794.43 49**	**2.2313**		**78,850.21 79**

3.4 Building Construction - 2030

Unmitigated Construction On-Site

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

3.4 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0032	122.2418	25.4581	0.4194	10.5858	0.1380	10.7238	3.0472	0.1319	3.1791		44,219.8691	44,219.8691	1.4261		44,255.5222
Worker	11.7047	6.9280	91.2293	0.3364	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		33,555.8208	33,555.8208	0.7118		33,573.6166
Total	**14.7079**	**129.1699**	**116.6874**	**0.7558**	**54.9126**	**0.3764**	**55.2890**	**14.8047**	**0.3512**	**15.1560**		**77,775.6899**	**77,775.6899**	**2.1380**		**77,829.1388**

Mitigated Construction On-Site

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

3.4 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0032	122.2418	25.4581	0.4194	10.5858	0.1380	10.7238	3.0472	0.1319	3.1791		44,219.86 91	44,219.86 91	1.4261		44,255.52 22
Worker	11.7047	6.9280	91.2293	0.3364	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		33,555.82 08	33,555.82 08	0.7118		33,573.61 66
Total	**14.7079**	**129.1699**	**116.6874**	**0.7558**	**54.9126**	**0.3764**	**55.2890**	**14.8047**	**0.3512**	**15.1560**		**77,775.68 99**	**77,775.68 99**	**2.1380**		**77,829.13 88**

3.4 Building Construction - 2031

Unmitigated Construction On-Site

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

3.4 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9496	121.0727	25.0028	0.4186	10.5861	0.1331	10.7192	3.0473	0.1273	3.1746		44,139.06 37	44,139.06 37	1.4135		44,174.40 21
Worker	10.6693	6.2314	84.5427	0.3283	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		32,754.50 54	32,754.50 54	0.6387		32,770.47 38
Total	**13.6190**	**127.3041**	**109.5455**	**0.7469**	**54.9130**	**0.3550**	**55.2679**	**14.8049**	**0.3313**	**15.1362**		**76,893.56 91**	**76,893.56 91**	**2.0523**		**76,944.87 59**

Mitigated Construction On-Site

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

3.4 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9496	121.0727	25.0028	0.4186	10.5861	0.1331	10.7192	3.0473	0.1273	3.1746		44,139.06 37	44,139.06 37	1.4135		44,174.40 21
Worker	10.6693	6.2314	84.5427	0.3283	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		32,754.50 54	32,754.50 54	0.6387		32,770.47 38
Total	**13.6190**	**127.3041**	**109.5455**	**0.7469**	**54.9130**	**0.3550**	**55.2679**	**14.8049**	**0.3313**	**15.1362**		**76,893.56 91**	**76,893.56 91**	**2.0523**		**76,944.87 59**

3.4 Building Construction - 2032

Unmitigated Construction On-Site

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

3.4 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9053	120.0470	24.6614	0.4182	10.5864	0.1287	10.7151	3.0474	0.1230	3.1705		44,092.1424	44,092.1424	1.4013		44,127.1754
Worker	9.7471	5.6300	78.7189	0.3212	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		32,051.3484	32,051.3484	0.5752		32,065.7275
Total	**12.6524**	**125.6770**	**103.3803**	**0.7393**	**54.9133**	**0.3353**	**55.2486**	**14.8050**	**0.3131**	**15.1181**		**76,143.4908**	**76,143.4908**	**1.9765**		**76,192.9029**

Mitigated Construction On-Site

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

3.4 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9053	120.0470	24.6614	0.4182	10.5864	0.1287	10.7151	3.0474	0.1230	3.1705		44,092.1424	44,092.1424	1.4013		44,127.1754
Worker	9.7471	5.6300	78.7189	0.3212	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		32,051.3484	32,051.3484	0.5752		32,065.7275
Total	**12.6524**	**125.6770**	**103.3803**	**0.7393**	**54.9133**	**0.3353**	**55.2486**	**14.8050**	**0.3131**	**15.1181**		**76,143.4908**	**76,143.4908**	**1.9765**		**76,192.9029**

3.4 Building Construction - 2033

Unmitigated Construction On-Site

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

3.4 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8710	119.1470	24.3941	0.4179	10.5867	0.1248	10.7114	3.0475	0.1192	3.1668		44,068.4894	44,068.4894	1.3921		44,103.2928
Worker	8.9570	5.1219	73.7653	0.3150	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		31,437.7685	31,437.7685	0.5209		31,450.7919
Total	**11.8280**	**124.2689**	**98.1593**	**0.7329**	**54.9135**	**0.3177**	**55.2312**	**14.8051**	**0.2967**	**15.1018**		**75,506.2579**	**75,506.2579**	**1.9131**		**75,554.0846**

Mitigated Construction On-Site

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

3.4 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8710	119.1470	24.3941	0.4179	10.5867	0.1248	10.7114	3.0475	0.1192	3.1668		44,068.4894	44,068.4894	1.3921		44,103.2928
Worker	8.9570	5.1219	73.7653	0.3150	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		31,437.7685	31,437.7685	0.5209		31,450.7919
Total	**11.8280**	**124.2689**	**98.1593**	**0.7329**	**54.9135**	**0.3177**	**55.2312**	**14.8051**	**0.2967**	**15.1018**		**75,506.2579**	**75,506.2579**	**1.9131**		**75,554.0846**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

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

3.4 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8394	118.3729	24.1375	0.4178	10.5869	0.1212	10.7081	3.0476	0.1158	3.1634		44,061.8147	44,061.8147	1.3835		44,096.4020
Worker	8.3002	4.7093	69.2265	0.3095	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		30,902.3834	30,902.3834	0.4714		30,914.1683
Total	**11.1396**	**123.0822**	**93.3640**	**0.7274**	**54.9138**	**0.3016**	**55.2154**	**14.8052**	**0.2818**	**15.0870**		**74,964.1981**	**74,964.1981**	**1.8549**		**75,010.5703**

Mitigated Construction On-Site

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

3.4 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8394	118.3729	24.1375	0.4178	10.5869	0.1212	10.7081	3.0476	0.1158	3.1634		44,061.8147	44,061.8147	1.3835		44,096.4020
Worker	8.3002	4.7093	69.2265	0.3095	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		30,902.3834	30,902.3834	0.4714		30,914.1683
Total	**11.1396**	**123.0822**	**93.3640**	**0.7274**	**54.9138**	**0.3016**	**55.2154**	**14.8052**	**0.2818**	**15.0870**		**74,964.1981**	**74,964.1981**	**1.8549**		**75,010.5703**

3.4 Building Construction - 2035

Unmitigated Construction On-Site

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

3.4 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.27 51	44,065.27 51	1.3776		44,099.71 60
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.57 12	30,440.57 12	0.4282		30,451.27 55
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.84 63**	**74,505.84 63**	**1.8058**		**74,550.99 14**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

3.4 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.27 51	44,065.27 51	1.3776		44,099.71 60
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.57 12	30,440.57 12	0.4282		30,451.27 55
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.84 63**	**74,505.84 63**	**1.8058**		**74,550.99 14**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.002 5	2,257.002 5	0.7141		2,274.854 8
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4544**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.002 5**	**2,257.002 5**	**0.7141**		**2,274.854 8**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0731	0.0604	0.6480	1.3800e-003	0.1232	1.1100e-003	0.1243	0.0327	1.0200e-003	0.0337		136.8182	136.8182	6.5200e-003		136.9811
Total	**0.0731**	**0.0604**	**0.6480**	**1.3800e-003**	**0.1232**	**1.1100e-003**	**0.1243**	**0.0327**	**1.0200e-003**	**0.0337**		**136.8182**	**136.8182**	**6.5200e-003**		**136.9811**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4544**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0731	0.0604	0.6480	1.3800e-003	0.1232	1.1100e-003	0.1243	0.0327	1.0200e-003	0.0337		136.8182	136.8182	6.5200e-003		136.9811
Total	**0.0731**	**0.0604**	**0.6480**	**1.3800e-003**	**0.1232**	**1.1100e-003**	**0.1243**	**0.0327**	**1.0200e-003**	**0.0337**		**136.8182**	**136.8182**	**6.5200e-003**		**136.9811**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**33.6778**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7652	3.8367	41.4591	0.0960	8.8637	0.0766	8.9404	2.3511	0.0707	2.4218		9,545.590 5	9,545.590 5	0.4076		9,555.779 6
Total	**4.7652**	**3.8367**	**41.4591**	**0.0960**	**8.8637**	**0.0766**	**8.9404**	**2.3511**	**0.0707**	**2.4218**		**9,545.590 5**	**9,545.590 5**	**0.4076**		**9,555.779 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**33.6778**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7652	3.8367	41.4591	0.0960	8.8637	0.0766	8.9404	2.3511	0.0707	2.4218		9,545.590 5	9,545.590 5	0.4076		9,555.779 6
Total	**4.7652**	**3.8367**	**41.4591**	**0.0960**	**8.8637**	**0.0766**	**8.9404**	**2.3511**	**0.0707**	**2.4218**		**9,545.590 5**	**9,545.590 5**	**0.4076**		**9,555.779 6**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**33.6545**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.3952	3.4249	37.7647	0.0927	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		9,225.769 2	9,225.769 2	0.3635		9,234.857 4
Total	**4.3952**	**3.4249**	**37.7647**	**0.0927**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**9,225.769 2**	**9,225.769 2**	**0.3635**		**9,234.857 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**33.6545**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.3952	3.4249	37.7647	0.0927	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		9,225.769 2	9,225.769 2	0.3635		9,234.857 4
Total	**4.3952**	**3.4249**	**37.7647**	**0.0927**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**9,225.769 2**	**9,225.769 2**	**0.3635**		**9,234.857 4**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**33.6401**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.0741	3.0694	34.5009	0.0894	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,901.0027	8,901.0027	0.3253		8,909.1344
Total	**4.0741**	**3.0694**	**34.5009**	**0.0894**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,901.0027**	**8,901.0027**	**0.3253**		**8,909.1344**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**33.6401**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.0741	3.0694	34.5009	0.0894	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,901.0027	8,901.0027	0.3253		8,909.1344
Total	**4.0741**	**3.0694**	**34.5009**	**0.0894**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,901.0027**	**8,901.0027**	**0.3253**		**8,909.1344**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**33.6272**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.7796	2.7516	31.4682	0.0861	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,571.1153	8,571.1153	0.2905		8,578.3768
Total	**3.7796**	**2.7516**	**31.4682**	**0.0861**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,571.1153**	**8,571.1153**	**0.2905**		**8,578.3768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**33.6272**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.7796	2.7516	31.4682	0.0861	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,571.1153	8,571.1153	0.2905		8,578.3768
Total	**3.7796**	**2.7516**	**31.4682**	**0.0861**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,571.1153**	**8,571.1153**	**0.2905**		**8,578.3768**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**33.6163**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5205	2.4749	28.9056	0.0827	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		8,241.197 0	8,241.197 0	0.2604		8,247.707 1
Total	**3.5205**	**2.4749**	**28.9056**	**0.0827**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**8,241.197 0**	**8,241.197 0**	**0.2604**		**8,247.707 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**33.6163**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5205	2.4749	28.9056	0.0827	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		8,241.197 0	8,241.197 0	0.2604		8,247.707 1
Total	**3.5205**	**2.4749**	**28.9056**	**0.0827**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**8,241.197 0**	**8,241.197 0**	**0.2604**		**8,247.707 1**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3007	2.2399	26.6456	0.0794	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,914.594 3	7,914.594 3	0.2353		7,920.477 3
Total	**3.3007**	**2.2399**	**26.6456**	**0.0794**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,914.594 3**	**7,914.594 3**	**0.2353**		**7,920.477 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3007	2.2399	26.6456	0.0794	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,914.594 3	7,914.594 3	0.2353		7,920.477 3
Total	**3.3007**	**2.2399**	**26.6456**	**0.0794**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,914.594 3**	**7,914.594 3**	**0.2353**		**7,920.477 3**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1022	2.0329	24.5154	0.0761	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,587.536 4	7,587.536 4	0.2113		7,592.818 5
Total	**3.1022**	**2.0329**	**24.5154**	**0.0761**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,587.536 4**	**7,587.536 4**	**0.2113**		**7,592.818 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1022	2.0329	24.5154	0.0761	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,587.536 4	7,587.536 4	0.2113		7,592.818 5
Total	**3.1022**	**2.0329**	**24.5154**	**0.0761**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,587.536 4**	**7,587.536 4**	**0.2113**		**7,592.818 5**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9171	1.8474	22.7197	0.0735	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		7,327.225 5	7,327.225 5	0.1914		7,332.010 0
Total	**2.9171**	**1.8474**	**22.7197**	**0.0735**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**7,327.225 5**	**7,327.225 5**	**0.1914**		**7,332.010 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9171	1.8474	22.7197	0.0735	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		7,327.2255	7,327.2255	0.1914		7,332.0100
Total	**2.9171**	**1.8474**	**22.7197**	**0.0735**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**7,327.2255**	**7,327.2255**	**0.1914**		**7,332.0100**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7315	1.6828	21.1414	0.0712	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		7,096.308 1	7,096.308 1	0.1742		7,100.662 0
Total	**2.7315**	**1.6828**	**21.1414**	**0.0712**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**7,096.308 1**	**7,096.308 1**	**0.1742**		**7,100.662 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7315	1.6828	21.1414	0.0712	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		7,096.308 1	7,096.308 1	0.1742		7,100.662 0
Total	**2.7315**	**1.6828**	**21.1414**	**0.0712**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**7,096.308 1**	**7,096.308 1**	**0.1742**		**7,100.662 0**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5352	1.5290	19.6194	0.0691	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,891.345 1	6,891.345 1	0.1575		6,895.282 1
Total	**2.5352**	**1.5290**	**19.6194**	**0.0691**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,891.345 1**	**6,891.345 1**	**0.1575**		**6,895.282 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5352	1.5290	19.6194	0.0691	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,891.345 1	6,891.345 1	0.1575		6,895.282 1
Total	**2.5352**	**1.5290**	**19.6194**	**0.0691**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,891.345 1**	**6,891.345 1**	**0.1575**		**6,895.282 1**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3405	1.3854	18.2425	0.0673	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,709.920 4	6,709.920 4	0.1423		6,713.478 9
Total	**2.3405**	**1.3854**	**18.2425**	**0.0673**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,709.920 4**	**6,709.920 4**	**0.1423**		**6,713.478 9**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3405	1.3854	18.2425	0.0673	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,709.9204	6,709.9204	0.1423		6,713.4789
Total	**2.3405**	**1.3854**	**18.2425**	**0.0673**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,709.9204**	**6,709.9204**	**0.1423**		**6,713.4789**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1335	1.2461	16.9054	0.0656	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,549.687 1	6,549.687 1	0.1277		6,552.880 1
Total	**2.1335**	**1.2461**	**16.9054**	**0.0656**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,549.687 1**	**6,549.687 1**	**0.1277**		**6,552.880 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1335	1.2461	16.9054	0.0656	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,549.687 1	6,549.687 1	0.1277		6,552.880 1
Total	**2.1335**	**1.2461**	**16.9054**	**0.0656**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,549.687 1**	**6,549.687 1**	**0.1277**		**6,552.880 1**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9491	1.1258	15.7409	0.0642	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		6,409.081 7	6,409.081 7	0.1150		6,411.9570
Total	**1.9491**	**1.1258**	**15.7409**	**0.0642**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**6,409.081 7**	**6,409.081 7**	**0.1150**		**6,411.957 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9491	1.1258	15.7409	0.0642	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		6,409.0817	6,409.0817	0.1150		6,411.9570
Total	**1.9491**	**1.1258**	**15.7409**	**0.0642**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**6,409.0817**	**6,409.0817**	**0.1150**		**6,411.9570**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7911	1.0242	14.7503	0.0630	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		6,286.388 5	6,286.388 5	0.1042		6,288.992 7
Total	**1.7911**	**1.0242**	**14.7503**	**0.0630**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**6,286.388 5**	**6,286.388 5**	**0.1042**		**6,288.992 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7911	1.0242	14.7503	0.0630	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		6,286.388 5	6,286.388 5	0.1042		6,288.992 7
Total	**1.7911**	**1.0242**	**14.7503**	**0.0630**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**6,286.388 5**	**6,286.388 5**	**0.1042**		**6,288.992 7**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6597	0.9417	13.8427	0.0619	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		6,179.331 3	6,179.331 3	0.0943		6,181.687 8
Total	**1.6597**	**0.9417**	**13.8427**	**0.0619**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**6,179.331 3**	**6,179.331 3**	**0.0943**		**6,181.687 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6597	0.9417	13.8427	0.0619	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		6,179.3313	6,179.3313	0.0943		6,181.6878
Total	**1.6597**	**0.9417**	**13.8427**	**0.0619**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**6,179.3313**	**6,179.3313**	**0.0943**		**6,181.6878**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**33.5535**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.6 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**33.5535**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.6 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

3.7 Underground Utilities - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.7 Underground Utilities - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	58.5663	280.9723	437.0925	1.8398	173.3369	0.9896	174.3264	46.3713	0.9186	47.2899		187,486.8618	187,486.8618	7.6229		187,677.4348
Unmitigated	61.1457	291.1898	488.9853	2.0990	202.7332	1.1187	203.8518	54.2354	1.0387	55.2741		213,798.5492	213,798.5492	8.4005		214,008.5610

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
City Park	94.50	1,137.50	837.00	504,217	431,106
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Condo/Townhouse	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Elementary School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
General Office Building	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
High School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Junior High School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Regional Shopping Center	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Single Family Housing	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Supermarket	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
City Park	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828
NaturalGas Unmitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2153.95	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6413.45	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86244.6	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45730.2	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2408.96	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3510.58	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.15395	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148.143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68.177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6.41345	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86.2446	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45.7302	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2.40896	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108.377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3.51058	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	246.4272	25.3426	366.2928	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.6258	27,737.6258	1.1356	0.4967	27,914.0274
Unmitigated	1,170.9281	31.5376	1,533.7428	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.3729	18,803.0611	36,579.4340	22.4031	1.4967	37,585.5389

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	213.2902					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	911.0458	27.4171	1,176.4807	2.2640		166.4518	166.4518		166.4518	166.4518	17,776.3729	18,157.3412	35,933.7140	21.7868	1.4967	36,924.4110
Landscaping	10.7106	4.1206	357.2622	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1279
Total	**1,170.9281**	**31.5376**	**1,533.7428**	**2.2829**		**168.4390**	**168.4390**		**168.4390**	**168.4390**	**17,776.3729**	**18,803.0611**	**36,579.4340**	**22.4031**	**1.4967**	**37,585.5389**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	197.3517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.4834	21.2220	9.0306	0.1355		1.7158	1.7158		1.7158	1.7158	0.0000	27,091.9059	27,091.9059	0.5193	0.4967	27,252.8995
Landscaping	10.7106	4.1206	357.2622	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1279
Total	**246.4272**	**25.3426**	**366.2928**	**0.1544**		**3.7031**	**3.7031**		**3.7031**	**3.7031**	**0.0000**	**27,737.6258**	**27,737.6258**	**1.1356**	**0.4967**	**27,914.0274**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model Full Buildout - 2016.3.2

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
City Park	50.00	Acre	50.00	2,178,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	217.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO2 Factor: 290 lb/MWh), adjusted for 2035 based on the increased effect of the RPS by 2035 (CO2 Factor : 217.5022)

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - Maximum of 797 acres graded (total area of the site)

Trips and VMT -

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	880.00	3,917.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	12,400.00	4,152.00
tblConstructionPhase	PhaseEndDate	11/13/2079	2/6/2035
tblConstructionPhase	PhaseEndDate	8/4/2025	6/28/2019
tblConstructionPhase	PhaseEndDate	6/29/2076	12/31/2019

tblConstructionPhase	PhaseEndDate	11/2/2020	3/29/2019
tblConstructionPhase	PhaseEndDate	2/13/2073	11/30/2035
tblConstructionPhase	PhaseStartDate	6/30/2076	2/1/2020
tblConstructionPhase	PhaseStartDate	11/3/2020	3/31/2019
tblConstructionPhase	PhaseStartDate	2/14/2073	9/2/2019
tblConstructionPhase	PhaseStartDate	8/5/2025	1/2/2020
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42

tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8452	54.6216	34.2317	0.0637	19.1898	2.3917	21.5739	9.9699	2.2004	12.1703	0.0000	6,310.8385	6,310.8385	1.9510	0.0000	6,359.6131
2020	74.1389	243.5694	320.5608	1.0061	63.7694	2.7619	66.5313	17.1533	2.6129	19.7662	0.0000	102,406.9410	102,406.9410	5.2409	0.0000	102,537.9629
2021	70.2468	221.9339	290.9323	0.9840	63.7704	2.0566	65.8271	17.1537	1.9404	19.0941	0.0000	100,232.5736	100,232.5736	4.8815	0.0000	100,354.6104
2022	67.4590	207.6738	266.1734	0.9616	63.7714	1.8069	65.5783	17.1540	1.7043	18.8584	0.0000	98,016.0437	98,016.0437	4.5865	0.0000	98,130.7070
2023	64.0757	174.3515	241.0643	0.9350	63.7723	1.3951	65.1674	17.1544	1.3121	18.4665	0.0000	95,364.1176	95,364.1176	3.9835	0.0000	95,463.7044
2024	62.0885	168.0064	222.8450	0.9132	63.7733	1.2709	65.0442	17.1547	1.1943	18.3490	0.0000	93,194.6668	93,194.6668	3.7805	0.0000	93,289.1804
2025	60.3807	162.3043	207.1271	0.8917	63.7741	1.1531	64.9271	17.1550	1.0828	18.2378	0.0000	91,064.2436	91,064.2436	3.6084	0.0000	91,154.4547
2026	58.9916	158.3720	192.9904	0.8709	63.7746	1.1271	64.9017	17.1552	1.0584	18.2136	0.0000	89,001.7902	89,001.7902	3.4502	0.0000	89,088.0456
2027	57.6968	154.8023	180.9016	0.8542	63.7752	1.0963	64.8715	17.1554	1.0296	18.1850	0.0000	87,340.6113	87,340.6113	3.3157	0.0000	87,423.5047
2028	56.4001	151.7459	170.5350	0.8395	63.7756	1.0638	64.8394	17.1555	0.9993	18.1548	0.0000	85,877.5659	85,877.5659	3.1947	0.0000	85,957.4321
2029	55.0406	148.9304	160.6270	0.8264	63.7760	1.0336	64.8096	17.1557	0.9712	18.1269	0.0000	84,581.4718	84,581.4718	3.0812	0.0000	84,658.5029
2030	53.6049	141.6065	151.8537	0.8190	63.7764	0.5955	64.3718	17.1558	0.5663	17.7222	0.0000	83,790.3962	83,790.3962	2.4868	0.0000	83,852.5664
2031	52.1876	139.3327	143.3311	0.8090	63.7767	0.5704	64.3471	17.1559	0.5431	17.6991	0.0000	82,805.3188	82,805.3188	2.3896	0.0000	82,865.0600
2032	50.9295	137.3512	135.9817	0.8005	63.7770	0.5476	64.3246	17.1561	0.5219	17.6780	0.0000	81,961.9817	81,961.9817	2.3039	0.0000	82,019.5783
2033	49.8575	135.6401	129.7657	0.7932	63.7773	0.5270	64.3043	17.1561	0.5028	17.6590	0.0000	81,240.6064	81,240.6064	2.2323	0.0000	81,296.4132
2034	48.9751	134.2018	124.0704	0.7869	63.7775	0.5082	64.2857	17.1562	0.4854	17.6416	0.0000	80,623.1146	80,623.1146	2.1666	0.0000	80,677.2806
2035	48.0924	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
Maximum	**74.1389**	**243.5694**	**320.5608**	**1.0061**	**63.7777**	**2.7619**	**66.5313**	**17.1563**	**2.6129**	**19.7662**	**0.0000**	**102,406.9410**	**102,406.9410**	**5.2409**	**0.0000**	**102,537.9629**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8452	54.6216	34.2317	0.0637	8.7258	2.3917	11.1099	4.5080	2.2004	6.7084	0.0000	6,310.8385	6,310.8385	1.9510	0.0000	6,359.6131
2020	74.1389	243.5694	320.5608	1.0061	63.7694	2.7619	66.5313	17.1533	2.6129	19.7662	0.0000	102,406.9410	102,406.9410	5.2409	0.0000	102,537.9629
2021	70.2468	221.9339	290.9323	0.9840	63.7704	2.0566	65.8271	17.1537	1.9404	19.0941	0.0000	100,232.5736	100,232.5736	4.8815	0.0000	100,354.6104
2022	67.4590	207.6738	266.1734	0.9616	63.7714	1.8069	65.5783	17.1540	1.7043	18.8584	0.0000	98,016.0437	98,016.0437	4.5865	0.0000	98,130.7070
2023	64.0757	174.3515	241.0643	0.9350	63.7723	1.3951	65.1674	17.1544	1.3121	18.4665	0.0000	95,364.1176	95,364.1176	3.9835	0.0000	95,463.7044
2024	62.0885	168.0064	222.8450	0.9132	63.7733	1.2709	65.0442	17.1547	1.1943	18.3490	0.0000	93,194.6668	93,194.6668	3.7805	0.0000	93,289.1804
2025	60.3807	162.3043	207.1271	0.8917	63.7741	1.1531	64.9271	17.1550	1.0828	18.2378	0.0000	91,064.2436	91,064.2436	3.6084	0.0000	91,154.4547
2026	58.9916	158.3720	192.9904	0.8709	63.7746	1.1271	64.9017	17.1552	1.0584	18.2136	0.0000	89,001.7902	89,001.7902	3.4502	0.0000	89,088.0456
2027	57.6968	154.8023	180.9016	0.8542	63.7752	1.0963	64.8715	17.1554	1.0296	18.1850	0.0000	87,340.6113	87,340.6113	3.3157	0.0000	87,423.5047
2028	56.4001	151.7459	170.5350	0.8395	63.7756	1.0638	64.8394	17.1555	0.9993	18.1548	0.0000	85,877.5659	85,877.5659	3.1947	0.0000	85,957.4321
2029	55.0406	148.9304	160.6270	0.8264	63.7760	1.0336	64.8096	17.1557	0.9712	18.1269	0.0000	84,581.4718	84,581.4718	3.0812	0.0000	84,658.5029
2030	53.6049	141.6065	151.8537	0.8190	63.7764	0.5955	64.3718	17.1558	0.5663	17.7222	0.0000	83,790.3962	83,790.3962	2.4868	0.0000	83,852.5664
2031	52.1876	139.3327	143.3311	0.8090	63.7767	0.5704	64.3471	17.1559	0.5431	17.6991	0.0000	82,805.3188	82,805.3188	2.3896	0.0000	82,865.0600
2032	50.9295	137.3512	135.9817	0.8005	63.7770	0.5476	64.3246	17.1561	0.5219	17.6780	0.0000	81,961.9817	81,961.9817	2.3039	0.0000	82,019.5783
2033	49.8575	135.6401	129.7657	0.7932	63.7773	0.5270	64.3043	17.1561	0.5028	17.6590	0.0000	81,240.6064	81,240.6064	2.2323	0.0000	81,296.4132
2034	48.9751	134.2018	124.0704	0.7869	63.7775	0.5082	64.2857	17.1562	0.4854	17.6416	0.0000	80,623.1146	80,623.1146	2.1666	0.0000	80,677.2806
2035	48.0924	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
Maximum	**74.1389**	**243.5694**	**320.5608**	**1.0061**	**63.7777**	**2.7619**	**66.5313**	**17.1563**	**2.6129**	**19.7662**	**0.0000**	**102,406.9410**	**102,406.9410**	**5.2409**	**0.0000**	**102,537.9629**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	1.01	0.00	0.99	1.92	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,170.928 1	31.5376	1,533.742 8	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.37 29	18,803.06 11	36,579.43 40	22.4031	1.4967	37,585.53 89
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	53.5396	296.6857	525.4666	1.9841	202.7332	1.1235	203.8567	54.2354	1.0433	55.2787		202,050.5 775	202,050.5 775	8.8765		202,272.4 907
Total	**1,229.548 8**	**372.8937**	**2,086.852 2**	**4.5442**	**202.7332**	**173.0731**	**375.8063**	**54.2354**	**172.9929**	**227.2283**	**17,776.37 29**	**276,284.0 264**	**294,060.3 992**	**32.3420**	**2.5130**	**295,617.8 124**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	246.4272	25.3426	366.2928	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.62 58	27,737.62 58	1.1356	0.4967	27,914.02 74
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	50.9260	285.1953	476.6114	1.7370	173.3369	0.9944	174.3313	46.3713	0.9232	47.2945		176,949.8 811	176,949.8 811	8.1070		177,152.5 563
Total	**302.4343**	**355.2083**	**870.5471**	**2.1686**	**173.3369**	**8.2081**	**181.5449**	**46.3713**	**8.1369**	**54.5082**	**0.0000**	**260,117.8 946**	**260,117.8 946**	**10.3050**	**1.5129**	**260,826.3 665**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	75.40	4.74	58.28	52.28	14.50	95.26	51.69	14.50	95.30	76.01	100.00	5.85	11.54	68.14	39.80	11.77

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	3/29/2019	5	64	
2	Grading	Grading	3/31/2019	6/28/2019	5	65	
3	Building Construction	Building Construction	1/2/2020	11/30/2035	5	4152	
4	Paving	Paving	9/2/2019	12/31/2019	5	87	
5	Architectural Coating	Architectural Coating	2/1/2020	2/6/2035	5	3917	
6	Underground Utilities	Trenching	7/1/2019	8/30/2019	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.452 9	3,766.452 9	1.1917		3,796.244 5
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.452 9**	**3,766.452 9**	**1.1917**		**3,796.244 5**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0957	0.0912	0.7694	1.5500e-003	0.1479	1.3300e-003	0.1492	0.0392	1.2300e-003	0.0405		153.7371	153.7371	7.5100e-003		153.9249
Total	**0.0957**	**0.0912**	**0.7694**	**1.5500e-003**	**0.1479**	**1.3300e-003**	**0.1492**	**0.0392**	**1.2300e-003**	**0.0405**		**153.7371**	**153.7371**	**7.5100e-003**		**153.9249**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.452 9	3,766.452 9	1.1917		3,796.244 5
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.1298**	**2.3904**	**10.5202**	**4.4688**	**2.1991**	**6.6679**	**0.0000**	**3,766.452 9**	**3,766.452 9**	**1.1917**		**3,796.244 5**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0957	0.0912	0.7694	1.5500e-003	0.1479	1.3300e-003	0.1492	0.0392	1.2300e-003	0.0405		153.7371	153.7371	7.5100e-003		153.9249
Total	**0.0957**	**0.0912**	**0.7694**	**1.5500e-003**	**0.1479**	**1.3300e-003**	**0.1492**	**0.0392**	**1.2300e-003**	**0.0405**		**153.7371**	**153.7371**	**7.5100e-003**		**153.9249**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.0255	0.0000	19.0255	4.7143	0.0000	4.7143			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**19.0255**	**2.3827**	**21.4081**	**4.7143**	**2.1920**	**6.9063**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1063	0.1014	0.8549	1.7200e-003	0.1643	1.4800e-003	0.1658	0.0436	1.3600e-003	0.0449		170.8190	170.8190	8.3500e-003		171.0277
Total	**0.1063**	**0.1014**	**0.8549**	**1.7200e-003**	**0.1643**	**1.4800e-003**	**0.1658**	**0.0436**	**1.3600e-003**	**0.0449**		**170.8190**	**170.8190**	**8.3500e-003**		**171.0277**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.5615	0.0000	8.5615	2.1214	0.0000	2.1214			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.5615**	**2.3827**	**10.9441**	**2.1214**	**2.1920**	**4.3135**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1063	0.1014	0.8549	1.7200e-003	0.1643	1.4800e-003	0.1658	0.0436	1.3600e-003	0.0449		170.8190	170.8190	8.3500e-003		171.0277
Total	**0.1063**	**0.1014**	**0.8549**	**1.7200e-003**	**0.1643**	**1.4800e-003**	**0.1658**	**0.0436**	**1.3600e-003**	**0.0449**		**170.8190**	**170.8190**	**8.3500e-003**		**171.0277**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2170	193.7148	57.0693	0.4368	10.5788	1.0741	11.6530	3.0447	1.0275	4.0722		45,938.0264	45,938.0264	2.2646		45,994.6421
Worker	25.9377	24.1547	204.0160	0.4495	44.3269	0.3832	44.7100	11.7576	0.3534	12.1110		44,696.7167	44,696.7167	1.9431		44,745.2933
Total	**33.1547**	**217.8695**	**261.0853**	**0.8863**	**54.9057**	**1.4573**	**56.3630**	**14.8023**	**1.3809**	**16.1832**		**90,634.7432**	**90,634.7432**	**4.2077**		**90,739.9354**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2170	193.7148	57.0693	0.4368	10.5788	1.0741	11.6530	3.0447	1.0275	4.0722		45,938.0264	45,938.0264	2.2646		45,994.6421
Worker	25.9377	24.1547	204.0160	0.4495	44.3269	0.3832	44.7100	11.7576	0.3534	12.1110		44,696.7167	44,696.7167	1.9431		44,745.2933
Total	**33.1547**	**217.8695**	**261.0853**	**0.8863**	**54.9057**	**1.4573**	**56.3630**	**14.8023**	**1.3809**	**16.1832**		**90,634.7432**	**90,634.7432**	**4.2077**		**90,739.9354**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

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

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9918	177.1067	50.3204	0.4331	10.5798	0.5598	11.1396	3.0451	0.5354	3.5804		45,560.5575	45,560.5575	2.1720		45,614.8568
Worker	23.9171	21.5575	185.1883	0.4343	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		43,199.0044	43,199.0044	1.7285		43,242.2176
Total	**29.9089**	**198.6642**	**235.5087**	**0.8673**	**54.9067**	**0.9299**	**55.8366**	**14.8026**	**0.8767**	**15.6794**		**88,759.5619**	**88,759.5619**	**3.9005**		**88,857.0744**

Mitigated Construction On-Site

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

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9918	177.1067	50.3204	0.4331	10.5798	0.5598	11.1396	3.0451	0.5354	3.5804		45,560.55 75	45,560.55 75	2.1720		45,614.85 68
Worker	23.9171	21.5575	185.1883	0.4343	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		43,199.00 44	43,199.00 44	1.7285		43,242.21 76
Total	**29.9089**	**198.6642**	**235.5087**	**0.8673**	**54.9067**	**0.9299**	**55.8366**	**14.8026**	**0.8767**	**15.6794**		**88,759.56 19**	**88,759.56 19**	**3.9005**		**88,857.07 44**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

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

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.4912	167.4699	45.6523	0.4292	10.5808	0.4880	11.0688	3.0454	0.4667	3.5121		45,167.14 10	45,167.14 10	2.1053		45,219.77 23
Worker	22.1851	19.3171	168.6253	0.4188	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		41,678.88 82	41,678.88 82	1.5426		41,717.45 22
Total	**27.6764**	**186.7870**	**214.2776**	**0.8479**	**54.9077**	**0.8448**	**55.7525**	**14.8030**	**0.7957**	**15.5986**		**86,846.02 92**	**86,846.02 92**	**3.6478**		**86,937.22 45**

Mitigated Construction On-Site

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

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.4912	167.4699	45.6523	0.4292	10.5808	0.4880	11.0688	3.0454	0.4667	3.5121		45,167.1410	45,167.1410	2.1053		45,219.7723
Worker	22.1851	19.3171	168.6253	0.4188	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		41,678.8882	41,678.8882	1.5426		41,717.4522
Total	**27.6764**	**186.7870**	**214.2776**	**0.8479**	**54.9077**	**0.8448**	**55.7525**	**14.8030**	**0.7957**	**15.5986**		**86,846.0292**	**86,846.0292**	**3.6478**		**86,937.2245**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

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

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1472	137.8898	39.1835	0.4214	10.5817	0.2100	10.7918	3.0457	0.2008	3.2465		44,367.1372	44,367.1372	1.7121		44,409.9402
Worker	20.6077	17.3120	153.1928	0.4031	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		40,134.8417	40,134.8417	1.3723		40,169.1484
Total	**24.7549**	**155.2018**	**192.3763**	**0.8245**	**54.9086**	**0.5555**	**55.4641**	**14.8033**	**0.5192**	**15.3225**		**84,501.9789**	**84,501.9789**	**3.0844**		**84,579.0885**

Mitigated Construction On-Site

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

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1472	137.8898	39.1835	0.4214	10.5817	0.2100	10.7918	3.0457	0.2008	3.2465		44,367.1372	44,367.1372	1.7121		44,409.9402
Worker	20.6077	17.3120	153.1928	0.4031	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		40,134.8417	40,134.8417	1.3723		40,169.1484
Total	**24.7549**	**155.2018**	**192.3763**	**0.8245**	**54.9086**	**0.5555**	**55.4641**	**14.8033**	**0.5192**	**15.3225**		**84,501.9789**	**84,501.9789**	**3.0844**		**84,579.0885**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

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

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9199	134.6639	36.5393	0.4183	10.5827	0.1949	10.7776	3.0461	0.1863	3.2324		44,050.115 8	44,050.115 8	1.6893		44,092.34 75
Worker	19.2345	15.5670	140.2783	0.3875	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		38,590.69 53	38,590.69 53	1.2259		38,621.34 37
Total	**23.1544**	**150.2310**	**176.8176**	**0.8058**	**54.9095**	**0.5298**	**55.4393**	**14.8036**	**0.4948**	**15.2984**		**82,640.81 11**	**82,640.811 1**	**2.9152**		**82,713.69 12**

Mitigated Construction On-Site

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

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9199	134.6639	36.5393	0.4183	10.5827	0.1949	10.7776	3.0461	0.1863	3.2324		44,050.1158	44,050.1158	1.6893		44,092.3475
Worker	19.2345	15.5670	140.2783	0.3875	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		38,590.6953	38,590.6953	1.2259		38,621.3437
Total	**23.1544**	**150.2310**	**176.8176**	**0.8058**	**54.9095**	**0.5298**	**55.4393**	**14.8036**	**0.4948**	**15.2984**		**82,640.8111**	**82,640.8111**	**2.9152**		**82,713.6912**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

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

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7245	131.7855	34.3966	0.4154	10.5835	0.1808	10.7643	3.0464	0.1728	3.2192		43,752.8656	43,752.8656	1.6657		43,794.5082
Worker	18.0692	14.0868	129.0346	0.3720	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		37,062.3578	37,062.3578	1.1054		37,089.9928
Total	**21.7937**	**145.8723**	**163.4312**	**0.7874**	**54.9103**	**0.5085**	**55.4188**	**14.8039**	**0.4747**	**15.2786**		**80,815.2234**	**80,815.2234**	**2.7711**		**80,884.5010**

Mitigated Construction On-Site

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

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7245	131.7855	34.3966	0.4154	10.5835	0.1808	10.7643	3.0464	0.1728	3.2192		43,752.8656	43,752.8656	1.6657		43,794.5082
Worker	18.0692	14.0868	129.0346	0.3720	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		37,062.3578	37,062.3578	1.1054		37,089.9928
Total	**21.7937**	**145.8723**	**163.4312**	**0.7874**	**54.9103**	**0.5085**	**55.4188**	**14.8039**	**0.4747**	**15.2786**		**80,815.2234**	**80,815.2234**	**2.7711**		**80,884.5010**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

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

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5787	129.4168	32.8788	0.4132	10.5841	0.1710	10.7550	3.0466	0.1635	3.2100		43,527.90 58	43,527.90 58	1.6451		43,569.03 21
Worker	17.0331	12.7837	118.5185	0.3566	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		35,531.06 57	35,531.06 57	0.9908		35,555.83 45
Total	**20.6118**	**142.2005**	**151.3973**	**0.7697**	**54.9109**	**0.4852**	**55.3961**	**14.8041**	**0.4528**	**15.2569**		**79,058.97 15**	**79,058.97 15**	**2.6358**		**79,124.86 67**

Mitigated Construction On-Site

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

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5787	129.4168	32.8788	0.4132	10.5841	0.1710	10.7550	3.0466	0.1635	3.2100		43,527.9058	43,527.9058	1.6451		43,569.0321
Worker	17.0331	12.7837	118.5185	0.3566	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		35,531.0657	35,531.0657	0.9908		35,555.8345
Total	**20.6118**	**142.2005**	**151.3973**	**0.7697**	**54.9109**	**0.4852**	**55.3961**	**14.8041**	**0.4528**	**15.2569**		**79,058.9715**	**79,058.9715**	**2.6358**		**79,124.8667**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

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

3.4 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4524	127.2459	31.5112	0.4112	10.5846	0.1622	10.7468	3.0468	0.1550	3.2018		43,330.9692	43,330.9692	1.6249		43,371.5907
Worker	16.0593	11.6180	109.5840	0.3442	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		34,310.8262	34,310.8262	0.8955		34,333.2139
Total	**19.5117**	**138.8639**	**141.0951**	**0.7555**	**54.9114**	**0.4581**	**55.3695**	**14.8043**	**0.4274**	**15.2317**		**77,641.7953**	**77,641.7953**	**2.5204**		**77,704.8045**

Mitigated Construction On-Site

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

3.4 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4524	127.2459	31.5112	0.4112	10.5846	0.1622	10.7468	3.0468	0.1550	3.2018		43,330.9692	43,330.9692	1.6249		43,371.5907
Worker	16.0593	11.6180	109.5840	0.3442	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		34,310.8262	34,310.8262	0.8955		34,333.2139
Total	**19.5117**	**138.8639**	**141.0951**	**0.7555**	**54.9114**	**0.4581**	**55.3695**	**14.8043**	**0.4274**	**15.2317**		**77,641.7953**	**77,641.7953**	**2.5204**		**77,704.8045**

3.4 Building Construction - 2028

Unmitigated Construction On-Site

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

3.4 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3480	125.4330	30.5378	0.4096	10.5850	0.1542	10.7392	3.0469	0.1474	3.1944		43,167.4239	43,167.4239	1.6019		43,207.4708
Worker	15.0657	10.5817	101.7559	0.3333	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		33,227.8759	33,227.8759	0.8138		33,248.2198
Total	**18.4137**	**136.0147**	**132.2938**	**0.7429**	**54.9119**	**0.4296**	**55.3415**	**14.8045**	**0.4008**	**15.2053**		**76,395.2998**	**76,395.2998**	**2.4156**		**76,455.6906**

Mitigated Construction On-Site

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

3.4 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3480	125.4330	30.5378	0.4096	10.5850	0.1542	10.7392	3.0469	0.1474	3.1944		43,167.4239	43,167.4239	1.6019		43,207.4708
Worker	15.0657	10.5817	101.7559	0.3333	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		33,227.8759	33,227.8759	0.8138		33,248.2198
Total	**18.4137**	**136.0147**	**132.2938**	**0.7429**	**54.9119**	**0.4296**	**55.3415**	**14.8045**	**0.4008**	**15.2053**		**76,395.2998**	**76,395.2998**	**2.4156**		**76,455.6906**

3.4 Building Construction - 2029

Unmitigated Construction On-Site

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

3.4 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2613	123.7826	29.7169	0.4082	10.5854	0.1470	10.7324	3.0471	0.1405	3.1876		43,025.7147	43,025.7147	1.5838		43,065.3093
Worker	14.0049	9.6108	94.1831	0.3236	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		32,265.8588	32,265.8588	0.7343		32,284.2169
Total	**17.2663**	**133.3934**	**123.9001**	**0.7318**	**54.9123**	**0.4033**	**55.3155**	**14.8046**	**0.3763**	**15.1809**		**75,291.5735**	**75,291.5735**	**2.3181**		**75,349.5262**

Mitigated Construction On-Site

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

3.4 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2613	123.7826	29.7169	0.4082	10.5854	0.1470	10.7324	3.0471	0.1405	3.1876		43,025.7147	43,025.7147	1.5838		43,065.3093
Worker	14.0049	9.6108	94.1831	0.3236	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		32,265.8588	32,265.8588	0.7343		32,284.2169
Total	**17.2663**	**133.3934**	**123.9001**	**0.7318**	**54.9123**	**0.4033**	**55.3155**	**14.8046**	**0.3763**	**15.1809**		**75,291.5735**	**75,291.5735**	**2.3181**		**75,349.5262**

3.4 Building Construction - 2030

Unmitigated Construction On-Site

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

3.4 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1914	122.3711	29.1048	0.4071	10.5858	0.1410	10.7267	3.0472	0.1348	3.1820		42,916.0566	42,916.0566	1.5641		42,955.1598
Worker	12.9488	8.7041	87.3312	0.3149	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		31,413.7576	31,413.7576	0.6626		31,430.3216
Total	**16.1401**	**131.0751**	**116.4360**	**0.7221**	**54.9126**	**0.3794**	**55.2920**	**14.8047**	**0.3540**	**15.1588**		**74,329.8142**	**74,329.8142**	**2.2267**		**74,385.4814**

Mitigated Construction On-Site

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

3.4 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1914	122.3711	29.1048	0.4071	10.5858	0.1410	10.7267	3.0472	0.1348	3.1820		42,916.0566	42,916.0566	1.5641		42,955.1598
Worker	12.9488	8.7041	87.3312	0.3149	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		31,413.7576	31,413.7576	0.6626		31,430.3216
Total	**16.1401**	**131.0751**	**116.4360**	**0.7221**	**54.9126**	**0.3794**	**55.2920**	**14.8047**	**0.3540**	**15.1588**		**74,329.8142**	**74,329.8142**	**2.2267**		**74,385.4814**

3.4 Building Construction - 2031

Unmitigated Construction On-Site

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

3.4 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1333	121.1545	28.5916	0.4063	10.5861	0.1358	10.7219	3.0473	0.1298	3.1772		42,834.70 31	42,834.70 31	1.5502		42,873.45 76
Worker	11.8161	7.8231	80.6565	0.3073	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		30,660.631 1	30,660.631 1	0.5932		30,675.46 15
Total	**14.9494**	**128.9775**	**109.2481**	**0.7136**	**54.9130**	**0.3577**	**55.2706**	**14.8049**	**0.3339**	**15.1387**		**73,495.33 42**	**73,495.33 42**	**2.1434**		**73,548.91 90**

Mitigated Construction On-Site

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

3.4 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1333	121.1545	28.5916	0.4063	10.5861	0.1358	10.7219	3.0473	0.1298	3.1772		42,834.7031	42,834.7031	1.5502		42,873.4576
Worker	11.8161	7.8231	80.6565	0.3073	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		30,660.6311	30,660.6311	0.5932		30,675.4615
Total	**14.9494**	**128.9775**	**109.2481**	**0.7136**	**54.9130**	**0.3577**	**55.2706**	**14.8049**	**0.3339**	**15.1387**		**73,495.3342**	**73,495.3342**	**2.1434**		**73,548.9190**

3.4 Building Construction - 2032

Unmitigated Construction On-Site

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

3.4 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0853	120.0847	28.2105	0.4058	10.5864	0.1312	10.7176	3.0474	0.1254	3.1728		42,784.4834	42,784.4834	1.5366		42,822.8976
Worker	10.8076	7.0632	74.8494	0.3006	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		29,999.6795	29,999.6795	0.5331		30,013.0062
Total	**13.8929**	**127.1479**	**103.0599**	**0.7064**	**54.9133**	**0.3378**	**55.2511**	**14.8050**	**0.3155**	**15.1204**		**72,784.1629**	**72,784.1629**	**2.0696**		**72,835.9038**

Mitigated Construction On-Site

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

3.4 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0853	120.0847	28.2105	0.4058	10.5864	0.1312	10.7176	3.0474	0.1254	3.1728		42,784.4834	42,784.4834	1.5366		42,822.8976
Worker	10.8076	7.0632	74.8494	0.3006	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		29,999.6795	29,999.6795	0.5331		30,013.0062
Total	**13.8929**	**127.1479**	**103.0599**	**0.7064**	**54.9133**	**0.3378**	**55.2511**	**14.8050**	**0.3155**	**15.1204**		**72,784.1629**	**72,784.1629**	**2.0696**		**72,835.9038**

3.4 Building Construction - 2033

Unmitigated Construction On-Site

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

3.4 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0483	119.1431	27.9157	0.4055	10.5867	0.1270	10.7137	3.0475	0.1214	3.1689		42,755.1409	42,755.1409	1.5264		42,793.2998
Worker	9.9451	6.4219	69.9149	0.2948	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		29,422.9678	29,422.9678	0.4819		29,435.0156
Total	**12.9934**	**125.5650**	**97.8306**	**0.7003**	**54.9135**	**0.3200**	**55.2335**	**14.8051**	**0.2989**	**15.1040**		**72,178.1086**	**72,178.1086**	**2.0083**		**72,228.3154**

Mitigated Construction On-Site

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

3.4 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0483	119.1431	27.9157	0.4055	10.5867	0.1270	10.7137	3.0475	0.1214	3.1689		42,755.1409	42,755.1409	1.5264		42,793.2998
Worker	9.9451	6.4219	69.9149	0.2948	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		29,422.9678	29,422.9678	0.4819		29,435.0156
Total	**12.9934**	**125.5650**	**97.8306**	**0.7003**	**54.9135**	**0.3200**	**55.2335**	**14.8051**	**0.2989**	**15.1040**		**72,178.1086**	**72,178.1086**	**2.0083**		**72,228.3154**

3.4 Building Construction - 2034

Unmitigated Construction On-Site

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

3.4 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0143	118.3288	27.6350	0.4054	10.5869	0.1232	10.7101	3.0476	0.1178	3.1654		42,741.3962	42,741.3962	1.5167		42,779.3148
Worker	9.2381	5.9019	65.4026	0.2897	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		28,919.8296	28,919.8296	0.4352		28,930.7104
Total	**12.2524**	**124.2307**	**93.0376**	**0.6951**	**54.9138**	**0.3037**	**55.2174**	**14.8052**	**0.2838**	**15.0889**		**71,661.2258**	**71,661.2258**	**1.9520**		**71,710.0252**

Mitigated Construction On-Site

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

3.4 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0143	118.3288	27.6350	0.4054	10.5869	0.1232	10.7101	3.0476	0.1178	3.1654		42,741.3962	42,741.3962	1.5167		42,779.3148
Worker	9.2381	5.9019	65.4026	0.2897	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		28,919.8296	28,919.8296	0.4352		28,930.7104
Total	**12.2524**	**124.2307**	**93.0376**	**0.6951**	**54.9138**	**0.3037**	**55.2174**	**14.8052**	**0.2838**	**15.0889**		**71,661.2258**	**71,661.2258**	**1.9520**		**71,710.0252**

3.4 Building Construction - 2035

Unmitigated Construction On-Site

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

3.4 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.5891	42,737.5891	1.5103		42,775.3467
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.9141	28,485.9141	0.3945		28,495.7770
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.5031**	**71,223.5031**	**1.9048**		**71,271.1237**

Mitigated Construction On-Site

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

3.4 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.58 91	42,737.58 91	1.5103		42,775.34 67
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.91 41	28,485.91 41	0.3945		28,495.77 70
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.50 31**	**71,223.50 31**	**1.9048**		**71,271.12 37**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.002 5	2,257.002 5	0.7141		2,274.854 8
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4544**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.002 5**	**2,257.002 5**	**0.7141**		**2,274.854 8**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0797	0.0760	0.6412	1.2900e-003	0.1232	1.1100e-003	0.1243	0.0327	1.0200e-003	0.0337		128.1143	128.1143	6.2600e-003		128.2708
Total	**0.0797**	**0.0760**	**0.6412**	**1.2900e-003**	**0.1232**	**1.1100e-003**	**0.1243**	**0.0327**	**1.0200e-003**	**0.0337**		**128.1143**	**128.1143**	**6.2600e-003**		**128.2708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4544**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0797	0.0760	0.6412	1.2900e-003	0.1232	1.1100e-003	0.1243	0.0327	1.0200e-003	0.0337		128.1143	128.1143	6.2600e-003		128.2708
Total	**0.0797**	**0.0760**	**0.6412**	**1.2900e-003**	**0.1232**	**1.1100e-003**	**0.1243**	**0.0327**	**1.0200e-003**	**0.0337**		**128.1143**	**128.1143**	**6.2600e-003**		**128.2708**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**33.6778**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.1866	4.8300	40.7956	0.0899	8.8637	0.0766	8.9404	2.3511	0.0707	2.4218		8,937.686 7	8,937.686 7	0.3885		8,947.400 2
Total	**5.1866**	**4.8300**	**40.7956**	**0.0899**	**8.8637**	**0.0766**	**8.9404**	**2.3511**	**0.0707**	**2.4218**		**8,937.686 7**	**8,937.686 7**	**0.3885**		**8,947.400 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**33.6778**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.1866	4.8300	40.7956	0.0899	8.8637	0.0766	8.9404	2.3511	0.0707	2.4218		8,937.6867	8,937.6867	0.3885		8,947.4002
Total	**5.1866**	**4.8300**	**40.7956**	**0.0899**	**8.8637**	**0.0766**	**8.9404**	**2.3511**	**0.0707**	**2.4218**		**8,937.6867**	**8,937.6867**	**0.3885**		**8,947.4002**

3.6 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**33.6545**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7825	4.3107	37.0308	0.0868	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		8,638.1997	8,638.1997	0.3456		8,646.8408
Total	**4.7825**	**4.3107**	**37.0308**	**0.0868**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**8,638.1997**	**8,638.1997**	**0.3456**		**8,646.8408**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**33.6545**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7825	4.3107	37.0308	0.0868	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		8,638.199 7	8,638.199 7	0.3456		8,646.840 8
Total	**4.7825**	**4.3107**	**37.0308**	**0.0868**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**8,638.199 7**	**8,638.199 7**	**0.3456**		**8,646.840 8**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**33.6401**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4362	3.8627	33.7188	0.0837	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,334.232 8	8,334.232 8	0.3085		8,341.944 2
Total	**4.4362**	**3.8627**	**33.7188**	**0.0837**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,334.232 8**	**8,334.232 8**	**0.3085**		**8,341.944 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**33.6401**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4362	3.8627	33.7188	0.0837	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,334.232 8	8,334.232 8	0.3085		8,341.944 2
Total	**4.4362**	**3.8627**	**33.7188**	**0.0837**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,334.232 8**	**8,334.232 8**	**0.3085**		**8,341.944 2**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**33.6272**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1208	3.4618	30.6329	0.0806	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,025.480 8	8,025.480 8	0.2744		8,032.340 8
Total	**4.1208**	**3.4618**	**30.6329**	**0.0806**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,025.480 8**	**8,025.480 8**	**0.2744**		**8,032.340 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**33.6272**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.6 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1208	3.4618	30.6329	0.0806	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,025.480 8	8,025.480 8	0.2744		8,032.340 8
Total	**4.1208**	**3.4618**	**30.6329**	**0.0806**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,025.480 8**	**8,025.480 8**	**0.2744**		**8,032.340 8**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**33.6163**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8462	3.1128	28.0505	0.0775	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		7,716.708 7	7,716.708 7	0.2451		7,722.837 3
Total	**3.8462**	**3.1128**	**28.0505**	**0.0775**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**7,716.708 7**	**7,716.708 7**	**0.2451**		**7,722.837 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**33.6163**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8462	3.1128	28.0505	0.0775	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		7,716.708 7	7,716.708 7	0.2451		7,722.837 3
Total	**3.8462**	**3.1128**	**28.0505**	**0.0775**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**7,716.708 7**	**7,716.708 7**	**0.2451**		**7,722.837 3**

3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6132	2.8168	25.8021	0.0744	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,411.0979	7,411.0979	0.2210		7,416.623 8
Total	**3.6132**	**2.8168**	**25.8021**	**0.0744**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,411.097 9**	**7,411.097 9**	**0.2210**		**7,416.623 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6132	2.8168	25.8021	0.0744	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,411.0979	7,411.0979	0.2210		7,416.6238
Total	**3.6132**	**2.8168**	**25.8021**	**0.0744**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,411.0979**	**7,411.0979**	**0.2210**		**7,416.6238**

3.6 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4060	2.5563	23.6993	0.0713	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,104.896 2	7,104.896 2	0.1981		7,109.849 1
Total	**3.4060**	**2.5563**	**23.6993**	**0.0713**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,104.896 2**	**7,104.896 2**	**0.1981**		**7,109.849 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4060	2.5563	23.6993	0.0713	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,104.896 2	7,104.896 2	0.1981		7,109.849 1
Total	**3.4060**	**2.5563**	**23.6993**	**0.0713**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,104.896 2**	**7,104.896 2**	**0.1981**		**7,109.849 1**

3.6 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2113	2.3232	21.9127	0.0688	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		6,860.893 5	6,860.893 5	0.1791		6,865.370 2
Total	**3.2113**	**2.3232**	**21.9127**	**0.0688**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**6,860.893 5**	**6,860.893 5**	**0.1791**		**6,865.370 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2113	2.3232	21.9127	0.0688	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		6,860.893 5	6,860.893 5	0.1791		6,865.370 2
Total	**3.2113**	**2.3232**	**21.9127**	**0.0688**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**6,860.893 5**	**6,860.893 5**	**0.1791**		**6,865.370 2**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0126	2.1160	20.3474	0.0667	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		6,644.343 6	6,644.343 6	0.1627		6,648.4116
Total	**3.0126**	**2.1160**	**20.3474**	**0.0667**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**6,644.343 6**	**6,644.343 6**	**0.1627**		**6,648.411 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0126	2.1160	20.3474	0.0667	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		6,644.343 6	6,644.343 6	0.1627		6,648.4116
Total	**3.0126**	**2.1160**	**20.3474**	**0.0667**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**6,644.343 6**	**6,644.343 6**	**0.1627**		**6,648.411 6**

3.6 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8005	1.9218	18.8331	0.0647	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,451.975 9	6,451.975 9	0.1468		6,455.646 8
Total	**2.8005**	**1.9218**	**18.8331**	**0.0647**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,451.975 9**	**6,451.975 9**	**0.1468**		**6,455.646 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.6 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8005	1.9218	18.8331	0.0647	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,451.975 9	6,451.975 9	0.1468		6,455.646 8
Total	**2.8005**	**1.9218**	**18.8331**	**0.0647**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,451.975 9**	**6,451.975 9**	**0.1468**		**6,455.646 8**

3.6 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5893	1.7405	17.4630	0.0630	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,281.587 2	6,281.587 2	0.1325		6,284.899 4
Total	**2.5893**	**1.7405**	**17.4630**	**0.0630**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,281.587 2**	**6,281.587 2**	**0.1325**		**6,284.899 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5893	1.7405	17.4630	0.0630	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,281.587 2	6,281.587 2	0.1325		6,284.899 4
Total	**2.5893**	**1.7405**	**17.4630**	**0.0630**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,281.587 2**	**6,281.587 2**	**0.1325**		**6,284.899 4**

3.6 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3628	1.5643	16.1283	0.0615	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,130.989 8	6,130.989 8	0.1186		6,133.955 3
Total	**2.3628**	**1.5643**	**16.1283**	**0.0615**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,130.989 8**	**6,130.989 8**	**0.1186**		**6,133.955 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3628	1.5643	16.1283	0.0615	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,130.989 8	6,130.989 8	0.1186		6,133.955 3
Total	**2.3628**	**1.5643**	**16.1283**	**0.0615**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,130.989 8**	**6,130.989 8**	**0.1186**		**6,133.955 3**

3.6 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1611	1.4124	14.9671	0.0601	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		5,998.824 0	5,998.824 0	0.1066		6,001.488 8
Total	**2.1611**	**1.4124**	**14.9671**	**0.0601**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**5,998.824 0**	**5,998.824 0**	**0.1066**		**6,001.488 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1611	1.4124	14.9671	0.0601	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		5,998.824 0	5,998.824 0	0.1066		6,001.488 8
Total	**2.1611**	**1.4124**	**14.9671**	**0.0601**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**5,998.824 0**	**5,998.824 0**	**0.1066**		**6,001.488 8**

3.6 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9886	1.2842	13.9804	0.0589	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		5,883.503 0	5,883.503 0	0.0964		5,885.912 1
Total	**1.9886**	**1.2842**	**13.9804**	**0.0589**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**5,883.503 0**	**5,883.503 0**	**0.0964**		**5,885.912 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9886	1.2842	13.9804	0.0589	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		5,883.5030	5,883.5030	0.0964		5,885.9121
Total	**1.9886**	**1.2842**	**13.9804**	**0.0589**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**5,883.5030**	**5,883.5030**	**0.0964**		**5,885.9121**

3.6 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8473	1.1802	13.0781	0.0579	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		5,782.894 0	5,782.894 0	0.0870		5,785.069 8
Total	**1.8473**	**1.1802**	**13.0781**	**0.0579**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**5,782.894 0**	**5,782.894 0**	**0.0870**		**5,785.069 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.6 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8473	1.1802	13.0781	0.0579	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		5,782.894 0	5,782.894 0	0.0870		5,785.069 8
Total	**1.8473**	**1.1802**	**13.0781**	**0.0579**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**5,782.894 0**	**5,782.894 0**	**0.0870**		**5,785.069 8**

3.6 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**33.5535**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.6 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.1270	5,696.1270	0.0789		5,698.0992
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.1270**	**5,696.1270**	**0.0789**		**5,698.0992**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**33.5535**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.6 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

3.7 Underground Utilities - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.7 Underground Utilities - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	50.9260	285.1953	476.6114	1.7370	173.3369	0.9944	174.3313	46.3713	0.9232	47.2945		176,949.8811	176,949.8811	8.1070		177,152.5563
Unmitigated	53.5396	296.6857	525.4666	1.9841	202.7332	1.1235	203.8567	54.2354	1.0433	55.2787		202,050.5775	202,050.5775	8.8765		202,272.4907

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
City Park	94.50	1,137.50	837.00	504,217	431,106
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Condo/Townhouse	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Elementary School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
General Office Building	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
High School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Junior High School	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Regional Shopping Center	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Single Family Housing	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
Supermarket	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511
City Park	0.576141	0.024402	0.213651	0.105014	0.011042	0.003920	0.020953	0.029929	0.004191	0.001944	0.007084	0.001218	0.000511

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828
NaturalGas Unmitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2153.95	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6413.45	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86244.6	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45730.2	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2408.96	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3510.58	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.15395	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148.143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68.177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6.41345	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86.2446	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45.7302	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2.40896	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108.377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3.51058	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	246.4272	25.3426	366.2928	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.6258	27,737.6258	1.1356	0.4967	27,914.0274
Unmitigated	1,170.9281	31.5376	1,533.7428	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.3729	18,803.0611	36,579.4340	22.4031	1.4967	37,585.5389

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	213.2902					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	911.0458	27.4171	1,176.4807	2.2640		166.4518	166.4518		166.4518	166.4518	17,776.3729	18,157.3412	35,933.7140	21.7868	1.4967	36,924.4110
Landscaping	10.7106	4.1206	357.2622	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1279
Total	**1,170.9281**	**31.5376**	**1,533.7428**	**2.2829**		**168.4390**	**168.4390**		**168.4390**	**168.4390**	**17,776.3729**	**18,803.0611**	**36,579.4340**	**22.4031**	**1.4967**	**37,585.5389**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	197.3517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.4834	21.2220	9.0306	0.1355		1.7158	1.7158		1.7158	1.7158	0.0000	27,091.9059	27,091.9059	0.5193	0.4967	27,252.8995
Landscaping	10.7106	4.1206	357.2622	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1279
Total	**246.4272**	**25.3426**	**366.2928**	**0.1544**		**3.7031**	**3.7031**		**3.7031**	**3.7031**	**0.0000**	**27,737.6258**	**27,737.6258**	**1.1356**	**0.4967**	**27,914.0274**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model Full Buildout - 2016.3.2

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
City Park	50.00	Acre	50.00	2,178,000.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 3.6 **Precipitation Freq (Days)** 55

Climate Zone 4 **Operational Year** 2040

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 217.5 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO2 Factor: 290 lb/MWh), adjusted for 2035 based on the increased effect of the RPS by 2035 (CO2 Factor : 217.5022). 2035 used as proxy for 2040

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading - Maximum of 797 acres graded

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	12,400.00	5,195.00
tblConstructionPhase	NumDays	880.00	4,960.00
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42

tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42

tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3423	3.6083	2.4329	4.3800e-003	1.2114	0.1739	1.3852	0.4750	0.1599	0.6349	0.0000	385.3733	385.3733	0.1207	0.0000	388.3898
2021	7.5455	28.5593	35.9485	0.1284	7.9411	0.2639	8.2049	2.1425	0.2489	2.3914	0.0000	11,869.0262	11,869.0262	0.5593	0.0000	11,883.0091
2022	7.5177	26.7998	33.2652	0.1264	8.0269	0.2332	8.2601	2.1654	0.2199	2.3853	0.0000	11,688.0723	11,688.0723	0.5283	0.0000	11,701.2793
2023	7.1032	22.4854	30.2167	0.1229	8.0271	0.1809	8.2079	2.1654	0.1701	2.3355	0.0000	11,373.0901	11,373.0901	0.4603	0.0000	11,384.5987
2024	6.9149	21.8548	28.1755	0.1209	8.0889	0.1660	8.2550	2.1821	0.1560	2.3382	0.0000	11,200.3416	11,200.3416	0.4401	0.0000	11,211.3431
2025	6.6803	21.0502	26.1058	0.1177	8.0582	0.1501	8.2083	2.1738	0.1409	2.3148	0.0000	10,902.9962	10,902.9962	0.4182	0.0000	10,913.4506
2026	6.5106	20.5577	24.3347	0.1149	8.0582	0.1467	8.2050	2.1739	0.1378	2.3117	0.0000	10,656.9587	10,656.9587	0.3996	0.0000	10,666.9481
2027	6.3531	20.1106	22.8234	0.1127	8.0583	0.1428	8.2011	2.1739	0.1341	2.3080	0.0000	10,458.8884	10,458.8884	0.3838	0.0000	10,468.4836
2028	6.1732	19.6521	21.4422	0.1104	8.0275	0.1380	8.1655	2.1656	0.1296	2.2952	0.0000	10,244.9660	10,244.9660	0.3682	0.0000	10,254.1706
2029	6.0341	19.3753	20.2843	0.1091	8.0584	0.1346	8.1930	2.1739	0.1265	2.3004	0.0000	10,129.8207	10,129.8207	0.3563	0.0000	10,138.7282
2030	5.8616	18.4338	19.1851	0.1081	8.0585	0.0775	8.1359	2.1740	0.0737	2.2476	0.0000	10,035.3709	10,035.3709	0.2860	0.0000	10,042.5218
2031	5.6933	18.1509	18.1173	0.1068	8.0585	0.0742	8.1327	2.1740	0.0707	2.2446	0.0000	9,918.1998	9,918.1998	0.2746	0.0000	9,925.0650
2032	5.5652	17.9731	17.2618	0.1061	8.0894	0.0716	8.1610	2.1823	0.0682	2.2505	0.0000	9,855.6880	9,855.6880	0.2655	0.0000	9,862.3262
2033	5.3960	17.6239	16.3535	0.1043	8.0277	0.0683	8.0960	2.1657	0.0652	2.2309	0.0000	9,695.3202	9,695.3202	0.2551	0.0000	9,701.6974
2034	5.2913	17.4457	15.6418	0.1035	8.0277	0.0659	8.0936	2.1657	0.0630	2.2286	0.0000	9,622.5886	9,622.5886	0.2474	0.0000	9,628.7732
2035	5.2051	17.2537	15.0748	0.1032	8.0586	0.0551	8.1137	2.1740	0.0523	2.2263	0.0000	9,597.6642	9,597.6642	0.2407	0.0000	9,603.6816
2036	5.2250	17.3199	15.1326	0.1036	8.0895	0.0553	8.1448	2.1823	0.0525	2.2348	0.0000	9,634.4369	9,634.4369	0.2416	0.0000	9,640.4773
2037	5.2051	17.2537	15.0748	0.1032	8.0586	0.0551	8.1137	2.1740	0.0523	2.2263	0.0000	9,597.6642	9,597.6642	0.2407	0.0000	9,603.6816

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2038	5.2051	17.2537	15.0748	0.1032	8.0586	0.0551	8.1137	2.1740	0.0523	2.2263	0.0000	9,597.6642	9,597.6642	0.2407	0.0000	9,603.6816
2039	5.1852	17.1876	15.0171	0.1028	8.0278	0.0549	8.0826	2.1657	0.0521	2.2178	0.0000	9,560.8916	9,560.8916	0.2398	0.0000	9,566.8859
2040	1.5205	15.2663	10.9204	0.0869	6.4887	0.0382	6.5268	1.7540	0.0363	1.7903	0.0000	8,103.4900	8,103.4900	0.1969	0.0000	8,108.4122
Maximum	**7.5455**	**28.5593**	**35.9485**	**0.1284**	**8.0895**	**0.2639**	**8.2601**	**2.1823**	**0.2489**	**2.3914**	**0.0000**	**11,869.0262**	**11,869.0262**	**0.5593**	**0.0000**	**11,883.0091**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3423	3.6083	2.4329	4.3800e-003	0.5533	0.1739	0.7272	0.2159	0.1599	0.3759	0.0000	385.3729	385.3729	0.1207	0.0000	388.3893
2021	7.5455	28.5593	35.9485	0.1284	7.9411	0.2639	8.2049	2.1425	0.2489	2.3914	0.0000	11,869.0258	11,869.0258	0.5593	0.0000	11,883.0088
2022	7.5177	26.7998	33.2652	0.1264	8.0269	0.2332	8.2601	2.1654	0.2199	2.3853	0.0000	11,688.0719	11,688.0719	0.5283	0.0000	11,701.2789
2023	7.1032	22.4854	30.2167	0.1229	8.0271	0.1809	8.2079	2.1654	0.1701	2.3355	0.0000	11,373.0898	11,373.0898	0.4603	0.0000	11,384.5983
2024	6.9149	21.8548	28.1755	0.1209	8.0889	0.1660	8.2550	2.1821	0.1560	2.3382	0.0000	11,200.3412	11,200.3412	0.4401	0.0000	11,211.3427
2025	6.6803	21.0502	26.1058	0.1177	8.0582	0.1501	8.2083	2.1738	0.1409	2.3148	0.0000	10,902.9959	10,902.9959	0.4182	0.0000	10,913.4501
2026	6.5106	20.5577	24.3347	0.1149	8.0582	0.1467	8.2050	2.1739	0.1378	2.3117	0.0000	10,656.9583	10,656.9583	0.3996	0.0000	10,666.9477
2027	6.3531	20.1105	22.8234	0.1127	8.0583	0.1428	8.2011	2.1739	0.1341	2.3080	0.0000	10,458.8880	10,458.8880	0.3838	0.0000	10,468.4832

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	6.1732	19.6521	21.4421	0.1104	8.0275	0.1380	8.1655	2.1656	0.1296	2.2952	0.0000	10,244.9656	10,244.9656	0.3682	0.0000	10,254.1702
2029	6.0341	19.3753	20.2843	0.1091	8.0584	0.1346	8.1930	2.1739	0.1265	2.3004	0.0000	10,129.8203	10,129.8203	0.3563	0.0000	10,138.7278
2030	5.8616	18.4338	19.1851	0.1081	8.0585	0.0775	8.1359	2.1740	0.0737	2.2476	0.0000	10,035.3704	10,035.3704	0.2860	0.0000	10,042.5214
2031	5.6933	18.1509	18.1173	0.1068	8.0585	0.0742	8.1327	2.1740	0.0707	2.2446	0.0000	9,918.1994	9,918.1994	0.2746	0.0000	9,925.0645
2032	5.5652	17.9731	17.2618	0.1061	8.0894	0.0716	8.1610	2.1823	0.0682	2.2505	0.0000	9,855.6876	9,855.6876	0.2655	0.0000	9,862.3257
2033	5.3960	17.6239	16.3535	0.1043	8.0277	0.0683	8.0960	2.1657	0.0652	2.2309	0.0000	9,695.3197	9,695.3197	0.2551	0.0000	9,701.6969
2034	5.2913	17.4457	15.6418	0.1035	8.0277	0.0659	8.0936	2.1657	0.0630	2.2286	0.0000	9,622.5882	9,622.5882	0.2474	0.0000	9,628.7727
2035	5.2051	17.2537	15.0748	0.1032	8.0586	0.0551	8.1137	2.1740	0.0523	2.2263	0.0000	9,597.6638	9,597.6638	0.2407	0.0000	9,603.6812
2036	5.2250	17.3198	15.1326	0.1036	8.0895	0.0553	8.1448	2.1823	0.0525	2.2348	0.0000	9,634.4364	9,634.4364	0.2416	0.0000	9,640.4769
2037	5.2051	17.2537	15.0748	0.1032	8.0586	0.0551	8.1137	2.1740	0.0523	2.2263	0.0000	9,597.6638	9,597.6638	0.2407	0.0000	9,603.6812
2038	5.2051	17.2537	15.0748	0.1032	8.0586	0.0551	8.1137	2.1740	0.0523	2.2263	0.0000	9,597.6638	9,597.6638	0.2407	0.0000	9,603.6812
2039	5.1852	17.1876	15.0171	0.1028	8.0278	0.0549	8.0826	2.1657	0.0521	2.2178	0.0000	9,560.8911	9,560.8911	0.2398	0.0000	9,566.8855
2040	1.5205	15.2663	10.9204	0.0869	6.4887	0.0382	6.5268	1.7540	0.0363	1.7903	0.0000	8,103.4896	8,103.4896	0.1969	0.0000	8,108.4118
Maximum	**7.5455**	**28.5593**	**35.9485**	**0.1284**	**8.0895**	**0.2639**	**8.2601**	**2.1823**	**0.2489**	**2.3914**	**0.0000**	**11,869.0258**	**11,869.0258**	**0.5593**	**0.0000**	**11,883.0088**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.00**	**0.40**	**0.60**	**0.00**	**0.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
5	1-1-2020	3-31-2020	1.5194	1.5194
6	4-1-2020	6-30-2020	1.7617	1.7617
7	7-1-2020	9-30-2020	0.1610	0.1610
8	10-1-2020	12-31-2020	0.5113	0.5113
9	1-1-2021	3-31-2021	8.6647	8.6647
10	4-1-2021	6-30-2021	8.9572	8.9572
11	7-1-2021	9-30-2021	9.0556	9.0556
12	10-1-2021	12-31-2021	9.3692	9.3692
13	1-1-2022	3-31-2022	8.6176	8.6176
14	4-1-2022	6-30-2022	8.4386	8.4386
15	7-1-2022	9-30-2022	8.5313	8.5313
16	10-1-2022	12-31-2022	8.8091	8.8091
17	1-1-2023	3-31-2023	7.4377	7.4377
18	4-1-2023	6-30-2023	7.2837	7.2837
19	7-1-2023	9-30-2023	7.3638	7.3638
20	10-1-2023	12-31-2023	7.6030	7.6030
21	1-1-2024	3-31-2024	7.2496	7.2496
22	4-1-2024	6-30-2024	7.0346	7.0346
23	7-1-2024	9-30-2024	7.1120	7.1120
24	10-1-2024	12-31-2024	7.3292	7.3292
25	1-1-2025	3-31-2025	6.9317	6.9317
26	4-1-2025	6-30-2025	6.8121	6.8121
27	7-1-2025	9-30-2025	6.8870	6.8870
28	10-1-2025	12-31-2025	7.0858	7.0858
29	1-1-2026	3-31-2026	6.7607	6.7607
30	4-1-2026	6-30-2026	6.6547	6.6547

31	**7-1-2026**	**9-30-2026**	6.7278	6.7278
32	**10-1-2026**	**12-31-2026**	6.9109	6.9109
33	**1-1-2027**	**3-31-2027**	6.6043	6.6043
34	**4-1-2027**	**6-30-2027**	6.5110	6.5110
35	**7-1-2027**	**9-30-2027**	6.5825	6.5825
36	**10-1-2027**	**12-31-2027**	6.7511	6.7511
37	**1-1-2028**	**3-31-2028**	6.5362	6.5362
38	**4-1-2028**	**6-30-2028**	6.3827	6.3827
39	**7-1-2028**	**9-30-2028**	6.4528	6.4528
40	**10-1-2028**	**12-31-2028**	6.6081	6.6081
41	**1-1-2029**	**3-31-2029**	6.3302	6.3302
42	**4-1-2029**	**6-30-2029**	6.2600	6.2600
43	**7-1-2029**	**9-30-2029**	6.3288	6.3288
44	**10-1-2029**	**12-31-2029**	6.4709	6.4709
45	**1-1-2030**	**3-31-2030**	6.0487	6.0487
46	**4-1-2030**	**6-30-2030**	5.9878	5.9878
47	**7-1-2030**	**9-30-2030**	6.0536	6.0536
48	**10-1-2030**	**12-31-2030**	6.1831	6.1831
49	**1-1-2031**	**3-31-2031**	5.9300	5.9300
50	**4-1-2031**	**6-30-2031**	5.8805	5.8805
51	**7-1-2031**	**9-30-2031**	5.9451	5.9451
52	**10-1-2031**	**12-31-2031**	6.0618	6.0618
53	**1-1-2032**	**3-31-2032**	5.8906	5.8906
54	**4-1-2032**	**6-30-2032**	5.7863	5.7863
55	**7-1-2032**	**9-30-2032**	5.8499	5.8499
56	**10-1-2032**	**12-31-2032**	5.9553	5.9553
57	**1-1-2033**	**3-31-2033**	5.7364	5.7364

58	**4-1-2033**	**6-30-2033**	5.7053	5.7053
59	**7-1-2033**	**9-30-2033**	5.7680	5.7680
60	**10-1-2033**	**12-31-2033**	5.8639	5.8639
61	**1-1-2034**	**3-31-2034**	5.6618	5.6618
62	**4-1-2034**	**6-30-2034**	5.6374	5.6374
63	**7-1-2034**	**9-30-2034**	5.6994	5.6994
64	**10-1-2034**	**12-31-2034**	5.7877	5.7877
65	**1-1-2035**	**3-31-2035**	5.5679	5.5679
66	**4-1-2035**	**6-30-2035**	5.5486	5.5486
67	**7-1-2035**	**9-30-2035**	5.6096	5.6096
68	**10-1-2035**	**12-31-2035**	5.6916	5.6916
69	**1-1-2036**	**3-31-2036**	5.6297	5.6297
70	**4-1-2036**	**6-30-2036**	5.5486	5.5486
71	**7-1-2036**	**9-30-2036**	5.6096	5.6096
72	**10-1-2036**	**12-31-2036**	5.6916	5.6916
73	**1-1-2037**	**3-31-2037**	5.5679	5.5679
74	**4-1-2037**	**6-30-2037**	5.5486	5.5486
75	**7-1-2037**	**9-30-2037**	5.6096	5.6096
76	**10-1-2037**	**12-31-2037**	5.6916	5.6916
77	**1-1-2038**	**3-31-2038**	5.5679	5.5679
78	**4-1-2038**	**6-30-2038**	5.5486	5.5486
79	**7-1-2038**	**9-30-2038**	5.6096	5.6096
80	**10-1-2038**	**12-31-2038**	5.6916	5.6916
81	**1-1-2039**	**3-31-2039**	5.5679	5.5679
82	**4-1-2039**	**6-30-2039**	5.5486	5.5486
83	**7-1-2039**	**9-30-2039**	5.6096	5.6096
84	**10-1-2039**	**12-31-2039**	5.6916	5.6916

85	**1-1-2040**	**3-31-2040**	4.8203	4.8203
86	**4-1-2040**	**6-30-2040**	4.4135	4.4135
87	**7-1-2040**	**9-30-2040**	4.4620	4.4620
		Highest	9.3692	9.3692

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	84.1648	1.6390	92.8541	0.0952		7.0729	7.0729		7.0729	7.0729	661.1846	748.5780	1,409.7626	0.8802	0.0557	1,448.3582
Energy	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	14,718.3121	14,718.3121	0.9147	0.3211	14,836.8702
Mobile	7.2231	45.5739	67.2995	0.3151	31.8390	0.1430	31.9820	8.5407	0.1329	8.6736	0.0000	29,171.9229	29,171.9229	1.1408	0.0000	29,200.4419
Waste						0.0000	0.0000		0.0000	0.0000	1,843.4563	0.0000	1,843.4563	108.9452	0.0000	4,567.0851
Water						0.0000	0.0000		0.0000	0.0000	145.0398	439.0965	584.1363	14.9555	0.3639	1,066.4555
Total	**92.3152**	**55.3652**	**165.1985**	**0.4609**	**31.8390**	**7.8566**	**39.6957**	**8.5407**	**7.8465**	**16.3872**	**2,649.6808**	**45,077.9095**	**47,727.5903**	**126.8364**	**0.7406**	**51,119.2109**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	44.0049	1.3850	44.9887	7.9200e-003		0.3188	0.3188		0.3188	0.3188	0.0000	1,080.8953	1,080.8953	0.0892	0.0185	1,088.6304
Energy	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	14,718.3121	14,718.3121	0.9147	0.3211	14,836.8702
Mobile	6.8417	44.0279	60.4794	0.2764	27.2224	0.1264	27.3487	7.3023	0.1174	7.4197	0.0000	25,599.8790	25,599.8790	1.0402	0.0000	25,625.8834
Waste						0.0000	0.0000		0.0000	0.0000	1,843.4563	0.0000	1,843.4563	108.9452	0.0000	4,567.0851
Water						0.0000	0.0000		0.0000	0.0000	116.0318	378.3883	494.4202	11.9680	0.2918	880.5888
Total	**51.7739**	**53.5652**	**110.5129**	**0.3349**	**27.2224**	**1.0858**	**28.3082**	**7.3023**	**1.0768**	**8.3791**	**1,959.4882**	**41,777.4748**	**43,736.9630**	**122.9573**	**0.6314**	**46,999.0579**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**43.92**	**3.25**	**33.10**	**27.34**	**14.50**	**86.18**	**28.69**	**14.50**	**86.28**	**48.87**	**26.05**	**7.32**	**8.36**	**3.06**	**14.75**	**8.06**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	3/31/2020	6/29/2020	5	65	
3	Underground Utilities	Trenching	7/1/2020	9/1/2020	5	45	
4	Paving	Paving	9/2/2020	12/31/2020	5	87	
5	Building Construction	Building Construction	1/2/2021	11/30/2040	5	5195	
6	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5781	0.0000	0.5781	0.3178	0.0000	0.3178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1305	1.3574	0.6884	1.2200e-003		0.0703	0.0703		0.0647	0.0647	0.0000	106.9782	106.9782	0.0346	0.0000	107.8432
Total	**0.1305**	**1.3574**	**0.6884**	**1.2200e-003**	**0.5781**	**0.0703**	**0.6484**	**0.3178**	**0.0647**	**0.3825**	**0.0000**	**106.9782**	**106.9782**	**0.0346**	**0.0000**	**107.8432**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5200e-003	2.3400e-003	0.0210	5.0000e-005	4.5800e-003	4.0000e-005	4.6200e-003	1.2200e-003	4.0000e-005	1.2500e-003	0.0000	4.3536	4.3536	1.9000e-004	0.0000	4.3583
Total	**2.5200e-003**	**2.3400e-003**	**0.0210**	**5.0000e-005**	**4.5800e-003**	**4.0000e-005**	**4.6200e-003**	**1.2200e-003**	**4.0000e-005**	**1.2500e-003**	**0.0000**	**4.3536**	**4.3536**	**1.9000e-004**	**0.0000**	**4.3583**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2602	0.0000	0.2602	0.1430	0.0000	0.1430	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1305	1.3574	0.6884	1.2200e-003		0.0703	0.0703		0.0647	0.0647	0.0000	106.9781	106.9781	0.0346	0.0000	107.8430
Total	**0.1305**	**1.3574**	**0.6884**	**1.2200e-003**	**0.2602**	**0.0703**	**0.3305**	**0.1430**	**0.0647**	**0.2077**	**0.0000**	**106.9781**	**106.9781**	**0.0346**	**0.0000**	**107.8430**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5200e-003	2.3400e-003	0.0210	5.0000e-005	4.5800e-003	4.0000e-005	4.6200e-003	1.2200e-003	4.0000e-005	1.2500e-003	0.0000	4.3536	4.3536	1.9000e-004	0.0000	4.3583
Total	**2.5200e-003**	**2.3400e-003**	**0.0210**	**5.0000e-005**	**4.5800e-003**	**4.0000e-005**	**4.6200e-003**	**1.2200e-003**	**4.0000e-005**	**1.2500e-003**	**0.0000**	**4.3536**	**4.3536**	**1.9000e-004**	**0.0000**	**4.3583**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6183	0.0000	0.6183	0.1532	0.0000	0.1532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1446	1.6314	1.0386	2.0200e-003		0.0707	0.0707		0.0650	0.0650	0.0000	177.0740	177.0740	0.0573	0.0000	178.5057
Total	**0.1446**	**1.6314**	**1.0386**	**2.0200e-003**	**0.6183**	**0.0707**	**0.6890**	**0.1532**	**0.0650**	**0.2182**	**0.0000**	**177.0740**	**177.0740**	**0.0573**	**0.0000**	**178.5057**

3.3 Grading - 2020

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2783	0.0000	0.2783	0.0690	0.0000	0.0690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1446	1.6314	1.0386	2.0200e-003		0.0707	0.0707		0.0650	0.0650	0.0000	177.0737	177.0737	0.0573	0.0000	178.5055
Total	**0.1446**	**1.6314**	**1.0386**	**2.0200e-003**	**0.2783**	**0.0707**	**0.3489**	**0.0690**	**0.0650**	**0.1340**	**0.0000**	**177.0737**	**177.0737**	**0.0573**	**0.0000**	**178.5055**

3.3 Grading - 2020

Mitigated Construction Off-Site

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

3.4 Underground Utilities - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Underground Utilities - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0590	0.6119	0.6374	9.9000e-004		0.0328	0.0328		0.0301	0.0301	0.0000	87.1228	87.1228	0.0282	0.0000	87.8272
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0590**	**0.6119**	**0.6374**	**9.9000e-004**		**0.0328**	**0.0328**		**0.0301**	**0.0301**	**0.0000**	**87.1228**	**87.1228**	**0.0282**	**0.0000**	**87.8272**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8600e-003	2.6500e-003	0.0238	5.0000e-005	5.1800e-003	5.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	4.9319	4.9319	2.1000e-004	0.0000	4.9372
Total	**2.8600e-003**	**2.6500e-003**	**0.0238**	**5.0000e-005**	**5.1800e-003**	**5.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.9319**	**4.9319**	**2.1000e-004**	**0.0000**	**4.9372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0590	0.6119	0.6374	9.9000e-004		0.0328	0.0328		0.0301	0.0301	0.0000	87.1227	87.1227	0.0282	0.0000	87.8271
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0590**	**0.6119**	**0.6374**	**9.9000e-004**		**0.0328**	**0.0328**		**0.0301**	**0.0301**	**0.0000**	**87.1227**	**87.1227**	**0.0282**	**0.0000**	**87.8271**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8600e-003	2.6500e-003	0.0238	5.0000e-005	5.1800e-003	5.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	4.9319	4.9319	2.1000e-004	0.0000	4.9372
Total	**2.8600e-003**	**2.6500e-003**	**0.0238**	**5.0000e-005**	**5.1800e-003**	**5.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**4.9319**	**4.9319**	**2.1000e-004**	**0.0000**	**4.9372**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2662	2.1548	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.1285	301.1285	0.0727	0.0000	302.9447
Total	**0.2471**	**2.2662**	**2.1548**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.1285**	**301.1285**	**0.0727**	**0.0000**	**302.9447**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7505	23.0944	6.0714	0.0573	1.3384	0.0709	1.4094	0.3868	0.0678	0.4546	0.0000	5,466.9891	5,466.9891	0.2437	0.0000	5,473.0824
Worker	2.8305	2.5456	23.2185	0.0568	5.5738	0.0481	5.6220	1.4822	0.0444	1.5266	0.0000	5,124.4015	5,124.4015	0.2033	0.0000	5,129.4842
Total	**3.5810**	**25.6400**	**29.2899**	**0.1140**	**6.9123**	**0.1191**	**7.0313**	**1.8690**	**0.1122**	**1.9812**	**0.0000**	**10,591.3906**	**10,591.3906**	**0.4470**	**0.0000**	**10,602.5667**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2662	2.1548	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.1281	301.1281	0.0727	0.0000	302.9443
Total	**0.2471**	**2.2662**	**2.1548**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.1281**	**301.1281**	**0.0727**	**0.0000**	**302.9443**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7505	23.0944	6.0714	0.0573	1.3384	0.0709	1.4094	0.3868	0.0678	0.4546	0.0000	5,466.989 1	5,466.989 1	0.2437	0.0000	5,473.082 4
Worker	2.8305	2.5456	23.2185	0.0568	5.5738	0.0481	5.6220	1.4822	0.0444	1.5266	0.0000	5,124.401 5	5,124.401 5	0.2033	0.0000	5,129.484 2
Total	**3.5810**	**25.6400**	**29.2899**	**0.1140**	**6.9123**	**0.1191**	**7.0313**	**1.8690**	**0.1122**	**1.9812**	**0.0000**	**10,591.39 06**	**10,591.39 06**	**0.4470**	**0.0000**	**10,602.56 67**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

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

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6878	21.8495	5.5003	0.0568	1.3385	0.0617	1.4003	0.3868	0.0590	0.4459	0.0000	5,420.931 3	5,420.931 3	0.2359	0.0000	5,426.829 7
Worker	2.6242	2.2811	21.1689	0.0548	5.5738	0.0464	5.6202	1.4822	0.0428	1.5249	0.0000	4,944.074 3	4,944.074 3	0.1817	0.0000	4,948.616 4
Total	**3.3120**	**24.1305**	**26.6692**	**0.1115**	**6.9124**	**0.1081**	**7.0205**	**1.8690**	**0.1018**	**1.9708**	**0.0000**	**10,365.00 56**	**10,365.00 56**	**0.4176**	**0.0000**	**10,375.44 61**

Mitigated Construction On-Site

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

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6878	21.8495	5.5003	0.0568	1.3385	0.0617	1.4003	0.3868	0.0590	0.4459	0.0000	5,420.9313	5,420.9313	0.2359	0.0000	5,426.8297
Worker	2.6242	2.2811	21.1689	0.0548	5.5738	0.0464	5.6202	1.4822	0.0428	1.5249	0.0000	4,944.0743	4,944.0743	0.1817	0.0000	4,948.6164
Total	**3.3120**	**24.1305**	**26.6692**	**0.1115**	**6.9124**	**0.1081**	**7.0205**	**1.8690**	**0.1018**	**1.9708**	**0.0000**	**10,365.0056**	**10,365.0056**	**0.4176**	**0.0000**	**10,375.4461**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

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

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5188	17.9927	4.7549	0.0558	1.3387	0.0268	1.3655	0.3869	0.0256	0.4125	0.0000	5,325.6387	5,325.6387	0.1923	0.0000	5,330.4466
Worker	2.4354	2.0444	19.2627	0.0527	5.5738	0.0449	5.6187	1.4822	0.0414	1.5236	0.0000	4,760.9078	4,760.9078	0.1620	0.0000	4,764.9571
Total	**2.9543**	**20.0371**	**24.0177**	**0.1085**	**6.9125**	**0.0717**	**6.9842**	**1.8690**	**0.0670**	**1.9361**	**0.0000**	**10,086.5466**	**10,086.5466**	**0.3543**	**0.0000**	**10,095.4037**

Mitigated Construction On-Site

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

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5188	17.9927	4.7549	0.0558	1.3387	0.0268	1.3655	0.3869	0.0256	0.4125	0.0000	5,325.638 7	5,325.638 7	0.1923	0.0000	5,330.446 6
Worker	2.4354	2.0444	19.2627	0.0527	5.5738	0.0449	5.6187	1.4822	0.0414	1.5236	0.0000	4,760.907 8	4,760.907 8	0.1620	0.0000	4,764.957 1
Total	**2.9543**	**20.0371**	**24.0177**	**0.1085**	**6.9125**	**0.0717**	**6.9842**	**1.8690**	**0.0670**	**1.9361**	**0.0000**	**10,086.54 66**	**10,086.54 66**	**0.3543**	**0.0000**	**10,095.40 37**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

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

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4944	17.7110	4.4653	0.0558	1.3491	0.0251	1.3742	0.3899	0.0240	0.4139	0.0000	5,327.8118	5,327.8118	0.1911	0.0000	5,332.5879
Worker	2.2876	1.8526	17.7965	0.0510	5.6167	0.0439	5.6606	1.4936	0.0404	1.5340	0.0000	4,612.9424	4,612.9424	0.1461	0.0000	4,616.5947
Total	**2.7820**	**19.5636**	**22.2619**	**0.1068**	**6.9658**	**0.0690**	**7.0347**	**1.8835**	**0.0644**	**1.9479**	**0.0000**	**9,940.7542**	**9,940.7542**	**0.3371**	**0.0000**	**9,949.1826**

Mitigated Construction On-Site

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

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4944	17.7110	4.4653	0.0558	1.3491	0.0251	1.3742	0.3899	0.0240	0.4139	0.0000	5,327.811 8	5,327.811 8	0.1911	0.0000	5,332.587 9
Worker	2.2876	1.8526	17.7965	0.0510	5.6167	0.0439	5.6606	1.4936	0.0404	1.5340	0.0000	4,612.942 4	4,612.942 4	0.1461	0.0000	4,616.594 7
Total	**2.7820**	**19.5636**	**22.2619**	**0.1068**	**6.9658**	**0.0690**	**7.0347**	**1.8835**	**0.0644**	**1.9479**	**0.0000**	**9,940.754 2**	**9,940.754 2**	**0.3371**	**0.0000**	**9,949.182 6**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

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

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4683	17.2694	4.1863	0.0552	1.3440	0.0232	1.3673	0.3884	0.0222	0.4106	0.0000	5,271.1868	5,271.1868	0.1876	0.0000	5,275.8757
Worker	2.1380	1.6700	16.3207	0.0488	5.5953	0.0428	5.6380	1.4879	0.0394	1.5273	0.0000	4,413.3318	4,413.3318	0.1314	0.0000	4,416.6163
Total	**2.6062**	**18.9394**	**20.5071**	**0.1040**	**6.9393**	**0.0660**	**7.0053**	**1.8763**	**0.0616**	**1.9379**	**0.0000**	**9,684.5186**	**9,684.5186**	**0.3189**	**0.0000**	**9,692.4921**

Mitigated Construction On-Site

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

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4683	17.2694	4.1863	0.0552	1.3440	0.0232	1.3673	0.3884	0.0222	0.4106	0.0000	5,271.1868	5,271.1868	0.1876	0.0000	5,275.8757
Worker	2.1380	1.6700	16.3207	0.0488	5.5953	0.0428	5.6380	1.4879	0.0394	1.5273	0.0000	4,413.3318	4,413.3318	0.1314	0.0000	4,416.6163
Total	**2.6062**	**18.9394**	**20.5071**	**0.1040**	**6.9393**	**0.0660**	**7.0053**	**1.8763**	**0.0616**	**1.9379**	**0.0000**	**9,684.5186**	**9,684.5186**	**0.3189**	**0.0000**	**9,692.4921**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

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

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4501	16.9624	4.0006	0.0549	1.3441	0.0220	1.3661	0.3885	0.0210	0.4095	0.0000	5,243.958 6	5,243.958 6	0.1852	0.0000	5,248.588 1
Worker	2.0117	1.5155	14.9996	0.0468	5.5953	0.0410	5.6363	1.4879	0.0378	1.5256	0.0000	4,230.985 1	4,230.985 1	0.1179	0.0000	4,233.931 6
Total	**2.4618**	**18.4779**	**19.0002**	**0.1017**	**6.9394**	**0.0630**	**7.0024**	**1.8763**	**0.0588**	**1.9351**	**0.0000**	**9,474.943 7**	**9,474.943 7**	**0.3030**	**0.0000**	**9,482.519 8**

Mitigated Construction On-Site

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

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4501	16.9624	4.0006	0.0549	1.3441	0.0220	1.3661	0.3885	0.0210	0.4095	0.0000	5,243.958 6	5,243.958 6	0.1852	0.0000	5,248.588 1
Worker	2.0117	1.5155	14.9996	0.0468	5.5953	0.0410	5.6363	1.4879	0.0378	1.5256	0.0000	4,230.985 1	4,230.985 1	0.1179	0.0000	4,233.931 6
Total	**2.4618**	**18.4779**	**19.0002**	**0.1017**	**6.9394**	**0.0630**	**7.0024**	**1.8763**	**0.0588**	**1.9351**	**0.0000**	**9,474.943 7**	**9,474.943 7**	**0.3030**	**0.0000**	**9,482.519 8**

3.6 Building Construction - 2027

Unmitigated Construction On-Site

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

3.6 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4345	16.6812	3.8331	0.0546	1.3442	0.0209	1.3650	0.3885	0.0199	0.4084	0.0000	5,220.2317	5,220.2317	0.1829	0.0000	5,224.8036
Worker	1.8935	1.3772	13.8798	0.0452	5.5953	0.0386	5.6339	1.4879	0.0355	1.5234	0.0000	4,085.6944	4,085.6944	0.1066	0.0000	4,088.3605
Total	**2.3279**	**18.0584**	**17.7128**	**0.0998**	**6.9395**	**0.0595**	**6.9989**	**1.8764**	**0.0555**	**1.9319**	**0.0000**	**9,305.9261**	**9,305.9261**	**0.2895**	**0.0000**	**9,313.1641**

Mitigated Construction On-Site

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

3.6 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4345	16.6812	3.8331	0.0546	1.3442	0.0209	1.3650	0.3885	0.0199	0.4084	0.0000	5,220.2317	5,220.2317	0.1829	0.0000	5,224.8036
Worker	1.8935	1.3772	13.8798	0.0452	5.5953	0.0386	5.6339	1.4879	0.0355	1.5234	0.0000	4,085.6944	4,085.6944	0.1066	0.0000	4,088.3605
Total	**2.3279**	**18.0584**	**17.7128**	**0.0998**	**6.9395**	**0.0595**	**6.9989**	**1.8764**	**0.0555**	**1.9319**	**0.0000**	**9,305.9261**	**9,305.9261**	**0.2895**	**0.0000**	**9,313.1641**

3.6 Building Construction - 2028

Unmitigated Construction On-Site

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

3.6 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4199	16.3829	3.6996	0.0542	1.3391	0.0198	1.3589	0.3870	0.0189	0.4059	0.0000	5,180.5095	5,180.5095	0.1796	0.0000	5,184.9993
Worker	1.7673	1.2495	12.8474	0.0436	5.5738	0.0358	5.6096	1.4822	0.0329	1.5151	0.0000	3,941.5958	3,941.5958	0.0966	0.0000	3,944.0107
Total	**2.1872**	**17.6323**	**16.5470**	**0.0978**	**6.9129**	**0.0556**	**6.9685**	**1.8692**	**0.0518**	**1.9211**	**0.0000**	**9,122.1054**	**9,122.1054**	**0.2762**	**0.0000**	**9,129.0100**

Mitigated Construction On-Site

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

3.6 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4199	16.3829	3.6996	0.0542	1.3391	0.0198	1.3589	0.3870	0.0189	0.4059	0.0000	5,180.5095	5,180.5095	0.1796	0.0000	5,184.9993
Worker	1.7673	1.2495	12.8474	0.0436	5.5738	0.0358	5.6096	1.4822	0.0329	1.5151	0.0000	3,941.5958	3,941.5958	0.0966	0.0000	3,944.0107
Total	**2.1872**	**17.6323**	**16.5470**	**0.0978**	**6.9129**	**0.0556**	**6.9685**	**1.8692**	**0.0518**	**1.9211**	**0.0000**	**9,122.1054**	**9,122.1054**	**0.2762**	**0.0000**	**9,129.0100**

3.6 Building Construction - 2029

Unmitigated Construction On-Site

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

3.6 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4108	16.2315	3.6133	0.0542	1.3443	0.0189	1.3632	0.3885	0.0181	0.4066	0.0000	5,183.3191	5,183.3191	0.1782	0.0000	5,187.7752
Worker	1.6473	1.1392	11.9469	0.0425	5.5953	0.0334	5.6287	1.4879	0.0308	1.5186	0.0000	3,842.2243	3,842.2243	0.0876	0.0000	3,844.4139
Total	**2.0581**	**17.3707**	**15.5602**	**0.0967**	**6.9396**	**0.0524**	**6.9919**	**1.8764**	**0.0489**	**1.9253**	**0.0000**	**9,025.5434**	**9,025.5434**	**0.2658**	**0.0000**	**9,032.1890**

Mitigated Construction On-Site

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

3.6 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4108	16.2315	3.6133	0.0542	1.3443	0.0189	1.3632	0.3885	0.0181	0.4066	0.0000	5,183.3191	5,183.3191	0.1782	0.0000	5,187.7752
Worker	1.6473	1.1392	11.9469	0.0425	5.5953	0.0334	5.6287	1.4879	0.0308	1.5186	0.0000	3,842.2243	3,842.2243	0.0876	0.0000	3,844.4139
Total	**2.0581**	**17.3707**	**15.5602**	**0.0967**	**6.9396**	**0.0524**	**6.9919**	**1.8764**	**0.0489**	**1.9253**	**0.0000**	**9,025.5434**	**9,025.5434**	**0.2658**	**0.0000**	**9,032.1890**

3.6 Building Construction - 2030

Unmitigated Construction On-Site

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

3.6 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4021	16.0485	3.5382	0.0541	1.3443	0.0182	1.3625	0.3886	0.0174	0.4059	0.0000	5,170.2142	5,170.2142	0.1760	0.0000	5,174.6152
Worker	1.5216	1.0317	11.0869	0.0413	5.5953	0.0311	5.6264	1.4879	0.0286	1.5165	0.0000	3,740.7848	3,740.7848	0.0791	0.0000	3,742.7617
Total	**1.9236**	**17.0802**	**14.6251**	**0.0954**	**6.9396**	**0.0493**	**6.9889**	**1.8764**	**0.0460**	**1.9224**	**0.0000**	**8,910.9990**	**8,910.9990**	**0.2551**	**0.0000**	**8,917.3769**

Mitigated Construction On-Site

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

3.6 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4021	16.0485	3.5382	0.0541	1.3443	0.0182	1.3625	0.3886	0.0174	0.4059	0.0000	5,170.2142	5,170.2142	0.1760	0.0000	5,174.6152
Worker	1.5216	1.0317	11.0869	0.0413	5.5953	0.0311	5.6264	1.4879	0.0286	1.5165	0.0000	3,740.7848	3,740.7848	0.0791	0.0000	3,742.7617
Total	**1.9236**	**17.0802**	**14.6251**	**0.0954**	**6.9396**	**0.0493**	**6.9889**	**1.8764**	**0.0460**	**1.9224**	**0.0000**	**8,910.9990**	**8,910.9990**	**0.2551**	**0.0000**	**8,917.3769**

3.6 Building Construction - 2031

Unmitigated Construction On-Site

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

3.6 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3949	15.8909	3.4752	0.0540	1.3444	0.0175	1.3619	0.3886	0.0168	0.4053	0.0000	5,160.6210	5,160.6210	0.1745	0.0000	5,164.9827
Worker	1.3873	0.9274	10.2495	0.0403	5.5953	0.0290	5.6242	1.4879	0.0266	1.5145	0.0000	3,651.1338	3,651.1338	0.0709	0.0000	3,652.9053
Total	**1.7821**	**16.8183**	**13.7247**	**0.0943**	**6.9397**	**0.0465**	**6.9861**	**1.8764**	**0.0434**	**1.9198**	**0.0000**	**8,811.7548**	**8,811.7548**	**0.2453**	**0.0000**	**8,817.8880**

Mitigated Construction On-Site

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

3.6 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3949	15.8909	3.4752	0.0540	1.3444	0.0175	1.3619	0.3886	0.0168	0.4053	0.0000	5,160.6210	5,160.6210	0.1745	0.0000	5,164.9827
Worker	1.3873	0.9274	10.2495	0.0403	5.5953	0.0290	5.6242	1.4879	0.0266	1.5145	0.0000	3,651.1338	3,651.1338	0.0709	0.0000	3,652.9053
Total	**1.7821**	**16.8183**	**13.7247**	**0.0943**	**6.9397**	**0.0465**	**6.9861**	**1.8764**	**0.0434**	**1.9198**	**0.0000**	**8,811.7548**	**8,811.7548**	**0.2453**	**0.0000**	**8,817.8880**

3.6 Building Construction - 2032

Unmitigated Construction On-Site

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

3.6 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3904	15.8128	3.4413	0.0541	1.3496	0.0170	1.3666	0.3901	0.0163	0.4063	0.0000	5,174.652 9	5,174.652 9	0.1736	0.0000	5,178.993 1
Worker	1.2727	0.8406	9.5574	0.0396	5.6167	0.0271	5.6438	1.4936	0.0249	1.5185	0.0000	3,586.143 7	3,586.143 7	0.0640	0.0000	3,587.742 7
Total	**1.6631**	**16.6534**	**12.9986**	**0.0937**	**6.9663**	**0.0441**	**7.0103**	**1.8836**	**0.0412**	**1.9248**	**0.0000**	**8,760.796 6**	**8,760.796 6**	**0.2376**	**0.0000**	**8,766.735 8**

Mitigated Construction On-Site

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

3.6 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3904	15.8128	3.4413	0.0541	1.3496	0.0170	1.3666	0.3901	0.0163	0.4063	0.0000	5,174.652 9	5,174.652 9	0.1736	0.0000	5,178.993 1
Worker	1.2727	0.8406	9.5574	0.0396	5.6167	0.0271	5.6438	1.4936	0.0249	1.5185	0.0000	3,586.143 7	3,586.143 7	0.0640	0.0000	3,587.742 7
Total	**1.6631**	**16.6534**	**12.9986**	**0.0937**	**6.9663**	**0.0441**	**7.0103**	**1.8836**	**0.0412**	**1.9248**	**0.0000**	**8,760.796 6**	**8,760.796 6**	**0.2376**	**0.0000**	**8,766.735 8**

3.6 Building Construction - 2033

Unmitigated Construction On-Site

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

3.6 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3829	15.5710	3.3785	0.0537	1.3393	0.0163	1.3557	0.3871	0.0156	0.4027	0.0000	5,132.0806	5,132.0806	0.1711	0.0000	5,136.3591
Worker	1.1612	0.7585	8.8677	0.0385	5.5738	0.0251	5.5989	1.4822	0.0231	1.5053	0.0000	3,490.3811	3,490.3811	0.0574	0.0000	3,491.8165
Total	**1.5440**	**16.3294**	**12.2462**	**0.0922**	**6.9131**	**0.0414**	**6.9546**	**1.8693**	**0.0387**	**1.9080**	**0.0000**	**8,622.4617**	**8,622.4617**	**0.2286**	**0.0000**	**8,628.1756**

Mitigated Construction On-Site

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

3.6 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3829	15.5710	3.3785	0.0537	1.3393	0.0163	1.3557	0.3871	0.0156	0.4027	0.0000	5,132.0806	5,132.0806	0.1711	0.0000	5,136.3591
Worker	1.1612	0.7585	8.8677	0.0385	5.5738	0.0251	5.5989	1.4822	0.0231	1.5053	0.0000	3,490.3811	3,490.3811	0.0574	0.0000	3,491.8165
Total	**1.5440**	**16.3294**	**12.2462**	**0.0922**	**6.9131**	**0.0414**	**6.9546**	**1.8693**	**0.0387**	**1.9080**	**0.0000**	**8,622.4617**	**8,622.4617**	**0.2286**	**0.0000**	**8,628.1756**

3.6 Building Construction - 2034

Unmitigated Construction On-Site

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

3.6 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3787	15.4664	3.3436	0.0536	1.3393	0.0159	1.3552	0.3871	0.0152	0.4023	0.0000	5,130.943 4	5,130.943 4	0.1701	0.0000	5,135.195 1
Worker	1.0774	0.6971	8.3037	0.0379	5.5738	0.0235	5.5973	1.4822	0.0216	1.5038	0.0000	3,430.717 3	3,430.717 3	0.0519	0.0000	3,432.014 5
Total	**1.4561**	**16.1635**	**11.6473**	**0.0915**	**6.9132**	**0.0393**	**6.9525**	**1.8693**	**0.0367**	**1.9060**	**0.0000**	**8,561.660 7**	**8,561.660 7**	**0.2220**	**0.0000**	**8,567.209 5**

Mitigated Construction On-Site

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

3.6 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3787	15.4664	3.3436	0.0536	1.3393	0.0159	1.3552	0.3871	0.0152	0.4023	0.0000	5,130.9434	5,130.9434	0.1701	0.0000	5,135.1951
Worker	1.0774	0.6971	8.3037	0.0379	5.5738	0.0235	5.5973	1.4822	0.0216	1.5038	0.0000	3,430.7173	3,430.7173	0.0519	0.0000	3,432.0145
Total	**1.4561**	**16.1635**	**11.6473**	**0.0915**	**6.9132**	**0.0393**	**6.9525**	**1.8693**	**0.0367**	**1.9060**	**0.0000**	**8,561.6607**	**8,561.6607**	**0.2220**	**0.0000**	**8,567.2095**

3.6 Building Construction - 2035

Unmitigated Construction On-Site

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

3.6 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3765	15.4391	3.3267	0.0538	1.3445	0.0155	1.3601	0.3886	0.0149	0.4035	0.0000	5,150.7263	5,150.7263	0.1700	0.0000	5,154.9761
Worker	1.0072	0.6511	7.8424	0.0374	5.5953	0.0221	5.6173	1.4879	0.0203	1.5082	0.0000	3,392.2584	3,392.2584	0.0473	0.0000	3,393.4396
Total	**1.3837**	**16.0901**	**11.1691**	**0.0913**	**6.9398**	**0.0376**	**6.9774**	**1.8765**	**0.0351**	**1.9116**	**0.0000**	**8,542.9847**	**8,542.9847**	**0.2172**	**0.0000**	**8,548.4157**

Mitigated Construction On-Site

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

3.6 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3765	15.4391	3.3267	0.0538	1.3445	0.0155	1.3601	0.3886	0.0149	0.4035	0.0000	5,150.7263	5,150.7263	0.1700	0.0000	5,154.9761
Worker	1.0072	0.6511	7.8424	0.0374	5.5953	0.0221	5.6173	1.4879	0.0203	1.5082	0.0000	3,392.2584	3,392.2584	0.0473	0.0000	3,393.4396
Total	**1.3837**	**16.0901**	**11.1691**	**0.0913**	**6.9398**	**0.0376**	**6.9774**	**1.8765**	**0.0351**	**1.9116**	**0.0000**	**8,542.9847**	**8,542.9847**	**0.2172**	**0.0000**	**8,548.4157**

3.6 Building Construction - 2036

Unmitigated Construction On-Site

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

3.6 Building Construction - 2036

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3779	15.4982	3.3394	0.0541	1.3497	0.0156	1.3653	0.3901	0.0149	0.4050	0.0000	5,170.460 8	5,170.460 8	0.1706	0.0000	5,174.727 0
Worker	1.0111	0.6536	7.8725	0.0376	5.6167	0.0221	5.6389	1.4936	0.0204	1.5139	0.0000	3,405.255 6	3,405.255 6	0.0474	0.0000	3,406.441 3
Total	**1.3890**	**16.1518**	**11.2119**	**0.0916**	**6.9664**	**0.0377**	**7.0041**	**1.8837**	**0.0353**	**1.9190**	**0.0000**	**8,575.716 4**	**8,575.716 4**	**0.2181**	**0.0000**	**8,581.168 2**

Mitigated Construction On-Site

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

3.6 Building Construction - 2036

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3779	15.4982	3.3394	0.0541	1.3497	0.0156	1.3653	0.3901	0.0149	0.4050	0.0000	5,170.4608	5,170.4608	0.1706	0.0000	5,174.7270
Worker	1.0111	0.6536	7.8725	0.0376	5.6167	0.0221	5.6389	1.4936	0.0204	1.5139	0.0000	3,405.2556	3,405.2556	0.0474	0.0000	3,406.4413
Total	**1.3890**	**16.1518**	**11.2119**	**0.0916**	**6.9664**	**0.0377**	**7.0041**	**1.8837**	**0.0353**	**1.9190**	**0.0000**	**8,575.7164**	**8,575.7164**	**0.2181**	**0.0000**	**8,581.1682**

3.6 Building Construction - 2037

Unmitigated Construction On-Site

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

3.6 Building Construction - 2037

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3765	15.4391	3.3267	0.0538	1.3445	0.0155	1.3601	0.3886	0.0149	0.4035	0.0000	5,150.7263	5,150.7263	0.1700	0.0000	5,154.9761
Worker	1.0072	0.6511	7.8424	0.0374	5.5953	0.0221	5.6173	1.4879	0.0203	1.5082	0.0000	3,392.2584	3,392.2584	0.0473	0.0000	3,393.4396
Total	**1.3837**	**16.0901**	**11.1691**	**0.0913**	**6.9398**	**0.0376**	**6.9774**	**1.8765**	**0.0351**	**1.9116**	**0.0000**	**8,542.9847**	**8,542.9847**	**0.2172**	**0.0000**	**8,548.4157**

Mitigated Construction On-Site

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

3.6 Building Construction - 2037

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3765	15.4391	3.3267	0.0538	1.3445	0.0155	1.3601	0.3886	0.0149	0.4035	0.0000	5,150.7263	5,150.7263	0.1700	0.0000	5,154.9761
Worker	1.0072	0.6511	7.8424	0.0374	5.5953	0.0221	5.6173	1.4879	0.0203	1.5082	0.0000	3,392.2584	3,392.2584	0.0473	0.0000	3,393.4396
Total	**1.3837**	**16.0901**	**11.1691**	**0.0913**	**6.9398**	**0.0376**	**6.9774**	**1.8765**	**0.0351**	**1.9116**	**0.0000**	**8,542.9847**	**8,542.9847**	**0.2172**	**0.0000**	**8,548.4157**

3.6 Building Construction - 2038

Unmitigated Construction On-Site

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

3.6 Building Construction - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3765	15.4391	3.3267	0.0538	1.3445	0.0155	1.3601	0.3886	0.0149	0.4035	0.0000	5,150.7263	5,150.7263	0.1700	0.0000	5,154.9761
Worker	1.0072	0.6511	7.8424	0.0374	5.5953	0.0221	5.6173	1.4879	0.0203	1.5082	0.0000	3,392.2584	3,392.2584	0.0473	0.0000	3,393.4396
Total	**1.3837**	**16.0901**	**11.1691**	**0.0913**	**6.9398**	**0.0376**	**6.9774**	**1.8765**	**0.0351**	**1.9116**	**0.0000**	**8,542.9847**	**8,542.9847**	**0.2172**	**0.0000**	**8,548.4157**

Mitigated Construction On-Site

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

3.6 Building Construction - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3765	15.4391	3.3267	0.0538	1.3445	0.0155	1.3601	0.3886	0.0149	0.4035	0.0000	5,150.7263	5,150.7263	0.1700	0.0000	5,154.9761
Worker	1.0072	0.6511	7.8424	0.0374	5.5953	0.0221	5.6173	1.4879	0.0203	1.5082	0.0000	3,392.2584	3,392.2584	0.0473	0.0000	3,393.4396
Total	**1.3837**	**16.0901**	**11.1691**	**0.0913**	**6.9398**	**0.0376**	**6.9774**	**1.8765**	**0.0351**	**1.9116**	**0.0000**	**8,542.9847**	**8,542.9847**	**0.2172**	**0.0000**	**8,548.4157**

3.6 Building Construction - 2039

Unmitigated Construction On-Site

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

3.6 Building Construction - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3750	15.3799	3.3139	0.0536	1.3394	0.0155	1.3548	0.3871	0.0148	0.4019	0.0000	5,130.9917	5,130.9917	0.1693	0.0000	5,135.2252
Worker	1.0034	0.6486	7.8124	0.0373	5.5738	0.0220	5.5958	1.4822	0.0202	1.5024	0.0000	3,379.2613	3,379.2613	0.0471	0.0000	3,380.4379
Total	**1.3784**	**16.0285**	**11.1263**	**0.0909**	**6.9132**	**0.0374**	**6.9506**	**1.8693**	**0.0350**	**1.9043**	**0.0000**	**8,510.2529**	**8,510.2529**	**0.2164**	**0.0000**	**8,515.6631**

Mitigated Construction On-Site

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

3.6 Building Construction - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3750	15.3799	3.3139	0.0536	1.3394	0.0155	1.3548	0.3871	0.0148	0.4019	0.0000	5,130.9917	5,130.9917	0.1693	0.0000	5,135.2252
Worker	1.0034	0.6486	7.8124	0.0373	5.5738	0.0220	5.5958	1.4822	0.0202	1.5024	0.0000	3,379.2613	3,379.2613	0.0471	0.0000	3,380.4379
Total	**1.3784**	**16.0285**	**11.1263**	**0.0909**	**6.9132**	**0.0374**	**6.9506**	**1.8693**	**0.0350**	**1.9043**	**0.0000**	**8,510.2529**	**8,510.2529**	**0.2164**	**0.0000**	**8,515.6631**

3.6 Building Construction - 2040

Unmitigated Construction On-Site

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

3.6 Building Construction - 2040

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3378	13.9630	2.9715	0.0497	1.2364	0.0133	1.2497	0.3574	0.0127	0.3701	0.0000	4,753.1364	4,753.1364	0.1543	0.0000	4,756.9933
Worker	0.6932	0.4578	5.8701	0.0328	5.1451	0.0156	5.1607	1.3682	0.0144	1.3825	0.0000	2,969.8680	2,969.8680	0.0305	0.0000	2,970.6312
Total	**1.0309**	**14.4208**	**8.8415**	**0.0825**	**6.3815**	**0.0289**	**6.4104**	**1.7255**	**0.0271**	**1.7526**	**0.0000**	**7,723.0044**	**7,723.0044**	**0.1848**	**0.0000**	**7,727.6245**

Mitigated Construction On-Site

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

3.6 Building Construction - 2040

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3378	13.9630	2.9715	0.0497	1.2364	0.0133	1.2497	0.3574	0.0127	0.3701	0.0000	4,753.1364	4,753.1364	0.1543	0.0000	4,756.9933
Worker	0.6932	0.4578	5.8701	0.0328	5.1451	0.0156	5.1607	1.3682	0.0144	1.3825	0.0000	2,969.8680	2,969.8680	0.0305	0.0000	2,970.6312
Total	**1.0309**	**14.4208**	**8.8415**	**0.0825**	**6.3815**	**0.0289**	**6.4104**	**1.7255**	**0.0271**	**1.7526**	**0.0000**	**7,723.0044**	**7,723.0044**	**0.1848**	**0.0000**	**7,727.6245**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.1686					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.1832	0.2181	3.6000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	30.6390	30.6390	2.1000e-003	0.0000	30.6916
Total	**3.1948**	**0.1832**	**0.2181**	**3.6000e-004**		**0.0113**	**0.0113**		**0.0113**	**0.0113**	**0.0000**	**30.6390**	**30.6390**	**2.1000e-003**	**0.0000**	**30.6916**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5225	0.4699	4.2857	0.0105	1.0288	8.8800e-003	1.0377	0.2736	8.1900e-003	0.2818	0.0000	945.8680	945.8680	0.0375	0.0000	946.8062
Total	**0.5225**	**0.4699**	**4.2857**	**0.0105**	**1.0288**	**8.8800e-003**	**1.0377**	**0.2736**	**8.1900e-003**	**0.2818**	**0.0000**	**945.8680**	**945.8680**	**0.0375**	**0.0000**	**946.8062**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.1686					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.1832	0.2181	3.6000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	30.6390	30.6390	2.1000e-003	0.0000	30.6916
Total	**3.1948**	**0.1832**	**0.2181**	**3.6000e-004**		**0.0113**	**0.0113**		**0.0113**	**0.0113**	**0.0000**	**30.6390**	**30.6390**	**2.1000e-003**	**0.0000**	**30.6916**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5225	0.4699	4.2857	0.0105	1.0288	8.8800e-003	1.0377	0.2736	8.1900e-003	0.2818	0.0000	945.8680	945.8680	0.0375	0.0000	946.8062
Total	**0.5225**	**0.4699**	**4.2857**	**0.0105**	**1.0288**	**8.8800e-003**	**1.0377**	**0.2736**	**8.1900e-003**	**0.2818**	**0.0000**	**945.8680**	**945.8680**	**0.0375**	**0.0000**	**946.8062**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**3.4592**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5247	0.4561	4.2330	0.0110	1.1146	9.2800e-003	1.1238	0.2964	8.5500e-003	0.3049	0.0000	988.6316	988.6316	0.0363	0.0000	989.5399
Total	**0.5247**	**0.4561**	**4.2330**	**0.0110**	**1.1146**	**9.2800e-003**	**1.1238**	**0.2964**	**8.5500e-003**	**0.3049**	**0.0000**	**988.6316**	**988.6316**	**0.0363**	**0.0000**	**989.5399**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**3.4592**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5247	0.4561	4.2330	0.0110	1.1146	9.2800e-003	1.1238	0.2964	8.5500e-003	0.3049	0.0000	988.6316	988.6316	0.0363	0.0000	989.5399
Total	**0.5247**	**0.4561**	**4.2330**	**0.0110**	**1.1146**	**9.2800e-003**	**1.1238**	**0.2964**	**8.5500e-003**	**0.3049**	**0.0000**	**988.6316**	**988.6316**	**0.0363**	**0.0000**	**989.5399**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**3.4575**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4870	0.4088	3.8518	0.0105	1.1146	8.9800e-003	1.1235	0.2964	8.2800e-003	0.3047	0.0000	952.0051	952.0051	0.0324	0.0000	952.8148
Total	**0.4870**	**0.4088**	**3.8518**	**0.0105**	**1.1146**	**8.9800e-003**	**1.1235**	**0.2964**	**8.2800e-003**	**0.3047**	**0.0000**	**952.0051**	**952.0051**	**0.0324**	**0.0000**	**952.8148**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**3.4575**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4870	0.4088	3.8518	0.0105	1.1146	8.9800e-003	1.1235	0.2964	8.2800e-003	0.3047	0.0000	952.0051	952.0051	0.0324	0.0000	952.8148
Total	**0.4870**	**0.4088**	**3.8518**	**0.0105**	**1.1146**	**8.9800e-003**	**1.1235**	**0.2964**	**8.2800e-003**	**0.3047**	**0.0000**	**952.0051**	**952.0051**	**0.0324**	**0.0000**	**952.8148**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4590					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**3.4827**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4574	0.3704	3.5586	0.0102	1.1231	8.7700e-003	1.1319	0.2987	8.0800e-003	0.3067	0.0000	922.4175	922.4175	0.0292	0.0000	923.1478
Total	**0.4574**	**0.3704**	**3.5586**	**0.0102**	**1.1231**	**8.7700e-003**	**1.1319**	**0.2987**	**8.0800e-003**	**0.3067**	**0.0000**	**922.4175**	**922.4175**	**0.0292**	**0.0000**	**923.1478**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4590					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**3.4827**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4574	0.3704	3.5586	0.0102	1.1231	8.7700e-003	1.1319	0.2987	8.0800e-003	0.3067	0.0000	922.4175	922.4175	0.0292	0.0000	923.1478
Total	**0.4574**	**0.3704**	**3.5586**	**0.0102**	**1.1231**	**8.7700e-003**	**1.1319**	**0.2987**	**8.0800e-003**	**0.3067**	**0.0000**	**922.4175**	**922.4175**	**0.0292**	**0.0000**	**923.1478**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**3.4681**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4275	0.3340	3.2635	9.7600e-003	1.1189	8.5500e-003	1.1274	0.2975	7.8800e-003	0.3054	0.0000	882.5028	882.5028	0.0263	0.0000	883.1596
Total	**0.4275**	**0.3340**	**3.2635**	**9.7600e-003**	**1.1189**	**8.5500e-003**	**1.1274**	**0.2975**	**7.8800e-003**	**0.3054**	**0.0000**	**882.5028**	**882.5028**	**0.0263**	**0.0000**	**883.1596**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**3.4681**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4275	0.3340	3.2635	9.7600e-003	1.1189	8.5500e-003	1.1274	0.2975	7.8800e-003	0.3054	0.0000	882.5028	882.5028	0.0263	0.0000	883.1596
Total	**0.4275**	**0.3340**	**3.2635**	**9.7600e-003**	**1.1189**	**8.5500e-003**	**1.1274**	**0.2975**	**7.8800e-003**	**0.3054**	**0.0000**	**882.5028**	**882.5028**	**0.0263**	**0.0000**	**883.1596**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**3.4681**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4023	0.3031	2.9994	9.3600e-003	1.1189	8.2000e-003	1.1271	0.2975	7.5500e-003	0.3051	0.0000	846.0402	846.0402	0.0236	0.0000	846.6294
Total	**0.4023**	**0.3031**	**2.9994**	**9.3600e-003**	**1.1189**	**8.2000e-003**	**1.1271**	**0.2975**	**7.5500e-003**	**0.3051**	**0.0000**	**846.0402**	**846.0402**	**0.0236**	**0.0000**	**846.6294**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**3.4681**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4023	0.3031	2.9994	9.3600e-003	1.1189	8.2000e-003	1.1271	0.2975	7.5500e-003	0.3051	0.0000	846.0402	846.0402	0.0236	0.0000	846.6294
Total	**0.4023**	**0.3031**	**2.9994**	**9.3600e-003**	**1.1189**	**8.2000e-003**	**1.1271**	**0.2975**	**7.5500e-003**	**0.3051**	**0.0000**	**846.0402**	**846.0402**	**0.0236**	**0.0000**	**846.6294**

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**3.4681**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3786	0.2754	2.7754	9.0300e-003	1.1189	7.7200e-003	1.1266	0.2975	7.1100e-003	0.3046	0.0000	816.9875	816.9875	0.0213	0.0000	817.5206
Total	**0.3786**	**0.2754**	**2.7754**	**9.0300e-003**	**1.1189**	**7.7200e-003**	**1.1266**	**0.2975**	**7.1100e-003**	**0.3046**	**0.0000**	**816.9875**	**816.9875**	**0.0213**	**0.0000**	**817.5206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**3.4681**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3786	0.2754	2.7754	9.0300e-003	1.1189	7.7200e-003	1.1266	0.2975	7.1100e-003	0.3046	0.0000	816.9875	816.9875	0.0213	0.0000	817.5206
Total	**0.3786**	**0.2754**	**2.7754**	**9.0300e-003**	**1.1189**	**7.7200e-003**	**1.1266**	**0.2975**	**7.1100e-003**	**0.3046**	**0.0000**	**816.9875**	**816.9875**	**0.0213**	**0.0000**	**817.5206**

3.7 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2376
Total	**3.4548**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2376**

3.7 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3534	0.2499	2.5690	8.7100e-003	1.1146	7.1600e-003	1.1217	0.2964	6.5900e-003	0.3030	0.0000	788.1731	788.1731	0.0193	0.0000	788.6560
Total	**0.3534**	**0.2499**	**2.5690**	**8.7100e-003**	**1.1146**	**7.1600e-003**	**1.1217**	**0.2964**	**6.5900e-003**	**0.3030**	**0.0000**	**788.1731**	**788.1731**	**0.0193**	**0.0000**	**788.6560**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2375
Total	**3.4548**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2375**

3.7 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3534	0.2499	2.5690	8.7100e-003	1.1146	7.1600e-003	1.1217	0.2964	6.5900e-003	0.3030	0.0000	788.1731	788.1731	0.0193	0.0000	788.6560
Total	**0.3534**	**0.2499**	**2.5690**	**8.7100e-003**	**1.1146**	**7.1600e-003**	**1.1217**	**0.2964**	**6.5900e-003**	**0.3030**	**0.0000**	**788.1731**	**788.1731**	**0.0193**	**0.0000**	**788.6560**

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**3.4681**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3294	0.2278	2.3889	8.4900e-003	1.1189	6.6900e-003	1.1255	0.2975	6.1500e-003	0.3037	0.0000	768.3025	768.3025	0.0175	0.0000	768.7403
Total	**0.3294**	**0.2278**	**2.3889**	**8.4900e-003**	**1.1189**	**6.6900e-003**	**1.1255**	**0.2975**	**6.1500e-003**	**0.3037**	**0.0000**	**768.3025**	**768.3025**	**0.0175**	**0.0000**	**768.7403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**3.4681**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3294	0.2278	2.3889	8.4900e-003	1.1189	6.6900e-003	1.1255	0.2975	6.1500e-003	0.3037	0.0000	768.3025	768.3025	0.0175	0.0000	768.7403
Total	**0.3294**	**0.2278**	**2.3889**	**8.4900e-003**	**1.1189**	**6.6900e-003**	**1.1255**	**0.2975**	**6.1500e-003**	**0.3037**	**0.0000**	**768.3025**	**768.3025**	**0.0175**	**0.0000**	**768.7403**

3.7 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3200	33.3200	1.3500e-003	0.0000	33.3537
Total	**3.4629**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3200**	**33.3200**	**1.3500e-003**	**0.0000**	**33.3537**

3.7 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3043	0.2063	2.2170	8.2700e-003	1.1189	6.2200e-003	1.1251	0.2975	5.7200e-003	0.3032	0.0000	748.0183	748.0183	0.0158	0.0000	748.4136
Total	**0.3043**	**0.2063**	**2.2170**	**8.2700e-003**	**1.1189**	**6.2200e-003**	**1.1251**	**0.2975**	**5.7200e-003**	**0.3032**	**0.0000**	**748.0183**	**748.0183**	**0.0158**	**0.0000**	**748.4136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3199	33.3199	1.3500e-003	0.0000	33.3536
Total	**3.4629**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3199**	**33.3199**	**1.3500e-003**	**0.0000**	**33.3536**

3.7 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3043	0.2063	2.2170	8.2700e-003	1.1189	6.2200e-003	1.1251	0.2975	5.7200e-003	0.3032	0.0000	748.0183	748.0183	0.0158	0.0000	748.4136
Total	**0.3043**	**0.2063**	**2.2170**	**8.2700e-003**	**1.1189**	**6.2200e-003**	**1.1251**	**0.2975**	**5.7200e-003**	**0.3032**	**0.0000**	**748.0183**	**748.0183**	**0.0158**	**0.0000**	**748.4136**

3.7 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3200	33.3200	1.3500e-003	0.0000	33.3537
Total	**3.4629**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3200**	**33.3200**	**1.3500e-003**	**0.0000**	**33.3537**

3.7 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2774	0.1854	2.0495	8.0700e-003	1.1189	5.7900e-003	1.1246	0.2975	5.3200e-003	0.3028	0.0000	730.0914	730.0914	0.0142	0.0000	730.4457
Total	**0.2774**	**0.1854**	**2.0495**	**8.0700e-003**	**1.1189**	**5.7900e-003**	**1.1246**	**0.2975**	**5.3200e-003**	**0.3028**	**0.0000**	**730.0914**	**730.0914**	**0.0142**	**0.0000**	**730.4457**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3199	33.3199	1.3500e-003	0.0000	33.3536
Total	**3.4629**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3199**	**33.3199**	**1.3500e-003**	**0.0000**	**33.3536**

3.7 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2774	0.1854	2.0495	8.0700e-003	1.1189	5.7900e-003	1.1246	0.2975	5.3200e-003	0.3028	0.0000	730.0914	730.0914	0.0142	0.0000	730.4457
Total	**0.2774**	**0.1854**	**2.0495**	**8.0700e-003**	**1.1189**	**5.7900e-003**	**1.1246**	**0.2975**	**5.3200e-003**	**0.3028**	**0.0000**	**730.0914**	**730.0914**	**0.0142**	**0.0000**	**730.4457**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4590					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1122	0.2355	3.9000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	33.4476	33.4476	1.3500e-003	0.0000	33.4815
Total	**3.4761**	**0.1122**	**0.2355**	**3.9000e-004**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**33.4476**	**33.4476**	**1.3500e-003**	**0.0000**	**33.4815**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2545	0.1681	1.9111	7.9200e-003	1.1231	5.4100e-003	1.1286	0.2987	4.9800e-003	0.3036	0.0000	717.0958	717.0958	0.0128	0.0000	717.4156
Total	**0.2545**	**0.1681**	**1.9111**	**7.9200e-003**	**1.1231**	**5.4100e-003**	**1.1286**	**0.2987**	**4.9800e-003**	**0.3036**	**0.0000**	**717.0958**	**717.0958**	**0.0128**	**0.0000**	**717.4156**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4590					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1122	0.2355	3.9000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	33.4476	33.4476	1.3500e-003	0.0000	33.4814
Total	**3.4761**	**0.1122**	**0.2355**	**3.9000e-004**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**33.4476**	**33.4476**	**1.3500e-003**	**0.0000**	**33.4814**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2545	0.1681	1.9111	7.9200e-003	1.1231	5.4100e-003	1.1286	0.2987	4.9800e-003	0.3036	0.0000	717.0958	717.0958	0.0128	0.0000	717.4156
Total	**0.2545**	**0.1681**	**1.9111**	**7.9200e-003**	**1.1231**	**5.4100e-003**	**1.1286**	**0.2987**	**4.9800e-003**	**0.3036**	**0.0000**	**717.0958**	**717.0958**	**0.0128**	**0.0000**	**717.4156**

3.7 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2259
Total	**3.4496**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2259**

3.7 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2322	0.1517	1.7732	7.7100e-003	1.1146	5.0200e-003	1.1196	0.2964	4.6100e-003	0.3010	0.0000	697.9469	697.9469	0.0115	0.0000	698.2339
Total	**0.2322**	**0.1517**	**1.7732**	**7.7100e-003**	**1.1146**	**5.0200e-003**	**1.1196**	**0.2964**	**4.6100e-003**	**0.3010**	**0.0000**	**697.9469**	**697.9469**	**0.0115**	**0.0000**	**698.2339**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2258
Total	**3.4496**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2258**

3.7 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2322	0.1517	1.7732	7.7100e-003	1.1146	5.0200e-003	1.1196	0.2964	4.6100e-003	0.3010	0.0000	697.9469	697.9469	0.0115	0.0000	698.2339
Total	**0.2322**	**0.1517**	**1.7732**	**7.7100e-003**	**1.1146**	**5.0200e-003**	**1.1196**	**0.2964**	**4.6100e-003**	**0.3010**	**0.0000**	**697.9469**	**697.9469**	**0.0115**	**0.0000**	**698.2339**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2259
Total	**3.4496**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2259**

3.7 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2154	0.1394	1.6604	7.5700e-003	1.1146	4.6900e-003	1.1193	0.2964	4.3100e-003	0.3007	0.0000	686.0163	686.0163	0.0104	0.0000	686.2757
Total	**0.2154**	**0.1394**	**1.6604**	**7.5700e-003**	**1.1146**	**4.6900e-003**	**1.1193**	**0.2964**	**4.3100e-003**	**0.3007**	**0.0000**	**686.0163**	**686.0163**	**0.0104**	**0.0000**	**686.2757**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2258
Total	**3.4496**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2258**

3.7 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2154	0.1394	1.6604	7.5700e-003	1.1146	4.6900e-003	1.1193	0.2964	4.3100e-003	0.3007	0.0000	686.0163	686.0163	0.0104	0.0000	686.2757
Total	**0.2154**	**0.1394**	**1.6604**	**7.5700e-003**	**1.1146**	**4.6900e-003**	**1.1193**	**0.2964**	**4.3100e-003**	**0.3007**	**0.0000**	**686.0163**	**686.0163**	**0.0104**	**0.0000**	**686.2757**

3.7 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.0989	0.2342	3.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.3200	33.3200	1.2300e-003	0.0000	33.3507
Total	**3.4612**	**0.0989**	**0.2342**	**3.9000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.3200**	**33.3200**	**1.2300e-003**	**0.0000**	**33.3507**

3.7 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2014	0.1302	1.5682	7.4900e-003	1.1189	4.4100e-003	1.1233	0.2975	4.0600e-003	0.3016	0.0000	678.3260	678.3260	9.4500e-003	0.0000	678.5621
Total	**0.2014**	**0.1302**	**1.5682**	**7.4900e-003**	**1.1189**	**4.4100e-003**	**1.1233**	**0.2975**	**4.0600e-003**	**0.3016**	**0.0000**	**678.3260**	**678.3260**	**9.4500e-003**	**0.0000**	**678.5621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.0989	0.2342	3.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.3199	33.3199	1.2300e-003	0.0000	33.3507
Total	**3.4612**	**0.0989**	**0.2342**	**3.9000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.3199**	**33.3199**	**1.2300e-003**	**0.0000**	**33.3507**

3.7 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2014	0.1302	1.5682	7.4900e-003	1.1189	4.4100e-003	1.1233	0.2975	4.0600e-003	0.3016	0.0000	678.3260	678.3260	9.4500e-003	0.0000	678.5621
Total	**0.2014**	**0.1302**	**1.5682**	**7.4900e-003**	**1.1189**	**4.4100e-003**	**1.1233**	**0.2975**	**4.0600e-003**	**0.3016**	**0.0000**	**678.3260**	**678.3260**	**9.4500e-003**	**0.0000**	**678.5621**

3.7 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4590					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.0993	0.2351	3.9000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	33.4476	33.4476	1.2400e-003	0.0000	33.4785
Total	**3.4745**	**0.0993**	**0.2351**	**3.9000e-004**		**1.3000e-003**	**1.3000e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**33.4476**	**33.4476**	**1.2400e-003**	**0.0000**	**33.4785**

3.7 Architectural Coating - 2036

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2022	0.1307	1.5742	7.5200e-003	1.1231	4.4300e-003	1.1276	0.2987	4.0700e-003	0.3027	0.0000	680.9249	680.9249	9.4800e-003	0.0000	681.1620
Total	**0.2022**	**0.1307**	**1.5742**	**7.5200e-003**	**1.1231**	**4.4300e-003**	**1.1276**	**0.2987**	**4.0700e-003**	**0.3027**	**0.0000**	**680.9249**	**680.9249**	**9.4800e-003**	**0.0000**	**681.1620**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4590					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.0993	0.2351	3.9000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	33.4476	33.4476	1.2400e-003	0.0000	33.4785
Total	**3.4745**	**0.0993**	**0.2351**	**3.9000e-004**		**1.3000e-003**	**1.3000e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**33.4476**	**33.4476**	**1.2400e-003**	**0.0000**	**33.4785**

3.7 Architectural Coating - 2036

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2022	0.1307	1.5742	7.5200e-003	1.1231	4.4300e-003	1.1276	0.2987	4.0700e-003	0.3027	0.0000	680.9249	680.9249	9.4800e-003	0.0000	681.1620
Total	**0.2022**	**0.1307**	**1.5742**	**7.5200e-003**	**1.1231**	**4.4300e-003**	**1.1276**	**0.2987**	**4.0700e-003**	**0.3027**	**0.0000**	**680.9249**	**680.9249**	**9.4800e-003**	**0.0000**	**681.1620**

3.7 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.0989	0.2342	3.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.3200	33.3200	1.2300e-003	0.0000	33.3507
Total	**3.4612**	**0.0989**	**0.2342**	**3.9000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.3200**	**33.3200**	**1.2300e-003**	**0.0000**	**33.3507**

3.7 Architectural Coating - 2037

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2014	0.1302	1.5682	7.4900e-003	1.1189	4.4100e-003	1.1233	0.2975	4.0600e-003	0.3016	0.0000	678.3260	678.3260	9.4500e-003	0.0000	678.5621
Total	**0.2014**	**0.1302**	**1.5682**	**7.4900e-003**	**1.1189**	**4.4100e-003**	**1.1233**	**0.2975**	**4.0600e-003**	**0.3016**	**0.0000**	**678.3260**	**678.3260**	**9.4500e-003**	**0.0000**	**678.5621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.0989	0.2342	3.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.3199	33.3199	1.2300e-003	0.0000	33.3507
Total	**3.4612**	**0.0989**	**0.2342**	**3.9000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.3199**	**33.3199**	**1.2300e-003**	**0.0000**	**33.3507**

3.7 Architectural Coating - 2037

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2014	0.1302	1.5682	7.4900e-003	1.1189	4.4100e-003	1.1233	0.2975	4.0600e-003	0.3016	0.0000	678.3260	678.3260	9.4500e-003	0.0000	678.5621
Total	**0.2014**	**0.1302**	**1.5682**	**7.4900e-003**	**1.1189**	**4.4100e-003**	**1.1233**	**0.2975**	**4.0600e-003**	**0.3016**	**0.0000**	**678.3260**	**678.3260**	**9.4500e-003**	**0.0000**	**678.5621**

3.7 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.0989	0.2342	3.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.3200	33.3200	1.2300e-003	0.0000	33.3507
Total	**3.4612**	**0.0989**	**0.2342**	**3.9000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.3200**	**33.3200**	**1.2300e-003**	**0.0000**	**33.3507**

3.7 Architectural Coating - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2014	0.1302	1.5682	7.4900e-003	1.1189	4.4100e-003	1.1233	0.2975	4.0600e-003	0.3016	0.0000	678.3260	678.3260	9.4500e-003	0.0000	678.5621
Total	**0.2014**	**0.1302**	**1.5682**	**7.4900e-003**	**1.1189**	**4.4100e-003**	**1.1233**	**0.2975**	**4.0600e-003**	**0.3016**	**0.0000**	**678.3260**	**678.3260**	**9.4500e-003**	**0.0000**	**678.5621**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4458					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.0989	0.2342	3.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.3199	33.3199	1.2300e-003	0.0000	33.3507
Total	**3.4612**	**0.0989**	**0.2342**	**3.9000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.3199**	**33.3199**	**1.2300e-003**	**0.0000**	**33.3507**

3.7 Architectural Coating - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2014	0.1302	1.5682	7.4900e-003	1.1189	4.4100e-003	1.1233	0.2975	4.0600e-003	0.3016	0.0000	678.3260	678.3260	9.4500e-003	0.0000	678.5621
Total	**0.2014**	**0.1302**	**1.5682**	**7.4900e-003**	**1.1189**	**4.4100e-003**	**1.1233**	**0.2975**	**4.0600e-003**	**0.3016**	**0.0000**	**678.3260**	**678.3260**	**9.4500e-003**	**0.0000**	**678.5621**

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0153	0.0985	0.2333	3.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.1923	33.1923	1.2300e-003	0.0000	33.2230
Total	**3.4479**	**0.0985**	**0.2333**	**3.9000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.1923**	**33.1923**	**1.2300e-003**	**0.0000**	**33.2230**

3.7 Architectural Coating - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2006	0.1297	1.5622	7.4600e-003	1.1146	4.3900e-003	1.1190	0.2964	4.0400e-003	0.3004	0.0000	675.7270	675.7270	9.4100e-003	0.0000	675.9623
Total	**0.2006**	**0.1297**	**1.5622**	**7.4600e-003**	**1.1146**	**4.3900e-003**	**1.1190**	**0.2964**	**4.0400e-003**	**0.3004**	**0.0000**	**675.7270**	**675.7270**	**9.4100e-003**	**0.0000**	**675.9623**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.4326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0153	0.0985	0.2333	3.9000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.1923	33.1923	1.2300e-003	0.0000	33.2229
Total	**3.4479**	**0.0985**	**0.2333**	**3.9000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.1923**	**33.1923**	**1.2300e-003**	**0.0000**	**33.2229**

3.7 Architectural Coating - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2006	0.1297	1.5622	7.4600e-003	1.1146	4.3900e-003	1.1190	0.2964	4.0400e-003	0.3004	0.0000	675.7270	675.7270	9.4100e-003	0.0000	675.9623
Total	**0.2006**	**0.1297**	**1.5622**	**7.4600e-003**	**1.1146**	**4.3900e-003**	**1.1190**	**0.2964**	**4.0400e-003**	**0.3004**	**0.0000**	**675.7270**	**675.7270**	**9.4100e-003**	**0.0000**	**675.9623**

3.7 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3301					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4400e-003	9.0900e-003	0.0224	4.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	3.1916	3.1916	1.1000e-004	0.0000	3.1944
Total	**0.3315**	**9.0900e-003**	**0.0224**	**4.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**3.1916**	**3.1916**	**1.1000e-004**	**0.0000**	**3.1944**

3.7 Architectural Coating - 2040

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0144	9.5400e-003	0.1223	6.8000e-004	0.1072	3.3000e-004	0.1075	0.0285	3.0000e-004	0.0288	0.0000	61.8608	61.8608	6.4000e-004	0.0000	61.8767
Total	**0.0144**	**9.5400e-003**	**0.1223**	**6.8000e-004**	**0.1072**	**3.3000e-004**	**0.1075**	**0.0285**	**3.0000e-004**	**0.0288**	**0.0000**	**61.8608**	**61.8608**	**6.4000e-004**	**0.0000**	**61.8767**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3301					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4400e-003	9.0900e-003	0.0224	4.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	3.1916	3.1916	1.1000e-004	0.0000	3.1944
Total	**0.3315**	**9.0900e-003**	**0.0224**	**4.0000e-005**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**3.1916**	**3.1916**	**1.1000e-004**	**0.0000**	**3.1944**

3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0144	9.5400e-003	0.1223	6.8000e-004	0.1072	3.3000e-004	0.1075	0.0285	3.0000e-004	0.0288	0.0000	61.8608	61.8608	6.4000e-004	0.0000	61.8767
Total	**0.0144**	**9.5400e-003**	**0.1223**	**6.8000e-004**	**0.1072**	**3.3000e-004**	**0.1075**	**0.0285**	**3.0000e-004**	**0.0288**	**0.0000**	**61.8608**	**61.8608**	**6.4000e-004**	**0.0000**	**61.8767**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.8417	44.0279	60.4794	0.2764	27.2224	0.1264	27.3487	7.3023	0.1174	7.4197	0.0000	25,599.8790	25,599.8790	1.0402	0.0000	25,625.8834
Unmitigated	7.2231	45.5739	67.2995	0.3151	31.8390	0.1430	31.9820	8.5407	0.1329	8.6736	0.0000	29,171.9229	29,171.9229	1.1408	0.0000	29,200.4419

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
City Park	94.50	1,137.50	837.00	504,217	431,106
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,541.1898	5,541.1898	0.7388	0.1529	5,605.2128
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,541.1898	5,541.1898	0.7388	0.1529	5,605.2128
NaturalGas Mitigated	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	9,177.1223	9,177.1223	0.1759	0.1683	9,231.6574
NaturalGas Unmitigated	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	9,177.1223	9,177.1223	0.1759	0.1683	9,231.6574

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	786190	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9541	41.9541	8.0000e-004	7.7000e-004	42.2034
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.40721e+007	0.2916	2.4916	1.0602	0.0159		0.2014	0.2014		0.2014	0.2014	0.0000	2,885.4907	2,885.4907	0.0553	0.0529	2,902.6377
Elementary School	2.48846e+007	0.1342	1.2198	1.0247	7.3200e-003		0.0927	0.0927		0.0927	0.0927	0.0000	1,327.9368	1,327.9368	0.0255	0.0244	1,335.8281
General Office Building	2.34091e+006	0.0126	0.1148	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003	0.0000	124.9199	124.9199	2.3900e-003	2.2900e-003	125.6622
High School	3.14793e+007	0.1697	1.5431	1.2962	9.2600e-003		0.1173	0.1173		0.1173	0.1173	0.0000	1,679.8549	1,679.8549	0.0322	0.0308	1,689.8375
Junior High School	1.66915e+007	0.0900	0.8182	0.6873	4.9100e-003		0.0622	0.0622		0.0622	0.0622	0.0000	890.7230	890.7230	0.0171	0.0163	896.0162
Regional Shopping Center	879270	4.7400e-003	0.0431	0.0362	2.6000e-004		3.2800e-003	3.2800e-003		3.2800e-003	3.2800e-003	0.0000	46.9212	46.9212	9.0000e-004	8.6000e-004	47.2000
Single Family Housing	3.95576e+007	0.2133	1.8228	0.7756	0.0116		0.1474	0.1474		0.1474	0.1474	0.0000	2,110.9435	2,110.9435	0.0405	0.0387	2,123.4878
Supermarket	1.28136e+006	6.9100e-003	0.0628	0.0528	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3783	68.3783	1.3100e-003	1.2500e-003	68.7846
Total		**0.9273**	**8.1523**	**5.0448**	**0.0506**		**0.6407**	**0.6407**		**0.6407**	**0.6407**	**0.0000**	**9,177.1223**	**9,177.1223**	**0.1759**	**0.1683**	**9,231.6574**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	786190	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9541	41.9541	8.0000e-004	7.7000e-004	42.2034
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.40721e+007	0.2916	2.4916	1.0602	0.0159		0.2014	0.2014		0.2014	0.2014	0.0000	2,885.4907	2,885.4907	0.0553	0.0529	2,902.6377
Elementary School	2.48846e+007	0.1342	1.2198	1.0247	7.3200e-003		0.0927	0.0927		0.0927	0.0927	0.0000	1,327.9368	1,327.9368	0.0255	0.0244	1,335.8281
General Office Building	2.34091e+006	0.0126	0.1148	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003	0.0000	124.9199	124.9199	2.3900e-003	2.2900e-003	125.6622
High School	3.14793e+007	0.1697	1.5431	1.2962	9.2600e-003		0.1173	0.1173		0.1173	0.1173	0.0000	1,679.8549	1,679.8549	0.0322	0.0308	1,689.8375
Junior High School	1.66915e+007	0.0900	0.8182	0.6873	4.9100e-003		0.0622	0.0622		0.0622	0.0622	0.0000	890.7230	890.7230	0.0171	0.0163	896.0162
Regional Shopping Center	879270	4.7400e-003	0.0431	0.0362	2.6000e-004		3.2800e-003	3.2800e-003		3.2800e-003	3.2800e-003	0.0000	46.9212	46.9212	9.0000e-004	8.6000e-004	47.2000
Single Family Housing	3.95576e+007	0.2133	1.8228	0.7756	0.0116		0.1474	0.1474		0.1474	0.1474	0.0000	2,110.9435	2,110.9435	0.0405	0.0387	2,123.4878
Supermarket	1.28136e+006	6.9100e-003	0.0628	0.0528	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3783	68.3783	1.3100e-003	1.2500e-003	68.7846
Total		**0.9273**	**8.1523**	**5.0448**	**0.0506**		**0.6407**	**0.6407**		**0.6407**	**0.6407**	**0.0000**	**9,177.1223**	**9,177.1223**	**0.1759**	**0.1683**	**9,231.6574**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	375680	37.0632	4.9400e-003	1.0200e-003	37.4914
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.45712e+007	1,437.5415	0.1917	0.0397	1,454.1508
Elementary School	7.27375e+006	717.6017	0.0957	0.0198	725.8929
General Office Building	2.54969e+006	251.5431	0.0335	6.9400e-003	254.4494
High School	9.20138e+006	907.7742	0.1210	0.0250	918.2626
Junior High School	4.87892e+006	481.3364	0.0642	0.0133	486.8978
Regional Shopping Center	3.96599e+006	391.2701	0.0522	0.0108	395.7908
Single Family Housing	1.10113e+007	1,086.3312	0.1448	0.0300	1,098.8827
Supermarket	2.33871e+006	230.7286	0.0308	6.3600e-003	233.3944
Total		**5,541.1898**	**0.7388**	**0.1529**	**5,605.2128**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	375680	37.0632	4.9400e-003	1.0200e-003	37.4914
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.45712e+007	1,437.5415	0.1917	0.0397	1,454.1508
Elementary School	7.27375e+006	717.6017	0.0957	0.0198	725.8929
General Office Building	2.54969e+006	251.5431	0.0335	6.9400e-003	254.4494
High School	9.20138e+006	907.7742	0.1210	0.0250	918.2626
Junior High School	4.87892e+006	481.3364	0.0642	0.0133	486.8978
Regional Shopping Center	3.96599e+006	391.2701	0.0522	0.0108	395.7908
Single Family Housing	1.10113e+007	1,086.3312	0.1448	0.0300	1,098.8827
Supermarket	2.33871e+006	230.7286	0.0308	6.3600e-003	233.3944
Total		**5,541.1898**	**0.7388**	**0.1529**	**5,605.2128**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	44.0049	1.3850	44.9887	7.9200e-003		0.3188	0.3188		0.3188	0.3188	0.0000	1,080.8953	1,080.8953	0.0892	0.0185	1,088.6304
Unmitigated	84.1648	1.6390	92.8541	0.0952		7.0729	7.0729		7.0729	7.0729	661.1846	748.5780	1,409.7626	0.8802	0.0557	1,448.3582

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.5484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	38.9255					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	37.3529	1.1241	48.2357	0.0928		6.8245	6.8245		6.8245	6.8245	661.1846	675.3546	1,336.5392	0.8104	0.0557	1,373.3878
Landscaping	1.3381	0.5149	44.6184	2.3700e-003		0.2484	0.2484		0.2484	0.2484	0.0000	73.2234	73.2234	0.0699	0.0000	74.9705
Total	**84.1648**	**1.6390**	**92.8542**	**0.0952**		**7.0729**	**7.0729**		**7.0729**	**7.0729**	**661.1846**	**748.5780**	**1,409.7626**	**0.8802**	**0.0557**	**1,448.3582**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.5484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	36.0167					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1018	0.8701	0.3703	5.5500e-003		0.0704	0.0704		0.0704	0.0704	0.0000	1,007.6719	1,007.6719	0.0193	0.0185	1,013.6600
Landscaping	1.3381	0.5149	44.6184	2.3700e-003		0.2484	0.2484		0.2484	0.2484	0.0000	73.2234	73.2234	0.0699	0.0000	74.9705
Total	**44.0049**	**1.3850**	**44.9887**	**7.9200e-003**		**0.3188**	**0.3188**		**0.3188**	**0.3188**	**0.0000**	**1,080.8953**	**1,080.8953**	**0.0892**	**0.0185**	**1,088.6305**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	494.4202	11.9680	0.2918	880.5888
Unmitigated	584.1363	14.9555	0.3639	1,066.455 5

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.92902 / 3.73786	6.3368	0.1938	4.6800e-003	12.5776
City Park	0 / 59.5741	20.5708	2.7400e-003	5.7000e-004	20.8084
Condo/Townhouse	188.165 / 118.626	201.1051	6.1502	0.1487	399.1656
Elementary School	39.131 / 100.623	68.0485	1.2825	0.0316	109.5405
General Office Building	25.4159 / 15.5775	27.0099	0.8307	0.0201	53.7607
High School	56.6843 / 145.76	98.5735	1.8578	0.0458	158.6778
Junior High School	18.6657 / 47.9976	32.4595	0.6118	0.0151	52.2514
Regional Shopping Center	27.4809 / 16.8431	29.2044	0.8982	0.0217	58.1286
Single Family Housing	88.6746 / 55.9036	94.7728	2.8984	0.0701	188.1109
Supermarket	7.02629 / 0.217308	6.0550	0.2295	5.5100e-003	13.4340
Total		**584.1363**	**14.9555**	**0.3639**	**1,066.4555**

7.2 Water by Land Use

Mitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments Mid Rise	4.74321 / 3.50985	5.2488	0.1551	3.7500e-003	10.2435
City Park	0 / 55.94	19.3159	2.5800e-003	5.3000e-004	19.5391
Condo/Townhouse	150.532 / 111.389	166.5776	4.9209	0.1191	325.0918
Elementary School	31.3048 / 94.4847	59.2683	1.0267	0.0255	92.5177
General Office Building	20.3327 / 14.6273	22.3556	0.6647	0.0161	43.7649
High School	45.3474 / 136.868	85.8547	1.4872	0.0369	134.0190
Junior High School	14.9326 / 45.0697	28.2713	0.4897	0.0121	44.1315
Regional Shopping Center	21.9847 / 15.8157	24.1720	0.7187	0.0174	47.3207
Single Family Housing	70.9397 / 52.4935	78.5014	2.3190	0.0561	153.2029
Supermarket	5.62103 / 0.204052	4.8544	0.1836	4.4100e-003	10.7577
Total		**494.4201**	**11.9681**	**0.2918**	**880.5888**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1,843.4563	108.9452	0.0000	4,567.0851
Unmitigated	1,843.4563	108.9452	0.0000	4,567.0851

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	41.86	8.4972	0.5022	0.0000	21.0515
City Park	4.3	0.8729	0.0516	0.0000	2.1625
Condo/Townhouse	1328.48	269.6694	15.9370	0.0000	668.0946
Elementary School	1754.34	356.1152	21.0458	0.0000	882.2603
General Office Building	132.99	26.9958	1.5954	0.0000	66.8809
High School	2219.26	450.4897	26.6232	0.0000	1,116.0692
Junior High School	1176.73	238.8656	14.1166	0.0000	591.7793
Regional Shopping Center	389.55	79.0751	4.6732	0.0000	195.9053
Single Family Housing	1712.48	347.6180	20.5436	0.0000	861.2088
Supermarket	321.48	65.2575	3.8566	0.0000	161.6728
Total		**1,843.4563**	**108.9451**	**0.0000**	**4,567.0851**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	41.86	8.4972	0.5022	0.0000	21.0515
City Park	4.3	0.8729	0.0516	0.0000	2.1625
Condo/Townhouse	1328.48	269.6694	15.9370	0.0000	668.0946
Elementary School	1754.34	356.1152	21.0458	0.0000	882.2603
General Office Building	132.99	26.9958	1.5954	0.0000	66.8809
High School	2219.26	450.4897	26.6232	0.0000	1,116.0692
Junior High School	1176.73	238.8656	14.1166	0.0000	591.7793
Regional Shopping Center	389.55	79.0751	4.6732	0.0000	195.9053
Single Family Housing	1712.48	347.6180	20.5436	0.0000	861.2088
Supermarket	321.48	65.2575	3.8566	0.0000	161.6728
Total		**1,843.4563**	**108.9451**	**0.0000**	**4,567.0851**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model Full Buildout - 2016.3.2

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
City Park	50.00	Acre	50.00	2,178,000.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	217.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO2 Factor: 290 lb/MWh), adjusted for 2035 based on the increased effect of the RPS by 2035 (CO2 Factor : 217.5022). 2035 used as proxy for 2040

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading - Maximum of 797 acres graded

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	12,400.00	5,195.00
tblConstructionPhase	NumDays	880.00	4,960.00
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42

tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42

tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5384	50.2686	32.7268	0.0638	19.1898	2.1987	21.3651	9.9699	2.0228	11.9927	0.0000	6,182.7993	6,182.7993	1.9500	0.0000	6,231.5486
2021	60.5274	215.0785	288.7727	1.0322	63.7704	2.0323	65.8027	17.1537	1.9171	19.0708	0.0000	105,131.3494	105,131.3494	4.7995	0.0000	105,251.3372
2022	57.9195	201.7286	264.7922	1.0086	63.7714	1.7840	65.5554	17.1540	1.6825	18.8365	0.0000	102,794.9271	102,794.9271	4.4994	0.0000	102,907.4126
2023	54.7364	169.3784	241.2801	0.9806	63.7723	1.3885	65.1608	17.1544	1.3058	18.4601	0.0000	100,002.3342	100,002.3342	3.9324	0.0000	100,100.6429
2024	52.8589	163.5918	223.4662	0.9573	63.7733	1.2650	65.0383	17.1547	1.1887	18.3434	0.0000	97,689.7324	97,689.7324	3.7246	0.0000	97,782.8462
2025	51.2453	158.3576	207.9295	0.9345	63.7741	1.1481	64.9222	17.1550	1.0780	18.2330	0.0000	95,417.3034	95,417.3034	3.5474	0.0000	95,505.9880
2026	49.9195	154.8400	193.8047	0.9124	63.7746	1.1226	64.8972	17.1552	1.0541	18.2093	0.0000	93,220.9984	93,220.9984	3.3838	0.0000	93,305.5931
2027	48.6919	151.6454	181.8167	0.8946	63.7752	1.0922	64.8674	17.1554	1.0257	18.1811	0.0000	91,455.9388	91,455.9388	3.2458	0.0000	91,537.0841
2028	47.4823	148.9088	171.4858	0.8790	63.7756	1.0601	64.8357	17.1555	0.9958	18.1513	0.0000	89,900.3234	89,900.3234	3.1215	0.0000	89,978.3620
2029	46.2244	146.3917	161.6282	0.8651	63.7760	1.0303	64.8063	17.1557	0.9680	18.1238	0.0000	88,523.7023	88,523.7023	3.0051	0.0000	88,598.8299
2030	44.8929	139.3461	152.8846	0.8570	63.7764	0.5925	64.3689	17.1558	0.5635	17.7193	0.0000	87,664.6051	87,664.6051	2.4079	0.0000	87,724.8034
2031	43.5970	137.3410	144.4056	0.8465	63.7767	0.5677	64.3444	17.1559	0.5405	17.6965	0.0000	86,622.2510	86,622.2510	2.3076	0.0000	86,679.9418
2032	42.4461	135.5937	137.0759	0.8375	63.7770	0.5451	64.3221	17.1561	0.5195	17.6756	0.0000	85,731.5673	85,731.5673	2.2191	0.0000	85,787.0456
2033	41.4636	134.0840	130.8644	0.8298	63.7773	0.5248	64.3020	17.1561	0.5007	17.6568	0.0000	84,971.6412	84,971.6412	2.1449	0.0000	85,025.2630
2034	40.6439	132.8148	125.1615	0.8232	63.7775	0.5062	64.2837	17.1562	0.4834	17.6397	0.0000	84,322.5242	84,322.5242	2.0768	0.0000	84,374.4438
2035	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2036	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2037	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2038	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2039	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2040	37.3456	127.5185	105.4194	0.8016	63.7784	0.3473	64.1257	17.1565	0.3299	17.4864	0.0000	82,196.4622	82,196.4622	1.8372	0.0000	82,242.3919
Maximum	**60.5274**	**215.0785**	**288.7727**	**1.0322**	**63.7784**	**2.1987**	**65.8027**	**17.1565**	**2.0228**	**19.0708**	**0.0000**	**105,131.3494**	**105,131.3494**	**4.7995**	**0.0000**	**105,251.3372**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5384	50.2686	32.7268	0.0638	8.7258	2.1987	10.9011	4.5080	2.0228	6.5308	0.0000	6,182.7993	6,182.7993	1.9500	0.0000	6,231.5486
2021	60.5274	215.0785	288.7727	1.0322	63.7704	2.0323	65.8027	17.1537	1.9171	19.0708	0.0000	105,131.3494	105,131.3494	4.7995	0.0000	105,251.3372
2022	57.9195	201.7286	264.7922	1.0086	63.7714	1.7840	65.5554	17.1540	1.6825	18.8365	0.0000	102,794.9271	102,794.9271	4.4994	0.0000	102,907.4126
2023	54.7364	169.3784	241.2801	0.9806	63.7723	1.3885	65.1608	17.1544	1.3058	18.4601	0.0000	100,002.3342	100,002.3342	3.9324	0.0000	100,100.6429
2024	52.8589	163.5918	223.4662	0.9573	63.7733	1.2650	65.0383	17.1547	1.1887	18.3434	0.0000	97,689.7324	97,689.7324	3.7246	0.0000	97,782.8462
2025	51.2453	158.3576	207.9295	0.9345	63.7741	1.1481	64.9222	17.1550	1.0780	18.2330	0.0000	95,417.3034	95,417.3034	3.5474	0.0000	95,505.9880
2026	49.9195	154.8400	193.8047	0.9124	63.7746	1.1226	64.8972	17.1552	1.0541	18.2093	0.0000	93,220.9984	93,220.9984	3.3838	0.0000	93,305.5931
2027	48.6919	151.6454	181.8167	0.8946	63.7752	1.0922	64.8674	17.1554	1.0257	18.1811	0.0000	91,455.9388	91,455.9388	3.2458	0.0000	91,537.0841

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	47.4823	148.9088	171.4858	0.8790	63.7756	1.0601	64.8357	17.1555	0.9958	18.1513	0.0000	89,900.3234	89,900.3234	3.1215	0.0000	89,978.3620
2029	46.2244	146.3917	161.6282	0.8651	63.7760	1.0303	64.8063	17.1557	0.9680	18.1238	0.0000	88,523.7023	88,523.7023	3.0051	0.0000	88,598.8299
2030	44.8929	139.3461	152.8846	0.8570	63.7764	0.5925	64.3689	17.1558	0.5635	17.7193	0.0000	87,664.6051	87,664.6051	2.4079	0.0000	87,724.8034
2031	43.5970	137.3410	144.4056	0.8465	63.7767	0.5677	64.3444	17.1559	0.5405	17.6965	0.0000	86,622.2510	86,622.2510	2.3076	0.0000	86,679.9417
2032	42.4461	135.5937	137.0759	0.8375	63.7770	0.5451	64.3221	17.1561	0.5195	17.6756	0.0000	85,731.5673	85,731.5673	2.2191	0.0000	85,787.0455
2033	41.4636	134.0840	130.8644	0.8298	63.7773	0.5248	64.3020	17.1561	0.5007	17.6568	0.0000	84,971.6412	84,971.6412	2.1449	0.0000	85,025.2630
2034	40.6439	132.8148	125.1615	0.8232	63.7775	0.5062	64.2837	17.1562	0.4834	17.6397	0.0000	84,322.5242	84,322.5242	2.0768	0.0000	84,374.4438
2035	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2036	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2037	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2038	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2039	39.8138	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
2040	37.3456	127.5185	105.4194	0.8016	63.7784	0.3473	64.1257	17.1565	0.3299	17.4864	0.0000	82,196.4622	82,196.4622	1.8372	0.0000	82,242.3919
Maximum	**60.5274**	**215.0785**	**288.7727**	**1.0322**	**63.7784**	**2.1987**	**65.8027**	**17.1565**	**2.0228**	**19.0708**	**0.0000**	**105,131.3494**	**105,131.3494**	**4.7995**	**0.0000**	**105,251.3372**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.81**	**0.00**	**0.80**	**1.55**	**0.00**	**1.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,170.922 1	31.5360	1,533.428 1	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.37 29	18,803.061 1	36,579.43 40	22.4030	1.4967	37,585.53 72
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	50.4207	283.7294	417.6284	2.0379	202.7360	0.8853	203.6213	54.2344	0.8224	55.0568		207,939.2 042	207,939.2 042	7.6679		208,130.9 006
Total	**1,226.423 9**	**359.9358**	**1,978.699 3**	**4.5980**	**202.7360**	**172.8349**	**375.5709**	**54.2344**	**172.7720**	**227.0065**	**17,776.37 29**	**282,172.6 531**	**299,949.0 260**	**31.1333**	**2.5130**	**301,476.2 206**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	246.4212	25.3409	365.9781	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.62 58	27,737.62 58	1.1355	0.4967	27,914.02 57
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	48.0770	274.8474	372.3627	1.7885	173.3393	0.7825	174.1218	46.3705	0.7267	47.0972		182,595.1 060	182,595.1 060	6.9765		182,769.5 193
Total	**299.5792**	**344.8587**	**765.9836**	**2.2201**	**173.3393**	**7.9962**	**181.3354**	**46.3705**	**7.9404**	**54.3108**	**0.0000**	**265,763.1 195**	**265,763.1 195**	**9.1745**	**1.5129**	**266,443.3 278**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	75.57	4.19	61.29	51.72	14.50	95.37	51.72	14.50	95.40	76.08	100.00	5.82	11.40	70.53	39.80	11.62

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	3/31/2020	6/29/2020	5	65	
3	Underground Utilities	Trenching	7/1/2020	9/1/2020	5	45	
4	Paving	Paving	9/2/2020	12/31/2020	5	87	
5	Building Construction	Building Construction	1/2/2021	11/30/2040	5	5195	
6	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0795	0.0640	0.6916	1.6000e-003	0.1479	1.2800e-003	0.1491	0.0392	1.1800e-003	0.0404		159.2406	159.2406	6.8000e-003		159.4106
Total	**0.0795**	**0.0640**	**0.6916**	**1.6000e-003**	**0.1479**	**1.2800e-003**	**0.1491**	**0.0392**	**1.1800e-003**	**0.0404**		**159.2406**	**159.2406**	**6.8000e-003**		**159.4106**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0795	0.0640	0.6916	1.6000e-003	0.1479	1.2800e-003	0.1491	0.0392	1.1800e-003	0.0404		159.2406	159.2406	6.8000e-003		159.4106
Total	**0.0795**	**0.0640**	**0.6916**	**1.6000e-003**	**0.1479**	**1.2800e-003**	**0.1491**	**0.0392**	**1.1800e-003**	**0.0404**		**159.2406**	**159.2406**	**6.8000e-003**		**159.4106**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.0255	0.0000	19.0255	4.7143	0.0000	4.7143			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**19.0255**	**2.1739**	**21.1994**	**4.7143**	**2.0000**	**6.7143**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.5615	0.0000	8.5615	2.1214	0.0000	2.1214			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.5615**	**2.1739**	**10.7354**	**2.1214**	**2.0000**	**4.1214**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

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

3.4 Underground Utilities - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.4 Underground Utilities - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.733 4	2,207.733 4	0.7140		2,225.584 1
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.733 4**	**2,207.733 4**	**0.7140**		**2,225.584 1**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0662**	**0.0533**	**0.5764**	**1.3300e-003**	**0.1232**	**1.0700e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**132.7005**	**132.7005**	**5.6700e-003**		**132.8422**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0662	0.0533	0.5764	1.3300e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		132.7005	132.7005	5.6700e-003		132.8422
Total	**0.0662**	**0.0533**	**0.5764**	**1.3300e-003**	**0.1232**	**1.0700e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**132.7005**	**132.7005**	**5.6700e-003**		**132.8422**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

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

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6278	175.5670	43.7565	0.4460	10.5798	0.5354	11.1152	3.0451	0.5121	3.5571		46,933.3719	46,933.3719	1.9827		46,982.9392
Worker	21.9799	17.1277	188.8587	0.4636	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		46,137.3964	46,137.3964	1.8180		46,182.8455
Total	**27.6077**	**192.6947**	**232.6152**	**0.9096**	**54.9067**	**0.9056**	**55.8123**	**14.8026**	**0.8534**	**15.6561**		**93,070.7683**	**93,070.7683**	**3.8007**		**93,165.7847**

Mitigated Construction On-Site

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

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6278	175.5670	43.7565	0.4460	10.5798	0.5354	11.1152	3.0451	0.5121	3.5571		46,933.3719	46,933.3719	1.9827		46,982.9392
Worker	21.9799	17.1277	188.8587	0.4636	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		46,137.3964	46,137.3964	1.8180		46,182.8455
Total	**27.6077**	**192.6947**	**232.6152**	**0.9096**	**54.9067**	**0.9056**	**55.8123**	**14.8026**	**0.8534**	**15.6561**		**93,070.7683**	**93,070.7683**	**3.8007**		**93,165.7847**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

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

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.1556	166.2855	39.5780	0.4421	10.5808	0.4652	11.0459	3.0454	0.4449	3.4903		46,544.8800	46,544.8800	1.9173		46,592.8112
Worker	20.3744	15.3496	172.5363	0.4471	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		44,513.2628	44,513.2628	1.6266		44,553.9286
Total	**25.5300**	**181.6351**	**212.1143**	**0.8893**	**54.9077**	**0.8220**	**55.7296**	**14.8030**	**0.7738**	**15.5768**		**91,058.1428**	**91,058.1428**	**3.5439**		**91,146.7399**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.1556	166.2855	39.5780	0.4421	10.5808	0.4652	11.0459	3.0454	0.4449	3.4903		46,544.8800	46,544.8800	1.9173		46,592.8112
Worker	20.3744	15.3496	172.5363	0.4471	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		44,513.2628	44,513.2628	1.6266		44,553.9286
Total	**25.5300**	**181.6351**	**212.1143**	**0.8893**	**54.9077**	**0.8220**	**55.7296**	**14.8030**	**0.7738**	**15.5768**		**91,058.1428**	**91,058.1428**	**3.5439**		**91,146.7399**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

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

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8860	137.1784	34.3866	0.4342	10.5817	0.2034	10.7851	3.0457	0.1945	3.2402		45,731.0409	45,731.0409	1.5646		45,770.1565
Worker	18.9016	13.7605	157.3702	0.4304	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		42,863.5200	42,863.5200	1.4526		42,899.8345
Total	**22.7876**	**150.9389**	**191.7568**	**0.8647**	**54.9086**	**0.5489**	**55.4575**	**14.8033**	**0.5129**	**15.3161**		**88,594.5609**	**88,594.5609**	**3.0172**		**88,669.9910**

Mitigated Construction On-Site

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

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8860	137.1784	34.3866	0.4342	10.5817	0.2034	10.7851	3.0457	0.1945	3.2402		45,731.0409	45,731.0409	1.5646		45,770.1565
Worker	18.9016	13.7605	157.3702	0.4304	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		42,863.5200	42,863.5200	1.4526		42,899.8345
Total	**22.7876**	**150.9389**	**191.7568**	**0.8647**	**54.9086**	**0.5489**	**55.4575**	**14.8033**	**0.5129**	**15.3161**		**88,594.5609**	**88,594.5609**	**3.0172**		**88,669.9910**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

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

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6756	134.0778	32.0292	0.4310	10.5827	0.1890	10.7717	3.0461	0.1807	3.2268		45,397.7656	45,397.7656	1.5417		45,436.3079
Worker	17.6058	12.3766	144.5546	0.4137	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		41,213.6228	41,213.6228	1.3023		41,246.1793
Total	**21.2814**	**146.4544**	**176.5837**	**0.8447**	**54.9095**	**0.5239**	**55.4334**	**14.8036**	**0.4892**	**15.2928**		**86,611.3884**	**86,611.3884**	**2.8440**		**86,682.4872**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6756	134.0778	32.0292	0.4310	10.5827	0.1890	10.7717	3.0461	0.1807	3.2268		45,397.7656	45,397.7656	1.5417		45,436.3079
Worker	17.6058	12.3766	144.5546	0.4137	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		41,213.6228	41,213.6228	1.3023		41,246.1793
Total	**21.2814**	**146.4544**	**176.5837**	**0.8447**	**54.9095**	**0.5239**	**55.4334**	**14.8036**	**0.4892**	**15.2928**		**86,611.3884**	**86,611.3884**	**2.8440**		**86,682.4872**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

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

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4955	131.3009	30.1373	0.4279	10.5835	0.1758	10.7593	3.0464	0.1681	3.2145		45,084.4801	45,084.4801	1.5189		45,122.4535
Worker	16.5063	11.2016	133.2528	0.3972	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		39,580.3066	39,580.3066	1.1768		39,609.7272
Total	**20.0017**	**142.5025**	**163.3901**	**0.8251**	**54.9103**	**0.5035**	**55.4138**	**14.8039**	**0.4699**	**15.2738**		**84,664.7867**	**84,664.7867**	**2.6958**		**84,732.1807**

Mitigated Construction On-Site

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

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4955	131.3009	30.1373	0.4279	10.5835	0.1758	10.7593	3.0464	0.1681	3.2145		45,084.4801	45,084.4801	1.5189		45,122.4535
Worker	16.5063	11.2016	133.2528	0.3972	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		39,580.3066	39,580.3066	1.1768		39,609.7272
Total	**20.0017**	**142.5025**	**163.3901**	**0.8251**	**54.9103**	**0.5035**	**55.4138**	**14.8039**	**0.4699**	**15.2738**		**84,664.7867**	**84,664.7867**	**2.6958**		**84,732.1807**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

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

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3605	129.0254	28.7955	0.4256	10.5841	0.1664	10.7505	3.0466	0.1591	3.2057		44,850.8255	44,850.8255	1.4996		44,888.3156
Worker	15.5138	10.1665	122.5999	0.3807	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		37,944.7140	37,944.7140	1.0566		37,971.1291
Total	**18.8743**	**139.1919**	**151.3955**	**0.8063**	**54.9109**	**0.4807**	**55.3916**	**14.8041**	**0.4485**	**15.2526**		**82,795.5396**	**82,795.5396**	**2.5562**		**82,859.4448**

Mitigated Construction On-Site

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

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3605	129.0254	28.7955	0.4256	10.5841	0.1664	10.7505	3.0466	0.1591	3.2057		44,850.82 55	44,850.82 55	1.4996		44,888.31 56
Worker	15.5138	10.1665	122.5999	0.3807	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		37,944.71 40	37,944.71 40	1.0566		37,971.12 91
Total	**18.8743**	**139.1919**	**151.3955**	**0.8063**	**54.9109**	**0.4807**	**55.3916**	**14.8041**	**0.4485**	**15.2526**		**82,795.53 96**	**82,795.53 96**	**2.5562**		**82,859.44 48**

3.6 Building Construction - 2027

Unmitigated Construction On-Site

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

3.6 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2438	126.9442	27.5840	0.4236	10.5846	0.1581	10.7426	3.0468	0.1511	3.1979		44,647.8729	44,647.8729	1.4811		44,684.8991
Worker	14.5881	9.2386	113.6193	0.3676	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		36,642.9180	36,642.9180	0.9571		36,666.8450
Total	**17.8319**	**136.1828**	**141.2033**	**0.7912**	**54.9114**	**0.4540**	**55.3654**	**14.8043**	**0.4234**	**15.2278**		**81,290.7909**	**81,290.7909**	**2.4381**		**81,351.7442**

Mitigated Construction On-Site

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

3.6 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2438	126.9442	27.5840	0.4236	10.5846	0.1581	10.7426	3.0468	0.1511	3.1979		44,647.8729	44,647.8729	1.4811		44,684.8991
Worker	14.5881	9.2386	113.6193	0.3676	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		36,642.9180	36,642.9180	0.9571		36,666.8450
Total	**17.8319**	**136.1828**	**141.2033**	**0.7912**	**54.9114**	**0.4540**	**55.3654**	**14.8043**	**0.4234**	**15.2278**		**81,290.7909**	**81,290.7909**	**2.4381**		**81,351.7442**

3.6 Building Construction - 2028

Unmitigated Construction On-Site

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

3.6 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1476	125.1950	26.7242	0.4219	10.5850	0.1506	10.7355	3.0469	0.1439	3.1908		44,477.97 56	44,477.97 56	1.4602		44,514.47 94
Worker	13.6602	8.4158	105.7264	0.3559	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		35,488.117 3	35,488.117 3	0.8709		35,509.89 07
Total	**16.8078**	**133.6108**	**132.4506**	**0.7779**	**54.9119**	**0.4260**	**55.3378**	**14.8045**	**0.3973**	**15.2018**		**79,966.09 29**	**79,966.09 29**	**2.3311**		**80,024.37 01**

Mitigated Construction On-Site

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

3.6 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1476	125.1950	26.7242	0.4219	10.5850	0.1506	10.7355	3.0469	0.1439	3.1908		44,477.9756	44,477.9756	1.4602		44,514.4794
Worker	13.6602	8.4158	105.7264	0.3559	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		35,488.1173	35,488.1173	0.8709		35,509.8907
Total	**16.8078**	**133.6108**	**132.4506**	**0.7779**	**54.9119**	**0.4260**	**55.3378**	**14.8045**	**0.3973**	**15.2018**		**79,966.0929**	**79,966.0929**	**2.3311**		**80,024.3701**

3.6 Building Construction - 2029

Unmitigated Construction On-Site

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

3.6 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0678	123.6012	26.0000	0.4205	10.5854	0.1437	10.7291	3.0471	0.1374	3.1845		44,331.3228	44,331.3228	1.4438		44,367.4171
Worker	12.6784	7.6464	98.1150	0.3456	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		34,463.1121	34,463.1121	0.7876		34,482.8007
Total	**15.7462**	**131.2476**	**124.1150**	**0.7661**	**54.9123**	**0.4000**	**55.3122**	**14.8046**	**0.3731**	**15.1778**		**78,794.4349**	**78,794.4349**	**2.2313**		**78,850.2179**

Mitigated Construction On-Site

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

3.6 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0678	123.6012	26.0000	0.4205	10.5854	0.1437	10.7291	3.0471	0.1374	3.1845		44,331.3228	44,331.3228	1.4438		44,367.4171
Worker	12.6784	7.6464	98.1150	0.3456	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		34,463.1121	34,463.1121	0.7876		34,482.8007
Total	**15.7462**	**131.2476**	**124.1150**	**0.7661**	**54.9123**	**0.4000**	**55.3122**	**14.8046**	**0.3731**	**15.1778**		**78,794.4349**	**78,794.4349**	**2.2313**		**78,850.2179**

3.6 Building Construction - 2030

Unmitigated Construction On-Site

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

3.6 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0032	122.2418	25.4581	0.4194	10.5858	0.1380	10.7238	3.0472	0.1319	3.1791		44,219.8691	44,219.8691	1.4261		44,255.5222
Worker	11.7047	6.9280	91.2293	0.3364	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		33,555.8208	33,555.8208	0.7118		33,573.6166
Total	**14.7079**	**129.1699**	**116.6874**	**0.7558**	**54.9126**	**0.3764**	**55.2890**	**14.8047**	**0.3512**	**15.1560**		**77,775.6899**	**77,775.6899**	**2.1380**		**77,829.1388**

Mitigated Construction On-Site

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

3.6 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0032	122.2418	25.4581	0.4194	10.5858	0.1380	10.7238	3.0472	0.1319	3.1791		44,219.8691	44,219.8691	1.4261		44,255.5222
Worker	11.7047	6.9280	91.2293	0.3364	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		33,555.8208	33,555.8208	0.7118		33,573.6166
Total	**14.7079**	**129.1699**	**116.6874**	**0.7558**	**54.9126**	**0.3764**	**55.2890**	**14.8047**	**0.3512**	**15.1560**		**77,775.6899**	**77,775.6899**	**2.1380**		**77,829.1388**

3.6 Building Construction - 2031

Unmitigated Construction On-Site

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

3.6 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9496	121.0727	25.0028	0.4186	10.5861	0.1331	10.7192	3.0473	0.1273	3.1746		44,139.0637	44,139.0637	1.4135		44,174.4021
Worker	10.6693	6.2314	84.5427	0.3283	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		32,754.5054	32,754.5054	0.6387		32,770.4738
Total	**13.6190**	**127.3041**	**109.5455**	**0.7469**	**54.9130**	**0.3550**	**55.2679**	**14.8049**	**0.3313**	**15.1362**		**76,893.5691**	**76,893.5691**	**2.0523**		**76,944.8759**

Mitigated Construction On-Site

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

3.6 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9496	121.0727	25.0028	0.4186	10.5861	0.1331	10.7192	3.0473	0.1273	3.1746		44,139.06 37	44,139.06 37	1.4135		44,174.40 21
Worker	10.6693	6.2314	84.5427	0.3283	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		32,754.50 54	32,754.50 54	0.6387		32,770.47 38
Total	**13.6190**	**127.3041**	**109.5455**	**0.7469**	**54.9130**	**0.3550**	**55.2679**	**14.8049**	**0.3313**	**15.1362**		**76,893.56 91**	**76,893.56 91**	**2.0523**		**76,944.87 59**

3.6 Building Construction - 2032

Unmitigated Construction On-Site

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

3.6 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9053	120.0470	24.6614	0.4182	10.5864	0.1287	10.7151	3.0474	0.1230	3.1705		44,092.1424	44,092.1424	1.4013		44,127.1754
Worker	9.7471	5.6300	78.7189	0.3212	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		32,051.3484	32,051.3484	0.5752		32,065.7275
Total	**12.6524**	**125.6770**	**103.3803**	**0.7393**	**54.9133**	**0.3353**	**55.2486**	**14.8050**	**0.3131**	**15.1181**		**76,143.4908**	**76,143.4908**	**1.9765**		**76,192.9029**

Mitigated Construction On-Site

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

3.6 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9053	120.0470	24.6614	0.4182	10.5864	0.1287	10.7151	3.0474	0.1230	3.1705		44,092.1424	44,092.1424	1.4013		44,127.1754
Worker	9.7471	5.6300	78.7189	0.3212	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		32,051.3484	32,051.3484	0.5752		32,065.7275
Total	**12.6524**	**125.6770**	**103.3803**	**0.7393**	**54.9133**	**0.3353**	**55.2486**	**14.8050**	**0.3131**	**15.1181**		**76,143.4908**	**76,143.4908**	**1.9765**		**76,192.9029**

3.6 Building Construction - 2033

Unmitigated Construction On-Site

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

3.6 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8710	119.1470	24.3941	0.4179	10.5867	0.1248	10.7114	3.0475	0.1192	3.1668		44,068.4894	44,068.4894	1.3921		44,103.2928
Worker	8.9570	5.1219	73.7653	0.3150	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		31,437.7685	31,437.7685	0.5209		31,450.7919
Total	**11.8280**	**124.2689**	**98.1593**	**0.7329**	**54.9135**	**0.3177**	**55.2312**	**14.8051**	**0.2967**	**15.1018**		**75,506.2579**	**75,506.2579**	**1.9131**		**75,554.0846**

Mitigated Construction On-Site

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

3.6 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8710	119.1470	24.3941	0.4179	10.5867	0.1248	10.7114	3.0475	0.1192	3.1668		44,068.4894	44,068.4894	1.3921		44,103.2928
Worker	8.9570	5.1219	73.7653	0.3150	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		31,437.7685	31,437.7685	0.5209		31,450.7919
Total	**11.8280**	**124.2689**	**98.1593**	**0.7329**	**54.9135**	**0.3177**	**55.2312**	**14.8051**	**0.2967**	**15.1018**		**75,506.2579**	**75,506.2579**	**1.9131**		**75,554.0846**

3.6 Building Construction - 2034

Unmitigated Construction On-Site

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

3.6 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8394	118.3729	24.1375	0.4178	10.5869	0.1212	10.7081	3.0476	0.1158	3.1634		44,061.8147	44,061.8147	1.3835		44,096.4020
Worker	8.3002	4.7093	69.2265	0.3095	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		30,902.3834	30,902.3834	0.4714		30,914.1683
Total	**11.1396**	**123.0822**	**93.3640**	**0.7274**	**54.9138**	**0.3016**	**55.2154**	**14.8052**	**0.2818**	**15.0870**		**74,964.1981**	**74,964.1981**	**1.8549**		**75,010.5703**

Mitigated Construction On-Site

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

3.6 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8394	118.3729	24.1375	0.4178	10.5869	0.1212	10.7081	3.0476	0.1158	3.1634		44,061.8147	44,061.8147	1.3835		44,096.4020
Worker	8.3002	4.7093	69.2265	0.3095	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		30,902.3834	30,902.3834	0.4714		30,914.1683
Total	**11.1396**	**123.0822**	**93.3640**	**0.7274**	**54.9138**	**0.3016**	**55.2154**	**14.8052**	**0.2818**	**15.0870**		**74,964.1981**	**74,964.1981**	**1.8549**		**75,010.5703**

3.6 Building Construction - 2035

Unmitigated Construction On-Site

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

3.6 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

Mitigated Construction On-Site

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

3.6 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

3.6 Building Construction - 2036

Unmitigated Construction On-Site

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

3.6 Building Construction - 2036

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

Mitigated Construction On-Site

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

3.6 Building Construction - 2036

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.27 51	44,065.27 51	1.3776		44,099.71 60
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.57 12	30,440.57 12	0.4282		30,451.27 55
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.84 63**	**74,505.84 63**	**1.8058**		**74,550.99 14**

3.6 Building Construction - 2037

Unmitigated Construction On-Site

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

3.6 Building Construction - 2037

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

Mitigated Construction On-Site

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

3.6 Building Construction - 2037

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

3.6 Building Construction - 2038

Unmitigated Construction On-Site

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

3.6 Building Construction - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.27 51	44,065.27 51	1.3776		44,099.71 60
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.57 12	30,440.57 12	0.4282		30,451.27 55
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.84 63**	**74,505.84 63**	**1.8058**		**74,550.99 14**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

3.6 Building Construction - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

3.6 Building Construction - 2039

Unmitigated Construction On-Site

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

3.6 Building Construction - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

Mitigated Construction On-Site

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

3.6 Building Construction - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

3.6 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737		2,897.5471	2,897.5471	0.1041		2,900.1503
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**		**2,897.5471**	**2,897.5471**	**0.1041**		**2,900.1503**

3.6 Building Construction - 2040

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7431	115.8752	23.2130	0.4195	10.5878	0.1101	10.6978	3.0479	0.1052	3.1531		44,234.07 50	44,234.07 50	1.3597		44,268.06 62
Worker	5.7384	3.3551	53.5813	0.2901	44.3269	0.1301	44.4569	11.7576	0.1196	11.8772		28,987.05 54	28,987.05 54	0.3029		28,994.62 87
Total	**8.4816**	**119.2303**	**76.7943**	**0.7096**	**54.9146**	**0.2401**	**55.1548**	**14.8055**	**0.2248**	**15.0303**		**73,221.13 04**	**73,221.13 04**	**1.6626**		**73,262.69 49**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737	0.0000	2,897.547 1	2,897.547 1	0.1041		2,900.150 3
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**	**0.0000**	**2,897.547 1**	**2,897.547 1**	**0.1041**		**2,900.150 3**

3.6 Building Construction - 2040

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.7431	115.8752	23.2130	0.4195	10.5878	0.1101	10.6978	3.0479	0.1052	3.1531		44,234.0750	44,234.0750	1.3597		44,268.0662
Worker	5.7384	3.3551	53.5813	0.2901	44.3269	0.1301	44.4569	11.7576	0.1196	11.8772		28,987.0554	28,987.0554	0.3029		28,994.6287
Total	**8.4816**	**119.2303**	**76.7943**	**0.7096**	**54.9146**	**0.2401**	**55.1548**	**14.8055**	**0.2248**	**15.0303**		**73,221.1304**	**73,221.1304**	**1.6626**		**73,262.6949**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**26.6236**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.3952	3.4249	37.7647	0.0927	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		9,225.769 2	9,225.769 2	0.3635		9,234.857 4
Total	**4.3952**	**3.4249**	**37.7647**	**0.0927**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**9,225.769 2**	**9,225.769 2**	**0.3635**		**9,234.857 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**26.6236**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.3952	3.4249	37.7647	0.0927	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		9,225.769 2	9,225.769 2	0.3635		9,234.857 4
Total	**4.3952**	**3.4249**	**37.7647**	**0.0927**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**9,225.769 2**	**9,225.769 2**	**0.3635**		**9,234.857 4**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**26.6092**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.0741	3.0694	34.5009	0.0894	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,901.0027	8,901.0027	0.3253		8,909.1344
Total	**4.0741**	**3.0694**	**34.5009**	**0.0894**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,901.0027**	**8,901.0027**	**0.3253**		**8,909.1344**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**26.6092**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.0741	3.0694	34.5009	0.0894	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,901.0027	8,901.0027	0.3253		8,909.1344
Total	**4.0741**	**3.0694**	**34.5009**	**0.0894**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,901.0027**	**8,901.0027**	**0.3253**		**8,909.1344**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**26.5963**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.7796	2.7516	31.4682	0.0861	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,571.1153	8,571.1153	0.2905		8,578.3768
Total	**3.7796**	**2.7516**	**31.4682**	**0.0861**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,571.1153**	**8,571.1153**	**0.2905**		**8,578.3768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**26.5963**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.7796	2.7516	31.4682	0.0861	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,571.1153	8,571.1153	0.2905		8,578.3768
Total	**3.7796**	**2.7516**	**31.4682**	**0.0861**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,571.1153**	**8,571.1153**	**0.2905**		**8,578.3768**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**26.5854**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5205	2.4749	28.9056	0.0827	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		8,241.197 0	8,241.197 0	0.2604		8,247.707 1
Total	**3.5205**	**2.4749**	**28.9056**	**0.0827**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**8,241.197 0**	**8,241.197 0**	**0.2604**		**8,247.707 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**26.5854**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5205	2.4749	28.9056	0.0827	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		8,241.1970	8,241.1970	0.2604		8,247.7071
Total	**3.5205**	**2.4749**	**28.9056**	**0.0827**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**8,241.1970**	**8,241.1970**	**0.2604**		**8,247.7071**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3007	2.2399	26.6456	0.0794	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,914.594 3	7,914.594 3	0.2353		7,920.477 3
Total	**3.3007**	**2.2399**	**26.6456**	**0.0794**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,914.594 3**	**7,914.594 3**	**0.2353**		**7,920.477 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3007	2.2399	26.6456	0.0794	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,914.594 3	7,914.594 3	0.2353		7,920.477 3
Total	**3.3007**	**2.2399**	**26.6456**	**0.0794**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,914.594 3**	**7,914.594 3**	**0.2353**		**7,920.477 3**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1022	2.0329	24.5154	0.0761	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,587.536 4	7,587.536 4	0.2113		7,592.818 5
Total	**3.1022**	**2.0329**	**24.5154**	**0.0761**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,587.536 4**	**7,587.536 4**	**0.2113**		**7,592.818 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1022	2.0329	24.5154	0.0761	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,587.5364	7,587.5364	0.2113		7,592.8185
Total	**3.1022**	**2.0329**	**24.5154**	**0.0761**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,587.5364**	**7,587.5364**	**0.2113**		**7,592.8185**

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9171	1.8474	22.7197	0.0735	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		7,327.2255	7,327.2255	0.1914		7,332.0100
Total	**2.9171**	**1.8474**	**22.7197**	**0.0735**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**7,327.2255**	**7,327.2255**	**0.1914**		**7,332.0100**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9171	1.8474	22.7197	0.0735	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		7,327.225 5	7,327.225 5	0.1914		7,332.010 0
Total	**2.9171**	**1.8474**	**22.7197**	**0.0735**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**7,327.225 5**	**7,327.225 5**	**0.1914**		**7,332.010 0**

3.7 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7315	1.6828	21.1414	0.0712	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		7,096.308 1	7,096.308 1	0.1742		7,100.662 0
Total	**2.7315**	**1.6828**	**21.1414**	**0.0712**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**7,096.308 1**	**7,096.308 1**	**0.1742**		**7,100.662 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7315	1.6828	21.1414	0.0712	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		7,096.308 1	7,096.308 1	0.1742		7,100.662 0
Total	**2.7315**	**1.6828**	**21.1414**	**0.0712**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**7,096.308 1**	**7,096.308 1**	**0.1742**		**7,100.662 0**

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5352	1.5290	19.6194	0.0691	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,891.345 1	6,891.345 1	0.1575		6,895.282 1
Total	**2.5352**	**1.5290**	**19.6194**	**0.0691**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,891.345 1**	**6,891.345 1**	**0.1575**		**6,895.282 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5352	1.5290	19.6194	0.0691	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,891.345 1	6,891.345 1	0.1575		6,895.282 1
Total	**2.5352**	**1.5290**	**19.6194**	**0.0691**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,891.345 1**	**6,891.345 1**	**0.1575**		**6,895.282 1**

3.7 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3405	1.3854	18.2425	0.0673	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,709.920 4	6,709.920 4	0.1423		6,713.478 9
Total	**2.3405**	**1.3854**	**18.2425**	**0.0673**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,709.920 4**	**6,709.920 4**	**0.1423**		**6,713.478 9**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3405	1.3854	18.2425	0.0673	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,709.920 4	6,709.920 4	0.1423		6,713.478 9
Total	**2.3405**	**1.3854**	**18.2425**	**0.0673**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,709.920 4**	**6,709.920 4**	**0.1423**		**6,713.478 9**

3.7 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1335	1.2461	16.9054	0.0656	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,549.687 1	6,549.687 1	0.1277		6,552.880 1
Total	**2.1335**	**1.2461**	**16.9054**	**0.0656**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,549.687 1**	**6,549.687 1**	**0.1277**		**6,552.880 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1335	1.2461	16.9054	0.0656	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,549.687 1	6,549.687 1	0.1277		6,552.880 1
Total	**2.1335**	**1.2461**	**16.9054**	**0.0656**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,549.687 1**	**6,549.687 1**	**0.1277**		**6,552.880 1**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9491	1.1258	15.7409	0.0642	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		6,409.0817	6,409.0817	0.1150		6,411.9570
Total	**1.9491**	**1.1258**	**15.7409**	**0.0642**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**6,409.0817**	**6,409.0817**	**0.1150**		**6,411.9570**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9491	1.1258	15.7409	0.0642	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		6,409.081 7	6,409.081 7	0.1150		6,411.9570
Total	**1.9491**	**1.1258**	**15.7409**	**0.0642**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**6,409.081 7**	**6,409.081 7**	**0.1150**		**6,411.957 0**

3.7 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7911	1.0242	14.7503	0.0630	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		6,286.388 5	6,286.388 5	0.1042		6,288.992 7
Total	**1.7911**	**1.0242**	**14.7503**	**0.0630**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**6,286.388 5**	**6,286.388 5**	**0.1042**		**6,288.992 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7911	1.0242	14.7503	0.0630	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		6,286.3885	6,286.3885	0.1042		6,288.9927
Total	**1.7911**	**1.0242**	**14.7503**	**0.0630**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**6,286.3885**	**6,286.3885**	**0.1042**		**6,288.9927**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6597	0.9417	13.8427	0.0619	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		6,179.331 3	6,179.331 3	0.0943		6,181.687 8
Total	**1.6597**	**0.9417**	**13.8427**	**0.0619**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**6,179.331 3**	**6,179.331 3**	**0.0943**		**6,181.687 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6597	0.9417	13.8427	0.0619	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		6,179.331 3	6,179.331 3	0.0943		6,181.687 8
Total	**1.6597**	**0.9417**	**13.8427**	**0.0619**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**6,179.331 3**	**6,179.331 3**	**0.0943**		**6,181.687 8**

3.7 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.9860	6,086.9860	0.0856		6,089.1264
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.9860**	**6,086.9860**	**0.0856**		**6,089.1264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

3.7 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2036

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2036

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

3.7 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2037

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.9860	6,086.9860	0.0856		6,089.1264
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.9860**	**6,086.9860**	**0.0856**		**6,089.1264**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2037

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

3.7 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

3.7 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1149	0.7270	1.7923	2.9700e-003		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003		281.4481	281.4481	9.9000e-003		281.6957
Total	**26.5196**	**0.7270**	**1.7923**	**2.9700e-003**		**7.4300e-003**	**7.4300e-003**		**7.4300e-003**	**7.4300e-003**		**281.4481**	**281.4481**	**9.9000e-003**		**281.6957**

3.7 Architectural Coating - 2040

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.1475	0.6709	10.7143	0.0580	8.8637	0.0260	8.8897	2.3511	0.0239	2.3750		5,796.3367	5,796.3367	0.0606		5,797.8511
Total	**1.1475**	**0.6709**	**10.7143**	**0.0580**	**8.8637**	**0.0260**	**8.8897**	**2.3511**	**0.0239**	**2.3750**		**5,796.3367**	**5,796.3367**	**0.0606**		**5,797.8511**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1149	0.7270	1.7923	2.9700e-003		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003	0.0000	281.4481	281.4481	9.9000e-003		281.6957
Total	**26.5196**	**0.7270**	**1.7923**	**2.9700e-003**		**7.4300e-003**	**7.4300e-003**		**7.4300e-003**	**7.4300e-003**	**0.0000**	**281.4481**	**281.4481**	**9.9000e-003**		**281.6957**

3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.1475	0.6709	10.7143	0.0580	8.8637	0.0260	8.8897	2.3511	0.0239	2.3750		5,796.3367	5,796.3367	0.0606		5,797.8511
Total	**1.1475**	**0.6709**	**10.7143**	**0.0580**	**8.8637**	**0.0260**	**8.8897**	**2.3511**	**0.0239**	**2.3750**		**5,796.3367**	**5,796.3367**	**0.0606**		**5,797.8511**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	48.0770	274.8474	372.3627	1.7885	173.3393	0.7825	174.1218	46.3705	0.7267	47.0972		182,595.1060	182,595.1060	6.9765		182,769.5193
Unmitigated	50.4207	283.7294	417.6284	2.0379	202.7360	0.8853	203.6213	54.2344	0.8224	55.0568		207,939.2042	207,939.2042	7.6679		208,130.9006

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
City Park	94.50	1,137.50	837.00	504,217	431,106
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828
NaturalGas Unmitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2153.95	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6413.45	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86244.6	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45730.2	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2408.96	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3510.58	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.15395	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148.143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68.177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6.41345	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86.2446	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45.7302	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2.40896	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108.377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3.51058	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	246.4212	25.3409	365.9781	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.6258	27,737.6258	1.1355	0.4967	27,914.0257
Unmitigated	1,170.9221	31.5360	1,533.4281	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.3729	18,803.0611	36,579.4340	22.4030	1.4967	37,585.5372

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	213.2902					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	911.0458	27.4171	1,176.4807	2.2640		166.4518	166.4518		166.4518	166.4518	17,776.3729	18,157.3412	35,933.7140	21.7868	1.4967	36,924.4110
Landscaping	10.7046	4.1189	356.9475	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1262
Total	**1,170.9221**	**31.5360**	**1,533.4281**	**2.2829**		**168.4390**	**168.4390**		**168.4390**	**168.4390**	**17,776.3729**	**18,803.0611**	**36,579.4340**	**22.4030**	**1.4967**	**37,585.5372**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	197.3517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.4834	21.2220	9.0306	0.1355		1.7158	1.7158		1.7158	1.7158	0.0000	27,091.9059	27,091.9059	0.5193	0.4967	27,252.8995
Landscaping	10.7046	4.1189	356.9475	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1262
Total	**246.4212**	**25.3409**	**365.9781**	**0.1544**		**3.7031**	**3.7031**		**3.7031**	**3.7031**	**0.0000**	**27,737.6258**	**27,737.6258**	**1.1355**	**0.4967**	**27,914.0257**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model Full Buildout - 2016.3.2

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
City Park	50.00	Acre	50.00	2,178,000.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 3.6 **Precipitation Freq (Days)** 55

Climate Zone 4 **Operational Year** 2040

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 217.5 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO_2 Factor: 290 lb/MWh), adjusted for 2035 based on the increased effect of the RPS by 2035 (CO_2 Factor : 217.5022). 2035 used as proxy for 2040

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading - Maximum of 797 acres graded

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	12,400.00	5,195.00
tblConstructionPhase	NumDays	880.00	4,960.00
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42

tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42

tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5462	50.2870	32.7145	0.0637	19.1898	2.1987	21.3651	9.9699	2.0228	11.9927	0.0000	6,171.5314	6,171.5314	1.9496	0.0000	6,220.2719
2021	63.2159	221.9339	290.9323	0.9840	63.7704	2.0566	65.8271	17.1537	1.9404	19.0941	0.0000	100,232.5736	100,232.5736	4.8815	0.0000	100,354.6104
2022	60.4280	207.6738	266.1734	0.9616	63.7714	1.8069	65.5783	17.1540	1.7043	18.8584	0.0000	98,016.0437	98,016.0437	4.5865	0.0000	98,130.7070
2023	57.0448	174.3515	241.0643	0.9350	63.7723	1.3951	65.1674	17.1544	1.3121	18.4665	0.0000	95,364.1176	95,364.1176	3.9835	0.0000	95,463.7044
2024	55.0576	168.0064	222.8450	0.9132	63.7733	1.2709	65.0442	17.1547	1.1943	18.3490	0.0000	93,194.6668	93,194.6668	3.7805	0.0000	93,289.1804
2025	53.3498	162.3043	207.1271	0.8917	63.7741	1.1531	64.9271	17.1550	1.0828	18.2378	0.0000	91,064.2436	91,064.2436	3.6084	0.0000	91,154.4547
2026	51.9607	158.3720	192.9904	0.8709	63.7746	1.1271	64.9017	17.1552	1.0584	18.2136	0.0000	89,001.7902	89,001.7902	3.4502	0.0000	89,088.0456
2027	50.6659	154.8023	180.9016	0.8542	63.7752	1.0963	64.8715	17.1554	1.0296	18.1850	0.0000	87,340.6113	87,340.6113	3.3157	0.0000	87,423.5047
2028	49.3692	151.7459	170.5350	0.8395	63.7756	1.0638	64.8394	17.1555	0.9993	18.1548	0.0000	85,877.5659	85,877.5659	3.1947	0.0000	85,957.4321
2029	48.0097	148.9304	160.6270	0.8264	63.7760	1.0336	64.8096	17.1557	0.9712	18.1269	0.0000	84,581.4718	84,581.4718	3.0812	0.0000	84,658.5029
2030	46.5739	141.6065	151.8537	0.8190	63.7764	0.5955	64.3718	17.1558	0.5663	17.7222	0.0000	83,790.3962	83,790.3962	2.4868	0.0000	83,852.5664
2031	45.1567	139.3327	143.3311	0.8090	63.7767	0.5704	64.3471	17.1559	0.5431	17.6991	0.0000	82,805.3188	82,805.3188	2.3896	0.0000	82,865.0600
2032	43.8986	137.3512	135.9817	0.8005	63.7770	0.5476	64.3246	17.1561	0.5219	17.6780	0.0000	81,961.9817	81,961.9817	2.3039	0.0000	82,019.5783
2033	42.8266	135.6401	129.7657	0.7932	63.7773	0.5270	64.3043	17.1561	0.5028	17.6590	0.0000	81,240.6064	81,240.6064	2.2323	0.0000	81,296.4132
2034	41.9442	134.2018	124.0704	0.7869	63.7775	0.5082	64.2857	17.1562	0.4854	17.6416	0.0000	80,623.1146	80,623.1146	2.1666	0.0000	80,677.2806
2035	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2036	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2037	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2038	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2039	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2040	38.4016	128.3207	104.3364	0.7663	63.7784	0.3488	64.1271	17.1565	0.3313	17.4879	0.0000	78,595.4896	78,595.4896	1.9362	0.0000	78,643.8946
Maximum	**63.2159**	**221.9339**	**290.9323**	**0.9840**	**63.7784**	**2.1987**	**65.8271**	**17.1565**	**2.0228**	**19.0941**	**0.0000**	**100,232.5736**	**100,232.5736**	**4.8815**	**0.0000**	**100,354.6104**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.5462	50.2870	32.7145	0.0637	8.7258	2.1987	10.9011	4.5080	2.0228	6.5308	0.0000	6,171.5314	6,171.5314	1.9496	0.0000	6,220.2719
2021	63.2159	221.9339	290.9323	0.9840	63.7704	2.0566	65.8271	17.1537	1.9404	19.0941	0.0000	100,232.5736	100,232.5736	4.8815	0.0000	100,354.6104
2022	60.4280	207.6738	266.1734	0.9616	63.7714	1.8069	65.5783	17.1540	1.7043	18.8584	0.0000	98,016.0437	98,016.0437	4.5865	0.0000	98,130.7070
2023	57.0448	174.3515	241.0643	0.9350	63.7723	1.3951	65.1674	17.1544	1.3121	18.4665	0.0000	95,364.1176	95,364.1176	3.9835	0.0000	95,463.7044
2024	55.0576	168.0064	222.8450	0.9132	63.7733	1.2709	65.0442	17.1547	1.1943	18.3490	0.0000	93,194.6668	93,194.6668	3.7805	0.0000	93,289.1804
2025	53.3498	162.3043	207.1271	0.8917	63.7741	1.1531	64.9271	17.1550	1.0828	18.2378	0.0000	91,064.2436	91,064.2436	3.6084	0.0000	91,154.4547
2026	51.9607	158.3720	192.9904	0.8709	63.7746	1.1271	64.9017	17.1552	1.0584	18.2136	0.0000	89,001.7902	89,001.7902	3.4502	0.0000	89,088.0456
2027	50.6659	154.8023	180.9016	0.8542	63.7752	1.0963	64.8715	17.1554	1.0296	18.1850	0.0000	87,340.6113	87,340.6113	3.3157	0.0000	87,423.5047

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	49.3692	151.7459	170.5350	0.8395	63.7756	1.0638	64.8394	17.1555	0.9993	18.1548	0.0000	85,877.5659	85,877.5659	3.1947	0.0000	85,957.4321
2029	48.0097	148.9304	160.6270	0.8264	63.7760	1.0336	64.8096	17.1557	0.9712	18.1269	0.0000	84,581.4718	84,581.4718	3.0812	0.0000	84,658.5029
2030	46.5739	141.6065	151.8537	0.8190	63.7764	0.5955	64.3718	17.1558	0.5663	17.7222	0.0000	83,790.3962	83,790.3962	2.4868	0.0000	83,852.5664
2031	45.1567	139.3327	143.3311	0.8090	63.7767	0.5704	64.3471	17.1559	0.5431	17.6991	0.0000	82,805.3188	82,805.3188	2.3896	0.0000	82,865.0600
2032	43.8986	137.3512	135.9817	0.8005	63.7770	0.5476	64.3246	17.1561	0.5219	17.6780	0.0000	81,961.9817	81,961.9817	2.3039	0.0000	82,019.5783
2033	42.8266	135.6401	129.7657	0.7932	63.7773	0.5270	64.3043	17.1561	0.5028	17.6590	0.0000	81,240.6064	81,240.6064	2.2323	0.0000	81,296.4132
2034	41.9442	134.2018	124.0704	0.7869	63.7775	0.5082	64.2857	17.1562	0.4854	17.6416	0.0000	80,623.1146	80,623.1146	2.1666	0.0000	80,677.2806
2035	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2036	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2037	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2038	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2039	41.0615	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
2040	38.4016	128.3207	104.3364	0.7663	63.7784	0.3488	64.1271	17.1565	0.3313	17.4879	0.0000	78,595.4896	78,595.4896	1.9362	0.0000	78,643.8946
Maximum	**63.2159**	**221.9339**	**290.9323**	**0.9840**	**63.7784**	**2.1987**	**65.8271**	**17.1565**	**2.0228**	**19.0941**	**0.0000**	**100,232.5736**	**100,232.5736**	**4.8815**	**0.0000**	**100,354.6104**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.81**	**0.00**	**0.80**	**1.55**	**0.00**	**1.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,170.922 1	31.5360	1,533.428 1	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.37 29	18,803.061 1	36,579.43 40	22.4030	1.4967	37,585.53 72
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	44.2193	286.9158	445.0124	1.9255	202.7360	0.8892	203.6251	54.2344	0.8261	55.0605		196,446.6 336	196,446.6 336	8.1385		196,650.0 952
Total	**1,220.222 5**	**363.1221**	**2,006.083 4**	**4.4856**	**202.7360**	**172.8388**	**375.5748**	**54.2344**	**172.7757**	**227.0102**	**17,776.37 29**	**270,680.0 824**	**288,456.4 553**	**31.6039**	**2.5130**	**289,995.4 152**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	246.4212	25.3409	365.9781	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.62 58	27,737.62 58	1.1355	0.4967	27,914.02 57
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	41.8273	276.9807	402.1306	1.6877	173.3393	0.7864	174.1256	46.3705	0.7304	47.1009		172,251.4 489	172,251.4 489	7.4476		172,437.6 378
Total	**293.3296**	**346.9920**	**795.7516**	**2.1192**	**173.3393**	**8.0000**	**181.3393**	**46.3705**	**7.9441**	**54.3145**	**0.0000**	**255,419.4 624**	**255,419.4 624**	**9.6455**	**1.5129**	**256,111.44 64**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**75.96**	**4.44**	**60.33**	**52.76**	**14.50**	**95.37**	**51.72**	**14.50**	**95.40**	**76.07**	**100.00**	**5.64**	**11.45**	**69.48**	**39.80**	**11.68**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2020	3/30/2020	5	64	
2	Grading	Grading	3/31/2020	6/29/2020	5	65	
3	Underground Utilities	Trenching	7/1/2020	9/1/2020	5	45	
4	Paving	Paving	9/2/2020	12/31/2020	5	87	
5	Building Construction	Building Construction	1/2/2021	11/30/2040	5	5195	
6	Architectural Coating	Architectural Coating	2/1/2021	2/3/2040	5	4960	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Winter

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0865	0.0806	0.6806	1.5000e-003	0.1479	1.2800e-003	0.1491	0.0392	1.1800e-003	0.0404		149.0995	149.0995	6.4800e-003		149.2615
Total	**0.0865**	**0.0806**	**0.6806**	**1.5000e-003**	**0.1479**	**1.2800e-003**	**0.1491**	**0.0392**	**1.1800e-003**	**0.0404**		**149.0995**	**149.0995**	**6.4800e-003**		**149.2615**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0865	0.0806	0.6806	1.5000e-003	0.1479	1.2800e-003	0.1491	0.0392	1.1800e-003	0.0404		149.0995	149.0995	6.4800e-003		149.2615
Total	**0.0865**	**0.0806**	**0.6806**	**1.5000e-003**	**0.1479**	**1.2800e-003**	**0.1491**	**0.0392**	**1.1800e-003**	**0.0404**		**149.0995**	**149.0995**	**6.4800e-003**		**149.2615**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.0255	0.0000	19.0255	4.7143	0.0000	4.7143			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**19.0255**	**2.1739**	**21.1994**	**4.7143**	**2.0000**	**6.7143**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0961	0.0895	0.7562	1.6700e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		165.6661	165.6661	7.2000e-003		165.8462
Total	**0.0961**	**0.0895**	**0.7562**	**1.6700e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**165.6661**	**165.6661**	**7.2000e-003**		**165.8462**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.5615	0.0000	8.5615	2.1214	0.0000	2.1214			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.5615**	**2.1739**	**10.7354**	**2.1214**	**2.0000**	**4.1214**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0961	0.0895	0.7562	1.6700e-003	0.1643	1.4200e-003	0.1657	0.0436	1.3100e-003	0.0449		165.6661	165.6661	7.2000e-003		165.8462
Total	**0.0961**	**0.0895**	**0.7562**	**1.6700e-003**	**0.1643**	**1.4200e-003**	**0.1657**	**0.0436**	**1.3100e-003**	**0.0449**		**165.6661**	**165.6661**	**7.2000e-003**		**165.8462**

3.4 Underground Utilities - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.4 Underground Utilities - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.733 4	2,207.733 4	0.7140		2,225.584 1
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.733 4**	**2,207.733 4**	**0.7140**		**2,225.584 1**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0721**	**0.0672**	**0.5671**	**1.2500e-003**	**0.1232**	**1.0700e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**124.2496**	**124.2496**	**5.4000e-003**		**124.3846**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.733 4	2,207.733 4	0.7140		2,225.584 1
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.733 4**	**2,207.733 4**	**0.7140**		**2,225.584 1**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0672	0.5671	1.2500e-003	0.1232	1.0700e-003	0.1243	0.0327	9.8000e-004	0.0337		124.2496	124.2496	5.4000e-003		124.3846
Total	**0.0721**	**0.0672**	**0.5671**	**1.2500e-003**	**0.1232**	**1.0700e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**124.2496**	**124.2496**	**5.4000e-003**		**124.3846**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

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

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9918	177.1067	50.3204	0.4331	10.5798	0.5598	11.1396	3.0451	0.5354	3.5804		45,560.55 75	45,560.55 75	2.1720		45,614.85 68
Worker	23.9171	21.5575	185.1883	0.4343	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		43,199.00 44	43,199.00 44	1.7285		43,242.21 76
Total	**29.9089**	**198.6642**	**235.5087**	**0.8673**	**54.9067**	**0.9299**	**55.8366**	**14.8026**	**0.8767**	**15.6794**		**88,759.56 19**	**88,759.56 19**	**3.9005**		**88,857.07 44**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9918	177.1067	50.3204	0.4331	10.5798	0.5598	11.1396	3.0451	0.5354	3.5804		45,560.55 75	45,560.55 75	2.1720		45,614.85 68
Worker	23.9171	21.5575	185.1883	0.4343	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		43,199.00 44	43,199.00 44	1.7285		43,242.21 76
Total	**29.9089**	**198.6642**	**235.5087**	**0.8673**	**54.9067**	**0.9299**	**55.8366**	**14.8026**	**0.8767**	**15.6794**		**88,759.56 19**	**88,759.56 19**	**3.9005**		**88,857.07 44**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

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

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.4912	167.4699	45.6523	0.4292	10.5808	0.4880	11.0688	3.0454	0.4667	3.5121		45,167.14 10	45,167.14 10	2.1053		45,219.77 23
Worker	22.1851	19.3171	168.6253	0.4188	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		41,678.88 82	41,678.88 82	1.5426		41,717.45 22
Total	**27.6764**	**186.7870**	**214.2776**	**0.8479**	**54.9077**	**0.8448**	**55.7525**	**14.8030**	**0.7957**	**15.5986**		**86,846.02 92**	**86,846.02 92**	**3.6478**		**86,937.22 45**

Mitigated Construction On-Site

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

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.4912	167.4699	45.6523	0.4292	10.5808	0.4880	11.0688	3.0454	0.4667	3.5121		45,167.1410	45,167.1410	2.1053		45,219.7723
Worker	22.1851	19.3171	168.6253	0.4188	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		41,678.8882	41,678.8882	1.5426		41,717.4522
Total	**27.6764**	**186.7870**	**214.2776**	**0.8479**	**54.9077**	**0.8448**	**55.7525**	**14.8030**	**0.7957**	**15.5986**		**86,846.0292**	**86,846.0292**	**3.6478**		**86,937.2245**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

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

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1472	137.8898	39.1835	0.4214	10.5817	0.2100	10.7918	3.0457	0.2008	3.2465		44,367.1372	44,367.1372	1.7121		44,409.9402
Worker	20.6077	17.3120	153.1928	0.4031	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		40,134.8417	40,134.8417	1.3723		40,169.1484
Total	**24.7549**	**155.2018**	**192.3763**	**0.8245**	**54.9086**	**0.5555**	**55.4641**	**14.8033**	**0.5192**	**15.3225**		**84,501.9789**	**84,501.9789**	**3.0844**		**84,579.0885**

Mitigated Construction On-Site

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

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1472	137.8898	39.1835	0.4214	10.5817	0.2100	10.7918	3.0457	0.2008	3.2465		44,367.1372	44,367.1372	1.7121		44,409.9402
Worker	20.6077	17.3120	153.1928	0.4031	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		40,134.8417	40,134.8417	1.3723		40,169.1484
Total	**24.7549**	**155.2018**	**192.3763**	**0.8245**	**54.9086**	**0.5555**	**55.4641**	**14.8033**	**0.5192**	**15.3225**		**84,501.9789**	**84,501.9789**	**3.0844**		**84,579.0885**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

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

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9199	134.6639	36.5393	0.4183	10.5827	0.1949	10.7776	3.0461	0.1863	3.2324		44,050.1158	44,050.1158	1.6893		44,092.3475
Worker	19.2345	15.5670	140.2783	0.3875	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		38,590.6953	38,590.6953	1.2259		38,621.3437
Total	**23.1544**	**150.2310**	**176.8176**	**0.8058**	**54.9095**	**0.5298**	**55.4393**	**14.8036**	**0.4948**	**15.2984**		**82,640.8111**	**82,640.8111**	**2.9152**		**82,713.6912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9199	134.6639	36.5393	0.4183	10.5827	0.1949	10.7776	3.0461	0.1863	3.2324		44,050.1158	44,050.1158	1.6893		44,092.3475
Worker	19.2345	15.5670	140.2783	0.3875	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		38,590.6953	38,590.6953	1.2259		38,621.3437
Total	**23.1544**	**150.2310**	**176.8176**	**0.8058**	**54.9095**	**0.5298**	**55.4393**	**14.8036**	**0.4948**	**15.2984**		**82,640.8111**	**82,640.8111**	**2.9152**		**82,713.6912**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

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

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7245	131.7855	34.3966	0.4154	10.5835	0.1808	10.7643	3.0464	0.1728	3.2192		43,752.8656	43,752.8656	1.6657		43,794.5082
Worker	18.0692	14.0868	129.0346	0.3720	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		37,062.3578	37,062.3578	1.1054		37,089.9928
Total	**21.7937**	**145.8723**	**163.4312**	**0.7874**	**54.9103**	**0.5085**	**55.4188**	**14.8039**	**0.4747**	**15.2786**		**80,815.2234**	**80,815.2234**	**2.7711**		**80,884.5010**

Mitigated Construction On-Site

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

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7245	131.7855	34.3966	0.4154	10.5835	0.1808	10.7643	3.0464	0.1728	3.2192		43,752.8656	43,752.8656	1.6657		43,794.5082
Worker	18.0692	14.0868	129.0346	0.3720	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		37,062.3578	37,062.3578	1.1054		37,089.9928
Total	**21.7937**	**145.8723**	**163.4312**	**0.7874**	**54.9103**	**0.5085**	**55.4188**	**14.8039**	**0.4747**	**15.2786**		**80,815.2234**	**80,815.2234**	**2.7711**		**80,884.5010**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

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

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5787	129.4168	32.8788	0.4132	10.5841	0.1710	10.7550	3.0466	0.1635	3.2100		43,527.9058	43,527.9058	1.6451		43,569.0321
Worker	17.0331	12.7837	118.5185	0.3566	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		35,531.0657	35,531.0657	0.9908		35,555.8345
Total	**20.6118**	**142.2005**	**151.3973**	**0.7697**	**54.9109**	**0.4852**	**55.3961**	**14.8041**	**0.4528**	**15.2569**		**79,058.9715**	**79,058.9715**	**2.6358**		**79,124.8667**

Mitigated Construction On-Site

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

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5787	129.4168	32.8788	0.4132	10.5841	0.1710	10.7550	3.0466	0.1635	3.2100		43,527.9058	43,527.9058	1.6451		43,569.0321
Worker	17.0331	12.7837	118.5185	0.3566	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		35,531.0657	35,531.0657	0.9908		35,555.8345
Total	**20.6118**	**142.2005**	**151.3973**	**0.7697**	**54.9109**	**0.4852**	**55.3961**	**14.8041**	**0.4528**	**15.2569**		**79,058.9715**	**79,058.9715**	**2.6358**		**79,124.8667**

3.6 Building Construction - 2027

Unmitigated Construction On-Site

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

3.6 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4524	127.2459	31.5112	0.4112	10.5846	0.1622	10.7468	3.0468	0.1550	3.2018		43,330.9692	43,330.9692	1.6249		43,371.5907
Worker	16.0593	11.6180	109.5840	0.3442	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		34,310.8262	34,310.8262	0.8955		34,333.2139
Total	**19.5117**	**138.8639**	**141.0951**	**0.7555**	**54.9114**	**0.4581**	**55.3695**	**14.8043**	**0.4274**	**15.2317**		**77,641.7953**	**77,641.7953**	**2.5204**		**77,704.8045**

Mitigated Construction On-Site

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

3.6 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4524	127.2459	31.5112	0.4112	10.5846	0.1622	10.7468	3.0468	0.1550	3.2018		43,330.9692	43,330.9692	1.6249		43,371.5907
Worker	16.0593	11.6180	109.5840	0.3442	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		34,310.8262	34,310.8262	0.8955		34,333.2139
Total	**19.5117**	**138.8639**	**141.0951**	**0.7555**	**54.9114**	**0.4581**	**55.3695**	**14.8043**	**0.4274**	**15.2317**		**77,641.7953**	**77,641.7953**	**2.5204**		**77,704.8045**

3.6 Building Construction - 2028

Unmitigated Construction On-Site

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

3.6 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3480	125.4330	30.5378	0.4096	10.5850	0.1542	10.7392	3.0469	0.1474	3.1944		43,167.4239	43,167.4239	1.6019		43,207.4708
Worker	15.0657	10.5817	101.7559	0.3333	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		33,227.8759	33,227.8759	0.8138		33,248.2198
Total	**18.4137**	**136.0147**	**132.2938**	**0.7429**	**54.9119**	**0.4296**	**55.3415**	**14.8045**	**0.4008**	**15.2053**		**76,395.2998**	**76,395.2998**	**2.4156**		**76,455.6906**

Mitigated Construction On-Site

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

3.6 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3480	125.4330	30.5378	0.4096	10.5850	0.1542	10.7392	3.0469	0.1474	3.1944		43,167.4239	43,167.4239	1.6019		43,207.4708
Worker	15.0657	10.5817	101.7559	0.3333	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		33,227.8759	33,227.8759	0.8138		33,248.2198
Total	**18.4137**	**136.0147**	**132.2938**	**0.7429**	**54.9119**	**0.4296**	**55.3415**	**14.8045**	**0.4008**	**15.2053**		**76,395.2998**	**76,395.2998**	**2.4156**		**76,455.6906**

3.6 Building Construction - 2029

Unmitigated Construction On-Site

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

3.6 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2613	123.7826	29.7169	0.4082	10.5854	0.1470	10.7324	3.0471	0.1405	3.1876		43,025.71 47	43,025.71 47	1.5838		43,065.30 93
Worker	14.0049	9.6108	94.1831	0.3236	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		32,265.85 88	32,265.85 88	0.7343		32,284.21 69
Total	**17.2663**	**133.3934**	**123.9001**	**0.7318**	**54.9123**	**0.4033**	**55.3155**	**14.8046**	**0.3763**	**15.1809**		**75,291.57 35**	**75,291.57 35**	**2.3181**		**75,349.52 62**

Mitigated Construction On-Site

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

3.6 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2613	123.7826	29.7169	0.4082	10.5854	0.1470	10.7324	3.0471	0.1405	3.1876		43,025.71 47	43,025.71 47	1.5838		43,065.30 93
Worker	14.0049	9.6108	94.1831	0.3236	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		32,265.85 88	32,265.85 88	0.7343		32,284.21 69
Total	**17.2663**	**133.3934**	**123.9001**	**0.7318**	**54.9123**	**0.4033**	**55.3155**	**14.8046**	**0.3763**	**15.1809**		**75,291.57 35**	**75,291.57 35**	**2.3181**		**75,349.52 62**

3.6 Building Construction - 2030

Unmitigated Construction On-Site

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

3.6 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1914	122.3711	29.1048	0.4071	10.5858	0.1410	10.7267	3.0472	0.1348	3.1820		42,916.0566	42,916.0566	1.5641		42,955.1598
Worker	12.9488	8.7041	87.3312	0.3149	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		31,413.7576	31,413.7576	0.6626		31,430.3216
Total	**16.1401**	**131.0751**	**116.4360**	**0.7221**	**54.9126**	**0.3794**	**55.2920**	**14.8047**	**0.3540**	**15.1588**		**74,329.8142**	**74,329.8142**	**2.2267**		**74,385.4814**

Mitigated Construction On-Site

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

3.6 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1914	122.3711	29.1048	0.4071	10.5858	0.1410	10.7267	3.0472	0.1348	3.1820		42,916.0566	42,916.0566	1.5641		42,955.1598
Worker	12.9488	8.7041	87.3312	0.3149	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		31,413.7576	31,413.7576	0.6626		31,430.3216
Total	**16.1401**	**131.0751**	**116.4360**	**0.7221**	**54.9126**	**0.3794**	**55.2920**	**14.8047**	**0.3540**	**15.1588**		**74,329.8142**	**74,329.8142**	**2.2267**		**74,385.4814**

3.6 Building Construction - 2031

Unmitigated Construction On-Site

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

3.6 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1333	121.1545	28.5916	0.4063	10.5861	0.1358	10.7219	3.0473	0.1298	3.1772		42,834.7031	42,834.7031	1.5502		42,873.4576
Worker	11.8161	7.8231	80.6565	0.3073	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		30,660.6311	30,660.6311	0.5932		30,675.4615
Total	**14.9494**	**128.9775**	**109.2481**	**0.7136**	**54.9130**	**0.3577**	**55.2706**	**14.8049**	**0.3339**	**15.1387**		**73,495.3342**	**73,495.3342**	**2.1434**		**73,548.9190**

Mitigated Construction On-Site

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

Salinas WASP Model Full Buildout - 2016.3.2 - Monterey County, Winter

3.6 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1333	121.1545	28.5916	0.4063	10.5861	0.1358	10.7219	3.0473	0.1298	3.1772		42,834.70 31	42,834.70 31	1.5502		42,873.45 76
Worker	11.8161	7.8231	80.6565	0.3073	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		30,660.631 1	30,660.631 1	0.5932		30,675.46 15
Total	**14.9494**	**128.9775**	**109.2481**	**0.7136**	**54.9130**	**0.3577**	**55.2706**	**14.8049**	**0.3339**	**15.1387**		**73,495.33 42**	**73,495.33 42**	**2.1434**		**73,548.91 90**

3.6 Building Construction - 2032

Unmitigated Construction On-Site

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

3.6 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0853	120.0847	28.2105	0.4058	10.5864	0.1312	10.7176	3.0474	0.1254	3.1728		42,784.4834	42,784.4834	1.5366		42,822.8976
Worker	10.8076	7.0632	74.8494	0.3006	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		29,999.6795	29,999.6795	0.5331		30,013.0062
Total	**13.8929**	**127.1479**	**103.0599**	**0.7064**	**54.9133**	**0.3378**	**55.2511**	**14.8050**	**0.3155**	**15.1204**		**72,784.1629**	**72,784.1629**	**2.0696**		**72,835.9038**

Mitigated Construction On-Site

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

3.6 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0853	120.0847	28.2105	0.4058	10.5864	0.1312	10.7176	3.0474	0.1254	3.1728		42,784.4834	42,784.4834	1.5366		42,822.8976
Worker	10.8076	7.0632	74.8494	0.3006	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		29,999.6795	29,999.6795	0.5331		30,013.0062
Total	**13.8929**	**127.1479**	**103.0599**	**0.7064**	**54.9133**	**0.3378**	**55.2511**	**14.8050**	**0.3155**	**15.1204**		**72,784.1629**	**72,784.1629**	**2.0696**		**72,835.9038**

3.6 Building Construction - 2033

Unmitigated Construction On-Site

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

3.6 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0483	119.1431	27.9157	0.4055	10.5867	0.1270	10.7137	3.0475	0.1214	3.1689		42,755.1409	42,755.1409	1.5264		42,793.2998
Worker	9.9451	6.4219	69.9149	0.2948	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		29,422.9678	29,422.9678	0.4819		29,435.0156
Total	**12.9934**	**125.5650**	**97.8306**	**0.7003**	**54.9135**	**0.3200**	**55.2335**	**14.8051**	**0.2989**	**15.1040**		**72,178.1086**	**72,178.1086**	**2.0083**		**72,228.3154**

Mitigated Construction On-Site

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

3.6 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0483	119.1431	27.9157	0.4055	10.5867	0.1270	10.7137	3.0475	0.1214	3.1689		42,755.1409	42,755.1409	1.5264		42,793.2998
Worker	9.9451	6.4219	69.9149	0.2948	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		29,422.9678	29,422.9678	0.4819		29,435.0156
Total	**12.9934**	**125.5650**	**97.8306**	**0.7003**	**54.9135**	**0.3200**	**55.2335**	**14.8051**	**0.2989**	**15.1040**		**72,178.1086**	**72,178.1086**	**2.0083**		**72,228.3154**

3.6 Building Construction - 2034

Unmitigated Construction On-Site

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

3.6 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0143	118.3288	27.6350	0.4054	10.5869	0.1232	10.7101	3.0476	0.1178	3.1654		42,741.3962	42,741.3962	1.5167		42,779.3148
Worker	9.2381	5.9019	65.4026	0.2897	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		28,919.8296	28,919.8296	0.4352		28,930.7104
Total	**12.2524**	**124.2307**	**93.0376**	**0.6951**	**54.9138**	**0.3037**	**55.2174**	**14.8052**	**0.2838**	**15.0889**		**71,661.2258**	**71,661.2258**	**1.9520**		**71,710.0252**

Mitigated Construction On-Site

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

3.6 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0143	118.3288	27.6350	0.4054	10.5869	0.1232	10.7101	3.0476	0.1178	3.1654		42,741.3962	42,741.3962	1.5167		42,779.3148
Worker	9.2381	5.9019	65.4026	0.2897	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		28,919.8296	28,919.8296	0.4352		28,930.7104
Total	**12.2524**	**124.2307**	**93.0376**	**0.6951**	**54.9138**	**0.3037**	**55.2174**	**14.8052**	**0.2838**	**15.0889**		**71,661.2258**	**71,661.2258**	**1.9520**		**71,710.0252**

3.6 Building Construction - 2035

Unmitigated Construction On-Site

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

3.6 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.5891	42,737.5891	1.5103		42,775.3467
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.9141	28,485.9141	0.3945		28,495.7770
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.5031**	**71,223.5031**	**1.9048**		**71,271.1237**

Mitigated Construction On-Site

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

3.6 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.5891	42,737.5891	1.5103		42,775.3467
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.9141	28,485.9141	0.3945		28,495.7770
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.5031**	**71,223.5031**	**1.9048**		**71,271.1237**

3.6 Building Construction - 2036

Unmitigated Construction On-Site

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

3.6 Building Construction - 2036

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.58 91	42,737.58 91	1.5103		42,775.34 67
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.91 41	28,485.91 41	0.3945		28,495.77 70
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.50 31**	**71,223.50 31**	**1.9048**		**71,271.12 37**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

3.6 Building Construction - 2036

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.58 91	42,737.58 91	1.5103		42,775.34 67
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.91 41	28,485.91 41	0.3945		28,495.77 70
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.50 31**	**71,223.50 31**	**1.9048**		**71,271.12 37**

3.6 Building Construction - 2037

Unmitigated Construction On-Site

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

3.6 Building Construction - 2037

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.58 91	42,737.58 91	1.5103		42,775.34 67
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.91 41	28,485.91 41	0.3945		28,495.77 70
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.50 31**	**71,223.50 31**	**1.9048**		**71,271.12 37**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

3.6 Building Construction - 2037

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.58 91	42,737.58 91	1.5103		42,775.34 67
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.91 41	28,485.91 41	0.3945		28,495.77 70
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.50 31**	**71,223.50 31**	**1.9048**		**71,271.12 37**

3.6 Building Construction - 2038

Unmitigated Construction On-Site

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

3.6 Building Construction - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.5891	42,737.5891	1.5103		42,775.3467
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.9141	28,485.9141	0.3945		28,495.7770
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.5031**	**71,223.5031**	**1.9048**		**71,271.1237**

Mitigated Construction On-Site

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

3.6 Building Construction - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.58 91	42,737.58 91	1.5103		42,775.34 67
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.91 41	28,485.91 41	0.3945		28,495.77 70
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.50 31**	**71,223.50 31**	**1.9048**		**71,271.12 37**

3.6 Building Construction - 2039

Unmitigated Construction On-Site

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

3.6 Building Construction - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.58 91	42,737.58 91	1.5103		42,775.34 67
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.91 41	28,485.91 41	0.3945		28,495.77 70
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.50 31**	**71,223.50 31**	**1.9048**		**71,271.12 37**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

3.6 Building Construction - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.5891	42,737.5891	1.5103		42,775.3467
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.9141	28,485.9141	0.3945		28,495.7770
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.5031**	**71,223.5031**	**1.9048**		**71,271.1237**

3.6 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737		2,897.5471	2,897.5471	0.1041		2,900.1503
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**		**2,897.5471**	**2,897.5471**	**0.1041**		**2,900.1503**

3.6 Building Construction - 2040

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9111	115.6657	26.6478	0.4066	10.5878	0.1115	10.6993	3.0479	0.1066	3.1545		42,872.70 99	42,872.70 99	1.4908		42,909.98 05
Worker	6.4784	4.1982	49.8164	0.2715	44.3269	0.1301	44.4569	11.7576	0.1196	11.8772		27,120.65 82	27,120.65 82	0.2761		27,127.56 14
Total	**9.3895**	**119.8639**	**76.4642**	**0.6781**	**54.9146**	**0.2416**	**55.1562**	**14.8055**	**0.2262**	**15.0317**		**69,993.36 80**	**69,993.36 80**	**1.7670**		**70,037.54 18**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1970	6.8903	16.1185	0.0310		0.0737	0.0737		0.0737	0.0737	0.0000	2,897.547 1	2,897.547 1	0.1041		2,900.150 3
Total	**1.1970**	**6.8903**	**16.1185**	**0.0310**		**0.0737**	**0.0737**		**0.0737**	**0.0737**	**0.0000**	**2,897.547 1**	**2,897.547 1**	**0.1041**		**2,900.150 3**

3.6 Building Construction - 2040

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9111	115.6657	26.6478	0.4066	10.5878	0.1115	10.6993	3.0479	0.1066	3.1545		42,872.7099	42,872.7099	1.4908		42,909.9805
Worker	6.4784	4.1982	49.8164	0.2715	44.3269	0.1301	44.4569	11.7576	0.1196	11.8772		27,120.6582	27,120.6582	0.2761		27,127.5614
Total	**9.3895**	**119.8639**	**76.4642**	**0.6781**	**54.9146**	**0.2416**	**55.1562**	**14.8055**	**0.2262**	**15.0317**		**69,993.3680**	**69,993.3680**	**1.7670**		**70,037.5418**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**26.6236**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7825	4.3107	37.0308	0.0868	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		8,638.199 7	8,638.199 7	0.3456		8,646.840 8
Total	**4.7825**	**4.3107**	**37.0308**	**0.0868**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**8,638.199 7**	**8,638.199 7**	**0.3456**		**8,646.840 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**26.6236**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7825	4.3107	37.0308	0.0868	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		8,638.199 7	8,638.199 7	0.3456		8,646.840 8
Total	**4.7825**	**4.3107**	**37.0308**	**0.0868**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**8,638.199 7**	**8,638.199 7**	**0.3456**		**8,646.840 8**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**26.6092**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4362	3.8627	33.7188	0.0837	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,334.232 8	8,334.232 8	0.3085		8,341.944 2
Total	**4.4362**	**3.8627**	**33.7188**	**0.0837**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,334.232 8**	**8,334.232 8**	**0.3085**		**8,341.944 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**26.6092**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4362	3.8627	33.7188	0.0837	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,334.2328	8,334.2328	0.3085		8,341.9442
Total	**4.4362**	**3.8627**	**33.7188**	**0.0837**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,334.2328**	**8,334.2328**	**0.3085**		**8,341.9442**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**26.5963**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1208	3.4618	30.6329	0.0806	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,025.480 8	8,025.480 8	0.2744		8,032.340 8
Total	**4.1208**	**3.4618**	**30.6329**	**0.0806**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,025.480 8**	**8,025.480 8**	**0.2744**		**8,032.340 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**26.5963**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1208	3.4618	30.6329	0.0806	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,025.480 8	8,025.480 8	0.2744		8,032.340 8
Total	**4.1208**	**3.4618**	**30.6329**	**0.0806**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,025.480 8**	**8,025.480 8**	**0.2744**		**8,032.340 8**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**26.5854**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8462	3.1128	28.0505	0.0775	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		7,716.708 7	7,716.708 7	0.2451		7,722.837 3
Total	**3.8462**	**3.1128**	**28.0505**	**0.0775**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**7,716.708 7**	**7,716.708 7**	**0.2451**		**7,722.837 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**26.5854**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8462	3.1128	28.0505	0.0775	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		7,716.708 7	7,716.708 7	0.2451		7,722.837 3
Total	**3.8462**	**3.1128**	**28.0505**	**0.0775**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**7,716.708 7**	**7,716.708 7**	**0.2451**		**7,722.837 3**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6132	2.8168	25.8021	0.0744	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,411.0979	7,411.0979	0.2210		7,416.623 8
Total	**3.6132**	**2.8168**	**25.8021**	**0.0744**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,411.097 9**	**7,411.097 9**	**0.2210**		**7,416.623 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6132	2.8168	25.8021	0.0744	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,411.0979	7,411.0979	0.2210		7,416.6238
Total	**3.6132**	**2.8168**	**25.8021**	**0.0744**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,411.0979**	**7,411.0979**	**0.2210**		**7,416.6238**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4060	2.5563	23.6993	0.0713	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,104.896 2	7,104.896 2	0.1981		7,109.849 1
Total	**3.4060**	**2.5563**	**23.6993**	**0.0713**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,104.896 2**	**7,104.896 2**	**0.1981**		**7,109.849 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4060	2.5563	23.6993	0.0713	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,104.896 2	7,104.896 2	0.1981		7,109.849 1
Total	**3.4060**	**2.5563**	**23.6993**	**0.0713**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,104.896 2**	**7,104.896 2**	**0.1981**		**7,109.849 1**

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2113	2.3232	21.9127	0.0688	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		6,860.893 5	6,860.893 5	0.1791		6,865.370 2
Total	**3.2113**	**2.3232**	**21.9127**	**0.0688**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**6,860.893 5**	**6,860.893 5**	**0.1791**		**6,865.370 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2113	2.3232	21.9127	0.0688	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		6,860.893 5	6,860.893 5	0.1791		6,865.370 2
Total	**3.2113**	**2.3232**	**21.9127**	**0.0688**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**6,860.893 5**	**6,860.893 5**	**0.1791**		**6,865.370 2**

3.7 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0126	2.1160	20.3474	0.0667	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		6,644.343 6	6,644.343 6	0.1627		6,648.4116
Total	**3.0126**	**2.1160**	**20.3474**	**0.0667**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**6,644.343 6**	**6,644.343 6**	**0.1627**		**6,648.411 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0126	2.1160	20.3474	0.0667	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		6,644.343 6	6,644.343 6	0.1627		6,648.4116
Total	**3.0126**	**2.1160**	**20.3474**	**0.0667**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**6,644.343 6**	**6,644.343 6**	**0.1627**		**6,648.411 6**

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8005	1.9218	18.8331	0.0647	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,451.975 9	6,451.975 9	0.1468		6,455.646 8
Total	**2.8005**	**1.9218**	**18.8331**	**0.0647**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,451.975 9**	**6,451.975 9**	**0.1468**		**6,455.646 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**26.5755**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8005	1.9218	18.8331	0.0647	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,451.975 9	6,451.975 9	0.1468		6,455.646 8
Total	**2.8005**	**1.9218**	**18.8331**	**0.0647**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,451.975 9**	**6,451.975 9**	**0.1468**		**6,455.646 8**

3.7 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5893	1.7405	17.4630	0.0630	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,281.587 2	6,281.587 2	0.1325		6,284.899 4
Total	**2.5893**	**1.7405**	**17.4630**	**0.0630**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,281.587 2**	**6,281.587 2**	**0.1325**		**6,284.899 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5893	1.7405	17.4630	0.0630	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,281.587 2	6,281.587 2	0.1325		6,284.899 4
Total	**2.5893**	**1.7405**	**17.4630**	**0.0630**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,281.587 2**	**6,281.587 2**	**0.1325**		**6,284.899 4**

3.7 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3628	1.5643	16.1283	0.0615	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,130.989 8	6,130.989 8	0.1186		6,133.955 3
Total	**2.3628**	**1.5643**	**16.1283**	**0.0615**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,130.989 8**	**6,130.989 8**	**0.1186**		**6,133.955 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3628	1.5643	16.1283	0.0615	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,130.989 8	6,130.989 8	0.1186		6,133.955 3
Total	**2.3628**	**1.5643**	**16.1283**	**0.0615**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,130.989 8**	**6,130.989 8**	**0.1186**		**6,133.955 3**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1611	1.4124	14.9671	0.0601	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		5,998.824 0	5,998.824 0	0.1066		6,001.488 8
Total	**2.1611**	**1.4124**	**14.9671**	**0.0601**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**5,998.824 0**	**5,998.824 0**	**0.1066**		**6,001.488 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1611	1.4124	14.9671	0.0601	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		5,998.8240	5,998.8240	0.1066		6,001.4888
Total	**2.1611**	**1.4124**	**14.9671**	**0.0601**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**5,998.8240**	**5,998.8240**	**0.1066**		**6,001.4888**

3.7 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9886	1.2842	13.9804	0.0589	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		5,883.503 0	5,883.503 0	0.0964		5,885.912 1
Total	**1.9886**	**1.2842**	**13.9804**	**0.0589**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**5,883.503 0**	**5,883.503 0**	**0.0964**		**5,885.912 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9886	1.2842	13.9804	0.0589	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		5,883.503 0	5,883.503 0	0.0964		5,885.912 1
Total	**1.9886**	**1.2842**	**13.9804**	**0.0589**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**5,883.503 0**	**5,883.503 0**	**0.0964**		**5,885.912 1**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8473	1.1802	13.0781	0.0579	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		5,782.894 0	5,782.894 0	0.0870		5,785.069 8
Total	**1.8473**	**1.1802**	**13.0781**	**0.0579**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**5,782.894 0**	**5,782.894 0**	**0.0870**		**5,785.069 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**26.5354**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8473	1.1802	13.0781	0.0579	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		5,782.894 0	5,782.894 0	0.0870		5,785.069 8
Total	**1.8473**	**1.1802**	**13.0781**	**0.0579**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**5,782.894 0**	**5,782.894 0**	**0.0870**		**5,785.069 8**

3.7 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.1270	5,696.1270	0.0789		5,698.0992
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.1270**	**5,696.1270**	**0.0789**		**5,698.0992**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

3.7 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2036

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2036

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

3.7 Architectural Coating - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2037

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.1270	5,696.1270	0.0789		5,698.0992
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.1270**	**5,696.1270**	**0.0789**		**5,698.0992**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2037

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

3.7 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**26.5225**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.1270	5,696.1270	0.0789		5,698.0992
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.1270**	**5,696.1270**	**0.0789**		**5,698.0992**

3.7 Architectural Coating - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1149	0.7270	1.7923	2.9700e-003		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003		281.4481	281.4481	9.9000e-003		281.6957
Total	**26.5196**	**0.7270**	**1.7923**	**2.9700e-003**		**7.4300e-003**	**7.4300e-003**		**7.4300e-003**	**7.4300e-003**		**281.4481**	**281.4481**	**9.9000e-003**		**281.6957**

3.7 Architectural Coating - 2040

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.2955	0.8395	9.9614	0.0543	8.8637	0.0260	8.8897	2.3511	0.0239	2.3750		5,423.126 4	5,423.126 4	0.0552		5,424.506 8
Total	**1.2955**	**0.8395**	**9.9614**	**0.0543**	**8.8637**	**0.0260**	**8.8897**	**2.3511**	**0.0239**	**2.3750**		**5,423.126 4**	**5,423.126 4**	**0.0552**		**5,424.506 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	26.4047					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1149	0.7270	1.7923	2.9700e-003		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003	0.0000	281.4481	281.4481	9.9000e-003		281.6957
Total	**26.5196**	**0.7270**	**1.7923**	**2.9700e-003**		**7.4300e-003**	**7.4300e-003**		**7.4300e-003**	**7.4300e-003**	**0.0000**	**281.4481**	**281.4481**	**9.9000e-003**		**281.6957**

3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.2955	0.8395	9.9614	0.0543	8.8637	0.0260	8.8897	2.3511	0.0239	2.3750		5,423.1264	5,423.1264	0.0552		5,424.5068
Total	**1.2955**	**0.8395**	**9.9614**	**0.0543**	**8.8637**	**0.0260**	**8.8897**	**2.3511**	**0.0239**	**2.3750**		**5,423.1264**	**5,423.1264**	**0.0552**		**5,424.5068**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	41.8273	276.9807	402.1306	1.6877	173.3393	0.7864	174.1256	46.3705	0.7304	47.1009		172,251.4489	172,251.4489	7.4476		172,437.6378
Unmitigated	44.2193	286.9158	445.0124	1.9255	202.7360	0.8892	203.6251	54.2344	0.8261	55.0605		196,446.6336	196,446.6336	8.1385		196,650.0952

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
City Park	94.50	1,137.50	837.00	504,217	431,106
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

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

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828
NaturalGas Unmitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2153.95	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6413.45	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86244.6	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45730.2	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2408.96	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3510.58	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.15395	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148.143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68.177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6.41345	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86.2446	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45.7302	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2.40896	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108.377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3.51058	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	246.4212	25.3409	365.9781	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.6258	27,737.6258	1.1355	0.4967	27,914.0257
Unmitigated	1,170.9221	31.5360	1,533.4281	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.3729	18,803.0611	36,579.4340	22.4030	1.4967	37,585.5372

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	213.2902					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	911.0458	27.4171	1,176.480 7	2.2640		166.4518	166.4518		166.4518	166.4518	17,776.37 29	18,157.34 12	35,933.71 40	21.7868	1.4967	36,924.411 0
Landscaping	10.7046	4.1189	356.9475	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1262
Total	**1,170.922 1**	**31.5360**	**1,533.428 1**	**2.2829**		**168.4390**	**168.4390**		**168.4390**	**168.4390**	**17,776.37 29**	**18,803.06 11**	**36,579.43 40**	**22.4030**	**1.4967**	**37,585.53 72**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	197.3517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.4834	21.2220	9.0306	0.1355		1.7158	1.7158		1.7158	1.7158	0.0000	27,091.9059	27,091.9059	0.5193	0.4967	27,252.8995
Landscaping	10.7046	4.1189	356.9475	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1262
Total	**246.4212**	**25.3409**	**365.9781**	**0.1544**		**3.7031**	**3.7031**		**3.7031**	**3.7031**	**0.0000**	**27,737.6258**	**27,737.6258**	**1.1355**	**0.4967**	**27,914.0257**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model - Year 2050 - 2016.3.2

Monterey County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
City Park	50.00	Acre	50.00	2,178,000.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2050
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	217.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO_2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO_2 Factor: 290 lb/MWh), adjusted for 2050 based on the increased effect of the RPS by 2050 (CO_2 Factor : 217.5022)

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading - Maximum of 797 acres graded (total area of the site)

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	12,400.00	4,152.00
tblConstructionPhase	NumDays	880.00	3,917.00
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42

tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42

tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

Salinas WASP Model - Year 2050 - 2016.3.2 - Monterey County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3651	3.9020	2.5058	4.3800e-003	1.2114	0.1899	1.4013	0.4750	0.1747	0.6497	0.0000	394.0761	394.0761	0.1208	0.0000	397.0950
2020	8.8575	31.4256	39.6932	0.1316	7.9632	0.3563	8.3195	2.1485	0.3370	2.4856	0.0000	12,162.2708	12,162.2708	0.6028	0.0000	12,177.3416
2021	8.8030	28.7237	36.4635	0.1298	8.0577	0.2666	8.3242	2.1737	0.2515	2.4251	0.0000	11,996.3648	11,996.3648	0.5648	0.0000	12,010.4845
2022	8.4317	26.7998	33.2652	0.1264	8.0269	0.2332	8.2601	2.1654	0.2199	2.3853	0.0000	11,688.0723	11,688.0723	0.5283	0.0000	11,701.2793
2023	8.0173	22.4854	30.2167	0.1229	8.0271	0.1809	8.2079	2.1654	0.1701	2.3355	0.0000	11,373.0901	11,373.0901	0.4603	0.0000	11,384.5987
2024	7.8360	21.8548	28.1755	0.1209	8.0889	0.1660	8.2550	2.1821	0.1560	2.3382	0.0000	11,200.3416	11,200.3416	0.4401	0.0000	11,211.3431
2025	7.5978	21.0502	26.1058	0.1177	8.0582	0.1501	8.2083	2.1738	0.1409	2.3148	0.0000	10,902.9962	10,902.9962	0.4182	0.0000	10,913.4506
2026	7.4281	20.5577	24.3347	0.1149	8.0582	0.1467	8.2050	2.1739	0.1378	2.3117	0.0000	10,656.9587	10,656.9587	0.3996	0.0000	10,666.9481
2027	7.2707	20.1106	22.8234	0.1127	8.0583	0.1428	8.2011	2.1739	0.1341	2.3080	0.0000	10,458.8884	10,458.8884	0.3838	0.0000	10,468.4836
2028	7.0872	19.6521	21.4422	0.1104	8.0275	0.1380	8.1655	2.1656	0.1296	2.2952	0.0000	10,244.9660	10,244.9660	0.3682	0.0000	10,254.1706
2029	6.9516	19.3753	20.2843	0.1091	8.0584	0.1346	8.1930	2.1739	0.1265	2.3004	0.0000	10,129.8207	10,129.8207	0.3563	0.0000	10,138.7282
2030	6.7791	18.4338	19.1851	0.1081	8.0585	0.0775	8.1359	2.1740	0.0737	2.2476	0.0000	10,035.3709	10,035.3709	0.2860	0.0000	10,042.5218
2031	6.6108	18.1509	18.1173	0.1068	8.0585	0.0742	8.1327	2.1740	0.0707	2.2446	0.0000	9,918.1998	9,918.1998	0.2746	0.0000	9,925.0650
2032	6.4863	17.9731	17.2618	0.1061	8.0894	0.0716	8.1610	2.1823	0.0682	2.2505	0.0000	9,855.6880	9,855.6880	0.2655	0.0000	9,862.3262
2033	6.3100	17.6239	16.3535	0.1043	8.0277	0.0683	8.0960	2.1657	0.0652	2.2309	0.0000	9,695.3202	9,695.3202	0.2551	0.0000	9,701.6974
2034	6.2053	17.4457	15.6418	0.1035	8.0277	0.0659	8.0936	2.1657	0.0630	2.2286	0.0000	9,622.5886	9,622.5886	0.2474	0.0000	9,628.7732
2035	1.8922	15.6786	12.3910	0.0885	6.4972	0.0460	6.5432	1.7563	0.0437	1.8000	0.0000	8,244.6699	8,244.6699	0.2126	0.0000	8,249.9852
Maximum	**8.8575**	**31.4256**	**39.6932**	**0.1316**	**8.0894**	**0.3563**	**8.3242**	**2.1823**	**0.3370**	**2.4856**	**0.0000**	**12,162.2708**	**12,162.2708**	**0.6028**	**0.0000**	**12,177.3416**

2.1 Overall Construction

Mitigated Construction

Salinas WASP Model - Year 2050 - 2016.3.2 - Monterey County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3651	3.9020	2.5058	4.3800e-003	0.5533	0.1899	0.7433	0.2159	0.1747	0.3907	0.0000	394.0757	394.0757	0.1208	0.0000	397.0945
2020	8.8575	31.4256	39.6932	0.1316	7.9632	0.3563	8.3195	2.1485	0.3370	2.4856	0.0000	12,162.2704	12,162.2704	0.6028	0.0000	12,177.3412
2021	8.8030	28.7237	36.4635	0.1298	8.0577	0.2666	8.3242	2.1737	0.2515	2.4251	0.0000	11,996.3644	11,996.3644	0.5648	0.0000	12,010.4841
2022	8.4317	26.7998	33.2652	0.1264	8.0269	0.2332	8.2601	2.1654	0.2199	2.3853	0.0000	11,688.0719	11,688.0719	0.5283	0.0000	11,701.2789
2023	8.0173	22.4854	30.2167	0.1229	8.0271	0.1809	8.2079	2.1654	0.1701	2.3355	0.0000	11,373.0898	11,373.0898	0.4603	0.0000	11,384.5983
2024	7.8360	21.8548	28.1755	0.1209	8.0889	0.1660	8.2550	2.1821	0.1560	2.3382	0.0000	11,200.3412	11,200.3412	0.4401	0.0000	11,211.3427
2025	7.5978	21.0502	26.1058	0.1177	8.0582	0.1501	8.2083	2.1738	0.1409	2.3148	0.0000	10,902.9959	10,902.9959	0.4182	0.0000	10,913.4501
2026	7.4281	20.5577	24.3347	0.1149	8.0582	0.1467	8.2050	2.1739	0.1378	2.3117	0.0000	10,656.9583	10,656.9583	0.3996	0.0000	10,666.9477
2027	7.2707	20.1105	22.8234	0.1127	8.0583	0.1428	8.2011	2.1739	0.1341	2.3080	0.0000	10,458.8880	10,458.8880	0.3838	0.0000	10,468.4832
2028	7.0872	19.6521	21.4421	0.1104	8.0275	0.1380	8.1655	2.1656	0.1296	2.2952	0.0000	10,244.9656	10,244.9656	0.3682	0.0000	10,254.1702
2029	6.9516	19.3753	20.2843	0.1091	8.0584	0.1346	8.1930	2.1739	0.1265	2.3004	0.0000	10,129.8203	10,129.8203	0.3563	0.0000	10,138.7278
2030	6.7791	18.4338	19.1851	0.1081	8.0585	0.0775	8.1359	2.1740	0.0737	2.2476	0.0000	10,035.3704	10,035.3704	0.2860	0.0000	10,042.5214
2031	6.6108	18.1509	18.1173	0.1068	8.0585	0.0742	8.1327	2.1740	0.0707	2.2446	0.0000	9,918.1994	9,918.1994	0.2746	0.0000	9,925.0645
2032	6.4863	17.9731	17.2618	0.1061	8.0894	0.0716	8.1610	2.1823	0.0682	2.2505	0.0000	9,855.6876	9,855.6876	0.2655	0.0000	9,862.3257
2033	6.3100	17.6239	16.3535	0.1043	8.0277	0.0683	8.0960	2.1657	0.0652	2.2309	0.0000	9,695.3197	9,695.3197	0.2551	0.0000	9,701.6969
2034	6.2053	17.4457	15.6418	0.1035	8.0277	0.0659	8.0936	2.1657	0.0630	2.2286	0.0000	9,622.5882	9,622.5882	0.2474	0.0000	9,628.7727
2035	1.8922	15.6786	12.3910	0.0885	6.4972	0.0460	6.5432	1.7563	0.0437	1.8000	0.0000	8,244.6695	8,244.6695	0.2126	0.0000	8,249.9848
Maximum	**8.8575**	**31.4256**	**39.6932**	**0.1316**	**8.0894**	**0.3563**	**8.3242**	**2.1823**	**0.3370**	**2.4856**	**0.0000**	**12,162.2704**	**12,162.2704**	**0.6028**	**0.0000**	**12,177.3412**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.51**	**0.00**	**0.50**	**0.74**	**0.00**	**0.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.5956	1.5956
2	**4-1-2019**	**6-30-2019**	1.8893	1.8893
3	**7-1-2019**	**9-30-2019**	0.1743	0.1743
4	**10-1-2019**	**12-31-2019**	0.5538	0.5538
5	**1-1-2020**	**3-31-2020**	9.7259	9.7259
6	**4-1-2020**	**6-30-2020**	9.9647	9.9647
7	**7-1-2020**	**9-30-2020**	10.0742	10.0742
8	**10-1-2020**	**12-31-2020**	10.4390	10.4390
9	**1-1-2021**	**3-31-2021**	9.3915	9.3915
10	**4-1-2021**	**6-30-2021**	9.1857	9.1857
11	**7-1-2021**	**9-30-2021**	9.2866	9.2866
12	**10-1-2021**	**12-31-2021**	9.6002	9.6002
13	**1-1-2022**	**3-31-2022**	8.8436	8.8436
14	**4-1-2022**	**6-30-2022**	8.6671	8.6671
15	**7-1-2022**	**9-30-2022**	8.7623	8.7623
16	**10-1-2022**	**12-31-2022**	9.0401	9.0401
17	**1-1-2023**	**3-31-2023**	7.6637	7.6637
18	**4-1-2023**	**6-30-2023**	7.5122	7.5122
19	**7-1-2023**	**9-30-2023**	7.5948	7.5948
20	**10-1-2023**	**12-31-2023**	7.8340	7.8340
21	**1-1-2024**	**3-31-2024**	7.4781	7.4781
22	**4-1-2024**	**6-30-2024**	7.2632	7.2632

23	**7-1-2024**	**9-30-2024**	7.3430	7.3430
24	**10-1-2024**	**12-31-2024**	7.5603	7.5603
25	**1-1-2025**	**3-31-2025**	7.1577	7.1577
26	**4-1-2025**	**6-30-2025**	7.0406	7.0406
27	**7-1-2025**	**9-30-2025**	7.1180	7.1180
28	**10-1-2025**	**12-31-2025**	7.3168	7.3168
29	**1-1-2026**	**3-31-2026**	6.9867	6.9867
30	**4-1-2026**	**6-30-2026**	6.8832	6.8832
31	**7-1-2026**	**9-30-2026**	6.9588	6.9588
32	**10-1-2026**	**12-31-2026**	7.1419	7.1419
33	**1-1-2027**	**3-31-2027**	6.8303	6.8303
34	**4-1-2027**	**6-30-2027**	6.7395	6.7395
35	**7-1-2027**	**9-30-2027**	6.8135	6.8135
36	**10-1-2027**	**12-31-2027**	6.9821	6.9821
37	**1-1-2028**	**3-31-2028**	6.7647	6.7647
38	**4-1-2028**	**6-30-2028**	6.6112	6.6112
39	**7-1-2028**	**9-30-2028**	6.6839	6.6839
40	**10-1-2028**	**12-31-2028**	6.8391	6.8391
41	**1-1-2029**	**3-31-2029**	6.5562	6.5562
42	**4-1-2029**	**6-30-2029**	6.4885	6.4885
43	**7-1-2029**	**9-30-2029**	6.5598	6.5598
44	**10-1-2029**	**12-31-2029**	6.7019	6.7019
45	**1-1-2030**	**3-31-2030**	6.2747	6.2747
46	**4-1-2030**	**6-30-2030**	6.2163	6.2163
47	**7-1-2030**	**9-30-2030**	6.2846	6.2846
48	**10-1-2030**	**12-31-2030**	6.4141	6.4141
49	**1-1-2031**	**3-31-2031**	6.1560	6.1560

50	**4-1-2031**	**6-30-2031**	6.1090	6.1090
51	**7-1-2031**	**9-30-2031**	6.1761	6.1761
52	**10-1-2031**	**12-31-2031**	6.2928	6.2928
53	**1-1-2032**	**3-31-2032**	6.1191	6.1191
54	**4-1-2032**	**6-30-2032**	6.0148	6.0148
55	**7-1-2032**	**9-30-2032**	6.0809	6.0809
56	**10-1-2032**	**12-31-2032**	6.1864	6.1864
57	**1-1-2033**	**3-31-2033**	5.9624	5.9624
58	**4-1-2033**	**6-30-2033**	5.9338	5.9338
59	**7-1-2033**	**9-30-2033**	5.9990	5.9990
60	**10-1-2033**	**12-31-2033**	6.0949	6.0949
61	**1-1-2034**	**3-31-2034**	5.8878	5.8878
62	**4-1-2034**	**6-30-2034**	5.8659	5.8659
63	**7-1-2034**	**9-30-2034**	5.9304	5.9304
64	**10-1-2034**	**12-31-2034**	6.0187	6.0187
65	**1-1-2035**	**3-31-2035**	5.0910	5.0910
66	**4-1-2035**	**6-30-2035**	4.5833	4.5833
67	**7-1-2035**	**9-30-2035**	4.6337	4.6337
		Highest	10.4390	10.4390

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	84.1648	1.6390	92.8541	0.0952		7.0729	7.0729		7.0729	7.0729	661.1846	748.5780	1,409.762 6	0.8802	0.0557	1,448.358 2
Energy	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	14,718.31 21	14,718.31 21	0.9147	0.3211	14,836.87 02
Mobile	5.9819	45.3551	58.6075	0.3115	31.8433	0.1160	31.9593	8.5419	0.1079	8.6498	0.0000	28,879.18 28	28,879.18 28	1.0811	0.0000	28,906.20 99
Waste						0.0000	0.0000		0.0000	0.0000	1,843.456 3	0.0000	1,843.456 3	108.9452	0.0000	4,567.085 1
Water						0.0000	0.0000		0.0000	0.0000	145.0398	439.0965	584.1363	14.9555	0.3639	1,066.455 5
Total	**91.0740**	**55.1464**	**156.5064**	**0.4572**	**31.8433**	**7.8297**	**39.6729**	**8.5419**	**7.8215**	**16.3634**	**2,649.680 8**	**44,785.16 94**	**47,434.85 01**	**126.7767**	**0.7406**	**50,824.97 88**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	44.0049	1.3850	44.9887	7.9200e-003		0.3188	0.3188		0.3188	0.3188	0.0000	1,080.8953	1,080.8953	0.0892	0.0185	1,088.6304
Energy	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	14,718.3121	14,718.3121	0.9147	0.3211	14,836.8702
Mobile	5.6216	43.9572	52.4612	0.2736	27.2260	0.1023	27.3283	7.3033	0.0951	7.3984	0.0000	25,381.4883	25,381.4883	0.9884	0.0000	25,406.1971
Waste						0.0000	0.0000		0.0000	0.0000	1,843.4563	0.0000	1,843.4563	108.9452	0.0000	4,567.0851
Water						0.0000	0.0000		0.0000	0.0000	116.0318	378.3883	494.4202	11.9680	0.2918	880.5888
Total	**50.5538**	**53.4945**	**102.4947**	**0.3321**	**27.2260**	**1.0617**	**28.2877**	**7.3033**	**1.0545**	**8.3578**	**1,959.4882**	**41,559.0841**	**43,518.5722**	**122.9055**	**0.6314**	**46,779.3716**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**44.49**	**3.00**	**34.51**	**27.37**	**14.50**	**86.44**	**28.70**	**14.50**	**86.52**	**48.92**	**26.05**	**7.20**	**8.26**	**3.05**	**14.75**	**7.96**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	3/29/2019	5	64	
2	Grading	Grading	3/31/2019	6/28/2019	5	65	
3	Underground Utilities	Trenching	7/1/2019	8/30/2019	5	45	
4	Paving	Paving	9/2/2019	12/31/2019	5	87	
5	Building Construction	Building Construction	1/2/2020	11/30/2035	5	4152	
6	Architectural Coating	Architectural Coating	2/1/2020	2/6/2035	5	3917	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5781	0.0000	0.5781	0.3178	0.0000	0.3178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1387	1.4583	0.7060	1.2200e-003		0.0765	0.0765		0.0704	0.0704	0.0000	109.3398	109.3398	0.0346	0.0000	110.2046
Total	**0.1387**	**1.4583**	**0.7060**	**1.2200e-003**	**0.5781**	**0.0765**	**0.6546**	**0.3178**	**0.0704**	**0.3882**	**0.0000**	**109.3398**	**109.3398**	**0.0346**	**0.0000**	**110.2046**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7800e-003	2.6500e-003	0.0237	5.0000e-005	4.5800e-003	4.0000e-005	4.6200e-003	1.2200e-003	4.0000e-005	1.2600e-003	0.0000	4.4890	4.4890	2.2000e-004	0.0000	4.4944
Total	**2.7800e-003**	**2.6500e-003**	**0.0237**	**5.0000e-005**	**4.5800e-003**	**4.0000e-005**	**4.6200e-003**	**1.2200e-003**	**4.0000e-005**	**1.2600e-003**	**0.0000**	**4.4890**	**4.4890**	**2.2000e-004**	**0.0000**	**4.4944**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2602	0.0000	0.2602	0.1430	0.0000	0.1430	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1387	1.4583	0.7060	1.2200e-003		0.0765	0.0765		0.0704	0.0704	0.0000	109.3397	109.3397	0.0346	0.0000	110.2045
Total	**0.1387**	**1.4583**	**0.7060**	**1.2200e-003**	**0.2602**	**0.0765**	**0.3366**	**0.1430**	**0.0704**	**0.2134**	**0.0000**	**109.3397**	**109.3397**	**0.0346**	**0.0000**	**110.2045**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7800e-003	2.6500e-003	0.0237	5.0000e-005	4.5800e-003	4.0000e-005	4.6200e-003	1.2200e-003	4.0000e-005	1.2600e-003	0.0000	4.4890	4.4890	2.2000e-004	0.0000	4.4944
Total	**2.7800e-003**	**2.6500e-003**	**0.0237**	**5.0000e-005**	**4.5800e-003**	**4.0000e-005**	**4.6200e-003**	**1.2200e-003**	**4.0000e-005**	**1.2600e-003**	**0.0000**	**4.4890**	**4.4890**	**2.2000e-004**	**0.0000**	**4.4944**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6183	0.0000	0.6183	0.1532	0.0000	0.1532	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1540	1.7719	1.0847	2.0200e-003		0.0774	0.0774		0.0712	0.0712	0.0000	181.0293	181.0293	0.0573	0.0000	182.4612
Total	**0.1540**	**1.7719**	**1.0847**	**2.0200e-003**	**0.6183**	**0.0774**	**0.6958**	**0.1532**	**0.0712**	**0.2245**	**0.0000**	**181.0293**	**181.0293**	**0.0573**	**0.0000**	**182.4612**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1400e-003	2.9900e-003	0.0267	6.0000e-005	5.1600e-003	5.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4200e-003	0.0000	5.0657	5.0657	2.4000e-004	0.0000	5.0718
Total	**3.1400e-003**	**2.9900e-003**	**0.0267**	**6.0000e-005**	**5.1600e-003**	**5.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0657**	**5.0657**	**2.4000e-004**	**0.0000**	**5.0718**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2783	0.0000	0.2783	0.0690	0.0000	0.0690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1540	1.7719	1.0847	2.0200e-003		0.0774	0.0774		0.0712	0.0712	0.0000	181.0291	181.0291	0.0573	0.0000	182.4610
Total	**0.1540**	**1.7719**	**1.0847**	**2.0200e-003**	**0.2783**	**0.0774**	**0.3557**	**0.0690**	**0.0712**	**0.1402**	**0.0000**	**181.0291**	**181.0291**	**0.0573**	**0.0000**	**182.4610**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1400e-003	2.9900e-003	0.0267	6.0000e-005	5.1600e-003	5.0000e-005	5.2100e-003	1.3700e-003	4.0000e-005	1.4200e-003	0.0000	5.0657	5.0657	2.4000e-004	0.0000	5.0718
Total	**3.1400e-003**	**2.9900e-003**	**0.0267**	**6.0000e-005**	**5.1600e-003**	**5.0000e-005**	**5.2100e-003**	**1.3700e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0657**	**5.0657**	**2.4000e-004**	**0.0000**	**5.0718**

3.4 Underground Utilities - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Underground Utilities - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0633	0.6631	0.6379	9.9000e-004		0.0359	0.0359		0.0330	0.0330	0.0000	89.0670	89.0670	0.0282	0.0000	89.7715
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0633**	**0.6631**	**0.6379**	**9.9000e-004**		**0.0359**	**0.0359**		**0.0330**	**0.0330**	**0.0000**	**89.0670**	**89.0670**	**0.0282**	**0.0000**	**89.7715**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1500e-003	3.0000e-003	0.0268	6.0000e-005	5.1800e-003	5.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	5.0852	5.0852	2.5000e-004	0.0000	5.0914
Total	**3.1500e-003**	**3.0000e-003**	**0.0268**	**6.0000e-005**	**5.1800e-003**	**5.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0852**	**5.0852**	**2.5000e-004**	**0.0000**	**5.0914**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0633	0.6631	0.6379	9.9000e-004		0.0359	0.0359		0.0330	0.0330	0.0000	89.0669	89.0669	0.0282	0.0000	89.7714
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0633**	**0.6631**	**0.6379**	**9.9000e-004**		**0.0359**	**0.0359**		**0.0330**	**0.0330**	**0.0000**	**89.0669**	**89.0669**	**0.0282**	**0.0000**	**89.7714**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1500e-003	3.0000e-003	0.0268	6.0000e-005	5.1800e-003	5.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	5.0852	5.0852	2.5000e-004	0.0000	5.0914
Total	**3.1500e-003**	**3.0000e-003**	**0.0268**	**6.0000e-005**	**5.1800e-003**	**5.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0852**	**5.0852**	**2.5000e-004**	**0.0000**	**5.0914**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5038	2.1987	3.5100e-003		0.1458	0.1458		0.1371	0.1371	0.0000	302.2510	302.2510	0.0737	0.0000	304.0945
Total	**0.2766**	**2.5038**	**2.1987**	**3.5100e-003**		**0.1458**	**0.1458**		**0.1371**	**0.1371**	**0.0000**	**302.2510**	**302.2510**	**0.0737**	**0.0000**	**304.0945**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9109	25.3332	6.9369	0.0580	1.3434	0.1381	1.4815	0.3882	0.1321	0.5203	0.0000	5,532.469 5	5,532.469 5	0.2557	0.0000	5,538.861 5
Worker	3.0813	2.8631	25.6432	0.0590	5.5953	0.0500	5.6453	1.4879	0.0461	1.5340	0.0000	5,322.455 6	5,322.455 6	0.2291	0.0000	5,328.183 2
Total	**3.9922**	**28.1963**	**32.5802**	**0.1170**	**6.9387**	**0.1881**	**7.1268**	**1.8761**	**0.1782**	**2.0543**	**0.0000**	**10,854.92 51**	**10,854.92 51**	**0.4848**	**0.0000**	**10,867.04 47**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5038	2.1987	3.5100e-003		0.1458	0.1458		0.1371	0.1371	0.0000	302.2507	302.2507	0.0737	0.0000	304.0941
Total	**0.2766**	**2.5038**	**2.1987**	**3.5100e-003**		**0.1458**	**0.1458**		**0.1371**	**0.1371**	**0.0000**	**302.2507**	**302.2507**	**0.0737**	**0.0000**	**304.0941**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.9109	25.3332	6.9369	0.0580	1.3434	0.1381	1.4815	0.3882	0.1321	0.5203	0.0000	5,532.4695	5,532.4695	0.2557	0.0000	5,538.8615
Worker	3.0813	2.8631	25.6432	0.0590	5.5953	0.0500	5.6453	1.4879	0.0461	1.5340	0.0000	5,322.4556	5,322.4556	0.2291	0.0000	5,328.1832
Total	**3.9922**	**28.1963**	**32.5802**	**0.1170**	**6.9387**	**0.1881**	**7.1268**	**1.8761**	**0.1782**	**2.0543**	**0.0000**	**10,854.9251**	**10,854.9251**	**0.4848**	**0.0000**	**10,867.0447**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7534	23.1832	6.0948	0.0575	1.3436	0.0712	1.4148	0.3883	0.0681	0.4564	0.0000	5,488.0160	5,488.0160	0.2447	0.0000	5,494.1328
Worker	2.8414	2.5554	23.3078	0.0570	5.5953	0.0483	5.6436	1.4879	0.0446	1.5324	0.0000	5,144.1107	5,144.1107	0.2041	0.0000	5,149.2130
Total	**3.5948**	**25.7386**	**29.4026**	**0.1145**	**6.9388**	**0.1195**	**7.0583**	**1.8761**	**0.1127**	**1.9888**	**0.0000**	**10,632.1267**	**10,632.1267**	**0.4488**	**0.0000**	**10,643.3457**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7534	23.1832	6.0948	0.0575	1.3436	0.0712	1.4148	0.3883	0.0681	0.4564	0.0000	5,488.0160	5,488.0160	0.2447	0.0000	5,494.1328
Worker	2.8414	2.5554	23.3078	0.0570	5.5953	0.0483	5.6436	1.4879	0.0446	1.5324	0.0000	5,144.1107	5,144.1107	0.2041	0.0000	5,149.2130
Total	**3.5948**	**25.7386**	**29.4026**	**0.1145**	**6.9388**	**0.1195**	**7.0583**	**1.8761**	**0.1127**	**1.9888**	**0.0000**	**10,632.1267**	**10,632.1267**	**0.4488**	**0.0000**	**10,643.3457**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

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

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6878	21.8495	5.5003	0.0568	1.3385	0.0617	1.4003	0.3868	0.0590	0.4459	0.0000	5,420.9313	5,420.9313	0.2359	0.0000	5,426.8297
Worker	2.6242	2.2811	21.1689	0.0548	5.5738	0.0464	5.6202	1.4822	0.0428	1.5249	0.0000	4,944.0743	4,944.0743	0.1817	0.0000	4,948.6164
Total	**3.3120**	**24.1305**	**26.6692**	**0.1115**	**6.9124**	**0.1081**	**7.0205**	**1.8690**	**0.1018**	**1.9708**	**0.0000**	**10,365.0056**	**10,365.0056**	**0.4176**	**0.0000**	**10,375.4461**

Mitigated Construction On-Site

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

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6878	21.8495	5.5003	0.0568	1.3385	0.0617	1.4003	0.3868	0.0590	0.4459	0.0000	5,420.9313	5,420.9313	0.2359	0.0000	5,426.8297
Worker	2.6242	2.2811	21.1689	0.0548	5.5738	0.0464	5.6202	1.4822	0.0428	1.5249	0.0000	4,944.0743	4,944.0743	0.1817	0.0000	4,948.6164
Total	**3.3120**	**24.1305**	**26.6692**	**0.1115**	**6.9124**	**0.1081**	**7.0205**	**1.8690**	**0.1018**	**1.9708**	**0.0000**	**10,365.0056**	**10,365.0056**	**0.4176**	**0.0000**	**10,375.4461**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

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

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5188	17.9927	4.7549	0.0558	1.3387	0.0268	1.3655	0.3869	0.0256	0.4125	0.0000	5,325.638 7	5,325.638 7	0.1923	0.0000	5,330.446 6
Worker	2.4354	2.0444	19.2627	0.0527	5.5738	0.0449	5.6187	1.4822	0.0414	1.5236	0.0000	4,760.907 8	4,760.907 8	0.1620	0.0000	4,764.957 1
Total	**2.9543**	**20.0371**	**24.0177**	**0.1085**	**6.9125**	**0.0717**	**6.9842**	**1.8690**	**0.0670**	**1.9361**	**0.0000**	**10,086.54 66**	**10,086.54 66**	**0.3543**	**0.0000**	**10,095.40 37**

Mitigated Construction On-Site

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

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5188	17.9927	4.7549	0.0558	1.3387	0.0268	1.3655	0.3869	0.0256	0.4125	0.0000	5,325.638 7	5,325.638 7	0.1923	0.0000	5,330.446 6
Worker	2.4354	2.0444	19.2627	0.0527	5.5738	0.0449	5.6187	1.4822	0.0414	1.5236	0.0000	4,760.907 8	4,760.907 8	0.1620	0.0000	4,764.957 1
Total	**2.9543**	**20.0371**	**24.0177**	**0.1085**	**6.9125**	**0.0717**	**6.9842**	**1.8690**	**0.0670**	**1.9361**	**0.0000**	**10,086.54 66**	**10,086.54 66**	**0.3543**	**0.0000**	**10,095.40 37**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

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

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4944	17.7110	4.4653	0.0558	1.3491	0.0251	1.3742	0.3899	0.0240	0.4139	0.0000	5,327.8118	5,327.8118	0.1911	0.0000	5,332.5879
Worker	2.2876	1.8526	17.7965	0.0510	5.6167	0.0439	5.6606	1.4936	0.0404	1.5340	0.0000	4,612.9424	4,612.9424	0.1461	0.0000	4,616.5947
Total	**2.7820**	**19.5636**	**22.2619**	**0.1068**	**6.9658**	**0.0690**	**7.0347**	**1.8835**	**0.0644**	**1.9479**	**0.0000**	**9,940.7542**	**9,940.7542**	**0.3371**	**0.0000**	**9,949.1826**

Mitigated Construction On-Site

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

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4944	17.7110	4.4653	0.0558	1.3491	0.0251	1.3742	0.3899	0.0240	0.4139	0.0000	5,327.8118	5,327.8118	0.1911	0.0000	5,332.5879
Worker	2.2876	1.8526	17.7965	0.0510	5.6167	0.0439	5.6606	1.4936	0.0404	1.5340	0.0000	4,612.9424	4,612.9424	0.1461	0.0000	4,616.5947
Total	**2.7820**	**19.5636**	**22.2619**	**0.1068**	**6.9658**	**0.0690**	**7.0347**	**1.8835**	**0.0644**	**1.9479**	**0.0000**	**9,940.7542**	**9,940.7542**	**0.3371**	**0.0000**	**9,949.1826**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

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

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4683	17.2694	4.1863	0.0552	1.3440	0.0232	1.3673	0.3884	0.0222	0.4106	0.0000	5,271.186 8	5,271.186 8	0.1876	0.0000	5,275.875 7
Worker	2.1380	1.6700	16.3207	0.0488	5.5953	0.0428	5.6380	1.4879	0.0394	1.5273	0.0000	4,413.331 8	4,413.331 8	0.1314	0.0000	4,416.616 3
Total	**2.6062**	**18.9394**	**20.5071**	**0.1040**	**6.9393**	**0.0660**	**7.0053**	**1.8763**	**0.0616**	**1.9379**	**0.0000**	**9,684.518 6**	**9,684.518 6**	**0.3189**	**0.0000**	**9,692.492 1**

Mitigated Construction On-Site

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

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4683	17.2694	4.1863	0.0552	1.3440	0.0232	1.3673	0.3884	0.0222	0.4106	0.0000	5,271.186 8	5,271.186 8	0.1876	0.0000	5,275.875 7
Worker	2.1380	1.6700	16.3207	0.0488	5.5953	0.0428	5.6380	1.4879	0.0394	1.5273	0.0000	4,413.331 8	4,413.331 8	0.1314	0.0000	4,416.616 3
Total	**2.6062**	**18.9394**	**20.5071**	**0.1040**	**6.9393**	**0.0660**	**7.0053**	**1.8763**	**0.0616**	**1.9379**	**0.0000**	**9,684.518 6**	**9,684.518 6**	**0.3189**	**0.0000**	**9,692.492 1**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

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

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4501	16.9624	4.0006	0.0549	1.3441	0.0220	1.3661	0.3885	0.0210	0.4095	0.0000	5,243.958 6	5,243.958 6	0.1852	0.0000	5,248.588 1
Worker	2.0117	1.5155	14.9996	0.0468	5.5953	0.0410	5.6363	1.4879	0.0378	1.5256	0.0000	4,230.985 1	4,230.985 1	0.1179	0.0000	4,233.931 6
Total	**2.4618**	**18.4779**	**19.0002**	**0.1017**	**6.9394**	**0.0630**	**7.0024**	**1.8763**	**0.0588**	**1.9351**	**0.0000**	**9,474.943 7**	**9,474.943 7**	**0.3030**	**0.0000**	**9,482.519 8**

Mitigated Construction On-Site

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

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4501	16.9624	4.0006	0.0549	1.3441	0.0220	1.3661	0.3885	0.0210	0.4095	0.0000	5,243.958 6	5,243.958 6	0.1852	0.0000	5,248.588 1
Worker	2.0117	1.5155	14.9996	0.0468	5.5953	0.0410	5.6363	1.4879	0.0378	1.5256	0.0000	4,230.985 1	4,230.985 1	0.1179	0.0000	4,233.931 6
Total	**2.4618**	**18.4779**	**19.0002**	**0.1017**	**6.9394**	**0.0630**	**7.0024**	**1.8763**	**0.0588**	**1.9351**	**0.0000**	**9,474.943 7**	**9,474.943 7**	**0.3030**	**0.0000**	**9,482.519 8**

3.6 Building Construction - 2027

Unmitigated Construction On-Site

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

3.6 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4345	16.6812	3.8331	0.0546	1.3442	0.0209	1.3650	0.3885	0.0199	0.4084	0.0000	5,220.2317	5,220.2317	0.1829	0.0000	5,224.8036
Worker	1.8935	1.3772	13.8798	0.0452	5.5953	0.0386	5.6339	1.4879	0.0355	1.5234	0.0000	4,085.6944	4,085.6944	0.1066	0.0000	4,088.3605
Total	**2.3279**	**18.0584**	**17.7128**	**0.0998**	**6.9395**	**0.0595**	**6.9989**	**1.8764**	**0.0555**	**1.9319**	**0.0000**	**9,305.9261**	**9,305.9261**	**0.2895**	**0.0000**	**9,313.1641**

Mitigated Construction On-Site

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

3.6 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4345	16.6812	3.8331	0.0546	1.3442	0.0209	1.3650	0.3885	0.0199	0.4084	0.0000	5,220.2317	5,220.2317	0.1829	0.0000	5,224.8036
Worker	1.8935	1.3772	13.8798	0.0452	5.5953	0.0386	5.6339	1.4879	0.0355	1.5234	0.0000	4,085.6944	4,085.6944	0.1066	0.0000	4,088.3605
Total	**2.3279**	**18.0584**	**17.7128**	**0.0998**	**6.9395**	**0.0595**	**6.9989**	**1.8764**	**0.0555**	**1.9319**	**0.0000**	**9,305.9261**	**9,305.9261**	**0.2895**	**0.0000**	**9,313.1641**

3.6 Building Construction - 2028

Unmitigated Construction On-Site

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

3.6 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4199	16.3829	3.6996	0.0542	1.3391	0.0198	1.3589	0.3870	0.0189	0.4059	0.0000	5,180.509 5	5,180.509 5	0.1796	0.0000	5,184.999 3
Worker	1.7673	1.2495	12.8474	0.0436	5.5738	0.0358	5.6096	1.4822	0.0329	1.5151	0.0000	3,941.595 8	3,941.595 8	0.0966	0.0000	3,944.010 7
Total	**2.1872**	**17.6323**	**16.5470**	**0.0978**	**6.9129**	**0.0556**	**6.9685**	**1.8692**	**0.0518**	**1.9211**	**0.0000**	**9,122.105 4**	**9,122.105 4**	**0.2762**	**0.0000**	**9,129.010 0**

Mitigated Construction On-Site

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

3.6 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4199	16.3829	3.6996	0.0542	1.3391	0.0198	1.3589	0.3870	0.0189	0.4059	0.0000	5,180.5095	5,180.5095	0.1796	0.0000	5,184.9993
Worker	1.7673	1.2495	12.8474	0.0436	5.5738	0.0358	5.6096	1.4822	0.0329	1.5151	0.0000	3,941.5958	3,941.5958	0.0966	0.0000	3,944.0107
Total	**2.1872**	**17.6323**	**16.5470**	**0.0978**	**6.9129**	**0.0556**	**6.9685**	**1.8692**	**0.0518**	**1.9211**	**0.0000**	**9,122.1054**	**9,122.1054**	**0.2762**	**0.0000**	**9,129.0100**

3.6 Building Construction - 2029

Unmitigated Construction On-Site

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

3.6 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4108	16.2315	3.6133	0.0542	1.3443	0.0189	1.3632	0.3885	0.0181	0.4066	0.0000	5,183.319 1	5,183.319 1	0.1782	0.0000	5,187.775 2
Worker	1.6473	1.1392	11.9469	0.0425	5.5953	0.0334	5.6287	1.4879	0.0308	1.5186	0.0000	3,842.224 3	3,842.224 3	0.0876	0.0000	3,844.413 9
Total	**2.0581**	**17.3707**	**15.5602**	**0.0967**	**6.9396**	**0.0524**	**6.9919**	**1.8764**	**0.0489**	**1.9253**	**0.0000**	**9,025.543 4**	**9,025.543 4**	**0.2658**	**0.0000**	**9,032.189 0**

Mitigated Construction On-Site

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

3.6 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4108	16.2315	3.6133	0.0542	1.3443	0.0189	1.3632	0.3885	0.0181	0.4066	0.0000	5,183.319 1	5,183.319 1	0.1782	0.0000	5,187.775 2
Worker	1.6473	1.1392	11.9469	0.0425	5.5953	0.0334	5.6287	1.4879	0.0308	1.5186	0.0000	3,842.224 3	3,842.224 3	0.0876	0.0000	3,844.413 9
Total	**2.0581**	**17.3707**	**15.5602**	**0.0967**	**6.9396**	**0.0524**	**6.9919**	**1.8764**	**0.0489**	**1.9253**	**0.0000**	**9,025.543 4**	**9,025.543 4**	**0.2658**	**0.0000**	**9,032.189 0**

3.6 Building Construction - 2030

Unmitigated Construction On-Site

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

3.6 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4021	16.0485	3.5382	0.0541	1.3443	0.0182	1.3625	0.3886	0.0174	0.4059	0.0000	5,170.214 2	5,170.214 2	0.1760	0.0000	5,174.615 2
Worker	1.5216	1.0317	11.0869	0.0413	5.5953	0.0311	5.6264	1.4879	0.0286	1.5165	0.0000	3,740.784 8	3,740.784 8	0.0791	0.0000	3,742.761 7
Total	**1.9236**	**17.0802**	**14.6251**	**0.0954**	**6.9396**	**0.0493**	**6.9889**	**1.8764**	**0.0460**	**1.9224**	**0.0000**	**8,910.999 0**	**8,910.999 0**	**0.2551**	**0.0000**	**8,917.376 9**

Mitigated Construction On-Site

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

3.6 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4021	16.0485	3.5382	0.0541	1.3443	0.0182	1.3625	0.3886	0.0174	0.4059	0.0000	5,170.2142	5,170.2142	0.1760	0.0000	5,174.6152
Worker	1.5216	1.0317	11.0869	0.0413	5.5953	0.0311	5.6264	1.4879	0.0286	1.5165	0.0000	3,740.7848	3,740.7848	0.0791	0.0000	3,742.7617
Total	**1.9236**	**17.0802**	**14.6251**	**0.0954**	**6.9396**	**0.0493**	**6.9889**	**1.8764**	**0.0460**	**1.9224**	**0.0000**	**8,910.9990**	**8,910.9990**	**0.2551**	**0.0000**	**8,917.3769**

3.6 Building Construction - 2031

Unmitigated Construction On-Site

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

3.6 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3949	15.8909	3.4752	0.0540	1.3444	0.0175	1.3619	0.3886	0.0168	0.4053	0.0000	5,160.6210	5,160.6210	0.1745	0.0000	5,164.9827
Worker	1.3873	0.9274	10.2495	0.0403	5.5953	0.0290	5.6242	1.4879	0.0266	1.5145	0.0000	3,651.1338	3,651.1338	0.0709	0.0000	3,652.9053
Total	**1.7821**	**16.8183**	**13.7247**	**0.0943**	**6.9397**	**0.0465**	**6.9861**	**1.8764**	**0.0434**	**1.9198**	**0.0000**	**8,811.7548**	**8,811.7548**	**0.2453**	**0.0000**	**8,817.8880**

Mitigated Construction On-Site

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

3.6 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3949	15.8909	3.4752	0.0540	1.3444	0.0175	1.3619	0.3886	0.0168	0.4053	0.0000	5,160.621 0	5,160.621 0	0.1745	0.0000	5,164.982 7
Worker	1.3873	0.9274	10.2495	0.0403	5.5953	0.0290	5.6242	1.4879	0.0266	1.5145	0.0000	3,651.133 8	3,651.133 8	0.0709	0.0000	3,652.905 3
Total	**1.7821**	**16.8183**	**13.7247**	**0.0943**	**6.9397**	**0.0465**	**6.9861**	**1.8764**	**0.0434**	**1.9198**	**0.0000**	**8,811.754 8**	**8,811.754 8**	**0.2453**	**0.0000**	**8,817.888 0**

3.6 Building Construction - 2032

Unmitigated Construction On-Site

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

3.6 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3904	15.8128	3.4413	0.0541	1.3496	0.0170	1.3666	0.3901	0.0163	0.4063	0.0000	5,174.652 9	5,174.652 9	0.1736	0.0000	5,178.993 1
Worker	1.2727	0.8406	9.5574	0.0396	5.6167	0.0271	5.6438	1.4936	0.0249	1.5185	0.0000	3,586.143 7	3,586.143 7	0.0640	0.0000	3,587.742 7
Total	**1.6631**	**16.6534**	**12.9986**	**0.0937**	**6.9663**	**0.0441**	**7.0103**	**1.8836**	**0.0412**	**1.9248**	**0.0000**	**8,760.796 6**	**8,760.796 6**	**0.2376**	**0.0000**	**8,766.735 8**

Mitigated Construction On-Site

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

3.6 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3904	15.8128	3.4413	0.0541	1.3496	0.0170	1.3666	0.3901	0.0163	0.4063	0.0000	5,174.652 9	5,174.652 9	0.1736	0.0000	5,178.993 1
Worker	1.2727	0.8406	9.5574	0.0396	5.6167	0.0271	5.6438	1.4936	0.0249	1.5185	0.0000	3,586.143 7	3,586.143 7	0.0640	0.0000	3,587.742 7
Total	**1.6631**	**16.6534**	**12.9986**	**0.0937**	**6.9663**	**0.0441**	**7.0103**	**1.8836**	**0.0412**	**1.9248**	**0.0000**	**8,760.796 6**	**8,760.796 6**	**0.2376**	**0.0000**	**8,766.735 8**

3.6 Building Construction - 2033

Unmitigated Construction On-Site

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

3.6 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3829	15.5710	3.3785	0.0537	1.3393	0.0163	1.3557	0.3871	0.0156	0.4027	0.0000	5,132.080 6	5,132.080 6	0.1711	0.0000	5,136.359 1
Worker	1.1612	0.7585	8.8677	0.0385	5.5738	0.0251	5.5989	1.4822	0.0231	1.5053	0.0000	3,490.381 1	3,490.381 1	0.0574	0.0000	3,491.816 5
Total	**1.5440**	**16.3294**	**12.2462**	**0.0922**	**6.9131**	**0.0414**	**6.9546**	**1.8693**	**0.0387**	**1.9080**	**0.0000**	**8,622.461 7**	**8,622.461 7**	**0.2286**	**0.0000**	**8,628.175 6**

Mitigated Construction On-Site

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

3.6 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3829	15.5710	3.3785	0.0537	1.3393	0.0163	1.3557	0.3871	0.0156	0.4027	0.0000	5,132.080 6	5,132.080 6	0.1711	0.0000	5,136.359 1
Worker	1.1612	0.7585	8.8677	0.0385	5.5738	0.0251	5.5989	1.4822	0.0231	1.5053	0.0000	3,490.3811	3,490.381 1	0.0574	0.0000	3,491.816 5
Total	**1.5440**	**16.3294**	**12.2462**	**0.0922**	**6.9131**	**0.0414**	**6.9546**	**1.8693**	**0.0387**	**1.9080**	**0.0000**	**8,622.461 7**	**8,622.461 7**	**0.2286**	**0.0000**	**8,628.175 6**

3.6 Building Construction - 2034

Unmitigated Construction On-Site

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

3.6 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3787	15.4664	3.3436	0.0536	1.3393	0.0159	1.3552	0.3871	0.0152	0.4023	0.0000	5,130.9434	5,130.9434	0.1701	0.0000	5,135.1951
Worker	1.0774	0.6971	8.3037	0.0379	5.5738	0.0235	5.5973	1.4822	0.0216	1.5038	0.0000	3,430.7173	3,430.7173	0.0519	0.0000	3,432.0145
Total	**1.4561**	**16.1635**	**11.6473**	**0.0915**	**6.9132**	**0.0393**	**6.9525**	**1.8693**	**0.0367**	**1.9060**	**0.0000**	**8,561.6607**	**8,561.6607**	**0.2220**	**0.0000**	**8,567.2095**

Mitigated Construction On-Site

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

3.6 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3787	15.4664	3.3436	0.0536	1.3393	0.0159	1.3552	0.3871	0.0152	0.4023	0.0000	5,130.943 4	5,130.943 4	0.1701	0.0000	5,135.195 1
Worker	1.0774	0.6971	8.3037	0.0379	5.5738	0.0235	5.5973	1.4822	0.0216	1.5038	0.0000	3,430.717 3	3,430.717 3	0.0519	0.0000	3,432.014 5
Total	**1.4561**	**16.1635**	**11.6473**	**0.0915**	**6.9132**	**0.0393**	**6.9525**	**1.8693**	**0.0367**	**1.9060**	**0.0000**	**8,561.660 7**	**8,561.660 7**	**0.2220**	**0.0000**	**8,567.209 5**

3.6 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1460	0.8594	1.9341	3.7100e-003		0.0109	0.0109		0.0109	0.0109	0.0000	315.4332	315.4332	0.0118	0.0000	315.7269
Total	**0.1460**	**0.8594**	**1.9341**	**3.7100e-003**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**0.0000**	**315.4332**	**315.4332**	**0.0118**	**0.0000**	**315.7269**

3.6 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3462	14.1968	3.0590	0.0495	1.2363	0.0143	1.2506	0.3574	0.0137	0.3710	0.0000	4,736.3000	4,736.3000	0.1563	0.0000	4,740.2079
Worker	0.9262	0.5987	7.2114	0.0344	5.1451	0.0203	5.1654	1.3682	0.0187	1.3868	0.0000	3,119.3181	3,119.3181	0.0435	0.0000	3,120.4042
Total	**1.2724**	**14.7955**	**10.2705**	**0.0839**	**6.3814**	**0.0346**	**6.4160**	**1.7255**	**0.0323**	**1.7578**	**0.0000**	**7,855.6181**	**7,855.6181**	**0.1998**	**0.0000**	**7,860.6121**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1460	0.8594	1.9341	3.7100e-003		0.0109	0.0109		0.0109	0.0109	0.0000	315.4329	315.4329	0.0118	0.0000	315.7266
Total	**0.1460**	**0.8594**	**1.9341**	**3.7100e-003**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**0.0000**	**315.4329**	**315.4329**	**0.0118**	**0.0000**	**315.7266**

3.6 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3462	14.1968	3.0590	0.0495	1.2363	0.0143	1.2506	0.3574	0.0137	0.3710	0.0000	4,736.3000	4,736.3000	0.1563	0.0000	4,740.2079
Worker	0.9262	0.5987	7.2114	0.0344	5.1451	0.0203	5.1654	1.3682	0.0187	1.3868	0.0000	3,119.3181	3,119.3181	0.0435	0.0000	3,120.4042
Total	**1.2724**	**14.7955**	**10.2705**	**0.0839**	**6.3814**	**0.0346**	**6.4160**	**1.7255**	**0.0323**	**1.7578**	**0.0000**	**7,855.6181**	**7,855.6181**	**0.1998**	**0.0000**	**7,860.6121**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9956					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0289	0.2012	0.2189	3.6000e-004		0.0133	0.0133		0.0133	0.0133	0.0000	30.5114	30.5114	2.3600e-003	0.0000	30.5704
Total	**4.0245**	**0.2012**	**0.2189**	**3.6000e-004**		**0.0133**	**0.0133**		**0.0133**	**0.0133**	**0.0000**	**30.5114**	**30.5114**	**2.3600e-003**	**0.0000**	**30.5704**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5642	0.5243	4.6955	0.0108	1.0245	9.1600e-003	1.0337	0.2724	8.4500e-003	0.2809	0.0000	974.5833	974.5833	0.0420	0.0000	975.6320
Total	**0.5642**	**0.5243**	**4.6955**	**0.0108**	**1.0245**	**9.1600e-003**	**1.0337**	**0.2724**	**8.4500e-003**	**0.2809**	**0.0000**	**974.5833**	**974.5833**	**0.0420**	**0.0000**	**975.6320**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.9956					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0289	0.2012	0.2189	3.6000e-004		0.0133	0.0133		0.0133	0.0133	0.0000	30.5114	30.5114	2.3600e-003	0.0000	30.5704
Total	**4.0245**	**0.2012**	**0.2189**	**3.6000e-004**		**0.0133**	**0.0133**		**0.0133**	**0.0133**	**0.0000**	**30.5114**	**30.5114**	**2.3600e-003**	**0.0000**	**30.5704**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5642	0.5243	4.6955	0.0108	1.0245	9.1600e-003	1.0337	0.2724	8.4500e-003	0.2809	0.0000	974.5833	974.5833	0.0420	0.0000	975.6320
Total	**0.5642**	**0.5243**	**4.6955**	**0.0108**	**1.0245**	**9.1600e-003**	**1.0337**	**0.2724**	**8.4500e-003**	**0.2809**	**0.0000**	**974.5833**	**974.5833**	**0.0420**	**0.0000**	**975.6320**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**4.3919**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5682	0.5110	4.6607	0.0114	1.1189	9.6600e-003	1.1285	0.2975	8.9100e-003	0.3064	0.0000	1,028.6315	1,028.6315	0.0408	0.0000	1,029.6518
Total	**0.5682**	**0.5110**	**4.6607**	**0.0114**	**1.1189**	**9.6600e-003**	**1.1285**	**0.2975**	**8.9100e-003**	**0.3064**	**0.0000**	**1,028.6315**	**1,028.6315**	**0.0408**	**0.0000**	**1,029.6518**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**4.3919**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5682	0.5110	4.6607	0.0114	1.1189	9.6600e-003	1.1285	0.2975	8.9100e-003	0.3064	0.0000	1,028.6315	1,028.6315	0.0408	0.0000	1,029.6518
Total	**0.5682**	**0.5110**	**4.6607**	**0.0114**	**1.1189**	**9.6600e-003**	**1.1285**	**0.2975**	**8.9100e-003**	**0.3064**	**0.0000**	**1,028.6315**	**1,028.6315**	**0.0408**	**0.0000**	**1,029.6518**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**4.3732**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5247	0.4561	4.2330	0.0110	1.1146	9.2800e-003	1.1238	0.2964	8.5500e-003	0.3049	0.0000	988.6316	988.6316	0.0363	0.0000	989.5399
Total	**0.5247**	**0.4561**	**4.2330**	**0.0110**	**1.1146**	**9.2800e-003**	**1.1238**	**0.2964**	**8.5500e-003**	**0.3049**	**0.0000**	**988.6316**	**988.6316**	**0.0363**	**0.0000**	**989.5399**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0266	0.1831	0.2358	3.9000e-004		0.0106	0.0106		0.0106	0.0106	0.0000	33.1923	33.1923	2.1600e-003	0.0000	33.2463
Total	**4.3732**	**0.1831**	**0.2358**	**3.9000e-004**		**0.0106**	**0.0106**		**0.0106**	**0.0106**	**0.0000**	**33.1923**	**33.1923**	**2.1600e-003**	**0.0000**	**33.2463**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.5247	0.4561	4.2330	0.0110	1.1146	9.2800e-003	1.1238	0.2964	8.5500e-003	0.3049	0.0000	988.6316	988.6316	0.0363	0.0000	989.5399
Total	**0.5247**	**0.4561**	**4.2330**	**0.0110**	**1.1146**	**9.2800e-003**	**1.1238**	**0.2964**	**8.5500e-003**	**0.3049**	**0.0000**	**988.6316**	**988.6316**	**0.0363**	**0.0000**	**989.5399**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2355	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**4.3716**	**0.1694**	**0.2355**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4870	0.4088	3.8518	0.0105	1.1146	8.9800e-003	1.1235	0.2964	8.2800e-003	0.3047	0.0000	952.0051	952.0051	0.0324	0.0000	952.8148
Total	**0.4870**	**0.4088**	**3.8518**	**0.0105**	**1.1146**	**8.9800e-003**	**1.1235**	**0.2964**	**8.2800e-003**	**0.3047**	**0.0000**	**952.0051**	**952.0051**	**0.0324**	**0.0000**	**952.8148**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.1694	0.2354	3.9000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	33.1923	33.1923	1.9900e-003	0.0000	33.2419
Total	**4.3716**	**0.1694**	**0.2354**	**3.9000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**33.1923**	**33.1923**	**1.9900e-003**	**0.0000**	**33.2419**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4870	0.4088	3.8518	0.0105	1.1146	8.9800e-003	1.1235	0.2964	8.2800e-003	0.3047	0.0000	952.0051	952.0051	0.0324	0.0000	952.8148
Total	**0.4870**	**0.4088**	**3.8518**	**0.0105**	**1.1146**	**8.9800e-003**	**1.1235**	**0.2964**	**8.2800e-003**	**0.3047**	**0.0000**	**952.0051**	**952.0051**	**0.0324**	**0.0000**	**952.8148**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**4.4037**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4574	0.3704	3.5586	0.0102	1.1231	8.7700e-003	1.1319	0.2987	8.0800e-003	0.3067	0.0000	922.4175	922.4175	0.0292	0.0000	923.1478
Total	**0.4574**	**0.3704**	**3.5586**	**0.0102**	**1.1231**	**8.7700e-003**	**1.1319**	**0.2987**	**8.0800e-003**	**0.3067**	**0.0000**	**922.4175**	**922.4175**	**0.0292**	**0.0000**	**923.1478**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0237	0.1597	0.2371	3.9000e-004		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	33.4476	33.4476	1.8800e-003	0.0000	33.4947
Total	**4.4037**	**0.1597**	**0.2371**	**3.9000e-004**		**7.9800e-003**	**7.9800e-003**		**7.9800e-003**	**7.9800e-003**	**0.0000**	**33.4476**	**33.4476**	**1.8800e-003**	**0.0000**	**33.4947**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4574	0.3704	3.5586	0.0102	1.1231	8.7700e-003	1.1319	0.2987	8.0800e-003	0.3067	0.0000	922.4175	922.4175	0.0292	0.0000	923.1478
Total	**0.4574**	**0.3704**	**3.5586**	**0.0102**	**1.1231**	**8.7700e-003**	**1.1319**	**0.2987**	**8.0800e-003**	**0.3067**	**0.0000**	**922.4175**	**922.4175**	**0.0292**	**0.0000**	**923.1478**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4275	0.3340	3.2635	9.7600e-003	1.1189	8.5500e-003	1.1274	0.2975	7.8800e-003	0.3054	0.0000	882.5028	882.5028	0.0263	0.0000	883.1596
Total	**0.4275**	**0.3340**	**3.2635**	**9.7600e-003**	**1.1189**	**8.5500e-003**	**1.1274**	**0.2975**	**7.8800e-003**	**0.3054**	**0.0000**	**882.5028**	**882.5028**	**0.0263**	**0.0000**	**883.1596**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4275	0.3340	3.2635	9.7600e-003	1.1189	8.5500e-003	1.1274	0.2975	7.8800e-003	0.3054	0.0000	882.5028	882.5028	0.0263	0.0000	883.1596
Total	**0.4275**	**0.3340**	**3.2635**	**9.7600e-003**	**1.1189**	**8.5500e-003**	**1.1274**	**0.2975**	**7.8800e-003**	**0.3054**	**0.0000**	**882.5028**	**882.5028**	**0.0263**	**0.0000**	**883.1596**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4023	0.3031	2.9994	9.3600e-003	1.1189	8.2000e-003	1.1271	0.2975	7.5500e-003	0.3051	0.0000	846.0402	846.0402	0.0236	0.0000	846.6294
Total	**0.4023**	**0.3031**	**2.9994**	**9.3600e-003**	**1.1189**	**8.2000e-003**	**1.1271**	**0.2975**	**7.5500e-003**	**0.3051**	**0.0000**	**846.0402**	**846.0402**	**0.0236**	**0.0000**	**846.6294**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4023	0.3031	2.9994	9.3600e-003	1.1189	8.2000e-003	1.1271	0.2975	7.5500e-003	0.3051	0.0000	846.0402	846.0402	0.0236	0.0000	846.6294
Total	**0.4023**	**0.3031**	**2.9994**	**9.3600e-003**	**1.1189**	**8.2000e-003**	**1.1271**	**0.2975**	**7.5500e-003**	**0.3051**	**0.0000**	**846.0402**	**846.0402**	**0.0236**	**0.0000**	**846.6294**

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3786	0.2754	2.7754	9.0300e-003	1.1189	7.7200e-003	1.1266	0.2975	7.1100e-003	0.3046	0.0000	816.9875	816.9875	0.0213	0.0000	817.5206
Total	**0.3786**	**0.2754**	**2.7754**	**9.0300e-003**	**1.1189**	**7.7200e-003**	**1.1266**	**0.2975**	**7.1100e-003**	**0.3046**	**0.0000**	**816.9875**	**816.9875**	**0.0213**	**0.0000**	**817.5206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3786	0.2754	2.7754	9.0300e-003	1.1189	7.7200e-003	1.1266	0.2975	7.1100e-003	0.3046	0.0000	816.9875	816.9875	0.0213	0.0000	817.5206
Total	**0.3786**	**0.2754**	**2.7754**	**9.0300e-003**	**1.1189**	**7.7200e-003**	**1.1266**	**0.2975**	**7.1100e-003**	**0.3046**	**0.0000**	**816.9875**	**816.9875**	**0.0213**	**0.0000**	**817.5206**

3.7 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2376
Total	**4.3688**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2376**

3.7 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3534	0.2499	2.5690	8.7100e-003	1.1146	7.1600e-003	1.1217	0.2964	6.5900e-003	0.3030	0.0000	788.1731	788.1731	0.0193	0.0000	788.6560
Total	**0.3534**	**0.2499**	**2.5690**	**8.7100e-003**	**1.1146**	**7.1600e-003**	**1.1217**	**0.2964**	**6.5900e-003**	**0.3030**	**0.0000**	**788.1731**	**788.1731**	**0.0193**	**0.0000**	**788.6560**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0222	0.1489	0.2352	3.9000e-004		6.7000e-003	6.7000e-003		6.7000e-003	6.7000e-003	0.0000	33.1923	33.1923	1.8100e-003	0.0000	33.2375
Total	**4.3688**	**0.1489**	**0.2352**	**3.9000e-004**		**6.7000e-003**	**6.7000e-003**		**6.7000e-003**	**6.7000e-003**	**0.0000**	**33.1923**	**33.1923**	**1.8100e-003**	**0.0000**	**33.2375**

3.7 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3534	0.2499	2.5690	8.7100e-003	1.1146	7.1600e-003	1.1217	0.2964	6.5900e-003	0.3030	0.0000	788.1731	788.1731	0.0193	0.0000	788.6560
Total	**0.3534**	**0.2499**	**2.5690**	**8.7100e-003**	**1.1146**	**7.1600e-003**	**1.1217**	**0.2964**	**6.5900e-003**	**0.3030**	**0.0000**	**788.1731**	**788.1731**	**0.0193**	**0.0000**	**788.6560**

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3294	0.2278	2.3889	8.4900e-003	1.1189	6.6900e-003	1.1255	0.2975	6.1500e-003	0.3037	0.0000	768.3025	768.3025	0.0175	0.0000	768.7403
Total	**0.3294**	**0.2278**	**2.3889**	**8.4900e-003**	**1.1189**	**6.6900e-003**	**1.1255**	**0.2975**	**6.1500e-003**	**0.3037**	**0.0000**	**768.3025**	**768.3025**	**0.0175**	**0.0000**	**768.7403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**4.3856**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3294	0.2278	2.3889	8.4900e-003	1.1189	6.6900e-003	1.1255	0.2975	6.1500e-003	0.3037	0.0000	768.3025	768.3025	0.0175	0.0000	768.7403
Total	**0.3294**	**0.2278**	**2.3889**	**8.4900e-003**	**1.1189**	**6.6900e-003**	**1.1255**	**0.2975**	**6.1500e-003**	**0.3037**	**0.0000**	**768.3025**	**768.3025**	**0.0175**	**0.0000**	**768.7403**

3.7 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3200	33.3200	1.3500e-003	0.0000	33.3537
Total	**4.3804**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3200**	**33.3200**	**1.3500e-003**	**0.0000**	**33.3537**

3.7 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3043	0.2063	2.2170	8.2700e-003	1.1189	6.2200e-003	1.1251	0.2975	5.7200e-003	0.3032	0.0000	748.0183	748.0183	0.0158	0.0000	748.4136
Total	**0.3043**	**0.2063**	**2.2170**	**8.2700e-003**	**1.1189**	**6.2200e-003**	**1.1251**	**0.2975**	**5.7200e-003**	**0.3032**	**0.0000**	**748.0183**	**748.0183**	**0.0158**	**0.0000**	**748.4136**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3199	33.3199	1.3500e-003	0.0000	33.3536
Total	**4.3804**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3199**	**33.3199**	**1.3500e-003**	**0.0000**	**33.3536**

3.7 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.3043	0.2063	2.2170	8.2700e-003	1.1189	6.2200e-003	1.1251	0.2975	5.7200e-003	0.3032	0.0000	748.0183	748.0183	0.0158	0.0000	748.4136
Total	**0.3043**	**0.2063**	**2.2170**	**8.2700e-003**	**1.1189**	**6.2200e-003**	**1.1251**	**0.2975**	**5.7200e-003**	**0.3032**	**0.0000**	**748.0183**	**748.0183**	**0.0158**	**0.0000**	**748.4136**

3.7 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3200	33.3200	1.3500e-003	0.0000	33.3537
Total	**4.3804**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3200**	**33.3200**	**1.3500e-003**	**0.0000**	**33.3537**

3.7 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2774	0.1854	2.0495	8.0700e-003	1.1189	5.7900e-003	1.1246	0.2975	5.3200e-003	0.3028	0.0000	730.0914	730.0914	0.0142	0.0000	730.4457
Total	**0.2774**	**0.1854**	**2.0495**	**8.0700e-003**	**1.1189**	**5.7900e-003**	**1.1246**	**0.2975**	**5.3200e-003**	**0.3028**	**0.0000**	**730.0914**	**730.0914**	**0.0142**	**0.0000**	**730.4457**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3633					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1117	0.2346	3.9000e-004		2.6500e-003	2.6500e-003		2.6500e-003	2.6500e-003	0.0000	33.3199	33.3199	1.3500e-003	0.0000	33.3536
Total	**4.3804**	**0.1117**	**0.2346**	**3.9000e-004**		**2.6500e-003**	**2.6500e-003**		**2.6500e-003**	**2.6500e-003**	**0.0000**	**33.3199**	**33.3199**	**1.3500e-003**	**0.0000**	**33.3536**

3.7 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2774	0.1854	2.0495	8.0700e-003	1.1189	5.7900e-003	1.1246	0.2975	5.3200e-003	0.3028	0.0000	730.0914	730.0914	0.0142	0.0000	730.4457
Total	**0.2774**	**0.1854**	**2.0495**	**8.0700e-003**	**1.1189**	**5.7900e-003**	**1.1246**	**0.2975**	**5.3200e-003**	**0.3028**	**0.0000**	**730.0914**	**730.0914**	**0.0142**	**0.0000**	**730.4457**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1122	0.2355	3.9000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	33.4476	33.4476	1.3500e-003	0.0000	33.4815
Total	**4.3972**	**0.1122**	**0.2355**	**3.9000e-004**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**33.4476**	**33.4476**	**1.3500e-003**	**0.0000**	**33.4815**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2545	0.1681	1.9111	7.9200e-003	1.1231	5.4100e-003	1.1286	0.2987	4.9800e-003	0.3036	0.0000	717.0958	717.0958	0.0128	0.0000	717.4156
Total	**0.2545**	**0.1681**	**1.9111**	**7.9200e-003**	**1.1231**	**5.4100e-003**	**1.1286**	**0.2987**	**4.9800e-003**	**0.3036**	**0.0000**	**717.0958**	**717.0958**	**0.0128**	**0.0000**	**717.4156**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3801					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0171	0.1122	0.2355	3.9000e-004		2.6600e-003	2.6600e-003		2.6600e-003	2.6600e-003	0.0000	33.4476	33.4476	1.3500e-003	0.0000	33.4814
Total	**4.3972**	**0.1122**	**0.2355**	**3.9000e-004**		**2.6600e-003**	**2.6600e-003**		**2.6600e-003**	**2.6600e-003**	**0.0000**	**33.4476**	**33.4476**	**1.3500e-003**	**0.0000**	**33.4814**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2545	0.1681	1.9111	7.9200e-003	1.1231	5.4100e-003	1.1286	0.2987	4.9800e-003	0.3036	0.0000	717.0958	717.0958	0.0128	0.0000	717.4156
Total	**0.2545**	**0.1681**	**1.9111**	**7.9200e-003**	**1.1231**	**5.4100e-003**	**1.1286**	**0.2987**	**4.9800e-003**	**0.3036**	**0.0000**	**717.0958**	**717.0958**	**0.0128**	**0.0000**	**717.4156**

3.7 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2259
Total	**4.3636**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2259**

3.7 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2322	0.1517	1.7732	7.7100e-003	1.1146	5.0200e-003	1.1196	0.2964	4.6100e-003	0.3010	0.0000	697.9469	697.9469	0.0115	0.0000	698.2339
Total	**0.2322**	**0.1517**	**1.7732**	**7.7100e-003**	**1.1146**	**5.0200e-003**	**1.1196**	**0.2964**	**4.6100e-003**	**0.3010**	**0.0000**	**697.9469**	**697.9469**	**0.0115**	**0.0000**	**698.2339**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2258
Total	**4.3636**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2258**

3.7 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2322	0.1517	1.7732	7.7100e-003	1.1146	5.0200e-003	1.1196	0.2964	4.6100e-003	0.3010	0.0000	697.9469	697.9469	0.0115	0.0000	698.2339
Total	**0.2322**	**0.1517**	**1.7732**	**7.7100e-003**	**1.1146**	**5.0200e-003**	**1.1196**	**0.2964**	**4.6100e-003**	**0.3010**	**0.0000**	**697.9469**	**697.9469**	**0.0115**	**0.0000**	**698.2339**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2259
Total	**4.3636**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2259**

3.7 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2154	0.1394	1.6604	7.5700e-003	1.1146	4.6900e-003	1.1193	0.2964	4.3100e-003	0.3007	0.0000	686.0163	686.0163	0.0104	0.0000	686.2757
Total	**0.2154**	**0.1394**	**1.6604**	**7.5700e-003**	**1.1146**	**4.6900e-003**	**1.1193**	**0.2964**	**4.3100e-003**	**0.3007**	**0.0000**	**686.0163**	**686.0163**	**0.0104**	**0.0000**	**686.2757**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.3466					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1113	0.2337	3.9000e-004		2.6400e-003	2.6400e-003		2.6400e-003	2.6400e-003	0.0000	33.1923	33.1923	1.3400e-003	0.0000	33.2258
Total	**4.3636**	**0.1113**	**0.2337**	**3.9000e-004**		**2.6400e-003**	**2.6400e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**33.1923**	**33.1923**	**1.3400e-003**	**0.0000**	**33.2258**

3.7 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.2154	0.1394	1.6604	7.5700e-003	1.1146	4.6900e-003	1.1193	0.2964	4.3100e-003	0.3007	0.0000	686.0163	686.0163	0.0104	0.0000	686.2757
Total	**0.2154**	**0.1394**	**1.6604**	**7.5700e-003**	**1.1146**	**4.6900e-003**	**1.1193**	**0.2964**	**4.3100e-003**	**0.3007**	**0.0000**	**686.0163**	**686.0163**	**0.0104**	**0.0000**	**686.2757**

3.7 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4514					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0102	0.0242	4.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	3.4469	3.4469	1.3000e-004	0.0000	3.4501
Total	**0.4530**	**0.0102**	**0.0242**	**4.0000e-005**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**3.4469**	**3.4469**	**1.3000e-004**	**0.0000**	**3.4501**

3.7 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0208	0.0135	0.1622	7.7000e-004	0.1157	4.6000e-004	0.1162	0.0308	4.2000e-004	0.0312	0.0000	70.1717	70.1717	9.8000e-004	0.0000	70.1961
Total	**0.0208**	**0.0135**	**0.1622**	**7.7000e-004**	**0.1157**	**4.6000e-004**	**0.1162**	**0.0308**	**4.2000e-004**	**0.0312**	**0.0000**	**70.1717**	**70.1717**	**9.8000e-004**	**0.0000**	**70.1961**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4514					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0102	0.0242	4.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	3.4469	3.4469	1.3000e-004	0.0000	3.4501
Total	**0.4530**	**0.0102**	**0.0242**	**4.0000e-005**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**3.4469**	**3.4469**	**1.3000e-004**	**0.0000**	**3.4501**

3.7 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0208	0.0135	0.1622	7.7000e-004	0.1157	4.6000e-004	0.1162	0.0308	4.2000e-004	0.0312	0.0000	70.1717	70.1717	9.8000e-004	0.0000	70.1961
Total	**0.0208**	**0.0135**	**0.1622**	**7.7000e-004**	**0.1157**	**4.6000e-004**	**0.1162**	**0.0308**	**4.2000e-004**	**0.0312**	**0.0000**	**70.1717**	**70.1717**	**9.8000e-004**	**0.0000**	**70.1961**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	5.6216	43.9572	52.4612	0.2736	27.2260	0.1023	27.3283	7.3033	0.0951	7.3984	0.0000	25,381.4883	25,381.4883	0.9884	0.0000	25,406.1971
Unmitigated	5.9819	45.3551	58.6075	0.3115	31.8433	0.1160	31.9593	8.5419	0.1079	8.6498	0.0000	28,879.1828	28,879.1828	1.0811	0.0000	28,906.2099

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
City Park	94.50	1,137.50	837.00	504,217	431,106
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
City Park	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Condo/Townhouse	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Elementary School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
General Office Building	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Junior High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Regional Shopping Center	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Single Family Housing	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Supermarket	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,541.1898	5,541.1898	0.7388	0.1529	5,605.2128
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,541.1898	5,541.1898	0.7388	0.1529	5,605.2128
NaturalGas Mitigated	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	9,177.1223	9,177.1223	0.1759	0.1683	9,231.6574
NaturalGas Unmitigated	0.9273	8.1523	5.0448	0.0506		0.6407	0.6407		0.6407	0.6407	0.0000	9,177.1223	9,177.1223	0.1759	0.1683	9,231.6574

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	786190	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9541	41.9541	8.0000e-004	7.7000e-004	42.2034
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.40721e+007	0.2916	2.4916	1.0602	0.0159		0.2014	0.2014		0.2014	0.2014	0.0000	2,885.4907	2,885.4907	0.0553	0.0529	2,902.6377
Elementary School	2.48846e+007	0.1342	1.2198	1.0247	7.3200e-003		0.0927	0.0927		0.0927	0.0927	0.0000	1,327.9368	1,327.9368	0.0255	0.0244	1,335.8281
General Office Building	2.34091e+006	0.0126	0.1148	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003	0.0000	124.9199	124.9199	2.3900e-003	2.2900e-003	125.6622
High School	3.14793e+007	0.1697	1.5431	1.2962	9.2600e-003		0.1173	0.1173		0.1173	0.1173	0.0000	1,679.8549	1,679.8549	0.0322	0.0308	1,689.8375
Junior High School	1.66915e+007	0.0900	0.8182	0.6873	4.9100e-003		0.0622	0.0622		0.0622	0.0622	0.0000	890.7230	890.7230	0.0171	0.0163	896.0162
Regional Shopping Center	879270	4.7400e-003	0.0431	0.0362	2.6000e-004		3.2800e-003	3.2800e-003		3.2800e-003	3.2800e-003	0.0000	46.9212	46.9212	9.0000e-004	8.6000e-004	47.2000
Single Family Housing	3.95576e+007	0.2133	1.8228	0.7756	0.0116		0.1474	0.1474		0.1474	0.1474	0.0000	2,110.9435	2,110.9435	0.0405	0.0387	2,123.4878
Supermarket	1.28136e+006	6.9100e-003	0.0628	0.0528	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3783	68.3783	1.3100e-003	1.2500e-003	68.7846
Total		**0.9273**	**8.1523**	**5.0448**	**0.0506**		**0.6407**	**0.6407**		**0.6407**	**0.6407**	**0.0000**	**9,177.1223**	**9,177.1223**	**0.1759**	**0.1683**	**9,231.6574**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	786190	4.2400e-003	0.0362	0.0154	2.3000e-004		2.9300e-003	2.9300e-003		2.9300e-003	2.9300e-003	0.0000	41.9541	41.9541	8.0000e-004	7.7000e-004	42.2034
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.40721e+007	0.2916	2.4916	1.0602	0.0159		0.2014	0.2014		0.2014	0.2014	0.0000	2,885.4907	2,885.4907	0.0553	0.0529	2,902.6377
Elementary School	2.48846e+007	0.1342	1.2198	1.0247	7.3200e-003		0.0927	0.0927		0.0927	0.0927	0.0000	1,327.9368	1,327.9368	0.0255	0.0244	1,335.8281
General Office Building	2.34091e+006	0.0126	0.1148	0.0964	6.9000e-004		8.7200e-003	8.7200e-003		8.7200e-003	8.7200e-003	0.0000	124.9199	124.9199	2.3900e-003	2.2900e-003	125.6622
High School	3.14793e+007	0.1697	1.5431	1.2962	9.2600e-003		0.1173	0.1173		0.1173	0.1173	0.0000	1,679.8549	1,679.8549	0.0322	0.0308	1,689.8375
Junior High School	1.66915e+007	0.0900	0.8182	0.6873	4.9100e-003		0.0622	0.0622		0.0622	0.0622	0.0000	890.7230	890.7230	0.0171	0.0163	896.0162
Regional Shopping Center	879270	4.7400e-003	0.0431	0.0362	2.6000e-004		3.2800e-003	3.2800e-003		3.2800e-003	3.2800e-003	0.0000	46.9212	46.9212	9.0000e-004	8.6000e-004	47.2000
Single Family Housing	3.95576e+007	0.2133	1.8228	0.7756	0.0116		0.1474	0.1474		0.1474	0.1474	0.0000	2,110.9435	2,110.9435	0.0405	0.0387	2,123.4878
Supermarket	1.28136e+006	6.9100e-003	0.0628	0.0528	3.8000e-004		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	68.3783	68.3783	1.3100e-003	1.2500e-003	68.7846
Total		**0.9273**	**8.1523**	**5.0448**	**0.0506**		**0.6407**	**0.6407**		**0.6407**	**0.6407**	**0.0000**	**9,177.1223**	**9,177.1223**	**0.1759**	**0.1683**	**9,231.6574**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	375680	37.0632	4.9400e-003	1.0200e-003	37.4914
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.45712e+007	1,437.5415	0.1917	0.0397	1,454.1508
Elementary School	7.27375e+006	717.6017	0.0957	0.0198	725.8929
General Office Building	2.54969e+006	251.5431	0.0335	6.9400e-003	254.4494
High School	9.20138e+006	907.7742	0.1210	0.0250	918.2626
Junior High School	4.87892e+006	481.3364	0.0642	0.0133	486.8978
Regional Shopping Center	3.96599e+006	391.2701	0.0522	0.0108	395.7908
Single Family Housing	1.10113e+007	1,086.3312	0.1448	0.0300	1,098.8827
Supermarket	2.33871e+006	230.7286	0.0308	6.3600e-003	233.3944
Total		**5,541.1898**	**0.7388**	**0.1529**	**5,605.2128**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	375680	37.0632	4.9400e-003	1.0200e-003	37.4914
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.45712e+007	1,437.5415	0.1917	0.0397	1,454.1508
Elementary School	7.27375e+006	717.6017	0.0957	0.0198	725.8929
General Office Building	2.54969e+006	251.5431	0.0335	6.9400e-003	254.4494
High School	9.20138e+006	907.7742	0.1210	0.0250	918.2626
Junior High School	4.87892e+006	481.3364	0.0642	0.0133	486.8978
Regional Shopping Center	3.96599e+006	391.2701	0.0522	0.0108	395.7908
Single Family Housing	1.10113e+007	1,086.3312	0.1448	0.0300	1,098.8827
Supermarket	2.33871e+006	230.7286	0.0308	6.3600e-003	233.3944
Total		**5,541.1898**	**0.7388**	**0.1529**	**5,605.2128**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	44.0049	1.3850	44.9887	7.9200e-003		0.3188	0.3188		0.3188	0.3188	0.0000	1,080.8953	1,080.8953	0.0892	0.0185	1,088.6304
Unmitigated	84.1648	1.6390	92.8541	0.0952		7.0729	7.0729		7.0729	7.0729	661.1846	748.5780	1,409.7626	0.8802	0.0557	1,448.3582

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.5484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	38.9255					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	37.3529	1.1241	48.2357	0.0928		6.8245	6.8245		6.8245	6.8245	661.1846	675.3546	1,336.539 2	0.8104	0.0557	1,373.387 8
Landscaping	1.3381	0.5149	44.6184	2.3700e-003		0.2484	0.2484		0.2484	0.2484	0.0000	73.2234	73.2234	0.0699	0.0000	74.9705
Total	**84.1648**	**1.6390**	**92.8542**	**0.0952**		**7.0729**	**7.0729**		**7.0729**	**7.0729**	**661.1846**	**748.5780**	**1,409.762 6**	**0.8802**	**0.0557**	**1,448.358 2**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.5484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	36.0167					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1018	0.8701	0.3703	5.5500e-003		0.0704	0.0704		0.0704	0.0704	0.0000	1,007.6719	1,007.6719	0.0193	0.0185	1,013.6600
Landscaping	1.3381	0.5149	44.6184	2.3700e-003		0.2484	0.2484		0.2484	0.2484	0.0000	73.2234	73.2234	0.0699	0.0000	74.9705
Total	**44.0049**	**1.3850**	**44.9887**	**7.9200e-003**		**0.3188**	**0.3188**		**0.3188**	**0.3188**	**0.0000**	**1,080.8953**	**1,080.8953**	**0.0892**	**0.0185**	**1,088.6305**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	494.4202	11.9680	0.2918	880.5888
Unmitigated	584.1363	14.9555	0.3639	1,066.4555

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.92902 / 3.73786	6.3368	0.1938	4.6800e-003	12.5776
City Park	0 / 59.5741	20.5708	2.7400e-003	5.7000e-004	20.8084
Condo/Townhouse	188.165 / 118.626	201.1051	6.1502	0.1487	399.1656
Elementary School	39.131 / 100.623	68.0485	1.2825	0.0316	109.5405
General Office Building	25.4159 / 15.5775	27.0099	0.8307	0.0201	53.7607
High School	56.6843 / 145.76	98.5735	1.8578	0.0458	158.6778
Junior High School	18.6657 / 47.9976	32.4595	0.6118	0.0151	52.2514
Regional Shopping Center	27.4809 / 16.8431	29.2044	0.8982	0.0217	58.1286
Single Family Housing	88.6746 / 55.9036	94.7728	2.8984	0.0701	188.1109
Supermarket	7.02629 / 0.217308	6.0550	0.2295	5.5100e-003	13.4340
Total		**584.1363**	**14.9555**	**0.3639**	**1,066.4555**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.74321 / 3.50985	5.2488	0.1551	3.7500e-003	10.2435
City Park	0 / 55.94	19.3159	2.5800e-003	5.3000e-004	19.5391
Condo/Townhouse	150.532 / 111.389	166.5776	4.9209	0.1191	325.0918
Elementary School	31.3048 / 94.4847	59.2683	1.0267	0.0255	92.5177
General Office Building	20.3327 / 14.6273	22.3556	0.6647	0.0161	43.7649
High School	45.3474 / 136.868	85.8547	1.4872	0.0369	134.0190
Junior High School	14.9326 / 45.0697	28.2713	0.4897	0.0121	44.1315
Regional Shopping Center	21.9847 / 15.8157	24.1720	0.7187	0.0174	47.3207
Single Family Housing	70.9397 / 52.4935	78.5014	2.3190	0.0561	153.2029
Supermarket	5.62103 / 0.204052	4.8544	0.1836	4.4100e-003	10.7577
Total		**494.4201**	**11.9681**	**0.2918**	**880.5888**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1,843.456 3	108.9452	0.0000	4,567.085 1
Unmitigated	1,843.456 3	108.9452	0.0000	4,567.085 1

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	41.86	8.4972	0.5022	0.0000	21.0515
City Park	4.3	0.8729	0.0516	0.0000	2.1625
Condo/Townhouse	1328.48	269.6694	15.9370	0.0000	668.0946
Elementary School	1754.34	356.1152	21.0458	0.0000	882.2603
General Office Building	132.99	26.9958	1.5954	0.0000	66.8809
High School	2219.26	450.4897	26.6232	0.0000	1,116.0692
Junior High School	1176.73	238.8656	14.1166	0.0000	591.7793
Regional Shopping Center	389.55	79.0751	4.6732	0.0000	195.9053
Single Family Housing	1712.48	347.6180	20.5436	0.0000	861.2088
Supermarket	321.48	65.2575	3.8566	0.0000	161.6728
Total		**1,843.4563**	**108.9451**	**0.0000**	**4,567.0851**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	41.86	8.4972	0.5022	0.0000	21.0515
City Park	4.3	0.8729	0.0516	0.0000	2.1625
Condo/Townhouse	1328.48	269.6694	15.9370	0.0000	668.0946
Elementary School	1754.34	356.1152	21.0458	0.0000	882.2603
General Office Building	132.99	26.9958	1.5954	0.0000	66.8809
High School	2219.26	450.4897	26.6232	0.0000	1,116.0692
Junior High School	1176.73	238.8656	14.1166	0.0000	591.7793
Regional Shopping Center	389.55	79.0751	4.6732	0.0000	195.9053
Single Family Housing	1712.48	347.6180	20.5436	0.0000	861.2088
Supermarket	321.48	65.2575	3.8566	0.0000	161.6728
Total		**1,843.4563**	**108.9451**	**0.0000**	**4,567.0851**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model - Year 2050 - 2016.3.2

Monterey County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
City Park	50.00	Acre	50.00	2,178,000.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2050
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	217.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO2 Factor: 290 lb/MWh), adjusted for 2050 based on the increased effect of the RPS by 2050 (CO2 Factor : 217.5022)

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading - Maximum of 797 acres graded (total area of the site)

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	12,400.00	4,152.00
tblConstructionPhase	NumDays	880.00	3,917.00
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42

Salinas WASP Model - Year 2050 - 2016.3.2 - Monterey County, Summer

tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42

tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Salinas WASP Model - Year 2050 - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8364	54.6007	34.2408	0.0638	19.1898	2.3917	21.5739	9.9699	2.2004	12.1703	0.0000	6,322.4438	6,322.4438	1.9513	0.0000	6,371.2269
2020	71.2172	235.3878	317.4609	1.0555	63.7694	2.7346	66.5040	17.1533	2.5867	19.7401	0.0000	107,424.3587	107,424.3587	5.1662	0.0000	107,553.5147
2021	67.5583	215.0785	288.7727	1.0322	63.7704	2.0323	65.8027	17.1537	1.9171	19.0708	0.0000	105,131.3494	105,131.3494	4.7995	0.0000	105,251.3372
2022	64.9504	201.7286	264.7922	1.0086	63.7714	1.7840	65.5554	17.1540	1.6825	18.8365	0.0000	102,794.9271	102,794.9271	4.4994	0.0000	102,907.4126
2023	61.7673	169.3784	241.2801	0.9806	63.7723	1.3885	65.1608	17.1544	1.3058	18.4601	0.0000	100,002.3342	100,002.3342	3.9324	0.0000	100,100.6429
2024	59.8898	163.5918	223.4662	0.9573	63.7733	1.2650	65.0383	17.1547	1.1887	18.3434	0.0000	97,689.7324	97,689.7324	3.7246	0.0000	97,782.8462
2025	58.2762	158.3576	207.9295	0.9345	63.7741	1.1481	64.9222	17.1550	1.0780	18.2330	0.0000	95,417.3034	95,417.3034	3.5474	0.0000	95,505.9880
2026	56.9504	154.8400	193.8047	0.9124	63.7746	1.1226	64.8972	17.1552	1.0541	18.2093	0.0000	93,220.9984	93,220.9984	3.3838	0.0000	93,305.5931
2027	55.7229	151.6454	181.8167	0.8946	63.7752	1.0922	64.8674	17.1554	1.0257	18.1811	0.0000	91,455.9388	91,455.9388	3.2458	0.0000	91,537.0841
2028	54.5132	148.9088	171.4858	0.8790	63.7756	1.0601	64.8357	17.1555	0.9958	18.1513	0.0000	89,900.3234	89,900.3234	3.1215	0.0000	89,978.3620
2029	53.2553	146.3917	161.6282	0.8651	63.7760	1.0303	64.8063	17.1557	0.9680	18.1238	0.0000	88,523.7023	88,523.7023	3.0051	0.0000	88,598.8299
2030	51.9238	139.3461	152.8846	0.8570	63.7764	0.5925	64.3689	17.1558	0.5635	17.7193	0.0000	87,664.6051	87,664.6051	2.4079	0.0000	87,724.8034
2031	50.6279	137.3410	144.4056	0.8465	63.7767	0.5677	64.3444	17.1559	0.5405	17.6965	0.0000	86,622.2510	86,622.2510	2.3076	0.0000	86,679.9418
2032	49.4770	135.5937	137.0759	0.8375	63.7770	0.5451	64.3221	17.1561	0.5195	17.6756	0.0000	85,731.5673	85,731.5673	2.2191	0.0000	85,787.0456
2033	48.4945	134.0840	130.8644	0.8298	63.7773	0.5248	64.3020	17.1561	0.5007	17.6568	0.0000	84,971.6412	84,971.6412	2.1449	0.0000	85,025.2630
2034	47.6748	132.8148	125.1615	0.8232	63.7775	0.5062	64.2837	17.1562	0.4834	17.6397	0.0000	84,322.5242	84,322.5242	2.0768	0.0000	84,374.4438
2035	46.8447	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.8271	83,771.8271	2.0097	0.0000	83,822.0707
Maximum	**71.2172**	**235.3878**	**317.4609**	**1.0555**	**63.7777**	**2.7346**	**66.5040**	**17.1563**	**2.5867**	**19.7401**	**0.0000**	**107,424.3587**	**107,424.3587**	**5.1662**	**0.0000**	**107,553.5147**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

Salinas WASP Model - Year 2050 - 2016.3.2 - Monterey County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8364	54.6007	34.2408	0.0638	8.7258	2.3917	11.1099	4.5080	2.2004	6.7084	0.0000	6,322.443 8	6,322.443 8	1.9513	0.0000	6,371.226 9
2020	71.2172	235.3878	317.4609	1.0555	63.7694	2.7346	66.5040	17.1533	2.5867	19.7401	0.0000	107,424.3 587	107,424.3 587	5.1662	0.0000	107,553.5 147
2021	67.5583	215.0785	288.7727	1.0322	63.7704	2.0323	65.8027	17.1537	1.9171	19.0708	0.0000	105,131.3 494	105,131.3 494	4.7995	0.0000	105,251.3 372
2022	64.9504	201.7286	264.7922	1.0086	63.7714	1.7840	65.5554	17.1540	1.6825	18.8365	0.0000	102,794.9 271	102,794.9 271	4.4994	0.0000	102,907.4 126
2023	61.7673	169.3784	241.2801	0.9806	63.7723	1.3885	65.1608	17.1544	1.3058	18.4601	0.0000	100,002.3 342	100,002.3 342	3.9324	0.0000	100,100.6 429
2024	59.8898	163.5918	223.4662	0.9573	63.7733	1.2650	65.0383	17.1547	1.1887	18.3434	0.0000	97,689.73 24	97,689.73 24	3.7246	0.0000	97,782.84 62
2025	58.2762	158.3576	207.9295	0.9345	63.7741	1.1481	64.9222	17.1550	1.0780	18.2330	0.0000	95,417.30 34	95,417.30 34	3.5474	0.0000	95,505.98 80
2026	56.9504	154.8400	193.8047	0.9124	63.7746	1.1226	64.8972	17.1552	1.0541	18.2093	0.0000	93,220.99 84	93,220.99 84	3.3838	0.0000	93,305.59 31
2027	55.7229	151.6454	181.8167	0.8946	63.7752	1.0922	64.8674	17.1554	1.0257	18.1811	0.0000	91,455.93 88	91,455.93 88	3.2458	0.0000	91,537.08 41
2028	54.5132	148.9088	171.4858	0.8790	63.7756	1.0601	64.8357	17.1555	0.9958	18.1513	0.0000	89,900.32 34	89,900.32 34	3.1215	0.0000	89,978.36 20
2029	53.2553	146.3917	161.6282	0.8651	63.7760	1.0303	64.8063	17.1557	0.9680	18.1238	0.0000	88,523.70 23	88,523.70 23	3.0051	0.0000	88,598.82 99
2030	51.9238	139.3461	152.8846	0.8570	63.7764	0.5925	64.3689	17.1558	0.5635	17.7193	0.0000	87,664.60 51	87,664.60 51	2.4079	0.0000	87,724.80 34
2031	50.6279	137.3410	144.4056	0.8465	63.7767	0.5677	64.3444	17.1559	0.5405	17.6965	0.0000	86,622.25 10	86,622.25 10	2.3076	0.0000	86,679.94 17
2032	49.4770	135.5937	137.0759	0.8375	63.7770	0.5451	64.3221	17.1561	0.5195	17.6756	0.0000	85,731.56 73	85,731.56 73	2.2191	0.0000	85,787.04 55
2033	48.4945	134.0840	130.8644	0.8298	63.7773	0.5248	64.3020	17.1561	0.5007	17.6568	0.0000	84,971.64 12	84,971.64 12	2.1449	0.0000	85,025.26 30
2034	47.6748	132.8148	125.1615	0.8232	63.7775	0.5062	64.2837	17.1562	0.4834	17.6397	0.0000	84,322.52 42	84,322.52 42	2.0768	0.0000	84,374.44 38
2035	46.8447	130.9123	120.1510	0.8176	63.7777	0.4214	64.1991	17.1563	0.3999	17.5562	0.0000	83,771.82 71	83,771.82 71	2.0097	0.0000	83,822.07 07
Maximum	**71.2172**	**235.3878**	**317.4609**	**1.0555**	**63.7777**	**2.7346**	**66.5040**	**17.1563**	**2.5867**	**19.7401**	**0.0000**	**107,424.3 587**	**107,424.3 587**	**5.1662**	**0.0000**	**107,553.5 147**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	1.01	0.00	0.99	1.92	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,170.9221	31.5360	1,533.4281	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.3729	18,803.0611	36,579.4340	22.4030	1.4967	37,585.5372
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828
Mobile	41.7127	283.5432	366.0289	2.0144	202.7623	0.7181	203.4804	54.2417	0.6676	54.9093		205,817.7982	205,817.7982	7.2591		205,999.2766
Total	**1,217.7159**	**359.7496**	**1,927.0998**	**4.5745**	**202.7623**	**172.6678**	**375.4300**	**54.2417**	**172.6172**	**226.8589**	**17,776.3729**	**280,051.2470**	**297,827.6199**	**30.7246**	**2.5130**	**299,344.5966**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	246.4212	25.3409	365.9781	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.6258	27,737.6258	1.1355	0.4967	27,914.0257
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828
Mobile	39.5044	275.4922	325.3872	1.7707	173.3617	0.6332	173.9949	46.3766	0.5884	46.9651		181,020.1771	181,020.1771	6.6244		181,185.7862
Total	**291.0066**	**345.5035**	**719.0081**	**2.2022**	**173.3617**	**7.8468**	**181.2086**	**46.3766**	**7.8021**	**54.1787**	**0.0000**	**264,188.1907**	**264,188.1907**	**8.8223**	**1.5129**	**264,859.5948**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**76.10**	**3.96**	**62.69**	**51.86**	**14.50**	**95.46**	**51.73**	**14.50**	**95.48**	**76.12**	**100.00**	**5.66**	**11.29**	**71.29**	**39.80**	**11.52**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	3/29/2019	5	64	
2	Grading	Grading	3/31/2019	6/28/2019	5	65	
3	Underground Utilities	Trenching	7/1/2019	8/30/2019	5	45	
4	Paving	Paving	9/2/2019	12/31/2019	5	87	
5	Building Construction	Building Construction	1/2/2020	11/30/2035	5	4152	
6	Architectural Coating	Architectural Coating	2/1/2020	2/6/2035	5	3917	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.452 9	3,766.452 9	1.1917		3,796.244 5
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.452 9**	**3,766.452 9**	**1.1917**		**3,796.244 5**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0877	0.0725	0.7776	1.6500e-003	0.1479	1.3300e-003	0.1492	0.0392	1.2300e-003	0.0405		164.1819	164.1819	7.8200e-003		164.3774
Total	**0.0877**	**0.0725**	**0.7776**	**1.6500e-003**	**0.1479**	**1.3300e-003**	**0.1492**	**0.0392**	**1.2300e-003**	**0.0405**		**164.1819**	**164.1819**	**7.8200e-003**		**164.3774**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.1298**	**2.3904**	**10.5202**	**4.4688**	**2.1991**	**6.6679**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0877	0.0725	0.7776	1.6500e-003	0.1479	1.3300e-003	0.1492	0.0392	1.2300e-003	0.0405		164.1819	164.1819	7.8200e-003		164.3774
Total	**0.0877**	**0.0725**	**0.7776**	**1.6500e-003**	**0.1479**	**1.3300e-003**	**0.1492**	**0.0392**	**1.2300e-003**	**0.0405**		**164.1819**	**164.1819**	**7.8200e-003**		**164.3774**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.0255	0.0000	19.0255	4.7143	0.0000	4.7143			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**19.0255**	**2.3827**	**21.4081**	**4.7143**	**2.1920**	**6.9063**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0975	0.0805	0.8640	1.8400e-003	0.1643	1.4800e-003	0.1658	0.0436	1.3600e-003	0.0449		182.4243	182.4243	8.6900e-003		182.6415
Total	**0.0975**	**0.0805**	**0.8640**	**1.8400e-003**	**0.1643**	**1.4800e-003**	**0.1658**	**0.0436**	**1.3600e-003**	**0.0449**		**182.4243**	**182.4243**	**8.6900e-003**		**182.6415**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.5615	0.0000	8.5615	2.1214	0.0000	2.1214			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.5615**	**2.3827**	**10.9441**	**2.1214**	**2.1920**	**4.3135**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0975	0.0805	0.8640	1.8400e-003	0.1643	1.4800e-003	0.1658	0.0436	1.3600e-003	0.0449		182.4243	182.4243	8.6900e-003		182.6415
Total	**0.0975**	**0.0805**	**0.8640**	**1.8400e-003**	**0.1643**	**1.4800e-003**	**0.1658**	**0.0436**	**1.3600e-003**	**0.0449**		**182.4243**	**182.4243**	**8.6900e-003**		**182.6415**

3.4 Underground Utilities - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.4 Underground Utilities - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4544**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0731	0.0604	0.6480	1.3800e-003	0.1232	1.1100e-003	0.1243	0.0327	1.0200e-003	0.0337		136.8182	136.8182	6.5200e-003		136.9811
Total	**0.0731**	**0.0604**	**0.6480**	**1.3800e-003**	**0.1232**	**1.1100e-003**	**0.1243**	**0.0327**	**1.0200e-003**	**0.0337**		**136.8182**	**136.8182**	**6.5200e-003**		**136.9811**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4544**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0731	0.0604	0.6480	1.3800e-003	0.1232	1.1100e-003	0.1243	0.0327	1.0200e-003	0.0337		136.8182	136.8182	6.5200e-003		136.9811
Total	**0.0731**	**0.0604**	**0.6480**	**1.3800e-003**	**0.1232**	**1.1100e-003**	**0.1243**	**0.0327**	**1.0200e-003**	**0.0337**		**136.8182**	**136.8182**	**6.5200e-003**		**136.9811**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8242	191.4942	49.9880	0.4497	10.5788	1.0468	11.6257	3.0447	1.0014	4.0461		47,307.4577	47,307.4577	2.0759		47,359.3540
Worker	23.8302	19.1871	207.3339	0.4799	44.3269	0.3832	44.7100	11.7576	0.3534	12.1110		47,736.7994	47,736.7994	2.0382		47,787.7539
Total	**30.6545**	**210.6812**	**257.3219**	**0.9296**	**54.9057**	**1.4300**	**56.3357**	**14.8023**	**1.3548**	**16.1571**		**95,044.2571**	**95,044.2571**	**4.1140**		**95,147.1078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.8242	191.4942	49.9880	0.4497	10.5788	1.0468	11.6257	3.0447	1.0014	4.0461		47,307.4577	47,307.4577	2.0759		47,359.3540
Worker	23.8302	19.1871	207.3339	0.4799	44.3269	0.3832	44.7100	11.7576	0.3534	12.1110		47,736.7994	47,736.7994	2.0382		47,787.7539
Total	**30.6545**	**210.6812**	**257.3219**	**0.9296**	**54.9057**	**1.4300**	**56.3357**	**14.8023**	**1.3548**	**16.1571**		**95,044.2571**	**95,044.2571**	**4.1140**		**95,147.1078**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

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

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6278	175.5670	43.7565	0.4460	10.5798	0.5354	11.1152	3.0451	0.5121	3.5571		46,933.3719	46,933.3719	1.9827		46,982.9392
Worker	21.9799	17.1277	188.8587	0.4636	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		46,137.3964	46,137.3964	1.8180		46,182.8455
Total	**27.6077**	**192.6947**	**232.6152**	**0.9096**	**54.9067**	**0.9056**	**55.8123**	**14.8026**	**0.8534**	**15.6561**		**93,070.7683**	**93,070.7683**	**3.8007**		**93,165.7847**

Mitigated Construction On-Site

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

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.6278	175.5670	43.7565	0.4460	10.5798	0.5354	11.1152	3.0451	0.5121	3.5571		46,933.3719	46,933.3719	1.9827		46,982.9392
Worker	21.9799	17.1277	188.8587	0.4636	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		46,137.3964	46,137.3964	1.8180		46,182.8455
Total	**27.6077**	**192.6947**	**232.6152**	**0.9096**	**54.9067**	**0.9056**	**55.8123**	**14.8026**	**0.8534**	**15.6561**		**93,070.7683**	**93,070.7683**	**3.8007**		**93,165.7847**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

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

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.1556	166.2855	39.5780	0.4421	10.5808	0.4652	11.0459	3.0454	0.4449	3.4903		46,544.8800	46,544.8800	1.9173		46,592.8112
Worker	20.3744	15.3496	172.5363	0.4471	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		44,513.2628	44,513.2628	1.6266		44,553.9286
Total	**25.5300**	**181.6351**	**212.1143**	**0.8893**	**54.9077**	**0.8220**	**55.7296**	**14.8030**	**0.7738**	**15.5768**		**91,058.1428**	**91,058.1428**	**3.5439**		**91,146.7399**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.1556	166.2855	39.5780	0.4421	10.5808	0.4652	11.0459	3.0454	0.4449	3.4903		46,544.8800	46,544.8800	1.9173		46,592.8112
Worker	20.3744	15.3496	172.5363	0.4471	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		44,513.2628	44,513.2628	1.6266		44,553.9286
Total	**25.5300**	**181.6351**	**212.1143**	**0.8893**	**54.9077**	**0.8220**	**55.7296**	**14.8030**	**0.7738**	**15.5768**		**91,058.1428**	**91,058.1428**	**3.5439**		**91,146.7399**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

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

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8860	137.1784	34.3866	0.4342	10.5817	0.2034	10.7851	3.0457	0.1945	3.2402		45,731.0409	45,731.0409	1.5646		45,770.1565
Worker	18.9016	13.7605	157.3702	0.4304	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		42,863.5200	42,863.5200	1.4526		42,899.8345
Total	**22.7876**	**150.9389**	**191.7568**	**0.8647**	**54.9086**	**0.5489**	**55.4575**	**14.8033**	**0.5129**	**15.3161**		**88,594.5609**	**88,594.5609**	**3.0172**		**88,669.9910**

Mitigated Construction On-Site

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

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8860	137.1784	34.3866	0.4342	10.5817	0.2034	10.7851	3.0457	0.1945	3.2402		45,731.0409	45,731.0409	1.5646		45,770.1565
Worker	18.9016	13.7605	157.3702	0.4304	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		42,863.5200	42,863.5200	1.4526		42,899.8345
Total	**22.7876**	**150.9389**	**191.7568**	**0.8647**	**54.9086**	**0.5489**	**55.4575**	**14.8033**	**0.5129**	**15.3161**		**88,594.5609**	**88,594.5609**	**3.0172**		**88,669.9910**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

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

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6756	134.0778	32.0292	0.4310	10.5827	0.1890	10.7717	3.0461	0.1807	3.2268		45,397.7656	45,397.7656	1.5417		45,436.3079
Worker	17.6058	12.3766	144.5546	0.4137	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		41,213.6228	41,213.6228	1.3023		41,246.1793
Total	**21.2814**	**146.4544**	**176.5837**	**0.8447**	**54.9095**	**0.5239**	**55.4334**	**14.8036**	**0.4892**	**15.2928**		**86,611.3884**	**86,611.3884**	**2.8440**		**86,682.4872**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.6756	134.0778	32.0292	0.4310	10.5827	0.1890	10.7717	3.0461	0.1807	3.2268		45,397.7656	45,397.7656	1.5417		45,436.3079
Worker	17.6058	12.3766	144.5546	0.4137	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		41,213.6228	41,213.6228	1.3023		41,246.1793
Total	**21.2814**	**146.4544**	**176.5837**	**0.8447**	**54.9095**	**0.5239**	**55.4334**	**14.8036**	**0.4892**	**15.2928**		**86,611.3884**	**86,611.3884**	**2.8440**		**86,682.4872**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

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

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4955	131.3009	30.1373	0.4279	10.5835	0.1758	10.7593	3.0464	0.1681	3.2145		45,084.4801	45,084.4801	1.5189		45,122.4535
Worker	16.5063	11.2016	133.2528	0.3972	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		39,580.3066	39,580.3066	1.1768		39,609.7272
Total	**20.0017**	**142.5025**	**163.3901**	**0.8251**	**54.9103**	**0.5035**	**55.4138**	**14.8039**	**0.4699**	**15.2738**		**84,664.7867**	**84,664.7867**	**2.6958**		**84,732.1807**

Mitigated Construction On-Site

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

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4955	131.3009	30.1373	0.4279	10.5835	0.1758	10.7593	3.0464	0.1681	3.2145		45,084.4801	45,084.4801	1.5189		45,122.4535
Worker	16.5063	11.2016	133.2528	0.3972	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		39,580.3066	39,580.3066	1.1768		39,609.7272
Total	**20.0017**	**142.5025**	**163.3901**	**0.8251**	**54.9103**	**0.5035**	**55.4138**	**14.8039**	**0.4699**	**15.2738**		**84,664.7867**	**84,664.7867**	**2.6958**		**84,732.1807**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

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

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3605	129.0254	28.7955	0.4256	10.5841	0.1664	10.7505	3.0466	0.1591	3.2057		44,850.8255	44,850.8255	1.4996		44,888.3156
Worker	15.5138	10.1665	122.5999	0.3807	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		37,944.7140	37,944.7140	1.0566		37,971.1291
Total	**18.8743**	**139.1919**	**151.3955**	**0.8063**	**54.9109**	**0.4807**	**55.3916**	**14.8041**	**0.4485**	**15.2526**		**82,795.5396**	**82,795.5396**	**2.5562**		**82,859.4448**

Mitigated Construction On-Site

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

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3605	129.0254	28.7955	0.4256	10.5841	0.1664	10.7505	3.0466	0.1591	3.2057		44,850.8255	44,850.8255	1.4996		44,888.3156
Worker	15.5138	10.1665	122.5999	0.3807	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		37,944.7140	37,944.7140	1.0566		37,971.1291
Total	**18.8743**	**139.1919**	**151.3955**	**0.8063**	**54.9109**	**0.4807**	**55.3916**	**14.8041**	**0.4485**	**15.2526**		**82,795.5396**	**82,795.5396**	**2.5562**		**82,859.4448**

3.6 Building Construction - 2027

Unmitigated Construction On-Site

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

3.6 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2438	126.9442	27.5840	0.4236	10.5846	0.1581	10.7426	3.0468	0.1511	3.1979		44,647.8729	44,647.8729	1.4811		44,684.8991
Worker	14.5881	9.2386	113.6193	0.3676	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		36,642.9180	36,642.9180	0.9571		36,666.8450
Total	**17.8319**	**136.1828**	**141.2033**	**0.7912**	**54.9114**	**0.4540**	**55.3654**	**14.8043**	**0.4234**	**15.2278**		**81,290.7909**	**81,290.7909**	**2.4381**		**81,351.7442**

Mitigated Construction On-Site

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

3.6 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2438	126.9442	27.5840	0.4236	10.5846	0.1581	10.7426	3.0468	0.1511	3.1979		44,647.8729	44,647.8729	1.4811		44,684.8991
Worker	14.5881	9.2386	113.6193	0.3676	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		36,642.9180	36,642.9180	0.9571		36,666.8450
Total	**17.8319**	**136.1828**	**141.2033**	**0.7912**	**54.9114**	**0.4540**	**55.3654**	**14.8043**	**0.4234**	**15.2278**		**81,290.7909**	**81,290.7909**	**2.4381**		**81,351.7442**

3.6 Building Construction - 2028

Unmitigated Construction On-Site

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

3.6 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1476	125.1950	26.7242	0.4219	10.5850	0.1506	10.7355	3.0469	0.1439	3.1908		44,477.97 56	44,477.97 56	1.4602		44,514.47 94
Worker	13.6602	8.4158	105.7264	0.3559	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		35,488.11 73	35,488.11 73	0.8709		35,509.89 07
Total	**16.8078**	**133.6108**	**132.4506**	**0.7779**	**54.9119**	**0.4260**	**55.3378**	**14.8045**	**0.3973**	**15.2018**		**79,966.09 29**	**79,966.09 29**	**2.3311**		**80,024.37 01**

Mitigated Construction On-Site

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

3.6 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1476	125.1950	26.7242	0.4219	10.5850	0.1506	10.7355	3.0469	0.1439	3.1908		44,477.9756	44,477.9756	1.4602		44,514.4794
Worker	13.6602	8.4158	105.7264	0.3559	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		35,488.1173	35,488.1173	0.8709		35,509.8907
Total	**16.8078**	**133.6108**	**132.4506**	**0.7779**	**54.9119**	**0.4260**	**55.3378**	**14.8045**	**0.3973**	**15.2018**		**79,966.0929**	**79,966.0929**	**2.3311**		**80,024.3701**

3.6 Building Construction - 2029

Unmitigated Construction On-Site

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

3.6 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0678	123.6012	26.0000	0.4205	10.5854	0.1437	10.7291	3.0471	0.1374	3.1845		44,331.3228	44,331.3228	1.4438		44,367.4171
Worker	12.6784	7.6464	98.1150	0.3456	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		34,463.1121	34,463.1121	0.7876		34,482.8007
Total	**15.7462**	**131.2476**	**124.1150**	**0.7661**	**54.9123**	**0.4000**	**55.3122**	**14.8046**	**0.3731**	**15.1778**		**78,794.4349**	**78,794.4349**	**2.2313**		**78,850.2179**

Mitigated Construction On-Site

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

3.6 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0678	123.6012	26.0000	0.4205	10.5854	0.1437	10.7291	3.0471	0.1374	3.1845		44,331.3228	44,331.3228	1.4438		44,367.4171
Worker	12.6784	7.6464	98.1150	0.3456	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		34,463.1121	34,463.1121	0.7876		34,482.8007
Total	**15.7462**	**131.2476**	**124.1150**	**0.7661**	**54.9123**	**0.4000**	**55.3122**	**14.8046**	**0.3731**	**15.1778**		**78,794.4349**	**78,794.4349**	**2.2313**		**78,850.2179**

3.6 Building Construction - 2030

Unmitigated Construction On-Site

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

3.6 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0032	122.2418	25.4581	0.4194	10.5858	0.1380	10.7238	3.0472	0.1319	3.1791		44,219.8691	44,219.8691	1.4261		44,255.5222
Worker	11.7047	6.9280	91.2293	0.3364	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		33,555.8208	33,555.8208	0.7118		33,573.6166
Total	**14.7079**	**129.1699**	**116.6874**	**0.7558**	**54.9126**	**0.3764**	**55.2890**	**14.8047**	**0.3512**	**15.1560**		**77,775.6899**	**77,775.6899**	**2.1380**		**77,829.1388**

Mitigated Construction On-Site

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

3.6 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0032	122.2418	25.4581	0.4194	10.5858	0.1380	10.7238	3.0472	0.1319	3.1791		44,219.8691	44,219.8691	1.4261		44,255.5222
Worker	11.7047	6.9280	91.2293	0.3364	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		33,555.8208	33,555.8208	0.7118		33,573.6166
Total	**14.7079**	**129.1699**	**116.6874**	**0.7558**	**54.9126**	**0.3764**	**55.2890**	**14.8047**	**0.3512**	**15.1560**		**77,775.6899**	**77,775.6899**	**2.1380**		**77,829.1388**

3.6 Building Construction - 2031

Unmitigated Construction On-Site

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

3.6 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9496	121.0727	25.0028	0.4186	10.5861	0.1331	10.7192	3.0473	0.1273	3.1746		44,139.06 37	44,139.06 37	1.4135		44,174.40 21
Worker	10.6693	6.2314	84.5427	0.3283	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		32,754.50 54	32,754.50 54	0.6387		32,770.47 38
Total	**13.6190**	**127.3041**	**109.5455**	**0.7469**	**54.9130**	**0.3550**	**55.2679**	**14.8049**	**0.3313**	**15.1362**		**76,893.56 91**	**76,893.56 91**	**2.0523**		**76,944.87 59**

Mitigated Construction On-Site

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

3.6 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9496	121.0727	25.0028	0.4186	10.5861	0.1331	10.7192	3.0473	0.1273	3.1746		44,139.06 37	44,139.06 37	1.4135		44,174.40 21
Worker	10.6693	6.2314	84.5427	0.3283	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		32,754.50 54	32,754.50 54	0.6387		32,770.47 38
Total	**13.6190**	**127.3041**	**109.5455**	**0.7469**	**54.9130**	**0.3550**	**55.2679**	**14.8049**	**0.3313**	**15.1362**		**76,893.56 91**	**76,893.56 91**	**2.0523**		**76,944.87 59**

3.6 Building Construction - 2032

Unmitigated Construction On-Site

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

3.6 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9053	120.0470	24.6614	0.4182	10.5864	0.1287	10.7151	3.0474	0.1230	3.1705		44,092.1424	44,092.1424	1.4013		44,127.1754
Worker	9.7471	5.6300	78.7189	0.3212	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		32,051.3484	32,051.3484	0.5752		32,065.7275
Total	**12.6524**	**125.6770**	**103.3803**	**0.7393**	**54.9133**	**0.3353**	**55.2486**	**14.8050**	**0.3131**	**15.1181**		**76,143.4908**	**76,143.4908**	**1.9765**		**76,192.9029**

Mitigated Construction On-Site

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

3.6 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9053	120.0470	24.6614	0.4182	10.5864	0.1287	10.7151	3.0474	0.1230	3.1705		44,092.1424	44,092.1424	1.4013		44,127.1754
Worker	9.7471	5.6300	78.7189	0.3212	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		32,051.3484	32,051.3484	0.5752		32,065.7275
Total	**12.6524**	**125.6770**	**103.3803**	**0.7393**	**54.9133**	**0.3353**	**55.2486**	**14.8050**	**0.3131**	**15.1181**		**76,143.4908**	**76,143.4908**	**1.9765**		**76,192.9029**

3.6 Building Construction - 2033

Unmitigated Construction On-Site

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

3.6 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8710	119.1470	24.3941	0.4179	10.5867	0.1248	10.7114	3.0475	0.1192	3.1668		44,068.4894	44,068.4894	1.3921		44,103.2928
Worker	8.9570	5.1219	73.7653	0.3150	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		31,437.7685	31,437.7685	0.5209		31,450.7919
Total	**11.8280**	**124.2689**	**98.1593**	**0.7329**	**54.9135**	**0.3177**	**55.2312**	**14.8051**	**0.2967**	**15.1018**		**75,506.2579**	**75,506.2579**	**1.9131**		**75,554.0846**

Mitigated Construction On-Site

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

3.6 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8710	119.1470	24.3941	0.4179	10.5867	0.1248	10.7114	3.0475	0.1192	3.1668		44,068.4894	44,068.4894	1.3921		44,103.2928
Worker	8.9570	5.1219	73.7653	0.3150	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		31,437.7685	31,437.7685	0.5209		31,450.7919
Total	**11.8280**	**124.2689**	**98.1593**	**0.7329**	**54.9135**	**0.3177**	**55.2312**	**14.8051**	**0.2967**	**15.1018**		**75,506.2579**	**75,506.2579**	**1.9131**		**75,554.0846**

3.6 Building Construction - 2034

Unmitigated Construction On-Site

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

3.6 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8394	118.3729	24.1375	0.4178	10.5869	0.1212	10.7081	3.0476	0.1158	3.1634		44,061.8147	44,061.8147	1.3835		44,096.4020
Worker	8.3002	4.7093	69.2265	0.3095	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		30,902.3834	30,902.3834	0.4714		30,914.1683
Total	**11.1396**	**123.0822**	**93.3640**	**0.7274**	**54.9138**	**0.3016**	**55.2154**	**14.8052**	**0.2818**	**15.0870**		**74,964.1981**	**74,964.1981**	**1.8549**		**75,010.5703**

Mitigated Construction On-Site

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

3.6 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8394	118.3729	24.1375	0.4178	10.5869	0.1212	10.7081	3.0476	0.1158	3.1634		44,061.8147	44,061.8147	1.3835		44,096.4020
Worker	8.3002	4.7093	69.2265	0.3095	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		30,902.3834	30,902.3834	0.4714		30,914.1683
Total	**11.1396**	**123.0822**	**93.3640**	**0.7274**	**54.9138**	**0.3016**	**55.2154**	**14.8052**	**0.2818**	**15.0870**		**74,964.1981**	**74,964.1981**	**1.8549**		**75,010.5703**

3.6 Building Construction - 2035

Unmitigated Construction On-Site

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

3.6 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.27 51	44,065.27 51	1.3776		44,099.71 60
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.57 12	30,440.57 12	0.4282		30,451.27 55
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.84 63**	**74,505.84 63**	**1.8058**		**74,550.99 14**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

3.6 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8122	117.7340	23.9192	0.4179	10.5871	0.1182	10.7053	3.0477	0.1130	3.1607		44,065.2751	44,065.2751	1.3776		44,099.7160
Worker	7.7188	4.3828	65.2685	0.3049	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		30,440.5712	30,440.5712	0.4282		30,451.2755
Total	**10.5310**	**122.1168**	**89.1877**	**0.7227**	**54.9140**	**0.2873**	**55.2012**	**14.8052**	**0.2685**	**15.0737**		**74,505.8463**	**74,505.8463**	**1.8058**		**74,550.9914**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**33.6778**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7652	3.8367	41.4591	0.0960	8.8637	0.0766	8.9404	2.3511	0.0707	2.4218		9,545.590 5	9,545.590 5	0.4076		9,555.779 6
Total	**4.7652**	**3.8367**	**41.4591**	**0.0960**	**8.8637**	**0.0766**	**8.9404**	**2.3511**	**0.0707**	**2.4218**		**9,545.590 5**	**9,545.590 5**	**0.4076**		**9,555.779 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**33.6778**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7652	3.8367	41.4591	0.0960	8.8637	0.0766	8.9404	2.3511	0.0707	2.4218		9,545.590 5	9,545.590 5	0.4076		9,555.779 6
Total	**4.7652**	**3.8367**	**41.4591**	**0.0960**	**8.8637**	**0.0766**	**8.9404**	**2.3511**	**0.0707**	**2.4218**		**9,545.590 5**	**9,545.590 5**	**0.4076**		**9,555.779 6**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**33.6545**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.3952	3.4249	37.7647	0.0927	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		9,225.769 2	9,225.769 2	0.3635		9,234.857 4
Total	**4.3952**	**3.4249**	**37.7647**	**0.0927**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**9,225.769 2**	**9,225.769 2**	**0.3635**		**9,234.857 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**33.6545**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.3952	3.4249	37.7647	0.0927	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		9,225.769 2	9,225.769 2	0.3635		9,234.857 4
Total	**4.3952**	**3.4249**	**37.7647**	**0.0927**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**9,225.769 2**	**9,225.769 2**	**0.3635**		**9,234.857 4**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**33.6401**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.0741	3.0694	34.5009	0.0894	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,901.002 7	8,901.002 7	0.3253		8,909.134 4
Total	**4.0741**	**3.0694**	**34.5009**	**0.0894**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,901.002 7**	**8,901.002 7**	**0.3253**		**8,909.134 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**33.6401**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.0741	3.0694	34.5009	0.0894	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,901.0027	8,901.0027	0.3253		8,909.1344
Total	**4.0741**	**3.0694**	**34.5009**	**0.0894**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,901.0027**	**8,901.0027**	**0.3253**		**8,909.1344**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**33.6272**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.7796	2.7516	31.4682	0.0861	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,571.115 3	8,571.115 3	0.2905		8,578.376 8
Total	**3.7796**	**2.7516**	**31.4682**	**0.0861**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,571.115 3**	**8,571.115 3**	**0.2905**		**8,578.376 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**33.6272**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.7796	2.7516	31.4682	0.0861	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,571.1153	8,571.1153	0.2905		8,578.3768
Total	**3.7796**	**2.7516**	**31.4682**	**0.0861**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,571.1153**	**8,571.1153**	**0.2905**		**8,578.3768**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**33.6163**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5205	2.4749	28.9056	0.0827	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		8,241.197 0	8,241.197 0	0.2604		8,247.707 1
Total	**3.5205**	**2.4749**	**28.9056**	**0.0827**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**8,241.197 0**	**8,241.197 0**	**0.2604**		**8,247.707 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**33.6163**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.5205	2.4749	28.9056	0.0827	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		8,241.197 0	8,241.197 0	0.2604		8,247.707 1
Total	**3.5205**	**2.4749**	**28.9056**	**0.0827**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**8,241.197 0**	**8,241.197 0**	**0.2604**		**8,247.707 1**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3007	2.2399	26.6456	0.0794	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,914.594 3	7,914.594 3	0.2353		7,920.477 3
Total	**3.3007**	**2.2399**	**26.6456**	**0.0794**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,914.594 3**	**7,914.594 3**	**0.2353**		**7,920.477 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.3007	2.2399	26.6456	0.0794	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,914.594 3	7,914.594 3	0.2353		7,920.477 3
Total	**3.3007**	**2.2399**	**26.6456**	**0.0794**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,914.594 3**	**7,914.594 3**	**0.2353**		**7,920.477 3**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1022	2.0329	24.5154	0.0761	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,587.536 4	7,587.536 4	0.2113		7,592.818 5
Total	**3.1022**	**2.0329**	**24.5154**	**0.0761**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,587.536 4**	**7,587.536 4**	**0.2113**		**7,592.818 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.1022	2.0329	24.5154	0.0761	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,587.536 4	7,587.536 4	0.2113		7,592.818 5
Total	**3.1022**	**2.0329**	**24.5154**	**0.0761**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,587.536 4**	**7,587.536 4**	**0.2113**		**7,592.818 5**

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9171	1.8474	22.7197	0.0735	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		7,327.225 5	7,327.225 5	0.1914		7,332.010 0
Total	**2.9171**	**1.8474**	**22.7197**	**0.0735**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**7,327.225 5**	**7,327.225 5**	**0.1914**		**7,332.010 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.9171	1.8474	22.7197	0.0735	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		7,327.2255	7,327.2255	0.1914		7,332.0100
Total	**2.9171**	**1.8474**	**22.7197**	**0.0735**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**7,327.2255**	**7,327.2255**	**0.1914**		**7,332.0100**

3.7 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7315	1.6828	21.1414	0.0712	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		7,096.308 1	7,096.308 1	0.1742		7,100.662 0
Total	**2.7315**	**1.6828**	**21.1414**	**0.0712**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**7,096.308 1**	**7,096.308 1**	**0.1742**		**7,100.662 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.7315	1.6828	21.1414	0.0712	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		7,096.308 1	7,096.308 1	0.1742		7,100.662 0
Total	**2.7315**	**1.6828**	**21.1414**	**0.0712**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**7,096.308 1**	**7,096.308 1**	**0.1742**		**7,100.662 0**

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5352	1.5290	19.6194	0.0691	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,891.345 1	6,891.345 1	0.1575		6,895.282 1
Total	**2.5352**	**1.5290**	**19.6194**	**0.0691**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,891.345 1**	**6,891.345 1**	**0.1575**		**6,895.282 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5352	1.5290	19.6194	0.0691	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,891.345 1	6,891.345 1	0.1575		6,895.282 1
Total	**2.5352**	**1.5290**	**19.6194**	**0.0691**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,891.345 1**	**6,891.345 1**	**0.1575**		**6,895.282 1**

3.7 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3405	1.3854	18.2425	0.0673	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,709.920 4	6,709.920 4	0.1423		6,713.478 9
Total	**2.3405**	**1.3854**	**18.2425**	**0.0673**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,709.920 4**	**6,709.920 4**	**0.1423**		**6,713.478 9**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3405	1.3854	18.2425	0.0673	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,709.920 4	6,709.920 4	0.1423		6,713.478 9
Total	**2.3405**	**1.3854**	**18.2425**	**0.0673**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,709.920 4**	**6,709.920 4**	**0.1423**		**6,713.478 9**

3.7 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1335	1.2461	16.9054	0.0656	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,549.687 1	6,549.687 1	0.1277		6,552.880 1
Total	**2.1335**	**1.2461**	**16.9054**	**0.0656**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,549.687 1**	**6,549.687 1**	**0.1277**		**6,552.880 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1335	1.2461	16.9054	0.0656	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,549.687 1	6,549.687 1	0.1277		6,552.880 1
Total	**2.1335**	**1.2461**	**16.9054**	**0.0656**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,549.687 1**	**6,549.687 1**	**0.1277**		**6,552.880 1**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9491	1.1258	15.7409	0.0642	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		6,409.0817	6,409.0817	0.1150		6,411.9570
Total	**1.9491**	**1.1258**	**15.7409**	**0.0642**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**6,409.0817**	**6,409.0817**	**0.1150**		**6,411.9570**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9491	1.1258	15.7409	0.0642	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		6,409.081 7	6,409.081 7	0.1150		6,411.957 0
Total	**1.9491**	**1.1258**	**15.7409**	**0.0642**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**6,409.081 7**	**6,409.081 7**	**0.1150**		**6,411.957 0**

3.7 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7911	1.0242	14.7503	0.0630	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		6,286.388 5	6,286.388 5	0.1042		6,288.992 7
Total	**1.7911**	**1.0242**	**14.7503**	**0.0630**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**6,286.388 5**	**6,286.388 5**	**0.1042**		**6,288.992 7**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7911	1.0242	14.7503	0.0630	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		6,286.388 5	6,286.388 5	0.1042		6,288.992 7
Total	**1.7911**	**1.0242**	**14.7503**	**0.0630**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**6,286.388 5**	**6,286.388 5**	**0.1042**		**6,288.992 7**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6597	0.9417	13.8427	0.0619	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		6,179.331 3	6,179.331 3	0.0943		6,181.687 8
Total	**1.6597**	**0.9417**	**13.8427**	**0.0619**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**6,179.331 3**	**6,179.331 3**	**0.0943**		**6,181.687 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.6597	0.9417	13.8427	0.0619	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		6,179.331 3	6,179.331 3	0.0943		6,181.687 8
Total	**1.6597**	**0.9417**	**13.8427**	**0.0619**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**6,179.331 3**	**6,179.331 3**	**0.0943**		**6,181.687 8**

3.7 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**33.5535**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**33.5535**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.5435	0.8764	13.0513	0.0610	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		6,086.986 0	6,086.986 0	0.0856		6,089.126 4
Total	**1.5435**	**0.8764**	**13.0513**	**0.0610**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**6,086.986 0**	**6,086.986 0**	**0.0856**		**6,089.126 4**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	39.5044	275.4922	325.3872	1.7707	173.3617	0.6332	173.9949	46.3766	0.5884	46.9651		181,020.1771	181,020.1771	6.6244		181,185.7862
Unmitigated	41.7127	283.5432	366.0289	2.0144	202.7623	0.7181	203.4804	54.2417	0.6676	54.9093		205,817.7982	205,817.7982	7.2591		205,999.2766

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
City Park	94.50	1,137.50	837.00	504,217	431,106
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
City Park	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Condo/Townhouse	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Elementary School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
General Office Building	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Junior High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Regional Shopping Center	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Single Family Housing	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Supermarket	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828
NaturalGas Unmitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2153.95	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6413.45	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86244.6	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45730.2	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2408.96	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3510.58	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.15395	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148.143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68.177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6.41345	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86.2446	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45.7302	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2.40896	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108.377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3.51058	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	246.4212	25.3409	365.9781	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.6258	27,737.6258	1.1355	0.4967	27,914.0257
Unmitigated	1,170.9221	31.5360	1,533.4281	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.3729	18,803.0611	36,579.4340	22.4030	1.4967	37,585.5372

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	213.2902					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	911.0458	27.4171	1,176.480 7	2.2640		166.4518	166.4518		166.4518	166.4518	17,776.37 29	18,157.34 12	35,933.71 40	21.7868	1.4967	36,924.41 10
Landscaping	10.7046	4.1189	356.9475	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1262
Total	**1,170.922 1**	**31.5360**	**1,533.428 1**	**2.2829**		**168.4390**	**168.4390**		**168.4390**	**168.4390**	**17,776.37 29**	**18,803.06 11**	**36,579.43 40**	**22.4030**	**1.4967**	**37,585.53 72**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	197.3517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.4834	21.2220	9.0306	0.1355		1.7158	1.7158		1.7158	1.7158	0.0000	27,091.9059	27,091.9059	0.5193	0.4967	27,252.8995
Landscaping	10.7046	4.1189	356.9475	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1262
Total	**246.4212**	**25.3409**	**365.9781**	**0.1544**		**3.7031**	**3.7031**		**3.7031**	**3.7031**	**0.0000**	**27,737.6258**	**27,737.6258**	**1.1355**	**0.4967**	**27,914.0257**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Salinas WASP Model - Year 2050 - 2016.3.2

Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	143.00	1000sqft	3.28	143,000.00	0
Elementary School	1,349.49	1000sqft	30.98	1,349,490.00	0
High School	1,707.12	1000sqft	39.19	1,707,120.00	0
Junior High School	905.18	1000sqft	20.78	905,180.00	0
City Park	50.00	Acre	50.00	2,178,000.00	0
Apartments Mid Rise	91.00	Dwelling Unit	2.39	91,000.00	260
Condo/Townhouse	2,888.00	Dwelling Unit	180.50	2,888,000.00	8260
Single Family Housing	1,361.00	Dwelling Unit	441.88	2,449,800.00	3892
Regional Shopping Center	371.00	1000sqft	8.52	371,000.00	0
Supermarket	57.00	1000sqft	1.31	57,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2050
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	217.5	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor derived from the PG&E 2020 Projected Emission Factor (CO2 Factor: 290 lb/MWh), adjusted for 2050 based on the increased effect of the RPS by 2050 (CO2 Factor : 217.5022)

Land Use - Land Use Types and sizes provided by project applicant.

Construction Phase - Based on information provided by the project applicant.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading - Maximum of 797 acres graded (total area of the site)

Vehicle Trips - Based on the trip rates provided within the Fehr & Peers TIA. Trip lengths modified to reflect what is provided with Fehr & Peers TIA (5.42 VMT/trip).

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Provide traffic calming measures for 50% of streets & intersections. 18 intersections/sq. mile. 3 miles to Salinas dntn. Approx. 0.5 miles to nearest trnst station. Connect project site & connect offsite.

Area Mitigation - Use Low VOC Paint

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	480.00	64.00
tblConstructionPhase	NumDays	1,240.00	65.00
tblConstructionPhase	NumDays	880.00	87.00
tblConstructionPhase	NumDays	12,400.00	4,152.00
tblConstructionPhase	NumDays	880.00	3,917.00
tblGrading	AcresOfGrading	162.50	797.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	217.5
tblVehicleTrips	CC_TL	7.30	5.42

tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CC_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CNW_TL	7.30	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	CW_TL	9.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TL	7.50	5.42
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HO_TTP	37.20	37.00
tblVehicleTrips	HS_TL	7.30	5.42

tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TL	7.30	5.42
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HS_TTP	18.80	19.00
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	HW_TL	10.80	5.42
tblVehicleTrips	ST_TR	0.00	1.73
tblVehicleTrips	ST_TR	4.37	0.26
tblVehicleTrips	ST_TR	0.00	1.44
tblVehicleTrips	SU_TR	0.00	1.72
tblVehicleTrips	SU_TR	1.79	0.26
tblVehicleTrips	SU_TR	0.00	1.44
tblVehicleTrips	WD_TR	15.43	1.72
tblVehicleTrips	WD_TR	12.89	0.26
tblVehicleTrips	WD_TR	13.78	1.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Salinas WASP Model - Year 2050 - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8452	54.6216	34.2317	0.0637	19.1898	2.3917	21.5739	9.9699	2.2004	12.1703	0.0000	6,310.8385	6,310.8385	1.9510	0.0000	6,359.6131
2020	74.1389	243.5694	320.5608	1.0061	63.7694	2.7619	66.5313	17.1533	2.6129	19.7662	0.0000	102,406.9410	102,406.9410	5.2409	0.0000	102,537.9629
2021	70.2468	221.9339	290.9323	0.9840	63.7704	2.0566	65.8271	17.1537	1.9404	19.0941	0.0000	100,232.5736	100,232.5736	4.8815	0.0000	100,354.6104
2022	67.4590	207.6738	266.1734	0.9616	63.7714	1.8069	65.5783	17.1540	1.7043	18.8584	0.0000	98,016.0437	98,016.0437	4.5865	0.0000	98,130.7070
2023	64.0757	174.3515	241.0643	0.9350	63.7723	1.3951	65.1674	17.1544	1.3121	18.4665	0.0000	95,364.1176	95,364.1176	3.9835	0.0000	95,463.7044
2024	62.0885	168.0064	222.8450	0.9132	63.7733	1.2709	65.0442	17.1547	1.1943	18.3490	0.0000	93,194.6668	93,194.6668	3.7805	0.0000	93,289.1804
2025	60.3807	162.3043	207.1271	0.8917	63.7741	1.1531	64.9271	17.1550	1.0828	18.2378	0.0000	91,064.2436	91,064.2436	3.6084	0.0000	91,154.4547
2026	58.9916	158.3720	192.9904	0.8709	63.7746	1.1271	64.9017	17.1552	1.0584	18.2136	0.0000	89,001.7902	89,001.7902	3.4502	0.0000	89,088.0456
2027	57.6968	154.8023	180.9016	0.8542	63.7752	1.0963	64.8715	17.1554	1.0296	18.1850	0.0000	87,340.6113	87,340.6113	3.3157	0.0000	87,423.5047
2028	56.4001	151.7459	170.5350	0.8395	63.7756	1.0638	64.8394	17.1555	0.9993	18.1548	0.0000	85,877.5659	85,877.5659	3.1947	0.0000	85,957.4321
2029	55.0406	148.9304	160.6270	0.8264	63.7760	1.0336	64.8096	17.1557	0.9712	18.1269	0.0000	84,581.4718	84,581.4718	3.0812	0.0000	84,658.5029
2030	53.6049	141.6065	151.8537	0.8190	63.7764	0.5955	64.3718	17.1558	0.5663	17.7222	0.0000	83,790.3962	83,790.3962	2.4868	0.0000	83,852.5664
2031	52.1876	139.3327	143.3311	0.8090	63.7767	0.5704	64.3471	17.1559	0.5431	17.6991	0.0000	82,805.3188	82,805.3188	2.3896	0.0000	82,865.0600
2032	50.9295	137.3512	135.9817	0.8005	63.7770	0.5476	64.3246	17.1561	0.5219	17.6780	0.0000	81,961.9817	81,961.9817	2.3039	0.0000	82,019.5783
2033	49.8575	135.6401	129.7657	0.7932	63.7773	0.5270	64.3043	17.1561	0.5028	17.6590	0.0000	81,240.6064	81,240.6064	2.2323	0.0000	81,296.4132
2034	48.9751	134.2018	124.0704	0.7869	63.7775	0.5082	64.2857	17.1562	0.4854	17.6416	0.0000	80,623.1146	80,623.1146	2.1666	0.0000	80,677.2806
2035	48.0924	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
Maximum	**74.1389**	**243.5694**	**320.5608**	**1.0061**	**63.7777**	**2.7619**	**66.5313**	**17.1563**	**2.6129**	**19.7662**	**0.0000**	**102,406.9410**	**102,406.9410**	**5.2409**	**0.0000**	**102,537.9629**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

Salinas WASP Model - Year 2050 - 2016.3.2 - Monterey County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.8452	54.6216	34.2317	0.0637	8.7258	2.3917	11.1099	4.5080	2.2004	6.7084	0.0000	6,310.8385	6,310.8385	1.9510	0.0000	6,359.6131
2020	74.1389	243.5694	320.5608	1.0061	63.7694	2.7619	66.5313	17.1533	2.6129	19.7662	0.0000	102,406.9410	102,406.9410	5.2409	0.0000	102,537.9629
2021	70.2468	221.9339	290.9323	0.9840	63.7704	2.0566	65.8271	17.1537	1.9404	19.0941	0.0000	100,232.5736	100,232.5736	4.8815	0.0000	100,354.6104
2022	67.4590	207.6738	266.1734	0.9616	63.7714	1.8069	65.5783	17.1540	1.7043	18.8584	0.0000	98,016.0437	98,016.0437	4.5865	0.0000	98,130.7070
2023	64.0757	174.3515	241.0643	0.9350	63.7723	1.3951	65.1674	17.1544	1.3121	18.4665	0.0000	95,364.1176	95,364.1176	3.9835	0.0000	95,463.7044
2024	62.0885	168.0064	222.8450	0.9132	63.7733	1.2709	65.0442	17.1547	1.1943	18.3490	0.0000	93,194.6668	93,194.6668	3.7805	0.0000	93,289.1804
2025	60.3807	162.3043	207.1271	0.8917	63.7741	1.1531	64.9271	17.1550	1.0828	18.2378	0.0000	91,064.2436	91,064.2436	3.6084	0.0000	91,154.4547
2026	58.9916	158.3720	192.9904	0.8709	63.7746	1.1271	64.9017	17.1552	1.0584	18.2136	0.0000	89,001.7902	89,001.7902	3.4502	0.0000	89,088.0456
2027	57.6968	154.8023	180.9016	0.8542	63.7752	1.0963	64.8715	17.1554	1.0296	18.1850	0.0000	87,340.6113	87,340.6113	3.3157	0.0000	87,423.5047
2028	56.4001	151.7459	170.5350	0.8395	63.7756	1.0638	64.8394	17.1555	0.9993	18.1548	0.0000	85,877.5659	85,877.5659	3.1947	0.0000	85,957.4321
2029	55.0406	148.9304	160.6270	0.8264	63.7760	1.0336	64.8096	17.1557	0.9712	18.1269	0.0000	84,581.4718	84,581.4718	3.0812	0.0000	84,658.5029
2030	53.6049	141.6065	151.8537	0.8190	63.7764	0.5955	64.3718	17.1558	0.5663	17.7222	0.0000	83,790.3962	83,790.3962	2.4868	0.0000	83,852.5664
2031	52.1876	139.3327	143.3311	0.8090	63.7767	0.5704	64.3471	17.1559	0.5431	17.6991	0.0000	82,805.3188	82,805.3188	2.3896	0.0000	82,865.0600
2032	50.9295	137.3512	135.9817	0.8005	63.7770	0.5476	64.3246	17.1561	0.5219	17.6780	0.0000	81,961.9817	81,961.9817	2.3039	0.0000	82,019.5783
2033	49.8575	135.6401	129.7657	0.7932	63.7773	0.5270	64.3043	17.1561	0.5028	17.6590	0.0000	81,240.6064	81,240.6064	2.2323	0.0000	81,296.4132
2034	48.9751	134.2018	124.0704	0.7869	63.7775	0.5082	64.2857	17.1562	0.4854	17.6416	0.0000	80,623.1146	80,623.1146	2.1666	0.0000	80,677.2806
2035	48.0924	132.1610	119.0724	0.7816	63.7777	0.4233	64.2010	17.1563	0.4017	17.5580	0.0000	80,098.6249	80,098.6249	2.1020	0.0000	80,151.1758
Maximum	**74.1389**	**243.5694**	**320.5608**	**1.0061**	**63.7777**	**2.7619**	**66.5313**	**17.1563**	**2.6129**	**19.7662**	**0.0000**	**102,406.9410**	**102,406.9410**	**5.2409**	**0.0000**	**102,537.9629**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	1.01	0.00	0.99	1.92	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1,170.922 1	31.5360	1,533.428 1	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.37 29	18,803.06 11	36,579.43 40	22.4030	1.4967	37,585.53 72
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	36.6570	284.8497	385.6702	1.9022	202.7623	0.7209	203.4832	54.2417	0.6703	54.9119		194,365.3 555	194,365.3 555	7.7223		194,558.4 124
Total	**1,212.660 2**	**361.0561**	**1,946.741 1**	**4.4623**	**202.7623**	**172.6706**	**375.4328**	**54.2417**	**172.6199**	**226.8616**	**17,776.37 29**	**268,598.8 043**	**286,375.1 772**	**31.1877**	**2.5130**	**287,903.7 324**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	246.4212	25.3409	365.9781	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.62 58	27,737.62 58	1.1355	0.4967	27,914.02 57
Energy	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.38 77	55,430.38 77	1.0624	1.0162	55,759.78 28
Mobile	34.3968	275.8879	346.9805	1.6695	173.3617	0.6360	173.9977	46.3766	0.5911	46.9677		170,671.9 935	170,671.9 935	7.0842		170,849.0 987
Total	**285.8991**	**345.8991**	**740.6014**	**2.1011**	**173.3617**	**7.8496**	**181.2114**	**46.3766**	**7.8048**	**54.1814**	**0.0000**	**253,840.0 071**	**253,840.0 071**	**9.2821**	**1.5129**	**254,522.9 072**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	76.42	4.20	61.96	52.92	14.50	95.45	51.73	14.50	95.48	76.12	100.00	5.49	11.36	70.24	39.80	11.59

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2019	3/29/2019	5	64	
2	Grading	Grading	3/31/2019	6/28/2019	5	65	
3	Underground Utilities	Trenching	7/1/2019	8/30/2019	5	45	
4	Paving	Paving	9/2/2019	12/31/2019	5	87	
5	Building Construction	Building Construction	1/2/2020	11/30/2035	5	4152	
6	Architectural Coating	Architectural Coating	2/1/2020	2/6/2035	5	3917	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 797

Acres of Paving: 0

Residential Indoor: 10,993,320; Residential Outdoor: 3,664,440; Non-Residential Indoor: 6,799,185; Non-Residential Outdoor: 2,266,395; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Salinas WASP Model - Year 2050 - 2016.3.2 - Monterey County, Winter

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	5,396.00	1,564.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,079.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Underground Utilities			0.00	0.00	10.80	7.30				

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0957	0.0912	0.7694	1.5500e-003	0.1479	1.3300e-003	0.1492	0.0392	1.2300e-003	0.0405		153.7371	153.7371	7.5100e-003		153.9249
Total	**0.0957**	**0.0912**	**0.7694**	**1.5500e-003**	**0.1479**	**1.3300e-003**	**0.1492**	**0.0392**	**1.2300e-003**	**0.0405**		**153.7371**	**153.7371**	**7.5100e-003**		**153.9249**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.1298**	**2.3904**	**10.5202**	**4.4688**	**2.1991**	**6.6679**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.2 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0957	0.0912	0.7694	1.5500e-003	0.1479	1.3300e-003	0.1492	0.0392	1.2300e-003	0.0405		153.7371	153.7371	7.5100e-003		153.9249
Total	**0.0957**	**0.0912**	**0.7694**	**1.5500e-003**	**0.1479**	**1.3300e-003**	**0.1492**	**0.0392**	**1.2300e-003**	**0.0405**		**153.7371**	**153.7371**	**7.5100e-003**		**153.9249**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.0255	0.0000	19.0255	4.7143	0.0000	4.7143			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**19.0255**	**2.3827**	**21.4081**	**4.7143**	**2.1920**	**6.9063**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1063	0.1014	0.8549	1.7200e-003	0.1643	1.4800e-003	0.1658	0.0436	1.3600e-003	0.0449		170.8190	170.8190	8.3500e-003		171.0277
Total	**0.1063**	**0.1014**	**0.8549**	**1.7200e-003**	**0.1643**	**1.4800e-003**	**0.1658**	**0.0436**	**1.3600e-003**	**0.0449**		**170.8190**	**170.8190**	**8.3500e-003**		**171.0277**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.5615	0.0000	8.5615	2.1214	0.0000	2.1214			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.5615**	**2.3827**	**10.9441**	**2.1214**	**2.1920**	**4.3135**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1063	0.1014	0.8549	1.7200e-003	0.1643	1.4800e-003	0.1658	0.0436	1.3600e-003	0.0449		170.8190	170.8190	8.3500e-003		171.0277
Total	**0.1063**	**0.1014**	**0.8549**	**1.7200e-003**	**0.1643**	**1.4800e-003**	**0.1658**	**0.0436**	**1.3600e-003**	**0.0449**		**170.8190**	**170.8190**	**8.3500e-003**		**171.0277**

3.4 Underground Utilities - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.4 Underground Utilities - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**			**0.0000**			**0.0000**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4544**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.5 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0797	0.0760	0.6412	1.2900e-003	0.1232	1.1100e-003	0.1243	0.0327	1.0200e-003	0.0337		128.1143	128.1143	6.2600e-003		128.2708
Total	**0.0797**	**0.0760**	**0.6412**	**1.2900e-003**	**0.1232**	**1.1100e-003**	**0.1243**	**0.0327**	**1.0200e-003**	**0.0337**		**128.1143**	**128.1143**	**6.2600e-003**		**128.2708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4544**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.5 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0797	0.0760	0.6412	1.2900e-003	0.1232	1.1100e-003	0.1243	0.0327	1.0200e-003	0.0337		128.1143	128.1143	6.2600e-003		128.2708
Total	**0.0797**	**0.0760**	**0.6412**	**1.2900e-003**	**0.1232**	**1.1100e-003**	**0.1243**	**0.0327**	**1.0200e-003**	**0.0337**		**128.1143**	**128.1143**	**6.2600e-003**		**128.2708**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2170	193.7148	57.0693	0.4368	10.5788	1.0741	11.6530	3.0447	1.0275	4.0722		45,938.0264	45,938.0264	2.2646		45,994.6421
Worker	25.9377	24.1547	204.0160	0.4495	44.3269	0.3832	44.7100	11.7576	0.3534	12.1110		44,696.7167	44,696.7167	1.9431		44,745.2933
Total	**33.1547**	**217.8695**	**261.0853**	**0.8863**	**54.9057**	**1.4573**	**56.3630**	**14.8023**	**1.3809**	**16.1832**		**90,634.7432**	**90,634.7432**	**4.2077**		**90,739.9354**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.2170	193.7148	57.0693	0.4368	10.5788	1.0741	11.6530	3.0447	1.0275	4.0722		45,938.0264	45,938.0264	2.2646		45,994.6421
Worker	25.9377	24.1547	204.0160	0.4495	44.3269	0.3832	44.7100	11.7576	0.3534	12.1110		44,696.7167	44,696.7167	1.9431		44,745.2933
Total	**33.1547**	**217.8695**	**261.0853**	**0.8863**	**54.9057**	**1.4573**	**56.3630**	**14.8023**	**1.3809**	**16.1832**		**90,634.7432**	**90,634.7432**	**4.2077**		**90,739.9354**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

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

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9918	177.1067	50.3204	0.4331	10.5798	0.5598	11.1396	3.0451	0.5354	3.5804		45,560.55 75	45,560.55 75	2.1720		45,614.85 68
Worker	23.9171	21.5575	185.1883	0.4343	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		43,199.00 44	43,199.00 44	1.7285		43,242.21 76
Total	**29.9089**	**198.6642**	**235.5087**	**0.8673**	**54.9067**	**0.9299**	**55.8366**	**14.8026**	**0.8767**	**15.6794**		**88,759.56 19**	**88,759.56 19**	**3.9005**		**88,857.07 44**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9918	177.1067	50.3204	0.4331	10.5798	0.5598	11.1396	3.0451	0.5354	3.5804		45,560.55 75	45,560.55 75	2.1720		45,614.85 68
Worker	23.9171	21.5575	185.1883	0.4343	44.3269	0.3702	44.6970	11.7576	0.3414	12.0989		43,199.00 44	43,199.00 44	1.7285		43,242.21 76
Total	**29.9089**	**198.6642**	**235.5087**	**0.8673**	**54.9067**	**0.9299**	**55.8366**	**14.8026**	**0.8767**	**15.6794**		**88,759.56 19**	**88,759.56 19**	**3.9005**		**88,857.07 44**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

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

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.4912	167.4699	45.6523	0.4292	10.5808	0.4880	11.0688	3.0454	0.4667	3.5121		45,167.1410	45,167.1410	2.1053		45,219.7723
Worker	22.1851	19.3171	168.6253	0.4188	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		41,678.8882	41,678.8882	1.5426		41,717.4522
Total	**27.6764**	**186.7870**	**214.2776**	**0.8479**	**54.9077**	**0.8448**	**55.7525**	**14.8030**	**0.7957**	**15.5986**		**86,846.0292**	**86,846.0292**	**3.6478**		**86,937.2245**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.4912	167.4699	45.6523	0.4292	10.5808	0.4880	11.0688	3.0454	0.4667	3.5121		45,167.1410	45,167.1410	2.1053		45,219.7723
Worker	22.1851	19.3171	168.6253	0.4188	44.3269	0.3568	44.6837	11.7576	0.3289	12.0865		41,678.8882	41,678.8882	1.5426		41,717.4522
Total	**27.6764**	**186.7870**	**214.2776**	**0.8479**	**54.9077**	**0.8448**	**55.7525**	**14.8030**	**0.7957**	**15.5986**		**86,846.0292**	**86,846.0292**	**3.6478**		**86,937.2245**

3.6 Building Construction - 2023

Unmitigated Construction On-Site

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

3.6 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1472	137.8898	39.1835	0.4214	10.5817	0.2100	10.7918	3.0457	0.2008	3.2465		44,367.1372	44,367.1372	1.7121		44,409.9402
Worker	20.6077	17.3120	153.1928	0.4031	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		40,134.8417	40,134.8417	1.3723		40,169.1484
Total	**24.7549**	**155.2018**	**192.3763**	**0.8245**	**54.9086**	**0.5555**	**55.4641**	**14.8033**	**0.5192**	**15.3225**		**84,501.9789**	**84,501.9789**	**3.0844**		**84,579.0885**

Mitigated Construction On-Site

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

3.6 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1472	137.8898	39.1835	0.4214	10.5817	0.2100	10.7918	3.0457	0.2008	3.2465		44,367.1372	44,367.1372	1.7121		44,409.9402
Worker	20.6077	17.3120	153.1928	0.4031	44.3269	0.3455	44.6723	11.7576	0.3184	12.0759		40,134.8417	40,134.8417	1.3723		40,169.1484
Total	**24.7549**	**155.2018**	**192.3763**	**0.8245**	**54.9086**	**0.5555**	**55.4641**	**14.8033**	**0.5192**	**15.3225**		**84,501.9789**	**84,501.9789**	**3.0844**		**84,579.0885**

3.6 Building Construction - 2024

Unmitigated Construction On-Site

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

3.6 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9199	134.6639	36.5393	0.4183	10.5827	0.1949	10.7776	3.0461	0.1863	3.2324		44,050.1158	44,050.1158	1.6893		44,092.3475
Worker	19.2345	15.5670	140.2783	0.3875	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		38,590.6953	38,590.6953	1.2259		38,621.3437
Total	**23.1544**	**150.2310**	**176.8176**	**0.8058**	**54.9095**	**0.5298**	**55.4393**	**14.8036**	**0.4948**	**15.2984**		**82,640.8111**	**82,640.8111**	**2.9152**		**82,713.6912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

3.6 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.9199	134.6639	36.5393	0.4183	10.5827	0.1949	10.7776	3.0461	0.1863	3.2324		44,050.11 58	44,050.11 58	1.6893		44,092.34 75
Worker	19.2345	15.5670	140.2783	0.3875	44.3269	0.3348	44.6617	11.7576	0.3085	12.0660		38,590.69 53	38,590.69 53	1.2259		38,621.34 37
Total	**23.1544**	**150.2310**	**176.8176**	**0.8058**	**54.9095**	**0.5298**	**55.4393**	**14.8036**	**0.4948**	**15.2984**		**82,640.81 11**	**82,640.811 1**	**2.9152**		**82,713.69 12**

3.6 Building Construction - 2025

Unmitigated Construction On-Site

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

3.6 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7245	131.7855	34.3966	0.4154	10.5835	0.1808	10.7643	3.0464	0.1728	3.2192		43,752.8656	43,752.8656	1.6657		43,794.5082
Worker	18.0692	14.0868	129.0346	0.3720	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		37,062.3578	37,062.3578	1.1054		37,089.9928
Total	**21.7937**	**145.8723**	**163.4312**	**0.7874**	**54.9103**	**0.5085**	**55.4188**	**14.8039**	**0.4747**	**15.2786**		**80,815.2234**	**80,815.2234**	**2.7711**		**80,884.5010**

Mitigated Construction On-Site

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

3.6 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.7245	131.7855	34.3966	0.4154	10.5835	0.1808	10.7643	3.0464	0.1728	3.2192		43,752.8656	43,752.8656	1.6657		43,794.5082
Worker	18.0692	14.0868	129.0346	0.3720	44.3269	0.3277	44.6545	11.7576	0.3018	12.0594		37,062.3578	37,062.3578	1.1054		37,089.9928
Total	**21.7937**	**145.8723**	**163.4312**	**0.7874**	**54.9103**	**0.5085**	**55.4188**	**14.8039**	**0.4747**	**15.2786**		**80,815.2234**	**80,815.2234**	**2.7711**		**80,884.5010**

3.6 Building Construction - 2026

Unmitigated Construction On-Site

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

3.6 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5787	129.4168	32.8788	0.4132	10.5841	0.1710	10.7550	3.0466	0.1635	3.2100		43,527.9058	43,527.9058	1.6451		43,569.0321
Worker	17.0331	12.7837	118.5185	0.3566	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		35,531.0657	35,531.0657	0.9908		35,555.8345
Total	**20.6118**	**142.2005**	**151.3973**	**0.7697**	**54.9109**	**0.4852**	**55.3961**	**14.8041**	**0.4528**	**15.2569**		**79,058.9715**	**79,058.9715**	**2.6358**		**79,124.8667**

Mitigated Construction On-Site

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

3.6 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.5787	129.4168	32.8788	0.4132	10.5841	0.1710	10.7550	3.0466	0.1635	3.2100		43,527.90 58	43,527.90 58	1.6451		43,569.03 21
Worker	17.0331	12.7837	118.5185	0.3566	44.3269	0.3142	44.6411	11.7576	0.2894	12.0469		35,531.06 57	35,531.06 57	0.9908		35,555.83 45
Total	**20.6118**	**142.2005**	**151.3973**	**0.7697**	**54.9109**	**0.4852**	**55.3961**	**14.8041**	**0.4528**	**15.2569**		**79,058.97 15**	**79,058.97 15**	**2.6358**		**79,124.86 67**

3.6 Building Construction - 2027

Unmitigated Construction On-Site

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

3.6 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4524	127.2459	31.5112	0.4112	10.5846	0.1622	10.7468	3.0468	0.1550	3.2018		43,330.9692	43,330.9692	1.6249		43,371.5907
Worker	16.0593	11.6180	109.5840	0.3442	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		34,310.8262	34,310.8262	0.8955		34,333.2139
Total	**19.5117**	**138.8639**	**141.0951**	**0.7555**	**54.9114**	**0.4581**	**55.3695**	**14.8043**	**0.4274**	**15.2317**		**77,641.7953**	**77,641.7953**	**2.5204**		**77,704.8045**

Mitigated Construction On-Site

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

3.6 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.4524	127.2459	31.5112	0.4112	10.5846	0.1622	10.7468	3.0468	0.1550	3.2018		43,330.9692	43,330.9692	1.6249		43,371.5907
Worker	16.0593	11.6180	109.5840	0.3442	44.3269	0.2959	44.6228	11.7576	0.2724	12.0299		34,310.8262	34,310.8262	0.8955		34,333.2139
Total	**19.5117**	**138.8639**	**141.0951**	**0.7555**	**54.9114**	**0.4581**	**55.3695**	**14.8043**	**0.4274**	**15.2317**		**77,641.7953**	**77,641.7953**	**2.5204**		**77,704.8045**

3.6 Building Construction - 2028

Unmitigated Construction On-Site

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

3.6 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3480	125.4330	30.5378	0.4096	10.5850	0.1542	10.7392	3.0469	0.1474	3.1944		43,167.4239	43,167.4239	1.6019		43,207.4708
Worker	15.0657	10.5817	101.7559	0.3333	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		33,227.8759	33,227.8759	0.8138		33,248.2198
Total	**18.4137**	**136.0147**	**132.2938**	**0.7429**	**54.9119**	**0.4296**	**55.3415**	**14.8045**	**0.4008**	**15.2053**		**76,395.2998**	**76,395.2998**	**2.4156**		**76,455.6906**

Mitigated Construction On-Site

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

3.6 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3480	125.4330	30.5378	0.4096	10.5850	0.1542	10.7392	3.0469	0.1474	3.1944		43,167.4239	43,167.4239	1.6019		43,207.4708
Worker	15.0657	10.5817	101.7559	0.3333	44.3269	0.2754	44.6023	11.7576	0.2534	12.0110		33,227.8759	33,227.8759	0.8138		33,248.2198
Total	**18.4137**	**136.0147**	**132.2938**	**0.7429**	**54.9119**	**0.4296**	**55.3415**	**14.8045**	**0.4008**	**15.2053**		**76,395.2998**	**76,395.2998**	**2.4156**		**76,455.6906**

3.6 Building Construction - 2029

Unmitigated Construction On-Site

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

3.6 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2613	123.7826	29.7169	0.4082	10.5854	0.1470	10.7324	3.0471	0.1405	3.1876		43,025.71 47	43,025.71 47	1.5838		43,065.30 93
Worker	14.0049	9.6108	94.1831	0.3236	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		32,265.85 88	32,265.85 88	0.7343		32,284.21 69
Total	**17.2663**	**133.3934**	**123.9001**	**0.7318**	**54.9123**	**0.4033**	**55.3155**	**14.8046**	**0.3763**	**15.1809**		**75,291.57 35**	**75,291.57 35**	**2.3181**		**75,349.52 62**

Mitigated Construction On-Site

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

3.6 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2613	123.7826	29.7169	0.4082	10.5854	0.1470	10.7324	3.0471	0.1405	3.1876		43,025.7147	43,025.7147	1.5838		43,065.3093
Worker	14.0049	9.6108	94.1831	0.3236	44.3269	0.2563	44.5831	11.7576	0.2358	11.9933		32,265.8588	32,265.8588	0.7343		32,284.2169
Total	**17.2663**	**133.3934**	**123.9001**	**0.7318**	**54.9123**	**0.4033**	**55.3155**	**14.8046**	**0.3763**	**15.1809**		**75,291.5735**	**75,291.5735**	**2.3181**		**75,349.5262**

3.6 Building Construction - 2030

Unmitigated Construction On-Site

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

3.6 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1914	122.3711	29.1048	0.4071	10.5858	0.1410	10.7267	3.0472	0.1348	3.1820		42,916.0566	42,916.0566	1.5641		42,955.1598
Worker	12.9488	8.7041	87.3312	0.3149	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		31,413.7576	31,413.7576	0.6626		31,430.3216
Total	**16.1401**	**131.0751**	**116.4360**	**0.7221**	**54.9126**	**0.3794**	**55.2920**	**14.8047**	**0.3540**	**15.1588**		**74,329.8142**	**74,329.8142**	**2.2267**		**74,385.4814**

Mitigated Construction On-Site

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

3.6 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1914	122.3711	29.1048	0.4071	10.5858	0.1410	10.7267	3.0472	0.1348	3.1820		42,916.0566	42,916.0566	1.5641		42,955.1598
Worker	12.9488	8.7041	87.3312	0.3149	44.3269	0.2384	44.5652	11.7576	0.2193	11.9768		31,413.7576	31,413.7576	0.6626		31,430.3216
Total	**16.1401**	**131.0751**	**116.4360**	**0.7221**	**54.9126**	**0.3794**	**55.2920**	**14.8047**	**0.3540**	**15.1588**		**74,329.8142**	**74,329.8142**	**2.2267**		**74,385.4814**

3.6 Building Construction - 2031

Unmitigated Construction On-Site

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

3.6 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1333	121.1545	28.5916	0.4063	10.5861	0.1358	10.7219	3.0473	0.1298	3.1772		42,834.7031	42,834.7031	1.5502		42,873.4576
Worker	11.8161	7.8231	80.6565	0.3073	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		30,660.6311	30,660.6311	0.5932		30,675.4615
Total	**14.9494**	**128.9775**	**109.2481**	**0.7136**	**54.9130**	**0.3577**	**55.2706**	**14.8049**	**0.3339**	**15.1387**		**73,495.3342**	**73,495.3342**	**2.1434**		**73,548.9190**

Mitigated Construction On-Site

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

3.6 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1333	121.1545	28.5916	0.4063	10.5861	0.1358	10.7219	3.0473	0.1298	3.1772		42,834.70 31	42,834.70 31	1.5502		42,873.45 76
Worker	11.8161	7.8231	80.6565	0.3073	44.3269	0.2218	44.5487	11.7576	0.2040	11.9616		30,660.63 11	30,660.63 11	0.5932		30,675.46 15
Total	**14.9494**	**128.9775**	**109.2481**	**0.7136**	**54.9130**	**0.3577**	**55.2706**	**14.8049**	**0.3339**	**15.1387**		**73,495.33 42**	**73,495.33 42**	**2.1434**		**73,548.91 90**

3.6 Building Construction - 2032

Unmitigated Construction On-Site

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

3.6 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0853	120.0847	28.2105	0.4058	10.5864	0.1312	10.7176	3.0474	0.1254	3.1728		42,784.4834	42,784.4834	1.5366		42,822.8976
Worker	10.8076	7.0632	74.8494	0.3006	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		29,999.6795	29,999.6795	0.5331		30,013.0062
Total	**13.8929**	**127.1479**	**103.0599**	**0.7064**	**54.9133**	**0.3378**	**55.2511**	**14.8050**	**0.3155**	**15.1204**		**72,784.1629**	**72,784.1629**	**2.0696**		**72,835.9038**

Mitigated Construction On-Site

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

3.6 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0853	120.0847	28.2105	0.4058	10.5864	0.1312	10.7176	3.0474	0.1254	3.1728		42,784.48 34	42,784.48 34	1.5366		42,822.89 76
Worker	10.8076	7.0632	74.8494	0.3006	44.3269	0.2066	44.5335	11.7576	0.1901	11.9476		29,999.67 95	29,999.67 95	0.5331		30,013.00 62
Total	**13.8929**	**127.1479**	**103.0599**	**0.7064**	**54.9133**	**0.3378**	**55.2511**	**14.8050**	**0.3155**	**15.1204**		**72,784.16 29**	**72,784.16 29**	**2.0696**		**72,835.90 38**

3.6 Building Construction - 2033

Unmitigated Construction On-Site

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

3.6 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0483	119.1431	27.9157	0.4055	10.5867	0.1270	10.7137	3.0475	0.1214	3.1689		42,755.1409	42,755.1409	1.5264		42,793.2998
Worker	9.9451	6.4219	69.9149	0.2948	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		29,422.9678	29,422.9678	0.4819		29,435.0156
Total	**12.9934**	**125.5650**	**97.8306**	**0.7003**	**54.9135**	**0.3200**	**55.2335**	**14.8051**	**0.2989**	**15.1040**		**72,178.1086**	**72,178.1086**	**2.0083**		**72,228.3154**

Mitigated Construction On-Site

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

3.6 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0483	119.1431	27.9157	0.4055	10.5867	0.1270	10.7137	3.0475	0.1214	3.1689		42,755.1409	42,755.1409	1.5264		42,793.2998
Worker	9.9451	6.4219	69.9149	0.2948	44.3269	0.1930	44.5198	11.7576	0.1775	11.9350		29,422.9678	29,422.9678	0.4819		29,435.0156
Total	**12.9934**	**125.5650**	**97.8306**	**0.7003**	**54.9135**	**0.3200**	**55.2335**	**14.8051**	**0.2989**	**15.1040**		**72,178.1086**	**72,178.1086**	**2.0083**		**72,228.3154**

3.6 Building Construction - 2034

Unmitigated Construction On-Site

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

3.6 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0143	118.3288	27.6350	0.4054	10.5869	0.1232	10.7101	3.0476	0.1178	3.1654		42,741.39 62	42,741.39 62	1.5167		42,779.31 48
Worker	9.2381	5.9019	65.4026	0.2897	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		28,919.82 96	28,919.82 96	0.4352		28,930.71 04
Total	**12.2524**	**124.2307**	**93.0376**	**0.6951**	**54.9138**	**0.3037**	**55.2174**	**14.8052**	**0.2838**	**15.0889**		**71,661.22 58**	**71,661.22 58**	**1.9520**		**71,710.02 52**

Mitigated Construction On-Site

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

3.6 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0143	118.3288	27.6350	0.4054	10.5869	0.1232	10.7101	3.0476	0.1178	3.1654		42,741.3962	42,741.3962	1.5167		42,779.3148
Worker	9.2381	5.9019	65.4026	0.2897	44.3269	0.1804	44.5073	11.7576	0.1660	11.9235		28,919.8296	28,919.8296	0.4352		28,930.7104
Total	**12.2524**	**124.2307**	**93.0376**	**0.6951**	**54.9138**	**0.3037**	**55.2174**	**14.8052**	**0.2838**	**15.0889**		**71,661.2258**	**71,661.2258**	**1.9520**		**71,710.0252**

3.6 Building Construction - 2035

Unmitigated Construction On-Site

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

3.6 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.58 91	42,737.58 91	1.5103		42,775.34 67
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.91 41	28,485.91 41	0.3945		28,495.77 70
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.50 31**	**71,223.50 31**	**1.9048**		**71,271.12 37**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.546 8	2,897.546 8	0.1079		2,900.244 8
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.546 8**	**2,897.546 8**	**0.1079**		**2,900.244 8**

3.6 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.9849	117.6531	27.3975	0.4054	10.5871	0.1201	10.7072	3.0477	0.1148	3.1625		42,737.5891	42,737.5891	1.5103		42,775.3467
Worker	8.6147	5.4909	61.4709	0.2853	44.3269	0.1690	44.4959	11.7576	0.1555	11.9130		28,485.9141	28,485.9141	0.3945		28,495.7770
Total	**11.5995**	**123.1440**	**88.8684**	**0.6906**	**54.9140**	**0.2892**	**55.2031**	**14.8052**	**0.2703**	**15.0755**		**71,223.5031**	**71,223.5031**	**1.9048**		**71,271.1237**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**33.6778**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.1866	4.8300	40.7956	0.0899	8.8637	0.0766	8.9404	2.3511	0.0707	2.4218		8,937.686 7	8,937.686 7	0.3885		8,947.400 2
Total	**5.1866**	**4.8300**	**40.7956**	**0.0899**	**8.8637**	**0.0766**	**8.9404**	**2.3511**	**0.0707**	**2.4218**		**8,937.686 7**	**8,937.686 7**	**0.3885**		**8,947.400 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**33.6778**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	5.1866	4.8300	40.7956	0.0899	8.8637	0.0766	8.9404	2.3511	0.0707	2.4218		8,937.686 7	8,937.686 7	0.3885		8,947.400 2
Total	**5.1866**	**4.8300**	**40.7956**	**0.0899**	**8.8637**	**0.0766**	**8.9404**	**2.3511**	**0.0707**	**2.4218**		**8,937.686 7**	**8,937.686 7**	**0.3885**		**8,947.400 2**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**33.6545**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7825	4.3107	37.0308	0.0868	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		8,638.1997	8,638.1997	0.3456		8,646.8408
Total	**4.7825**	**4.3107**	**37.0308**	**0.0868**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**8,638.1997**	**8,638.1997**	**0.3456**		**8,646.8408**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**33.6545**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.7825	4.3107	37.0308	0.0868	8.8637	0.0740	8.9378	2.3511	0.0683	2.4193		8,638.199 7	8,638.199 7	0.3456		8,646.840 8
Total	**4.7825**	**4.3107**	**37.0308**	**0.0868**	**8.8637**	**0.0740**	**8.9378**	**2.3511**	**0.0683**	**2.4193**		**8,638.199 7**	**8,638.199 7**	**0.3456**		**8,646.840 8**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**33.6401**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4362	3.8627	33.7188	0.0837	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,334.232 8	8,334.232 8	0.3085		8,341.944 2
Total	**4.4362**	**3.8627**	**33.7188**	**0.0837**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,334.232 8**	**8,334.232 8**	**0.3085**		**8,341.944 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**33.6401**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.4362	3.8627	33.7188	0.0837	8.8637	0.0714	8.9351	2.3511	0.0658	2.4169		8,334.232 8	8,334.232 8	0.3085		8,341.944 2
Total	**4.4362**	**3.8627**	**33.7188**	**0.0837**	**8.8637**	**0.0714**	**8.9351**	**2.3511**	**0.0658**	**2.4169**		**8,334.232 8**	**8,334.232 8**	**0.3085**		**8,341.944 2**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**33.6272**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1208	3.4618	30.6329	0.0806	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,025.480 8	8,025.480 8	0.2744		8,032.340 8
Total	**4.1208**	**3.4618**	**30.6329**	**0.0806**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,025.480 8**	**8,025.480 8**	**0.2744**		**8,032.340 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**33.6272**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1208	3.4618	30.6329	0.0806	8.8637	0.0691	8.9328	2.3511	0.0637	2.4147		8,025.480 8	8,025.480 8	0.2744		8,032.340 8
Total	**4.1208**	**3.4618**	**30.6329**	**0.0806**	**8.8637**	**0.0691**	**8.9328**	**2.3511**	**0.0637**	**2.4147**		**8,025.480 8**	**8,025.480 8**	**0.2744**		**8,032.340 8**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**33.6163**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8462	3.1128	28.0505	0.0775	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		7,716.708 7	7,716.708 7	0.2451		7,722.837 3
Total	**3.8462**	**3.1128**	**28.0505**	**0.0775**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**7,716.708 7**	**7,716.708 7**	**0.2451**		**7,722.837 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**33.6163**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.8462	3.1128	28.0505	0.0775	8.8637	0.0670	8.9307	2.3511	0.0617	2.4128		7,716.708 7	7,716.708 7	0.2451		7,722.837 3
Total	**3.8462**	**3.1128**	**28.0505**	**0.0775**	**8.8637**	**0.0670**	**8.9307**	**2.3511**	**0.0617**	**2.4128**		**7,716.708 7**	**7,716.708 7**	**0.2451**		**7,722.837 3**

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6132	2.8168	25.8021	0.0744	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,411.097 9	7,411.097 9	0.2210		7,416.623 8
Total	**3.6132**	**2.8168**	**25.8021**	**0.0744**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,411.097 9**	**7,411.097 9**	**0.2210**		**7,416.623 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.6132	2.8168	25.8021	0.0744	8.8637	0.0655	8.9293	2.3511	0.0604	2.4114		7,411.097 9	7,411.097 9	0.2210		7,416.623 8
Total	**3.6132**	**2.8168**	**25.8021**	**0.0744**	**8.8637**	**0.0655**	**8.9293**	**2.3511**	**0.0604**	**2.4114**		**7,411.097 9**	**7,411.097 9**	**0.2210**		**7,416.623 8**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4060	2.5563	23.6993	0.0713	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,104.896 2	7,104.896 2	0.1981		7,109.849 1
Total	**3.4060**	**2.5563**	**23.6993**	**0.0713**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,104.896 2**	**7,104.896 2**	**0.1981**		**7,109.849 1**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.4060	2.5563	23.6993	0.0713	8.8637	0.0628	8.9266	2.3511	0.0579	2.4089		7,104.896 2	7,104.896 2	0.1981		7,109.849 1
Total	**3.4060**	**2.5563**	**23.6993**	**0.0713**	**8.8637**	**0.0628**	**8.9266**	**2.3511**	**0.0579**	**2.4089**		**7,104.896 2**	**7,104.896 2**	**0.1981**		**7,109.849 1**

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2113	2.3232	21.9127	0.0688	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		6,860.893 5	6,860.893 5	0.1791		6,865.370 2
Total	**3.2113**	**2.3232**	**21.9127**	**0.0688**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**6,860.893 5**	**6,860.893 5**	**0.1791**		**6,865.370 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.2113	2.3232	21.9127	0.0688	8.8637	0.0592	8.9229	2.3511	0.0545	2.4055		6,860.893 5	6,860.893 5	0.1791		6,865.370 2
Total	**3.2113**	**2.3232**	**21.9127**	**0.0688**	**8.8637**	**0.0592**	**8.9229**	**2.3511**	**0.0545**	**2.4055**		**6,860.893 5**	**6,860.893 5**	**0.1791**		**6,865.370 2**

3.7 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0126	2.1160	20.3474	0.0667	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		6,644.343 6	6,644.343 6	0.1627		6,648.411 6
Total	**3.0126**	**2.1160**	**20.3474**	**0.0667**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**6,644.343 6**	**6,644.343 6**	**0.1627**		**6,648.411 6**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	3.0126	2.1160	20.3474	0.0667	8.8637	0.0551	8.9188	2.3511	0.0507	2.4018		6,644.343 6	6,644.343 6	0.1627		6,648.411 6
Total	**3.0126**	**2.1160**	**20.3474**	**0.0667**	**8.8637**	**0.0551**	**8.9188**	**2.3511**	**0.0507**	**2.4018**		**6,644.343 6**	**6,644.343 6**	**0.1627**		**6,648.411 6**

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8005	1.9218	18.8331	0.0647	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,451.975 9	6,451.975 9	0.1468		6,455.646 8
Total	**2.8005**	**1.9218**	**18.8331**	**0.0647**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,451.975 9**	**6,451.975 9**	**0.1468**		**6,455.646 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**33.6064**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.7 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.8005	1.9218	18.8331	0.0647	8.8637	0.0512	8.9150	2.3511	0.0471	2.3982		6,451.975 9	6,451.975 9	0.1468		6,455.646 8
Total	**2.8005**	**1.9218**	**18.8331**	**0.0647**	**8.8637**	**0.0512**	**8.9150**	**2.3511**	**0.0471**	**2.3982**		**6,451.975 9**	**6,451.975 9**	**0.1468**		**6,455.646 8**

3.7 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5893	1.7405	17.4630	0.0630	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,281.587 2	6,281.587 2	0.1325		6,284.899 4
Total	**2.5893**	**1.7405**	**17.4630**	**0.0630**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,281.587 2**	**6,281.587 2**	**0.1325**		**6,284.899 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.5893	1.7405	17.4630	0.0630	8.8637	0.0477	8.9114	2.3511	0.0439	2.3949		6,281.587 2	6,281.587 2	0.1325		6,284.899 4
Total	**2.5893**	**1.7405**	**17.4630**	**0.0630**	**8.8637**	**0.0477**	**8.9114**	**2.3511**	**0.0439**	**2.3949**		**6,281.587 2**	**6,281.587 2**	**0.1325**		**6,284.899 4**

3.7 Architectural Coating - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3628	1.5643	16.1283	0.0615	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,130.989 8	6,130.989 8	0.1186		6,133.955 3
Total	**2.3628**	**1.5643**	**16.1283**	**0.0615**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,130.989 8**	**6,130.989 8**	**0.1186**		**6,133.955 3**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.3628	1.5643	16.1283	0.0615	8.8637	0.0444	8.9081	2.3511	0.0408	2.3919		6,130.989 8	6,130.989 8	0.1186		6,133.955 3
Total	**2.3628**	**1.5643**	**16.1283**	**0.0615**	**8.8637**	**0.0444**	**8.9081**	**2.3511**	**0.0408**	**2.3919**		**6,130.989 8**	**6,130.989 8**	**0.1186**		**6,133.955 3**

3.7 Architectural Coating - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1611	1.4124	14.9671	0.0601	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		5,998.824 0	5,998.824 0	0.1066		6,001.488 8
Total	**2.1611**	**1.4124**	**14.9671**	**0.0601**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**5,998.824 0**	**5,998.824 0**	**0.1066**		**6,001.488 8**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	2.1611	1.4124	14.9671	0.0601	8.8637	0.0413	8.9051	2.3511	0.0380	2.3891		5,998.8240	5,998.8240	0.1066		6,001.4888
Total	**2.1611**	**1.4124**	**14.9671**	**0.0601**	**8.8637**	**0.0413**	**8.9051**	**2.3511**	**0.0380**	**2.3891**		**5,998.8240**	**5,998.8240**	**0.1066**		**6,001.4888**

3.7 Architectural Coating - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9886	1.2842	13.9804	0.0589	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		5,883.5030	5,883.5030	0.0964		5,885.9121
Total	**1.9886**	**1.2842**	**13.9804**	**0.0589**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**5,883.5030**	**5,883.5030**	**0.0964**		**5,885.9121**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.9886	1.2842	13.9804	0.0589	8.8637	0.0386	8.9023	2.3511	0.0355	2.3866		5,883.503 0	5,883.503 0	0.0964		5,885.912 1
Total	**1.9886**	**1.2842**	**13.9804**	**0.0589**	**8.8637**	**0.0386**	**8.9023**	**2.3511**	**0.0355**	**2.3866**		**5,883.503 0**	**5,883.503 0**	**0.0964**		**5,885.912 1**

3.7 Architectural Coating - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203		281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**		**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8473	1.1802	13.0781	0.0579	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		5,782.8940	5,782.8940	0.0870		5,785.0698
Total	**1.8473**	**1.1802**	**13.0781**	**0.0579**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**5,782.8940**	**5,782.8940**	**0.0870**		**5,785.0698**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1308	0.8563	1.7977	2.9700e-003		0.0203	0.0203		0.0203	0.0203	0.0000	281.4481	281.4481	0.0114		281.7328
Total	**33.5663**	**0.8563**	**1.7977**	**2.9700e-003**		**0.0203**	**0.0203**		**0.0203**	**0.0203**	**0.0000**	**281.4481**	**281.4481**	**0.0114**		**281.7328**

3.7 Architectural Coating - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.8473	1.1802	13.0781	0.0579	8.8637	0.0361	8.8998	2.3511	0.0332	2.3843		5,782.894 0	5,782.894 0	0.0870		5,785.069 8
Total	**1.8473**	**1.1802**	**13.0781**	**0.0579**	**8.8637**	**0.0361**	**8.8998**	**2.3511**	**0.0332**	**2.3843**		**5,782.894 0**	**5,782.894 0**	**0.0870**		**5,785.069 8**

3.7 Architectural Coating - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**33.5535**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.127 0	5,696.127 0	0.0789		5,698.099 2
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.127 0**	**5,696.127 0**	**0.0789**		**5,698.099 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	33.4356					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**33.5535**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

3.7 Architectural Coating - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.7226	1.0980	12.2919	0.0570	8.8637	0.0338	8.8975	2.3511	0.0311	2.3822		5,696.1270	5,696.1270	0.0789		5,698.0992
Total	**1.7226**	**1.0980**	**12.2919**	**0.0570**	**8.8637**	**0.0338**	**8.8975**	**2.3511**	**0.0311**	**2.3822**		**5,696.1270**	**5,696.1270**	**0.0789**		**5,698.0992**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	34.3968	275.8879	346.9805	1.6695	173.3617	0.6360	173.9977	46.3766	0.5911	46.9677		170,671.9935	170,671.9935	7.0842		170,849.0987
Unmitigated	36.6570	284.8497	385.6702	1.9022	202.7623	0.7209	203.4832	54.2417	0.6703	54.9119		194,365.3555	194,365.3555	7.7223		194,558.4124

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	605.15	581.49	533.26	1,036,322	886,055
City Park	94.50	1,137.50	837.00	504,217	431,106
Condo/Townhouse	16,779.28	16,374.96	13977.92	28,595,338	24,449,014
Elementary School	2,321.12	2,334.62	2321.12	3,183,944	2,722,272
General Office Building	1,577.29	351.78	150.15	1,934,463	1,653,966
High School	443.85	443.85	443.85	699,312	597,912
Junior High School	1,303.46	1,303.46	1303.46	1,786,505	1,527,462
Regional Shopping Center	15,841.70	18,538.87	9364.04	19,004,413	16,248,773
Single Family Housing	12,956.72	13,487.51	11731.82	22,526,743	19,260,366
Supermarket	5,827.68	10,122.63	9487.08	5,793,011	4,953,024
Total	57,750.75	64,676.67	50,149.70	85,064,268	72,729,949

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
City Park	5.42	5.42	5.42	33.00	48.00	19.00	66	28	6
Condo/Townhouse	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Elementary School	5.42	5.42	5.42	65.00	30.00	5.00	63	25	12
General Office Building	5.42	5.42	5.42	33.00	48.00	19.00	77	19	4
High School	5.42	5.42	5.42	77.80	17.20	5.00	75	19	6
Junior High School	5.42	5.42	5.42	72.80	22.20	5.00	63	25	12
Regional Shopping Center	5.42	5.42	5.42	16.30	64.70	19.00	54	35	11
Single Family Housing	5.42	5.42	5.42	44.00	19.00	37.00	86	11	3
Supermarket	5.42	5.42	5.42	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
City Park	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Condo/Townhouse	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Elementary School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
General Office Building	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Junior High School	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Regional Shopping Center	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Single Family Housing	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479
Supermarket	0.578370	0.024013	0.215962	0.099937	0.008884	0.003803	0.022117	0.032069	0.004411	0.001798	0.006991	0.001166	0.000479

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828
NaturalGas Unmitigated	5.0811	44.6704	27.6428	0.2772		3.5106	3.5106		3.5106	3.5106		55,430.3877	55,430.3877	1.0624	1.0162	55,759.7828

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2153.95	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6413.45	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86244.6	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45730.2	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2408.96	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3510.58	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.15395	0.0232	0.1985	0.0845	1.2700e-003		0.0161	0.0161		0.0161	0.0161		253.4053	253.4053	4.8600e-003	4.6500e-003	254.9112
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	148.143	1.5976	13.6524	5.8095	0.0871		1.1038	1.1038		1.1038	1.1038		17,428.5424	17,428.5424	0.3341	0.3195	17,532.1115
Elementary School	68.177	0.7352	6.6840	5.6146	0.0401		0.5080	0.5080		0.5080	0.5080		8,020.8205	8,020.8205	0.1537	0.1471	8,068.4842
General Office Building	6.41345	0.0692	0.6288	0.5282	3.7700e-003		0.0478	0.0478		0.0478	0.0478		754.5238	754.5238	0.0145	0.0138	759.0075
High School	86.2446	0.9301	8.4554	7.1025	0.0507		0.6426	0.6426		0.6426	0.6426		10,146.4280	10,146.4280	0.1945	0.1860	10,206.7231
Junior High School	45.7302	0.4932	4.4834	3.7660	0.0269		0.3407	0.3407		0.3407	0.3407		5,380.0223	5,380.0223	0.1031	0.0986	5,411.9931
Regional Shopping Center	2.40896	0.0260	0.2362	0.1984	1.4200e-003		0.0180	0.0180		0.0180	0.0180		283.4069	283.4069	5.4300e-003	5.2000e-003	285.0911
Single Family Housing	108.377	1.1688	9.9877	4.2501	0.0638		0.8075	0.8075		0.8075	0.8075		12,750.2297	12,750.2297	0.2444	0.2338	12,825.9979
Supermarket	3.51058	0.0379	0.3442	0.2891	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.0089	413.0089	7.9200e-003	7.5700e-003	415.4632
Total		**5.0811**	**44.6704**	**27.6428**	**0.2772**		**3.5106**	**3.5106**		**3.5106**	**3.5106**		**55,430.3877**	**55,430.3877**	**1.0624**	**1.0162**	**55,759.7828**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	246.4212	25.3409	365.9781	0.1544		3.7031	3.7031		3.7031	3.7031	0.0000	27,737.6258	27,737.6258	1.1355	0.4967	27,914.0257
Unmitigated	1,170.9221	31.5360	1,533.4281	2.2830		168.4390	168.4390		168.4390	168.4390	17,776.3729	18,803.0611	36,579.4340	22.4030	1.4967	37,585.5372

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	213.2902					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	911.0458	27.4171	1,176.480 7	2.2640		166.4518	166.4518		166.4518	166.4518	17,776.37 29	18,157.34 12	35,933.71 40	21.7868	1.4967	36,924.41 10
Landscaping	10.7046	4.1189	356.9475	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1262
Total	**1,170.922 1**	**31.5360**	**1,533.428 1**	**2.2829**		**168.4390**	**168.4390**		**168.4390**	**168.4390**	**17,776.37 29**	**18,803.06 11**	**36,579.43 40**	**22.4030**	**1.4967**	**37,585.53 72**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	35.8814					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	197.3517					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.4834	21.2220	9.0306	0.1355		1.7158	1.7158		1.7158	1.7158	0.0000	27,091.9059	27,091.9059	0.5193	0.4967	27,252.8995
Landscaping	10.7046	4.1189	356.9475	0.0189		1.9873	1.9873		1.9873	1.9873		645.7199	645.7199	0.6163		661.1262
Total	**246.4212**	**25.3409**	**365.9781**	**0.1544**		**3.7031**	**3.7031**		**3.7031**	**3.7031**	**0.0000**	**27,737.6258**	**27,737.6258**	**1.1355**	**0.4967**	**27,914.0257**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Greenhouse Gas Efficiency Metric Calculation Methodology – Salinas West Area Specific Plan

The methodology used for assessing the proposed project's consistency with GHG targets established in AB 32 is the use of GHG efficiency metrics to assess the GHG efficiency of the project on a "service population (SP)" basis (the sum of the number of jobs and the number of residents provided by a project). These metrics represent the rate of emissions needed to achieve a fair share of the state's emissions mandate embodied in AB 32. The use of "fair share" in this instance indicates the GHG efficiency level that, if applied statewide, would meet the AB 32 emissions target and support efforts to reduce emissions beyond 2020.

GHG efficiency metrics for the project were developed based on emissions rates for the land use-driven emission sectors in the CARB's GHG inventory. The GHG efficiency metric is only based on sectors that would accommodate projected growth (as indicated by population and employment growth) while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020). The per service population efficiency target is based on the AB 32 GHG reduction target and GHG emissions inventory prepared for the CARB's 2008 Scoping Plan.

To develop the efficiency metric for 2020, land-use driven sectors in the CARB's 1990 GHG inventory were identified and separated to tailor the inventory to land use projects. This process removes emission sources that would not be applicable to the project area. For example, emissions associated with ships and commercial boats, aviation, rail, industrial sources, agriculture and forestry, and unspecified sectors were removed from the CARB's 1990 inventory in order to exclude non-land use sectors. The exceptions for the industrial sector are the landfill and domestic wastewater sub-sectors which were included in development of the GHG efficiency metric because emissions from these sectors are included in the project's emissions profile. Isolating the land use-driven sectors from the CARB's overall inventory ensures that the threshold is directly applicable to land use projects, whereby emission sectors included in the inventory used for developing the GHG efficiency metric can be mapped to a project's emissions data. For example, emissions associated with on-road transportation, electricity, natural gas, wastewater treatment, and solid waste are included in both the inventory used to develop the GHG efficiency metric and the project's operational emissions. The CARB's complete 1990 inventory and the adjusted land use-driven emissions inventory are shown on the following pages.

The land-use sector driven inventory for 1990 was divided by the population and employment projections for California in 2020. Detailed calculations showing derivation of the efficiency metrics are shown on the following pages. The efficiency metric allows the threshold to be applied evenly to all project types (residential, commercial/retail and mixed use) and uses an emissions inventory comprised only of sources from land-use related sectors. The efficiency approach allows lead agencies to assess whether any given project or plan would accommodate population and employment growth in a way that is consistent with the emissions limit established under AB 32. The resultant GHG efficiency metric would be (approximately) 4.84 MT CO_2e/SP/year for 2020 (as provided below).

The proposed project is anticipated to be built out in the relative medium-term, within the timeframe of the State's longer-term target years (2030 and 2050). The CARB has indicated that an average statewide

GHG reduction of 5.2 percent per year would be necessary to achieve the 2030 target[1,2]. Therefore, GHG efficiency goals in terms of metric tons per service population, similar to the one developed for 2020, were estimated for Years 2030, 2035, and 2050 to allow evaluation of the project's GHG emissions in the post-2020 landscape. The equivalent goal for 2030 computes to approximately 2.62 MT CO_2e/SP/year. For Year 2035, the goal computes to 1.94 MT CO_2e/SP/year, for Year 2045, 1.07 MT CO_2e/SP/year, and for Year 2050 the goal is 0.80 MT CO_2e/SP/year. These targets were estimated by applying a uniform reduction from the CARB's 1990 emissions inventory and dividing the resultant value by the projected population and employment in these future years.

These GHG efficiency metric were derived based on the reduction trajectory the state needs to maintain to achieve its 2030 and 2050 goals (an approximately 5.2 percent reduction per year) (CARB, 2016b). Therefore, if the project's emissions are determined to be on this trajectory based on compliance with the 2035 GHG emissions per service population goal, it would not be anticipated to interfere with the State's long-term GHG reduction goals.

All calculations are based on the IPCC Second Assessment Report's Global Warming Potentials to allow consistent comparison between the ARB 1990 inventory and the California Emissions Estimator Model (CalEEMod; used to estimate project emissions).

[1] California Air Resources Board. 2016. California Climate Strategy. January 29, 2016. Available at: http://docketpublic.energy.ca.gov/PublicDocuments/15-RETI-02/TN210091_20160129T154626_California_Climate_Strategy_CARB_for_RETI_20_Plenary_Meeting_on.pdf

[2] California Air Resources Board. 2015. 2030 Target Scoping Plan Workshop Slides. (October 1, 2015). Available at: http://www.arb.ca.gov/cc/scopingplan/meetings/10_1_15slides/2015slides.pdf

California Greenhouse Gas Inventory for 1990 – by Sector and Activity (Land Use-driven sectors only) *Million metric tons of CO_2-equiavlent (CO_2e) – (based on IPCC Second Assessment Report's Global Warming Potentials) (CARB, 2007).*

Year 1990

Transportation	
On Road	
Passenger Cars	63.77
Light Duty Trucks	44.75
Motorcycles	0.43
Heavy Duty Trucks	29.03
Freight	0.02
Electricity Generation In-State	
CHP: Commercial	***0.70***
Merchant Owned	***2.33***
Transmission and Distribution	***1.56***
Utility Owned	***29.92***
Electricity Generation In-State	
Specified Imports	***29.61***
Transmission and Distribution	***1.02***
Unspecified Imports	***30.96***
Commercial	
CHP: Commercial	***0.40***
Communication	***0.07***
Domestic Utilities	***0.34***
Education	***1.42***
Food Services	***1.89***
Healthcare	***1.32***
Hotels	***0.67***
Not Specified Commercial	***5.58***
Offices	***1.46***
Retail & Wholesale	***0.68***
Transportation Services	***0.03***
Residential	
Household Use	***29.66***
Industrial	
Landfills	***6.26***
Wastewater Treatment	
Domestic Wastewater	2.83
Total Emissions	**286.70**

Future Year Service Population Thresholds

	2020	2030	2035	2045	2050
Population	40,719,999	44,019,846	45,521,334	48,088,425	49,158,401
Employment	18,511,200	20,011,301*	20,693,874*	21,860,866*	22,347,274*
Service Population	59,231,199	64,031,147	66,215,208	69,949,291	71,505,675
Emissions (Million Metric Tons)	286.70	167.67	128.22	74.99	57.35
MT/SP	**4.840**	**2.619**	**1.936**	**1.072**	**0.802**

Notes:

SP = service population.

*Assumes proportion of employed persons to the overall population remains equal to that as was applicable in 2020 (direct 2030, 2035, 2045, and 2050 employment projections were not available).

2030, 2035, 2045, and 2050 Emissions are based on an annual 5.2% reduction from 2020 (CARB, 2016).

Sources:

California Air Resources Board (CARB). 2007. Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. Public Release Date: November 16, 2007. Available: https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm

California Air Resources Board (CARB). 2015. 2030 Target Scoping Plan Workshop Slides. (October 1, 2015). Available: http://www.arb.ca.gov/cc/scopingplan/meetings/10_1_15slides/2015slides.pdf

California Air Resources Board (CARB). 2016. California Climate Strategy. January 29, 2016. Available at: http://docketpublic.energy.ca.gov/PublicDocuments/15-RETI-02/TN210091_20160129T154626_California_Climate_Strategy_CARB_for_RETI_20_Plenary_Meeting_on.pdf

California Department of Finance, Demographics Research Unit (Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 5-year Increments. Published February, 2017.

California Department of Finance Employment Development Department. Industry Employment Projections Labor Market Information Division 2010-2020. Published 5/23/2012.

Off-road Mobile (Construction) Energy Usage

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source.
Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Given Factor:	**292.7**	**metric tons**	**CO2**	**(provided in CalEEMod Output File)**
Conversion Factor:	2204.62	pounds	per metric ton	
Intermediate Result:	**645,216**	**pounds**	**CO2**	
Conversion Factor:	22.38	pounds	CO2 per 1 gallon of diesel fuel	Source: U.S. EIA, 2016
Final Result:	**28,830.04**	**gallons**	**diesel fuel**	http://www.eia.gov/tools/faqs/faq.cfm?id=307&t=11

On-road Mobile (Operational) Energy Usage

Note: Note: For the sake of simplicity, it was assumed that passenger vehicles, light duty trucks, motorcycles, and mobile homes use gasoline, and all medium-duty trucks, heavy-duty trucks, and buses use diesel fuel.

Unmitigated:

Step 1: **Total Net Daily Trips (provided by Fehr & Peers)**

52,094

	Res H-W	*Res H-S*	*Res H-O*
Trip Length (miles) (provided by CalEEMod)	5.140079155	3.474313	3.569499
Trip %	44.00%	18.80%	37.20%

Average Trip Length (weighted average)

4.2427

Therefore:

Average Daily VMT:

221,017

Step 2: Given:

Fleet Mix (provided by CalEEMod v2016.3.2)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
57.6%	2.2%	22.4%	11.3%	0.9%	0.4%	1.6%	0.7%	0.2%	0.0%	2.4%	0.1%	0.2%

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2035

LDA	LDT1	LDT2	MDV	MCY	MH
38.56615359	36.43479	29.61125	21.64655964	35.66689431	6.926878415

Diesel MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2035

LHD1	LHD2	MHD	HHD	OBUS	UBUS	SBUS
18.77501658	17.17627	8.749969	5.3166419	6.868177122	5.100980741	12.59359

Therefore:

Weighted Average MPG Factors

Gasoline: **34.3** Diesel: **10.9**

Step 3: **Therefore:**

6,190 daily gallons of gasoline **802 daily gallons of diesel**

or

2,259,455 annual gallons of gasoline	**292,769 annual gallons of diesel**

On-road Mobile (Construction) Energy Usage - Site Preparation

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-road vehicles use diesel fuel as an energy source.Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

18

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

194

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	**LDT1**	**LDT2**
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	**LDT1**	**LDT2**
25.538436	21.67566	18.62846

Therefore:

Weighted Average Worker MPG Factor

21.9

Step 3: **Therefore:**

8.9 **Worker daily gallons of gasoline**

Step 4: 64 **# of Days (see CalEEMod)**

Therefore:

Result: **567** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Grading

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-roadvehicles use diesel fuel as an energy source. Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

20

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

216

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	**LDT1**	**LDT2**
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	**LDT1**	**LDT2**
25.538436	21.67566	18.62846

Therefore:

Weighted Average Worker MPG Factor

21.9

Step 3: **Therefore:**

9.8 **Worker daily gallons of gasoline**

Step 4: 65 **# of Days (see CalEEMod)**

Therefore:

Result: **640** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Underground Utilities

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-roadvehicles use diesel fuel as an energy source. Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

0

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

-

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	**LDT1**	**LDT2**
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	**LDT1**	**LDT2**
25.538436	21.67566	18.62846

Therefore:

Weighted Average Worker MPG Factor

21.9

Step 3: **Therefore:**

0.0 **Worker daily gallons of gasoline**

Step 4: 45 **# of Days (see CalEEMod)**

Therefore:

Result: - **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Paving

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-roadvehicles use diesel fuel as an energy source. Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

15

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

162

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	**LDT1**	**LDT2**
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	**LDT1**	**LDT2**
25.538436	21.67566	18.62846

Therefore:

Weighted Average Worker MPG Factor

21.9

Step 3: **Therefore:**

7.4 **Worker daily gallons of gasoline**

Step 4: 87 **# of Days (see CalEEMod)**

Therefore:

Result: **642** **Total gallons of gasoline**

On-road Mobile (Construction) Energy Usage - Building Construction

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-roadvehicles use diesel fuel as an energy source. Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Step 1:

Total Daily Worker Trips (provided by CalEEMod)	**Total Daily Vendor Trips (provided by CalEEMod)**	**Total Daily Hauler Trips (provided by CalEEMod)**
5,396	1,564	0
Worker Trip Length (miles) (provided by CalEEMod)	**Vendor Trip Length (miles) (provided by CalEEMod)**	**Hauling Trip Length (miles) (provided by CalEEMod)**
10.8	7.3	0

Therefore:

Average Worker Daily VMT:	**Average Vendor Daily VMT:**	**Average Hauling Daily VMT:**
58,276.80	**11,417**	-

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	**LDT1**	**LDT2**
0.33333333	0.333333	0.333333

Assumed Fleet Mix for Vendors (provided by CalEEMod v2016.3.1)

MHD	**HHD**
0.5	0.5

And:

MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

<u>Gasoline:</u>

LDA	**LDT1**	**LDT2**
25.5384357	21.67566	18.62846

<u>Diesel:</u>

MHD	**HHD**
8.2132533	4.733365

Therefore:

Weighted Average Worker (Gasoline) MPG Factor	**Weighted Average Vendor (Diesel) MPG Factor**	**Weighted Average Hauling MPG Factor**
21.9	**6.5**	**0.0**

Step 3:

Therefore:	**Therefore:**	**Therefore:**
2,655 Worker daily gallons of gasoline	**1,764 Vendor daily gallons of diesel**	**0.0**

Step 4: 4152 **# of Days (see CalEEMod)**

Therefore:	Therefore:
11,024,722 Total gallons of gasoline	**7,323,026 Total gallons of diesel**

On-road Mobile (Construction) Energy Usage - Architectural Coating

Note: For the sake of simplicity, and as a conservative estimation, it was assumed that all off-roadvehicles use diesel fuel as an energy source. Site preparation and grading off-road mobile vehicle on-site gallons of fuel are calculated below.

Step 1: **Total Daily Worker Trips (provided by CalEEMod)**

1079

Worker Trip Length (miles) (provided by CalEEMod)

10.8

Therefore:

Average Worker Daily VMT:

11,653

Step 2: Given:

Assumed Fleet Mix for Workers (provided by CalEEMod v2016.3.1)

LDA	LDT1	LDT2
0.3333333	0.333333	0.333333

And:

Gasoline MPG Factors for each Vehicle Class (from EMFAC2014) - Year 2018

LDA	LDT1	LDT2
25.538436	21.67566	18.62846

Therefore:

Weighted Average Worker MPG Factor

21.9

Step 3: **Therefore:**

531.0 **Worker daily gallons of gasoline**

Step 4: 3917 **# of Days (see CalEEMod)**

Therefore:

Result: **2,079,761** **Total gallons of gasoline**

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: County
Region: Monterey
Calendar Year: 2018
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	CO2_RUNEX	Fuel_Consumption	**Derived Emission Factor**
Monterey	2018	All Other Buses	Aggregated	Aggregated	DSL	261.8885923	14395.14	0	20.04297717	1.822178306	**7.899960269**
Monterey	2018	LDA	Aggregated	Aggregated	GAS	130638.1298	5091502	815069.3	1797.458898	199.3662425	**25.53843574**
Monterey	2018	LDA	Aggregated	Aggregated	DSL	1306.390688	52588.32	7876.589	17.79795639	1.601816075	**32.83043479**
Monterey	2018	LDT1	Aggregated	Aggregated	GAS	9518.686972	340980.3	57550.78	140.5346151	15.73102633	**21.67565649**
Monterey	2018	LDT1	Aggregated	Aggregated	DSL	29.55562305	590.2404	131.7317	0.275480272	0.024793224	**23.80652057**
Monterey	2018	LDT2	Aggregated	Aggregated	GAS	53238.08576	1997597	329005.6	964.3324585	107.2335803	**18.62846174**
Monterey	2018	LDT2	Aggregated	Aggregated	DSL	90.41952879	3495.782	522.6922	1.557554872	0.140179938	**24.93781646**
Monterey	2018	LHD1	Aggregated	Aggregated	GAS	4684.122239	146090.5	69786.44	137.3754597	15.31254197	**9.540575584**
Monterey	2018	LHD1	Aggregated	Aggregated	DSL	4009.270463	138704.1	50431.58	89.90698095	8.147744891	**17.02361438**
Monterey	2018	LHD2	Aggregated	Aggregated	GAS	590.6492429	20989.52	8799.794	22.03392865	2.441950843	**8.595389938**
Monterey	2018	LHD2	Aggregated	Aggregated	DSL	1186.635746	45576.04	14926.38	32.90908263	2.988318367	**15.25140132**
Monterey	2018	MCY	Aggregated	Aggregated	GAS	6561.953881	80802.43	13122.6	16.15092798	2.283097004	**35.3915895**
Monterey	2018	MDV	Aggregated	Aggregated	GAS	46337.47583	1505123	285049.2	964.330179	107.761616	**13.96715354**
Monterey	2018	MDV	Aggregated	Aggregated	DSL	419.2156119	18341.86	2651.608	10.26563285	0.923906957	**19.85249535**
Monterey	2018	MH	Aggregated	Aggregated	GAS	971.0810387	8044.742	97.14695	11.53873486	1.242942824	**6.472334545**
Monterey	2018	MH	Aggregated	Aggregated	DSL	235.9951166	2177.852	23.59951	2.559956607	0.230396095	**9.452643933**
Monterey	2018	Motor Coach	Aggregated	Aggregated	DSL	87.13814401	13006.67	0	25.19584261	2.368070054	**5.492518402**
Monterey	2018	OBUS	Aggregated	Aggregated	GAS	173.7461133	14362.64	3476.312	20.36314748	2.22800875	**6.44639975**
Monterey	2018	PTO	Aggregated	Aggregated	DSL	0	5993.859	0	14.55158677	1.309642809	**4.576712458**
Monterey	2018	SBUS	Aggregated	Aggregated	GAS	38.10700411	3216.252	152.428	2.379327827	0.272967068	**11.78256564**
Monterey	2018	SBUS	Aggregated	Aggregated	DSL	254.5443722	9745.075	0	14.02199891	1.357291554	**7.179794885**
Monterey	2018	T6 Ag	Aggregated	Aggregated	DSL	269.8897157	4955.712	0	6.79128404	0.628015427	**7.891067671**
Monterey	2018	T6 CAIRP heavy	Aggregated	Aggregated	DSL	11.17330917	623.1839	0	0.824638733	0.074978794	**8.311469319**
Monterey	2018	T6 CAIRP small	Aggregated	Aggregated	DSL	29.68801412	1913.021	0	2.550691643	0.231559996	**8.261448184**
Monterey	2018	T6 instate construction heavy	Aggregated	Aggregated	DSL	28.15039316	1990.701	0	2.694238106	0.2444526	**8.143504439**
Monterey	2018	T6 instate construction small	Aggregated	Aggregated	DSL	157.1459962	9097.733	0	12.2265905	1.11122631	**8.187110467**
Monterey	2018	T6 instate heavy	Aggregated	Aggregated	DSL	752.8894853	37873.97	0	50.65235966	4.611324033	**8.2132533**
Monterey	2018	T6 instate small	Aggregated	Aggregated	DSL	1643.839154	91912.99	0	123.6314267	11.23987536	**8.177403196**
Monterey	2018	T6 OOS heavy	Aggregated	Aggregated	DSL	6.581435148	357.061	0	0.472787424	0.042999941	**8.303755103**
Monterey	2018	T6 OOS small	Aggregated	Aggregated	DSL	17.01011637	1096.089	0	1.461450453	0.132675175	**8.261448184**
Monterey	2018	T6 Public	Aggregated	Aggregated	DSL	174.93472	2668.278	0	3.618554861	0.337564421	**7.904499667**
Monterey	2018	T6 utility	Aggregated	Aggregated	DSL	56.63512158	1108.062	0	1.524192818	0.140901543	**7.864089005**
Monterey	2018	T6TS	Aggregated	Aggregated	GAS	365.9000613	25892.47	7320.928	36.75611203	4.108160861	**6.302690552**
Monterey	2018	T7 Ag	Aggregated	Aggregated	DSL	127.4670086	2166.89	0	4.213444892	0.40834444	**5.306525419**
Monterey	2018	T7 CAIRP	Aggregated	Aggregated	DSL	265.8455653	56036.58	0	100.2167901	9.731474302	**5.758282997**
Monterey	2018	T7 CAIRP construction	Aggregated	Aggregated	DSL	6.011212266	1412.188	0	2.58215124	0.247975364	**5.69487217**
Monterey	2018	T7 NNOOS	Aggregated	Aggregated	DSL	280.0322919	69485.43	0	116.3763141	11.35801295	**6.117745501**
Monterey	2018	T7 NOOS	Aggregated	Aggregated	DSL	107.2575163	22134.43	0	39.61215741	3.91791505	**5.649544077**
Monterey	2018	T7 POAK	Aggregated	Aggregated	DSL	20.99663932	2800.266	0	5.268006705	0.489817743	**5.716955204**
Monterey	2018	T7 Public	Aggregated	Aggregated	DSL	162.6657346	3733.354	0	7.296295236	0.788731534	**4.733365076**
Monterey	2018	T7 Single	Aggregated	Aggregated	DSL	321.3236487	30186.27	0	57.34093726	5.274435618	**5.723127926**
Monterey	2018	T7 single construction	Aggregated	Aggregated	DSL	39.98949378	3653.145	0	6.699923722	0.619042608	**5.901281273**
Monterey	2018	T7 SWCV	Aggregated	Aggregated	DSL	148.8181292	6856.699	0	32.76829866	3.066312267	**2.236138522**
Monterey	2018	T7 tractor	Aggregated	Aggregated	DSL	265.3914115	38612.11	0	69.73001422	6.402805246	**6.03049891**
Monterey	2018	T7 tractor construction	Aggregated	Aggregated	DSL	31.05774559	2723.689	0	5.03546207	0.466234993	**5.841880826**
Monterey	2018	T7 utility	Aggregated	Aggregated	DSL	14.610423	334.5948	0	0.60805307	0.065654029	**5.096333518**
Monterey	2018	T7IS	Aggregated	Aggregated	GAS	19.21944882	3331.128	384.5427	6.636747278	0.739399601	**4.50517915**
Monterey	2018	UBUS	Aggregated	Aggregated	GAS	61.41915332	15428.92	245.6766	29.33754108	3.17301575	**4.862540068**
Monterey	2018	UBUS	Aggregated	Aggregated	DSL	66.2167924	16537.05	264.8672	41.39953149	3.725957834	**4.438335752**

EMFAC2014 (v1.0.7) Emissions Inventory
Region Type: County
Region: Monterey
Calendar Year: 2035
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	CO2_TOTEX	Fuel_Consumption	**Derived Emission Factor**
Monterey	2035	All Other Buses	Aggregated	Aggregated	DSL	331.0306	15039.04	0	19.84134736	1.785721262	**8.421827674**
Monterey	2035	LDA	Aggregated	Aggregated	GAS	150723.9	5435167	944843.1	1318.818518	140.9310118	**38.56615359**
Monterey	2035	LDA	Aggregated	Aggregated	DSL	2012.734	74114.08	12711.3	16.79960671	1.511964604	**49.01839626**
Monterey	2035	LDT1	Aggregated	Aggregated	GAS	6940.404	270501.5	43499.03	69.4700466	7.424264195	**36.43479472**
Monterey	2035	LDT1	Aggregated	Aggregated	DSL	3.793134	149.0108	23.83248	0.035795216	0.003221569	**46.25410892**
Monterey	2035	LDT2	Aggregated	Aggregated	GAS	67567.57	2365593	417605.1	747.1710943	79.88833157	**29.61125177**
Monterey	2035	LDT2	Aggregated	Aggregated	DSL	143.2698	5133.532	898.9128	1.494867602	0.134538084	**38.15672116**
Monterey	2035	LHD1	Aggregated	Aggregated	GAS	1881.643	51820.2	28033.68	48.15047117	5.151951938	**10.05836285**
Monterey	2035	LHD1	Aggregated	Aggregated	DSL	2267.476	70708.84	28522	41.84570463	3.766113417	**18.77501658**
Monterey	2035	LHD2	Aggregated	Aggregated	GAS	335.6101	12523.68	5000.09	12.59450684	1.344301351	**9.316124328**
Monterey	2035	LHD2	Aggregated	Aggregated	DSL	827.8271	30968.74	10413.02	20.03328079	1.802995271	**17.1762735**
Monterey	2035	MCY	Aggregated	Aggregated	GAS	7357.748	78605.75	14714.02	16.96016149	2.203885584	**35.66689431**
Monterey	2035	MDV	Aggregated	Aggregated	GAS	37516.71	1135695	221939.9	490.2573575	52.46537228	**21.64655964**
Monterey	2035	MDV	Aggregated	Aggregated	DSL	869.5534	29569.77	5446.821	11.1186993	1.000682937	**29.54958517**
Monterey	2035	MH	Aggregated	Aggregated	GAS	499.0302	4385.985	49.92298	5.942907807	0.633183472	**6.926878415**
Monterey	2035	MH	Aggregated	Aggregated	DSL	147.8516	1284.041	14.78516	1.445302884	0.13007726	**9.871372011**
Monterey	2035	Motor Coach	Aggregated	Aggregated	DSL	133.8814	17868.29	0	33.2061438	2.988552942	**5.978910202**
Monterey	2035	OBUS	Aggregated	Aggregated	GAS	161.5232	13599.02	3231.756	18.5516281	1.98000364	**6.868177122**
Monterey	2035	PTO	Aggregated	Aggregated	DSL	0	5630.076	0	11.60350862	1.044315776	**5.39116223**
Monterey	2035	SBUS	Aggregated	Aggregated	GAS	50.03963	3850.369	200.1585	2.85678585	0.305740418	**12.59358775**
Monterey	2035	SBUS	Aggregated	Aggregated	DSL	261.9811	9670.076	0	14.32994276	1.289694849	**7.497956904**
Monterey	2035	T6 Ag	Aggregated	Aggregated	DSL	411.853	4955.712	0	6.808936373	0.612804274	**8.086941368**
Monterey	2035	T6 CAIRP heavy	Aggregated	Aggregated	DSL	17.57628	856.1171	0	1.078082714	0.097027444	**8.823453109**
Monterey	2035	T6 CAIRP small	Aggregated	Aggregated	DSL	45.48089	2628.068	0	3.381804484	0.304362404	**8.634667703**
Monterey	2035	T6 instate construction heavy	Aggregated	Aggregated	DSL	60.42344	4762.939	0	6.173751468	0.555637632	**8.572023633**
Monterey	2035	T6 instate construction small	Aggregated	Aggregated	DSL	453.3438	21767.18	0	28.19226746	2.537304072	**8.578861636**
Monterey	2035	T6 instate heavy	Aggregated	Aggregated	DSL	982.8528	47615.79	0	60.46470709	5.441823639	**8.749968617**
Monterey	2035	T6 instate small	Aggregated	Aggregated	DSL	2350.696	120113.1	0	155.6034593	14.00431133	**8.576863284**
Monterey	2035	T6 OOS heavy	Aggregated	Aggregated	DSL	10.08702	490.5229	0	0.61773213	0.055595892	**8.823006729**
Monterey	2035	T6 OOS small	Aggregated	Aggregated	DSL	26.05884	1505.784	0	1.937646876	0.174388219	**8.634667703**
Monterey	2035	T6 Public	Aggregated	Aggregated	DSL	105.4679	1675.476	0	2.239339139	0.201540523	**8.313344955**
Monterey	2035	T6 utility	Aggregated	Aggregated	DSL	69.26794	1305.09	0	1.712737723	0.154146395	**8.466562704**
Monterey	2035	T6TS	Aggregated	Aggregated	GAS	297.4056	24822.92	5950.491	34.11988032	3.643372677	**6.813169544**
Monterey	2035	T7 Ag	Aggregated	Aggregated	DSL	226.5035	2166.89	0	4.991527014	0.449237431	**4.823485316**
Monterey	2035	T7 CAIRP	Aggregated	Aggregated	DSL	299.8431	76981.89	0	129.0122044	11.61109839	**6.630026399**
Monterey	2035	T7 CAIRP construction	Aggregated	Aggregated	DSL	15.61872	3378.793	0	5.869318056	0.528238625	**6.396337587**
Monterey	2035	T7 NNOOS	Aggregated	Aggregated	DSL	386.8924	95457.64	0	162.4495719	14.62046147	**6.529044118**
Monterey	2035	T7 NOOS	Aggregated	Aggregated	DSL	118.729	30407.82	0	51.74932677	4.657439409	**6.528871495**
Monterey	2035	T7 POAK	Aggregated	Aggregated	DSL	40.17084	6120.245	0	10.11956262	0.910760636	**6.719927401**
Monterey	2035	T7 Public	Aggregated	Aggregated	DSL	111.9927	2568.356	0	5.367539344	0.483078541	**5.3166419**
Monterey	2035	T7 Single	Aggregated	Aggregated	DSL	264.3911	28354.19	0	48.37042183	4.353337965	**6.513205991**
Monterey	2035	T7 single construction	Aggregated	Aggregated	DSL	92.43903	8740.492	0	14.76348387	1.328713549	**6.578161136**
Monterey	2035	T7 SWCV	Aggregated	Aggregated	DSL	172.6496	7955.083	0	34.74333337	3.126900003	**2.544079744**
Monterey	2035	T7 tractor	Aggregated	Aggregated	DSL	413.417	54105.17	0	87.5099781	7.875898029	**6.869713785**
Monterey	2035	T7 tractor construction	Aggregated	Aggregated	DSL	75.32129	6516.683	0	10.97338881	0.987604993	**6.598470757**
Monterey	2035	T7 utility	Aggregated	Aggregated	DSL	17.26354	394.0901	0	0.767860168	0.069107415	**5.702573735**
Monterey	2035	T7IS	Aggregated	Aggregated	GAS	16.41471	3317.808	328.4256	5.936714805	0.653314176	**5.078426847**
Monterey	2035	UBUS	Aggregated	Aggregated	GAS	48.07377	10995.33	192.2951	19.9054245	2.129162373	**5.164156318**
Monterey	2035	UBUS	Aggregated	Aggregated	DSL	46.29891	10573.72	185.1956	23.03199138	2.072879224	**5.100980741**

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APPENDIX C – CAPCOA QUANTIFYING GHG MITIGATION MEASURES

CAPCOA

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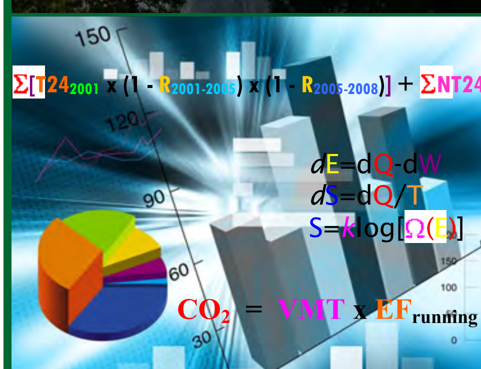

Quantifying Greenhouse Gas Mitigation Measures

A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures

August, 2010

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California Air Pollution Control Officers Association

with

Northeast States for Coordinated Air Use Management

National Association of Clean Air Agencies

Environ

Fehr & Peers

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Principal Author

Barbara Lee, NSCAPCD

Project Coordination

Jill Whynot, SCAQMD

Project Oversight Panel

Larry Allen, SLOAPCD
Aeron Arlin-Genet, SLOAPCD
Dan Barber, SJVAPCD
Jeane Berry, SMAQMD
Elaine Chang, SCAQMD
Yusho Chang, PCAQMD
Joseph Hurley, SMAQMD
Aaron Katzenstein SCAQMD
Barbara Lee, NSCAPCD (Chair)
Paul Miller, NESCAUM
Ian Peterson, BAAQMD
Tim Taylor, SMAQMD
Tom Thompson, PCAQMD
David Vintze, BAAQMD
Barry Wallerstein, SCAQMD
David Warner, SJVAPCD
Jill Whynot, SCAQMD (Vice Chair)
Abby Young, BAAQMD
Mel Zeldin, CAPCOA
Yifang Zhu, SCAQMD

External Reviewers

Martha Brook, CEC
Pete Parkinson, County of Sonoma
Bill Loudon, DKS Associates

Editing, Proofing & Layout

Fernando Berton, CAPCOA
Jessica DePrimo, NSCAPCD
Arlene Farol, SCAQMD

Technical Analysis & Discussion of Methods

Shari Libicki, Environ
David Kim, Environ
Jennifer Schulte, Environ
Jerry Walters, Fehr & Peers
Meghan Mitman, Fehr & Peers
Tien-Tien Chan, Fehr & Peers

Disclaimer

The California Air Pollution Control Officers Association (CAPCOA) has prepared this report on quantifying greenhouse gas emissions from select mitigation strategies to provide a common platform of information and tools to support local governments.

This paper is intended as a resource, not a guidance document. It is not intended, and should not be interpreted, to dictate the manner in which a city or county chooses to address greenhouse gas emissions in the context of projects it reviews, or in the preparation of its General Plan.

This paper has been prepared at a time when California law and regulation, as well as accepted practice regarding how climate change should be addressed in government programs, is undergoing change. There is pending litigation that may have bearing on these decisions, as well as active legislation at the federal level. In the face of this uncertainty, local governments are working to understand the new expectations, and how best to meet them. This paper is provided as a resource to local policy and decision makers to enable them to make the best decisions they can during this period of uncertainty.

Finally, in order to provide context for the quantification methodologies it describes, this report reviews requirements, discusses policy options, and highlights methods, tools, and resources available; these reviews and discussions are not intended to provide legal advice and should not be construed as such. Questions of legal interpretation, or requests for legal advice, should be directed to the jurisdiction's counsel.

Table of Contents

Executive Summary

This report on *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* was prepared by the California Air Pollution Control Officers Association with the Northeast States for Coordinated Air Use Management and the National Association of Clean Air Agencies, and with technical support from Environ and Fehr & Peers. It is primarily focused on the quantification of project-level mitigation of greenhouse gas emissions associated with land use, transportation, energy use, and other related project areas. The mitigation measures quantified in the Report generally correspond to measures previously discussed in CAPCOA's earlier reports: *CEQA and Climate Change*; and *Model Policies for Greenhouse Gases in General Plans*. The Report does not provide policy guidance or advocate any policy position related to greenhouse gas emission reduction.

The Report provides a discussion of background information on programs and other circumstances in which quantification of greenhouse gas emissions is important. This includes voluntary emission reduction efforts, project-level emission reduction efforts, reductions for regulatory compliance, and reductions for some form of credit. The information provided covers basic terms and concepts and again, does not endorse or provide guidance on any policy position.

Certain key concepts for quantification are covered in greater depth. These include baseline, business-as-usual, types of emission reductions, project scope, lifecycle analysis, accuracy and reliability, additionality, and verification.

In order to provide transparency and to enhance the understanding of underlying strengths and weaknesses, the Report includes a detailed explanation of the approaches and methods used in developing the quantification of the mitigation measures. There is a summary of baseline methods (which are discussed in greater detail in Appendix B) as well as a discussion of methods for the measures. This includes the selection process for the measures, the development of the quantification approaches, and limitations in the data used to derive the quantification.

The mitigation measures were broken into categories, and an overview is provided for each category. The overview discusses specific considerations in quantifying emissions for measures in the category, as well as project-specific data the user will need to provide. Where appropriate and where data are readily available, the user is directed to relevant data sources. In addition, some tables and other information are included in the appendices.

The mitigation measures are presented in Fact Sheets. An overview of the Fact Sheets is provided which outlines their organization and describes the layout of information. The Report also includes a step-by-step guide to using a Fact Sheet to quantify a project, and discusses the use of Fact Sheets outside of California. The Report also discusses the grouping of the measures, and outlines procedures and limitations for quantifying projects where measures are combined either within or across categories. These limitations are critical to ensure that emission reductions are appropriately quantified and are not double counted. As a general guide, approximate ranges of effectiveness are provided for each of the measures, and this is presented in tables at the end of Chapter 6. These ranges are for reference only and should not be used in lieu of the actual Fact Sheets; they do not provide accurate quantification on a project-specific basis.

The Fact Sheets themselves are presented in Chapter 7, which includes an index of the Fact Sheets and cross references each measure to measures described in CAPCOA's earlier reports: *CEQA and Climate Change*; and *Model Policies for Greenhouse Gases in General Plans*. Each Fact Sheet includes a description of the measure, assumptions and limitations in the quantification, a baseline methodology, and the quantification of the measure itself. There is also a sample project calculation, and a discussion of the data and studies used in the development of the quantification.

In the Appendices, there is a glossary of terms. The baseline methodology is fully explained, and there is additional supporting information for the transportation methods and the non-transportation methods. Finally, the Report includes select reference tables that the user may consult for select project-specific factors that are called for in some of the Fact Sheets.

Background

The California Air Pollution Control Officers Association (CAPCOA) prepared the report, *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* (Quantification Report, or Report), in collaboration with the Northeast States for Coordinated Air Use Management (NESCAUM) and the National Association of Clean Air Agencies (NACAA), and with contract support from Environ, and Fehr & Peers, who performed the technical analysis. The Report provides methods for quantifying emission reductions from a specified list of mitigation measures, primarily focused on project-level mitigation. The emissions calculations include greenhouse gases (GHGs), particulate matter (PM), carbon monoxide (CO), oxides of nitrogen (NOx), sulfur dioxide (SO2), and reactive organic gases (ROG), as well as toxic air pollutants, where information is available.

The measures included in this Report were selected because they are frequently considered as mitigation for GHG impacts, and standardized methods for quantifying emissions from these projects were not previously available. Measures were screened on the basis of the feasibility of quantifying the emissions, the availability of robust and meaningful data upon which to base the quantification, and whether the measures (alone or in combination with other measures) would result in appreciable reductions in GHG emissions. CAPCOA does not mean to suggest that other measures should not be considered, or that they might not be effective or quantifiable; on the contrary, there are many options and approaches to mitigate emissions of GHGs. CAPCOA sought to provide a high quality quantification tool to local governments with the broadest applicability possible, given the resource limitations for the project. CAPCOA encourages local governments to be bold and creative as they approach the challenge of climate change, and does not intend this Report to limit the scope of measures considered for mitigation.

The majority of the measures in the Report have been discussed in CAPCOA's previous resource documents: *CEQA and Climate Change*, and *Model Policies for Greenhouse Gases in General Plans*. The measures in this Report are cross-referenced to those prior reports. The quantification methods provided here are largely project-level in nature; they can certainly inform planning decisions, however a complete planning-level analysis of mitigation strategies will entail additional quantification.

In developing the quantification methods, CAPCOA and its contractors conducted an extensive literature review. The goal of the Report was to provide accurate and reliable quantification methods that can be used throughout California and adapted for use outside of the state as well.

Intent and Audience

This document is intended to further support the efforts of local governments to address the impacts of GHG emissions in their environmental review of projects and in their planning efforts. Project proponents and others interested in quantifying mitigation measures will also find the document useful.

The guidance provided in this Report specifically addresses appropriate procedures for applying quantification methods to achieve accurate and reliable results. The Report includes background information on programs and concepts associated with the quantification of GHG emissions. The Report does not provide policy guidance on any of these issues, nor does it dictate how any jurisdiction should address questions of policy. Policy considerations are left to individual agencies and their governing boards. Rather, this Report is intended to support the creation of a standardized approach to quantifying mitigation measures, to allow emission reductions and measure effectiveness to be considered and compared on a common basis.

Because the quantification methods in this Report were developed to meet the highest standards for accuracy and reliability, CAPCOA believes they will be generally accepted for most quantification purposes. The decision to accept any quantification method rests with the reviewing agency, however. Further, while the Report discusses the quantification of GHG emissions for a variety of purposes, including the quantification of reductions for credit, using these methods does not guarantee that credit will be awarded.

Using the Document

Chapters 2 and 3 of this Report discuss programs and concepts associated with GHG quantification. They are intended to provide background information for those interested in the context in which reductions are being made. Chapter 4 discusses the underpinnings of the quantification methods and specifically addresses limitations in the data used as well as limitations in applying the methods; it is important for anyone using this Report to review Chapter 4. Chapter 5 provides an overview of the mitigation measure categories, including key considerations in the quantification of emission reductions in those categories. Chapter 6 explains how to use the fact sheets for each measure's quantification method, and also discusses the effectiveness of the measures and how combining measures changes the effectiveness.

Once the user understands the quantification context, and the limitations of the methods, the fact sheets can be used like recipes in a cookbook . In using the fact sheets, however, CAPCOA strongly advises the reader to pay careful attention to the assumptions and limitations set forth for each individual measure, and to make sure that these are respected and appropriately considered.

The fact sheets with the actual quantification methods for each individual measure are contained in Chapter 7. The baseline methods are explained in Appendix B. It is the responsibility of the user to ensure that all data inputs are provided as called for in the methods, and that the data are of appropriate quality.

CAPCOA will not be able to provide case-by-case review or adjustments for specific projects outside of the provision for project-specific data inputs that is part of each fact sheet. Questions about individual projects may be referred to your local air district.

As a final note, the methods contained in this document include generalized information about the measures themselves. This information includes emission factors, usage rates, and other data from various sources, most commonly published data from public agencies. The data were carefully reviewed to ensure they represent the best information available for this purpose. The use of generalized information allows the quantification methods to be used across a range of circumstances, including variations in geographical location, climate, and population density, among others.

Where good quality, project-specific data is available that provides a superior characterization of a particular project, it should be used instead of the more generalized data presented here. The methods provided for baseline and mitigated emissions scenarios allow for such substitution. The local agency reviewing the project should review the project-specific data, however, to ensure that it meets standards for data quality and will not result in an inappropriate under- or overestimation of project emissions or mitigation.

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Quantification Framework

The Quantification Report has been prepared to support a range of quantification needs. It is based on the premise that quantification of GHG emissions and reductions should rest on a foundation of clear assumptions, limits, and calculations. When these elements and the methods of applying them are transparent, a common "language" is created that allows us to talk about, compare, and evaluate GHGs with confidence that we are looking at "apples to apples."

For the purpose of this report, GHGs are the six gases identified in the Kyoto Protocol: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). GHGs are expressed in metric tons (MT) of CO_2e (carbon dioxide equivalents). Individual GHGs are converted to CO_2e by multiplying values by their global warming potential (GWP). Global warming potentials represent a ratio of a gas' heat trapping characteristics compared to CO_2, which has a global warming potential of 1.

As a general rule, the quantification methods in this report are only accurate to the degree that the project adheres to the assumptions, limitations, and other criteria specified for a given measure. Where specific data inputs are indicated for either the baseline or the project scenario calculations, those data must be provided for the calculations to be valid. Further, the quality of the data used will substantially impact the quality of the results achieved. For example, if a calculation method calls for a traffic count, the calculations can't be made without supplying a traffic count number. However, the number used could be a rough estimate, could be based on a small, one-time sample, or could be derived through a full traffic study over a representative period of time or times. Clearly, using a rough estimate for any of the data inputs will yield results that are less accurate than they would be if higher quality data inputs were provided.

This does not mean that rough estimates cannot be used. There will be times when the quantification does not need to be precise. In order to speak the common language, however, it is important to identify how precise your data inputs are. It is also important to give careful consideration to the intended use of the quantification, to make sure that the results you achieve will be sufficiently rigorous to support the conclusions you draw from them.

The quantification methods in this report rely on very specific assumptions and limitations for each mitigation measure. Unlike the discussion of data inputs, the measure assumptions and limits affect more than the precision of the calculations: they determine whether the calculation is valid at all. For example, there is a method for calculating GHG reductions for each percentage in improvement in building energy use beyond the performance standards in California's Title 24; that method states that the measure is specifically for electricity and natural gas use in residential and commercial buildings subject to Title 24. If the building is located outside of California, where Title 24 is not applicable, the method will not yield accurate results unless the baseline assumptions are adjusted to reflect the standards that actually apply. Further, the measure effectiveness is based on assumptions that certain other energy efficiency measures are also applied (such as third-party HVAC-commissioning); if those additional measures are not applied, the calculated reductions will not be accurate and will overestimate the reductions compared to what will actually be achieved.

There may be situations where you choose to apply a method even if the assumptions do not match the specific conditions of the project; while CAPCOA does not recommend this, if you do it, it is imperative that any deviations are clearly identified. While you may still be able to calculate a reduction for your measure, in many cases the error in your result will be so large that any conclusions you would draw from the analysis could be completely wrong.

Quantifying Measures for Different Purposes

There are several reasons that a person might implement measures to reduce GHG emissions. Some measures are implemented simply because it's a good thing to do. Knowing how many metric tons of GHG emissions were reduced might not be important in that case. There are other reasons for undertaking a project to reduce GHGs, however, and for some of these purposes quantification (and verification) become increasingly important, and sensitive. This chapter discusses the role of quantification, and to a lesser extent verification, in reductions undertaken for a range of reasons. These include: voluntary reductions, reductions undertaken specifically to mitigate current or future impacts, reductions for regulatory compliance, and reductions where some form of credit is being sought, including credits that may be traded on a credit exchange. The purpose for which reductions are quantified will determine the level of detail involved in the quantification, as well as the degree of verification needed to support the quantification. As stated previously, this discussion is provided for information purposes only; it should not be construed to advocate or endorse any particular policy position.

Voluntary Reductions

Voluntary reductions of GHG emissions are reductions that are not required for any reason, including a regulation, law, or other form of standard. Even when reductions are not mandatory, however, there may be reasons to quantify them. The project proponent may simply want to know how effective the project is. Examples of this would be when a project is undertaken in an educational setting, or to demonstrate the general feasibility of a concept, or promote an image of environmental responsibility. In such a case, the focus may be on implementing the project more than documenting exactly how many tons of CO_2e have been reduced,

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CLIMATE LEADERS

and a reasonable estimate might be sufficient. The project proponent may wish to track reductions to fulfill an organizational policy or commitment, or to establish a track record in GHG reductions. For these purposes, the quantification does not need to be precise, but it should still be based on sound principles and accepted methods.

When reductions are purely voluntary, they may be estimated using the methods contained in this document, even if all of the variables are not known, or if some of the assumptions are not fully supported by the specifics of the project. If the quantification is performed without the level of detail outlined in the method for a given measure (or specified for the baseline calculations), the results will be less accurate. The same is true if a method is used in a situation where the assumptions are not fully supported, or if the method is used outside the noted limitations. As one would expect, the greater the degree of variation from the conditions put forth in the fact sheets, the less accurate the quantification will be. Significant deviation can result in very large errors.

If there is any possibility that the project proponent may at some point wish to use the reductions to fulfill a future regulatory or mitigation requirement, or seek some form of credit for the reductions, the proponent should not deviate from the methods and should ensure that all necessary data are included, and all assumptions and limitations are appropriately addressed. Acceptance of the quantification methods in this Report to fulfill any requirement is solely at the discretion of the approving agency. Use of these methods does not guarantee that credit of any kind will be awarded for reductions made.

Reductions to Mitigate Current or Future Impacts

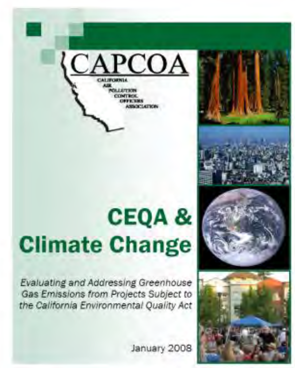
One of the most common reasons for quantifying emissions of GHG is to analyze and mitigate current or future impacts of specific actions or activities. This can include project-level impacts, such as those evaluated under the California Environmental Quality Act (CEQA), or plan-level impacts, such those resulting from the implementation of a General Plan or Climate Action Plan. Quantification of projects and mitigation under CEQA was the main focus in preparing this guidance document. Most of the measures quantified in the Report are project-level in nature. Many of these are also good examples of the kinds of policies and actions that would be included in a General Plan or a Climate Action Plan. The quantification methods provided here can be used to support conclusions about the effectiveness of different measures in a planning context; however, a full analysis of plan-level impacts will require consideration of additional factors, depending on the nature of the measure. Some of the measures have been specifically identified as General Plan measures, and a discussion is included about appropriate analysis of these measures, where study data exist to support such analysis.

Project-Level Mitigation: Existing environmental law and policy requires that environmental impacts of projects be evaluated and disclosed to the public, and where those impacts are potentially significant, that they be mitigated. At the federal level, the National Environmental Protection Act (NEPA) governs this evaluation. Many states have their own programs as well; in California, the California Environmental Quality Act, or CEQA, sets forth the requirements and the framework for the review.

The responsibility to evaluate impacts, to determine significance, and to define appropriate mitigation rests with the Lead Agency. This is typically a city or county with land-use decision-making authority, although other agencies can be Lead Agencies, depending on the nature of the project and the jurisdiction of the agency.

Guidance on CEQA and Climate Change: There are currently two resources for Lead Agencies on incorporating considerations of climate change into their CEQA processes. The first was prepared by CAPCOA, and the most recent is an amendment to the official CEQA Guidelines prepared by the California Natural Resources Agency (Resources Agency).

CAPCOA Guidance- In January of 2008, CAPCOA released a resource document, *"CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act,"* that discussed different approaches to determining whether GHG emissions from projects are significant under CEQA. It reviewed the models and other tools available at that time for conducting GHG analyses, and the document also contained a list of mitigation measures. A copy of the report is available at *http://www.capcoa.org*.



Resources Agency Guidance- Since the release of that report, the California Natural Resources Agency (Resources Agency) finalized its guidance on GHG emissions and CEQA in December of 2009. Under Senate Bill 97 (Chapter 148, Statutes of 2007), the Governor's Office of Planning and Research (OPR) was required to prepare amendments to the state's CEQA Guidelines addressing analysis and mitigation of the potential effects of GHG emissions in CEQA documents. The legislation required the Resources Agency to adopt the amended Guidelines by 2010.

The CEQA Guidelines Amendments adopted by the Resources Agency made material changes to 14 sections of the Guidelines. The changes include dealing with the determination of significance (principally in Public Resource Code Section 15064) and cumulative impacts, as well as areas such as the consultation process for the draft EIR, the statement of overriding considerations, the environmental setting, mitigation measures, and tiering and streamlining. Overall, the discussion of determining significance in

these amendments is consistent with the earlier report released by CAPCOA.

In the Final Statement of Reasons (SOR) for the adoption of the amendments to the CEQA Guidelines, the Resources Agency makes two points that are important with regard to quantification of GHG emissions from projects. First, it states that the Guidelines "appropriately focus on a project's potential incremental contribution of GHGs" and that the amendments "expressly incorporate the fair argument standard." [1] This sets the parameters for the analysis to be performed. The Resources Agency further states that the analysis for GHGs must be consistent with existing CEQA principles, which includes standards for the substantial evidence needed to support findings.

Second, the Final SOR specifically states that the amendments "interpret and make specific statutory CEQA provisions and case law … determining the significance of GHG emissions that may result from proposed projects."[2] In this context, they cite specific case law as well as CEQA Guidelines Section 15144 that require a lead agency to "meaningfully attempt to quantify the Project's potential impacts on GHG emissions and determine their significance."[3]

Complete copies of the 2009 CEQA Guidelines Amendments and the Final Statement of Reasons may be downloaded at: *http://ceres.ca.gov/ceqa/docs/*.

<u>Quantification of Projects</u>: Project level quantification, especially as it pertains to CEQA, was CAPCOA's main focus in developing this Report. The baseline conditions and quantification methods were selected to be consistent with the implementation of AB 32, as well as the Scoping Plan developed by ARB. The list of mitigation measures selected for the Report reflects the types of strategies that local governments and project proponents have shown interest in, and sought direction on quantifying. For the most part, they entail clearly delineated boundary conditions, and have been designed to be applicable across a range of circumstances.

This Quantification Report does not provide any policy guidance on what amount of GHG emissions would be significant. The determination of significance, including any thresholds, is the exclusive purview of the Lead Agency and its policy board. CAPCOA's Quantification Report provides methods to quantify emissions from specific types of mitigation projects or measures. It is based on a careful review of existing studies and determinations to develop rigorous quantification methods that meet the substantial evidence requirements of CEQA.

A project proponent or reviewer who wishes to use these methods to quantify emissions for the purpose of complying with CEQA must adhere to the assumptions and limitations

[1] California Natural Resources Agency: "Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing and Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97," December, 2009; p 12.
[2] Ibid: p. 18.
[3] Ibid: p. 18.

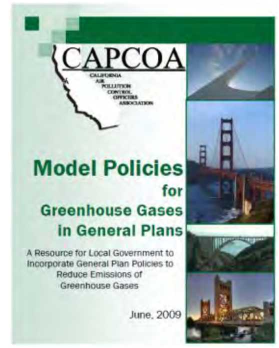
specified in the methods for each project type. If these assumptions and limitations are not followed, the quantification will not be valid. Ultimately, the Lead Agency will have the responsibility to review and decide whether to allow any requests for deviations from the method, and to determine whether those deviations have a substantive impact on the results. Lead Agencies may contact their local air district for assistance in making such a review, but CAPCOA will not be in a position to provide any case-by-case review of changes to the quantification methods in this report.

As stated previously, where good quality, project-specific data are available, they should be substituted for the more generalized data used in the baseline and mitigation emissions calculations. The quality of the data inputs can significantly affect the accuracy and reliability of the results. When quantification is performed for CEQA compliance, CAPCOA recommends that project-specific data be as robust as possible. We discourage the use of approximations or unsubstantiated numbers. In any case, CAPCOA strongly recommends that the source(s) and/or basis of all project-specific data supplied by the project proponent be clearly identified in the analysis, and the limitations of the data be discussed.

Plan-Level Mitigation: Cities and counties, as well as other entities, develop environmental planning documents. The most common are General Plans, which specify the blueprint for land-use, transportation, housing, growth, and resource management for cities, counties, and regions. These plans are periodically updated, and in recent updates, the California Attorney General has put jurisdictions on notice that their plans must consider climate change.

A stand-alone plan that considers climate change is a Climate Action Plan. Climate Action Plans can be developed for a school or company, for a city, county, region, or larger jurisdiction. A Climate Action Plan will typically identify a reduction target or commitment, and then set forth the complement of goals, policies, measures, and ordinances that will achieve the target. These policies and other strategies will typically include measures in transportation, land use, energy conservation, water conservation, and other elements.

<u>Guidance on Planning and Climate Change</u>: CAPCOA prepared a guidance document on GHGs and General Plans for local governments. There are also several important processes under way that will have a significant impact on the planning process in the coming years. These include the early implementation of Senate Bill 375 (Steinberg, Statutes of 2008); the development of new General Plan Guidelines; and statewide planning for adaptation to the impacts of climate change. They are described below.

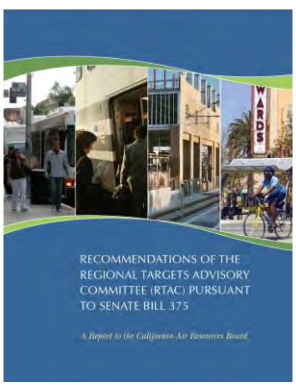


<u>CAPCOA Guidance for General Plans</u>- In June of 2009, CAPCOA released "*Model Policies for Greenhouse Gases in General Plans: A Resource for Local Government to Incorporate General Plan Policies to Reduce Emissions of Greenhouse Gases*." This document embodied a menu of GHG mitigation measures that could

be included in a General Plan or a Climate Action Plan. It was structured around the elements of a General Plan, provided model language that could be taken and dropped into a plan, and also provided a worksheet for evaluating which measures to use. The CAPCOA Model Policies document focused on strategies to reduce GHG emissions; it did not address climate change adaptation, which is an important, but separate consideration.

Senate Bill 375- Senate Bill 375 is considered a landmark piece of legislation that aligns regional land use, transportation, housing, and greenhouse gas reduction planning efforts. The bill requires the ARB to set greenhouse gas emission reduction targets for light trucks and passenger vehicles for 2020 and 2035. The 18 Metropolitan Planning Organizations (MPOs) are responsible for preparing Sustainable Communities Strategies and, if needed, Alternative Planning Strategies (APS), that will include a region's respective strategy for meeting the established targets. An APS is an alternative strategy that must show how the region would, if implemented, meet the target if the SCS does not.

To develop the targets, SB 375 called for a Regional Targets Advisory Committee (RTAC), which included representatives from the MPOs, cities and counties, air districts, elected officials, the business community, nongovernmental organizations, and experts in land use and transportation. The RTAC provided recommendations on the targets to ARB in a formal report in September, 2009. The report covers a range of important considerations in target setting and implementation. Target setting topics include: the use of empirical data and modeling; key underlying assumptions; best management practices; the base year, the metric, targets for 2020 and 2035; and both statewide and regional factors affecting transportation patterns. For implementation, the report considers housing and social equity issues; local government challenges in meeting the targets; funding and other support at the state and federal level; and a variety of other important considerations. A complete copy of the report may be downloaded at: *http://www.arb.ca.gov/cc/sb375/rtac/report/092909/finalreport.pdf*.



ARB staff released draft regional targets for 2020 for the four largest MPOs in June, 2010, along with placeholder targets for 2035. Placeholder targets were also issued for both 2020 and 2035 for MPOs in the San Joaquin Valley. An alternative approach to target setting was proposed for the remaining MPOs. As required by SB 375, ARB expects to formally adopt the final targets before the end of September, 2010. Additional information about the target setting process can be found at: *http://www.arb.ca.gov/cc/sb375/sb375.htm*.

For the four largest MPOs, the draft 2020 targets are expressed as a percent reduction in emissions based on the potential reductions from land use and transportation planning scenarios provided by the MPOs, with a proposed range for the targets between 5% and 10%[4]. This reduction excludes the expected emission reductions from Pavley GHG vehicle standards and low carbon fuel standard measures. Each of the four regions has its own placeholder targets for 2035, shown in Table 2-1, below.

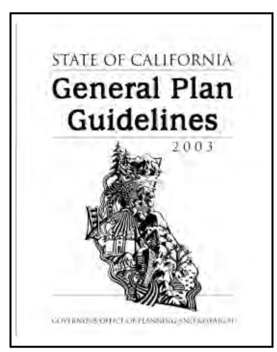
Table 2-1: Draft Regional Targets for 2035	
Regional MPO	Draft GHG Reduction Target
Metropolitan Planning Commission (MTC)	3-12%
Sacramento Area Council of Governments (SACOG)	13-17%
San Diego Association of Governments (SANDAG)	5-19%
Southern California Association of Governments (SCAG)	3-12%

Source: ARB: "Draft Regional Greenhouse Gas Emission Reduction Targets For Automobiles and Light Trucks Pursuant to Senate Bill 375" page 4.

The placeholder targets for the MPOs in the San Joaquin Valley range from 1-7% for both 2020 and 2035. Placeholder targets were provided in lieu of draft targets to allow the MPOs to provide additional information for ARB to consider before finalizing the targets. For the remaining six MPOs, ARB proposes to use the most current per-capita GHG emissions data, adjusted for the impacts of the recession, as the basis for setting individual regional targets in those areas.

In addition to serving on the RTAC, local districts will support the MPOs as they develop their strategies to meet their regional targets, and local cities and counties as they incorporate sustainable strategies into their own planning efforts. Two of the contractors who developed the quantification methods in this Quantification Report also served on the RTAC, and every effort has been made to ensure that work here will ultimately be compatible with, and useful in, the implementation of SB 375.

General Plan Guidelines- The Governor's Office of Planning and Research (OPR) provides technical assistance on land use planning and CEQA matters to local governments. In this effort, OPR is required to adopt and periodically revise advisory guidelines to assist local governments in the preparation of local general plans. Commonly referred to as the General Plan Guidelines, the most current edition was released in 2003.



In the 2003 edition, OPR included an overview of the General Plan statutory requirements, a review of CEQA's role in the general plan process, implementation techniques, and the General Plan's relationship to other statutory planning requirements. The 2003 Guidelines do not specifically address GHG emissions or climate change.

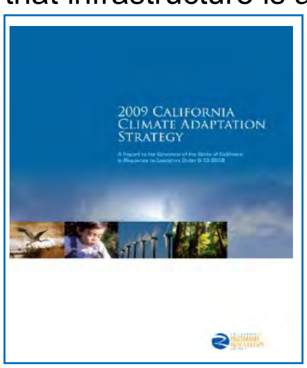
[4] ARB: "Draft Regional Greenhouse Gas Emission Reduction Targets For Automobiles and Light Trucks Pursuant to Senate Bill 375," June, 2010; page 4.

It is important to note that the General Plan Guidelines are advisory, not mandatory. Nevertheless, it is the state's only official document explaining California's legal requirements for general plans. The General Plan Guidelines are continually shaped to reflect current trends, changes in applicable laws, and incorporate additional statutory requirements. This includes anticipated effects from AB 32 and SB 375.

An update to the 2003 General Plan Guidelines has been in development and includes a Climate Change Supplement. This update is expected to be finalized by the end of 2010.

<u>Adaptation</u>- Adaptation has not received the same attention that has been given to steps that might prevent or mitigate the extent of climate change, however it is a topic that should not be ignored in General Plans. The overwhelming body of scientific studies point to a certain amount of change in our climate that is inevitable, even if we are aggressive and diligent in our efforts to prevent it. Many regions of the state (indeed, the nation) are projected to see substantial impacts on agriculture, climate dependant business (such as recreation and tourism), infrastructure, and habitat. Coastal areas will see a rise in sea level, currently projected to be between one and three meters by 2100. Wild fires are expected to increase in number, size, and severity. Stresses on the environment, combined with extreme weather events, are projected to increase the incidence and severity of a number of infectious diseases and other medical conditions. These and myriad other changes pose tremendous risks to people and our way of life.

For that reason, in December, 2009, a team of California state agencies released a report: "The 2009 Climate Adaptation Strategy." In it, the team states that 2.5 trillion dollars' worth of infrastructure in California is at risk from the various projected climate-related changes in our environment. The estimated cost of addressing the impacts on that infrastructure is about $3.9 billion, annually.[5] The report identifies a number of



steps to be taken in the near term to appropriately plan for and address this threat. Highlights of the actions include: the formation of a Climate Adaptation Advisory Panel; new approaches to water management; revised land-use planning to avoid construction in highly vulnerable areas; evaluation of all state infrastructure projects to avoid exacerbating threats to infrastructure; and, more specific planning by emergency response agencies, public health agencies, and others to fortify existing communities and resources, and prepare for future stressors. For more information, the full report may be downloaded at: *http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF*.

<u>Quantification for Planning Purposes</u>: Quantification of the impacts of measures for planning purposes is a different exercise than quantification for a specific project. By its

[5] California Natural Resources Agency: "2009 Climate Adaptation Strategy" Dec. 2009; p. 5.

very nature, planning involves a future set of conditions about which less is known, and indeed knowable. The art and science of planning depend upon the interpretation of present conditions and trends, and the application of that interpretation to create a picture of future conditions. This document does not address detailed planning analysis in a comprehensive manner.

The majority of the measures described and quantified here are project-level measures; only a few are plan-level measures by design. That said, many of the project level measures are good examples of the implementation of planning-level policies that were described in the CAPCOA Model Policies report. The quantification of these measures will provide important and useful information for the planner to use in the context of quantifying anticipated effects in broader planning efforts.

In a planning context, it is especially important to be mindful of the interactions of different measures. A more detailed explanation is provided in Chapter 6, but the main concern is that certain measures do interact with each other, and their effects are not independent. This means that some measures will have little effect on their own, but in combination with other measures may have significant effect. The classic example of this is the bus shelter. A clean, well-lit, and comfortable bus shelter can enhance ridership on the buses stopping at that shelter and therefore reduce vehicle trips; but without the underlying bus service, the shelter itself does not reduce vehicle trips.

There are also instances where a measure is less effective in combination with other measures than it might be by itself. There are several reasons why this can occur. In some cases this happens because of a diminishing return for consecutive efforts. For example, there may be six good methods to increase ridership on a public transit line, any one of which might increase transit ridership by 20%. But implementing all of them will not necessarily increase ridership by 120%. In fact, for each successive method applied, it is likely that a lesser effect will be observed. Another example is where the measures are in some sense competing, as in a campaign to increase ridership on a commuter rail line at the same time that a new public transit bus line is established with overlapping service areas. Although the ridership campaign might be expected to cause 5% of drivers to switch to rail, some of those potential new riders might use the new bus service instead, making the ridership campaign less effective. At the same time, the new bus line might also be expected to reduce vehicle trips by 5%, but the actual reduction may be lower in reality if some of the ridership comes from those who would have been rail passengers and not from driving. Together, the ridership campaign for the rail line and the new bus line may only reduce vehicle trips by 7%, not the 10% predicted from the estimates of their independent effectiveness.[6]

These effects become more pronounced when considered in a city-wide, county-wide, or regional context. The interplay of land use decisions and transportation infrastructure development will be better assessed with more integrated computer modeling efforts. The quantification of some of the strategies at the individual, project level will provide

[6] Please note that the effectiveness estimates provided here are only for the purposes of illustration and should not be taken as actual quantification of such measures.

insight into how useful and appropriate the strategies will be in the planning effort, however. More detailed discussion of how to quantify combinations of measures is provided in Chapter 6.

Reductions for Regulatory Compliance

There are three basic types of regulations for which emissions quantification is likely to be required: command-and-control regulations, permitting, and participation in a cap-and-trade program. A discussion of each is provided for information purposes, as is a discussion of quantification for mandatory emissions reporting regulations. The quantification methods in this document are intended primarily for use in project-level mitigation. Regulatory programs are likely to have specific requirements for monitoring, reporting, and quantification, which may or may not allow the use of the methods in this Report.

Command and Control Regulations: Some local air districts have command-and-control regulations for GHGs already on the books. These include limitations on the use of certain chemicals that are active in the atmosphere, performance requirements for landfill gas collection, and for systems that use GHGs with high Global Warming Potential, as well as efficiency standards for specific equipment or processes. Under the umbrella of the Scoping Plan, the ARB is also developing command-and-control regulations for a number of source categories. Regulations already adopted include standards for various GHGs that have a high global warming potential, such as sulfur hexafluoride (SF_6) used in the electricity sector, semiconductors, and other operations; perfluorocarbons in semiconductor manufacturing; certain refrigerants; and materials used in consumer products. There are also GHG emission limits on light-duty vehicles, rules for port drayage trucks and other heavy-duty vehicles, as well as landfill methane control requirements, and the Low Carbon Fuel Standard. Additional rulemaking is currently underway.

For these types of regulations, compliance may not rest upon quantification of emissions or emissions reductions. In many cases, installation of a specific technology, substitution of materials, or implementation of inspection and maintenance programs meets the requirements of the rule, and is presumed to have a certain effectiveness in reducing emissions from a baseline level. When a focused regulation does require quantification of emissions, it will generally specify a method for testing emissions, where appropriate, or for calculating emissions from other measured parameters.

A related, but more flexible type of regulation for emission reductions is an overall emissions cap for facilities or operations. Under this approach, sometimes referred to as a “bubble,” the regulation calls for an overall reduction in emissions from a specified baseline, but the operator has the discretion to decide how to achieve those reductions. This is different from a cap-and-trade program (see below), in that there is no trading between facilities, or purchasing of credits to offset obligations. Because energy efficiency and other conservation projects are a likely strategy to meet a facility-wide GHG emission reduction requirement, the quantification of measures in this Report may be useful for compliance with such a cap. Of course, the caveats about assumptions and data inputs are also important here. Further, demonstration of compliance with this kind of limit will also involve verification of the emissions reductions, and is likely to include ongoing compliance tracking.

The regional targets of SB 375 are a type of emissions cap. It is important to note that the quantification presented in this Report may ultimately be useful in demonstrating reductions towards those targets. Although much of the work of implementing SB 375 will involve extensive land use and transportation modeling, the project level quantification in this Report may allow cities and counties to track their contribution towards their region's goal.

Permitting Programs: In addition to land-use permitting (discussed under "Project-level Mitigation" above), there may be requirements for operations to have permits to emit GHGs because GHGs are air pollutants. Federal air permitting requirements for stationary sources will become effective on January 1, 2011 (and will apply to applications that have not been acted upon prior to that date), under several federal permit programs, including Prevention of Significant Deterioration (PSD) and Title V. These programs are implemented by the local air districts. Applicability of these programs is based on annual potential to emit GHGs, with thresholds initially set between 75,000 and 100,000 tons per year, depending on the program, and decreasing over time, with final thresholds for smaller sources of GHG to be determined by a future federal rulemaking.

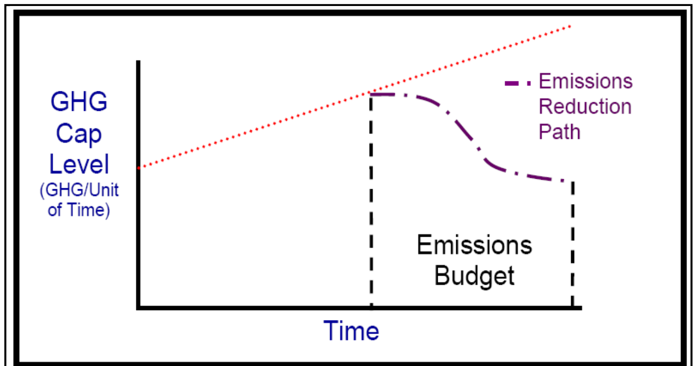
Because these permit programs are threshold-driven, quantification of emissions is an important element of compliance. At present, there is no specific federal guidance on quantifying GHG emissions pursuant to these programs, other than general guidelines for quantifying emissions of other regulated pollutants. This Quantification Report does not specifically address stationary source emissions, however some of the methods may be useful for certain elements of these programs, such as energy efficiency, water efficiency, and other associated measures of carbon use by a facility. The local air district with jurisdiction will be able to provide guidance on calculating emissions for a specific project, both for applicability and for compliance.

In addition, most permits require some form of verification, and ongoing demonstration on compliance. These obligations will be established as part of the permit.

Cap-and-Trade: A cap-and-trade program is a specific type of emissions trading program. Emissions trading in general is discussed in the next section. A brief explanation of cap-and-trade programs is provided below as background information for interested readers. It is not necessary to understand cap and trade programs, or emissions trading in general, in order to use the quantification methods in this report.

Further, these quantification methods were not developed specifically for the purposes of complying with cap and trade requirements, or for emissions trading more generally.

A cap-and-trade regulation establishes “allowances” for carbon emissions, expressed as CO_2 equivalents, usually in tons, or metric tons. An emitter of carbon must hold enough allowances to cover the amount of carbon it actually emits. Allowances are obtained on a carbon exchange, or market. In some cases they may be allocated by the government to emitters. There is a “cap” placed on the amount of allowances available in the market, and the cap declines over time. Carbon emitters must either reduce their emissions or purchase allowances from someone else; this is the “trade” part of the program. In this way, the program should cause carbon to be reduced wherever the reduction costs are lowest. The ARB is developing a cap-and-trade program which they currently expect will be considered for Board approval before the end of 2010. Information about the developing ARB program can be obtained from the conceptual drafts released by staff. Legislation is also pending at the federal level that would establish cap-and-trade on a national scale, but the ultimate scope and content of the program is still unknown. The most recent ARB draft proposal may be downloaded at: *http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm*.



From ARB materials for AB 32 Program Design Technical Stakeholder Working Group Meeting, April 25, 2008, Figure 1, page 3

Although compliance with a cap-and-trade program is not likely to be a reason for quantifying GHG reductions today, it is likely to be one in the future. When that time comes, there will be several important considerations in deciding whether to use this Quantification Report in meeting those obligations.

Mandatory Reporting: The ARB currently has a Mandatory Reporting Rule for specified stationary sources with GHG emissions greater than 25,000 metric tons of CO_2e per year. This rule was established pursuant to the requirements of AB 32, and was intended to provide information to support the development of the Scoping Plan and its implementing regulations. At the time the Mandatory Reporting Rule was approved by the ARB Board, staff indicated that the Rule was not intended, nor did it include the level of detail necessary, to implement the cap-and-trade program (which, at that time, was not yet proposed). Applicable quantification protocols will be developed and approved by the ARB Board as part of its cap-and-trade regulation, as will a revised Mandatory Reporting Rule. More information about the ARB’s Mandatory Reporting Rule may be obtained at *http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm*.

The U.S. EPA also has a Mandatory Reporting Rule. Under this rule, suppliers of fossil fuels or greenhouse gases that are used in industrial operations, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to EPA. The EPA rule does not currently specify quantification methods, and CAPCOA anticipates that any methods in this Report that would be applicable to affected reporters (e.g., building energy use) would be also be acceptable for use under the rule. Details on this rule can be found in 40 CFR Part 98, which was published in the Federal Register (*www.regulations.gov*) on October 30, 2009 under Docket ID No. EPA-HQ-OAR-2008-0508-2278.

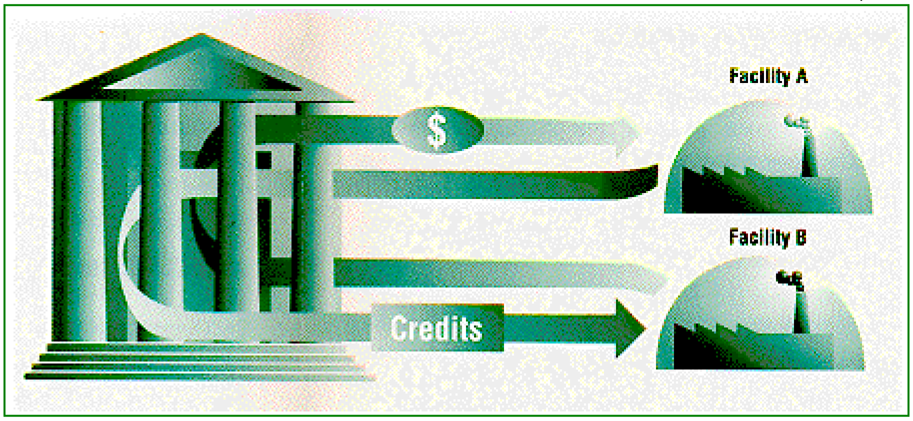
Reductions for Credit

There are several different ways to formally award credit for emission reductions. Emission reduction credits are used when the opportunity, desire, obligation, and the resources to implement reductions are not aligned. Sometimes an entity has the desire and opportunity to reduce emissions, but not the resources. Sometimes an entity is required to make reductions but has no viable project opportunities. Or funds may be available to implement project, but willing participants are needed. Systems are used to match up projects, proponents, funding, and, in some cases, compliance obligations, and the basis of the systems is emission reduction credits.

Concurrent Offsite Mitigation Projects: The simplest form of credit for emission reductions occurs when someone needs to reduce emissions to mitigate impacts (for example, under CEQA), but does not have a good opportunity within his or her own operation or project; but if a good opportunity is available at another operation the person who needs the reductions can fund that project in exchange for being able to take credit for the reduction. A variant of this can occur when a list of emission reduction projects that could be used for mitigation is maintained, and those projects are matched with people who need to implement mitigation. The key in this arrangement is that the project is directly funded by the person who needs mitigation, at whatever the cost the mitigation project ultimately has. The emission reductions occur, but are not traded as an independent commodity. The person who needs the mitigation remains obligated to ensure that the project is implemented and the emission reductions occur.

Mitigation Funds: Instead of matching the person needing mitigation with a project that is then directly funded by that person, it is also possible to collect the funding and then create the projects. In this case, funds are paid into a mitigation fund at a pre-established rate, and the operator of the fund is then obligated to find and implement emission reduction projects. The rate is typically set at a level (for example in dollars per ton needed) that is sufficient to implement an actual project to produce the emission reductions, based on data about actual project costs. As with concurrent offsite mitigation projects, the emission reductions here are not traded as an independent commodity, however a default rate is established. Under a mitigation fund, then, the person needing mitigation is considered to have provided it (that is, given “credit” for the reductions) at the point of paying into the mitigation fund. The obligation to ensure the emission reductions occur is transferred to the fund operator.

Emissions Trading: Emissions trading is a transaction that occurs between entities that make emission reductions which they don't need, and entities that desire emissions reductions but, for whatever reason, do not choose to make them. The emissions (or, more accurately, "credits" for the emission reductions) are treated as a commodity with independent value. The transaction occurs in some form of market, much as transactions occur between the grower of produce and the consumer in a local farmers market. The transaction, or trade, happens when a consumer believes that the product is worth the price being asked for it.



The obligation to ensure the emission reductions occur generally rests with the person selling the credits, and (to the extent an independent review has occurred) with whomever grants certification to the reduction project.

As explained above, a cap-and-trade program is a type of GHG trading market, but there are other types of emissions trading markets. An open GHG credit-based trading market does not have a cap, and participation is on a voluntary basis. In a credit-based market, credits are awarded for emission reductions, and may be purchased and sold as a commodity on an exchange. The credits are sometimes referred to as offsets, and they are generally tracked as tons, or metric tons, of pollutant reduced; in the case of GHGs, this is typically in the form of CO_2e. The important distinction between an open market and a cap-and-trade system is that the creation, buying, and selling of offsets is not restricted in an open market.

The following key terms and concepts are discussed to help the interested reader understand how credits are used in a trading market, It is not necessary to understand trading markets in order to use the quantification methods in this report, and the reader may proceed directly to Chapter 3.

<ins>Regulators and Exchanges</ins>: Some emissions trading markets are run by the government, while others are operated by independent, non-governmental entities. In government-run markets, such as the Regional Clean Air Incentives Market (RECLAIM) developed and administered by the South Coast Air Quality Management District, and U.S. EPA's Acid Rain program, a government agency establishes and implements the trading market. These markets are typically regulatory in nature, rather than voluntary, although some voluntary participation may be allowed. The Regional Greenhouse Gas Initiative (RGGI) implemented by ten Northeast and Mid-Atlantic states, and the

European Union Emission Trading Scheme (EU ETS) are other examples of regulatory markets.

Independent exchanges, such as the California Climate Action Registry (CCAR) and the Climate Registry (TCR), were established as independent, non-governmental operations. They offer a forum for entities to have emission reductions certified for credit, and for those credits to be bought and sold. These bodies develop their own structure and rules for participation. The nature of those rules determines the quality of the credits available on the exchange. Participation in the exchange is voluntary.

Standards for Credits: In order to be acceptable for credit under the AB 32 program, GHG emission reductions must be real, permanent, quantifiable, verifiable, enforceable, and additional. Historically, the federal Clean Air Act (CAA, or Act) has required emission reduction credits to be: real, permanent, quantifiable, enforceable, and surplus[7]. In this context, surplus means the reductions are not required by any law, regulation, permit condition, or other enforceable mechanism under the Act. California continued this concept in AB 32, requiring that any regulation adopted pursuant to AB 32 ensure that GHG reductions are “real, permanent, quantifiable, verifiable, and enforceable.”[8]

The term “additional” comes from the Clean Development Mechanism in the Kyoto Protocol; it is essentially the same as “surplus” except that it is not restricted to any particular statute, and means that you cannot receive credit for any reductions that you were otherwise obligated to make. AB 32 requires its implementing regulations that include market-based compliance mechanisms to ensure that reductions are “in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that might otherwise occur.”[9]

Protocols: Transactions to purchase emission reductions depend on the confidence the purchaser has in the value of reductions being purchased. Price is part of the concept of value that we can easily understand. The other, less tangible part of the concept of value is the quality of the emission reductions themselves. This is harder to understand because, unlike the produce at the farmer’s market, we can’t examine the product to determine its value. Not only are emission reductions invisible, they actually *didn’t happen*. So to have confidence in their value, we need a reliable and accurate picture of what *would have happened*, as well as what *actually happened*.

Protocols are the formalized procedures for accounting for credits that ensure the credits are an accurate and reliable representation of emission reductions that actually occurred. Some protocols focus only on quantification of the reductions, while others also address documentation and verification. They can be developed and adopted by regulatory bodies, by the operators of exchanges, or by subject area experts. Some markets will require participants to use a specific protocol or set of protocols. Others

[7] 40 CFR Sections 51.493 and 51.852
[8] California HS&C: Section 35862(d)(1)
[9] Ibid, Section 35862(d)(2)

will allow participants to propose a protocol for developing and quantifying reductions. Failure to follow required protocols may prevent the project from receiving credit.

Holding and Using Credits: When credits are awarded for emission reduction projects, the owner of the credits is generally given a certificate of value. In this case, "value" means the corresponding emission reductions, not the price, which is determined by the market. The credits are registered with a bank where they are kept until the owner of the credits uses or sells them.

Credit Banks: Emission credit banks are similar to savings banks where money is deposited. The bank tracks credits, credit value, credit price, and transactions. It compiles data and issues reports. Banks are subject to accounting standards and requirements for transparency. It is important to note that not all credits can be banked. Credits or allowances that have a finite life do not retain their value beyond their life term.

Credit Life: Credits may have a specified life (for example, one year), or they may be permanent. The life of the credit may be dictated either by the nature of the reductions that generated it, or by the program in which it is being used. As discussed above, in California, AB 32 requires reductions for regulatory compliance to be permanent. In other markets, such as Kyoto's Clean Development Mechanism, there are both long term and short term credits.

Discounting Credit Value: Some regulatory structures require that credits be discounted, that is, the emission reduction value of the credit (not the price) is reduced to account for certain factors, or to enhance the liquidity of the market. In some cases, a portion of the credit value is surrendered or retired in the interest of environmental policy goals.

Offset Ratios: Offset ratios are a way to ensure an adequate margin of safety when credits are provided to offset impacts. A program may require that the amount of credits provided is greater than the anticipated emissions increases. If the program requires 10% extra credits, then the offset ratio is said to be "1.1 to 1."

The above discussion of emission reduction credits and trading is provided for information only, and should not be construed as endorsement of, or recommendation for, the use of credits or trading for the purposes of meeting GHG reduction obligations. CAPCOA does not make policy recommendations regarding credits or trading in this Report. Decisions about whether to allow the use of credits rests solely with the agency with jurisdiction over a project or program.

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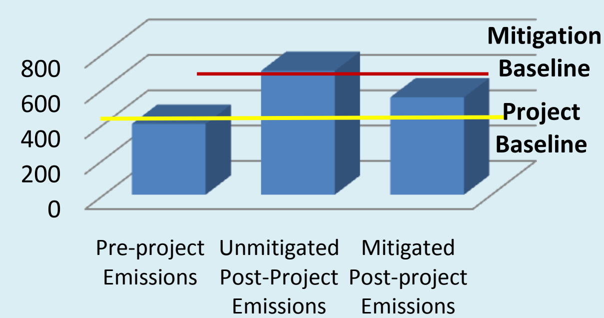
This chapter provides an overview of some key concepts that arise in considering quantification of GHG emission reduction projects. This discussion is provided so the reader understands the context in which these terms are used throughout this document. Here again, this discussion is not intended to endorse any policy position, nor does it provide any recommendations on thresholds of significance for GHG emissions. Policy decisions are left to individual agencies and their governing boards.

Baseline

An emissions baseline is the foundation of any estimate of the impacts of a project or of a mitigation measure. In its simplest form, it reflects the current level of emissions if those emissions do not vary. Usually, however, emissions do vary, typically because the activities or operations that cause the emissions change. Traffic patterns change with the time of day, ski areas are busiest in the winter, air conditioners run more in the summer, people drive less when fuel prices rise, and production of goods changes with the economy. To set a baseline, it is important to understand what factors affect the activity or operation in a way that will alter its emissions; then, the most appropriate scenario is selected and the emissions are adjusted to account for that scenario. Figure 3-1: Baseline illustrates the concept of baselines in project analysis.

Figure 3-1: Baseline



Regulatory programs that require calculation of emissions baselines generally specify the basis for the calculation. For example, a baseline scenario could be a three year average of actual emissions, or the worst case, or, as in CEQA, the program may call for an analysis to identify a representative set of conditions based on historical data.

In its proposed draft regulation for cap-and-trade, ARB defines baseline to mean "the scenario that reflects a conservative estimate of the business-as-usual performance or activities for the relevant type of activity or practice such that the baseline provides an adequate margin of safety to reasonably calculate the amount of GHG reductions in reference to such baseline."[1]

For this Quantification Report, CAPCOA selected a baseline period to correspond to the average GHG emissions from 2002 to 2004, inclusive. This is the emissions baseline period used by ARB in its Scoping Plan[2]. The baseline conditions used to quantify the

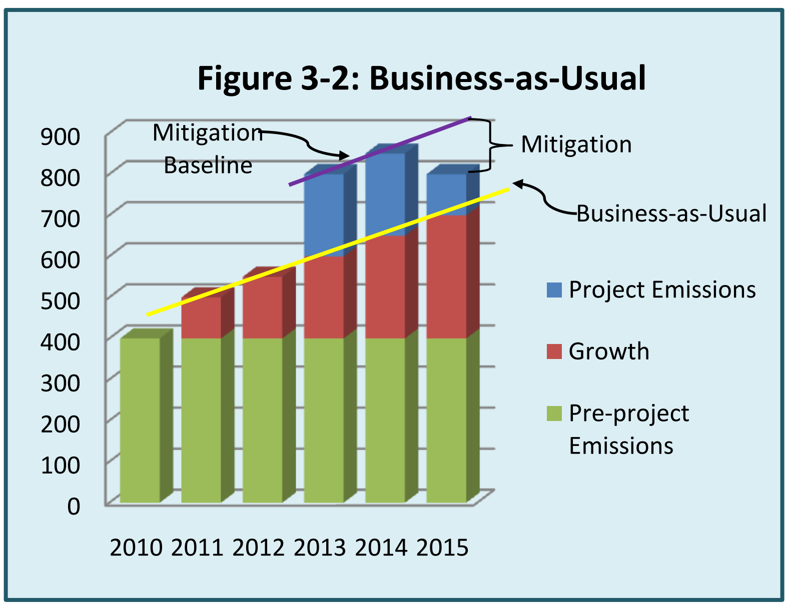
[1] ARB: "Preliminary Draft Regulation for a California Cap-and-Trade Program," Section 95802 (a)(2), Dec., 2009; page 5.
[2] ARB: "Climate Change Scoping Plan: a framework for change," Dec., 2008; page 11.

effectiveness of mitigation measures for this Quantification Report reflect the conditions that formed the basis for ARB's 2007 inventory of economic activity and GHG emissions. Those conditions and the associated quantification methods are explained in Appendix B to this Report. A copy of ARB's Scoping Plan may be downloaded at: *http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm*.

There may be circumstances in which a different set of baseline conditions is more appropriate. If a user wishes to adjust the baseline, CAPCOA recommends using the methods provided in the measure Fact Sheet, and in Appendix B, but substituting data inputs that better reflect the baseline conditions for the project under consideration. This ensures consistent methods are used so the comparison of baseline to project is an "apples-to-apples" comparison. So, for example, a user outside of California would substitute an emission factor for electricity generation that better represents the generation mix that is provided in the user's region. This alternative factor would be used in the baseline methods where electricity generation is part of the calculation, and would also be used in the quantification of emissions associated with the project.

It may also be appropriate to adjust the baseline conditions on a temporal basis if needed to account for changes over time. The ARB revises its emissions inventory information on a periodic basis. The most current inventory information was published in May of 2010, and covers the time period from 2000 to 2008. The information is available by category, with trends analysis, and with full documentation of data sources and methods. The updated emissions inventory information is available at: *http://www.arb.ca.gov/cc/inventory/data/data.htm*.

Business-as-Usual Scenario



Not all baseline conditions occur in the present. In some cases, the baseline is a forecast of the conditions that are expected to exist at some time in the future, in the absence of interventions to change those future conditions. The forecasted baseline conditions are referred to as "business-as-usual" and are intended to reflect normal operation. For example, a town might currently have 20,000 residents, and be on a course to to add another 5,000 residents in low-density, planned development at the perimeter of its existing footprint over the next 10 years. The town could add an urban growth boundary that would change that anticipated development. In order to quantify the effect of adding the urban growth boundary, the business-as-usual growth scenario must first be calculated; that will form the baseline to compare to the growth scenario with the adopted boundary. Figure 3-2 illustrates the application of the "business-as-usual" concept to a project.

ARB defines business-as-usual to mean, "the normal course of business or activities for an entity or a project before the imposition of greenhouse gas emission reduction requirements or incentives."[3]

Mitigation Types

There are four general ways to create emission reductions for mitigation projects: (1) the operation or activity can be avoided so that emissions are not created in the first place; (2) the operation or activity can be changed so that it creates fewer emissions; (3) emission control technology can be added to the activity or operation that prevents the release of emissions that are created; and (4) emissions that have been released can be sequestered in the environment. Each of these is discussed below.

Avoided Emissions: When someone chooses to walk to the grocery store in lieu of driving, or turn off the lights, energy isn't needed to power the car or lights, and the emissions associated with that energy don't occur. In the case of walking instead of driving, the avoided emissions include the CO_2 and other pollutants that would have

come from the tailpipe of the car. These are "direct" emissions that are being avoided, and they can be readily quantified to show the benefit associated with walking. When electricity isn't needed, it isn't generated; the avoided emissions are the CO_2 and other pollutants that are not emitted by the power plant. Because the emissions are not directly emitted where the light is being used, this type of emissions are referred to as "indirect" emissions; even though they are indirect, they can still be quantified to show the benefit of turning off the lights. There can be other benefits associated with avoided emissions as well. When you consider the walking scenario in a lifecycle sense, the avoided emissions can also include the energy that would have been used to extract, refine, transport, and dispense the fuel. The same is true when you use a reusable cloth bag instead of a disposable plastic bag to carry your purchases; energy is needed to extract and refine the petroleum that goes into the bag, to make and transport the bag, and then to dispose of the bag after it is used. These kinds of avoided emissions are much more difficult to fully quantify, however, and will not be included in the quantification approaches in this document. Even if we aren't quantifying the benefits, however, it is important to understand that avoided emissions can have positive effects both upstream and downstream, creating a ripple effect of further avoided emissions.

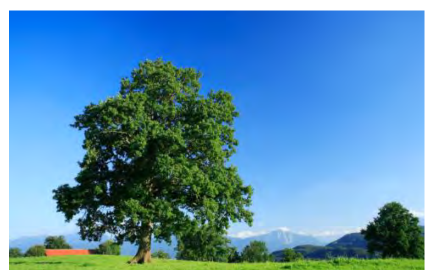
[3] ARB: "Preliminary Draft Regulation for a California Cap-and-Trade Program," Section 95802 (a)(18), Dec., 2009; page 7.

Fewer Created Emissions: If the activity or operation can't be avoided, sometimes it can be accomplished in a way that creates fewer emissions. This is usually associated with increased efficiency. So, for example, if walking to the store isn't an option, someone could choose to drive there in a more efficient vehicle, like a gas-electric hybrid powered car. The engine in the hybrid is able to drive more miles with less fuel consumed. Less fuel consumed equates to fewer emissions at the tailpipe. In the lighting example, using a more efficient light bulb is one way to reduce the indirect emissions, but a more efficient power plant would also do this.

Controlled Emissions: Once emissions are created, they are either released to the environment, or they are controlled with technology that captures and stores or destroys them. In the car example, the addition of a catalytic converter allows the tailpipe emissions to be collected after they are created, and destroyed before they are released. Note that the efficiency of the engine (discussed above), and the control of emissions after they leave it, are two distinct ways to reduce emissions. There are also emissions control technologies for power plants.

Sequestration of Emissions: Carbon emissions are "sequestered" by embedding the carbon in structure that will hold the emissions and keep them out of the atmosphere. Sequestration happens through biological, chemical, or physical processes.

<u>Biological Sequestration</u>: Trees and other vegetation biologically absorb carbon from the atmosphere and incorporate it into their biomass; the carbon becomes the solid form of the growing tree or plant. Many sequestration projects involve the planting of trees or vegetation to improve the uptake of carbon from the atmosphere. Enhanced farming practices may also achieve some sequestration through the use of CO_2 absorbing cover crops, improved grazing practices, and restoration of depleted land. Increased peat production in peat bogs is also method to biologically sequester carbon.



<u>Chemical Sequestration</u>: Oceans absorb CO_2, and it causes the oceans to become more acidic (which is detrimental to coral reefs and other sea life). Other chemical processes include reacting CO_2 through a process called mineral carbonation to form stable carbonate minerals that are normally found in the earth's crust.

<u>Physical Sequestration</u>: CO_2 can also be physically contained in a way that prevents its release to the atmosphere. This can involve injecting it deep into the ground, for example into depleted oil and gas reservoirs. It can also be injected into oil wells to push up the oil. Another approach is to embed it in cement through a newly developed process that causes cement to absorb CO_2 from the atmosphere while it is curing.

Measure or Project Scope

Just as good quantification requires careful and transparent consideration of the baseline or business-as-usual scenario, it also requires a complete and detailed characterization of the measure or project being undertaken. This is important because considerations of what is included in, and what is excluded from, the analysis can have a significant impact on results of the quantification.

Determining the appropriate scope for the analysis of a project or measure is not always as simple as it might appear. Take for example the installation of solar panels in a remote desert region that receives a lot of sun. The panels generate electricity without releasing GHG emissions, which offset more traditional generation of electricity that does emit GHGs. But the desert region may be prone to dust or sand storms, which would quickly obscure the glass panels and decrease their effectiveness. This decrease could be minimized if the panels were cleaned regularly. But the cleaning will require vehicles to come to the site, which takes energy and releases GHGs, and the cleaning activity itself may do so as well. If the site is truly remote, the emissions from those vehicle trips could be large. But what if there is another installation nearby: can the trip-related emissions be considered only in addition to those for the other site? Do you have to know if the cleaning for both sites can be accomplished in one trip? And what about the energy and materials needed to make the solar panels?

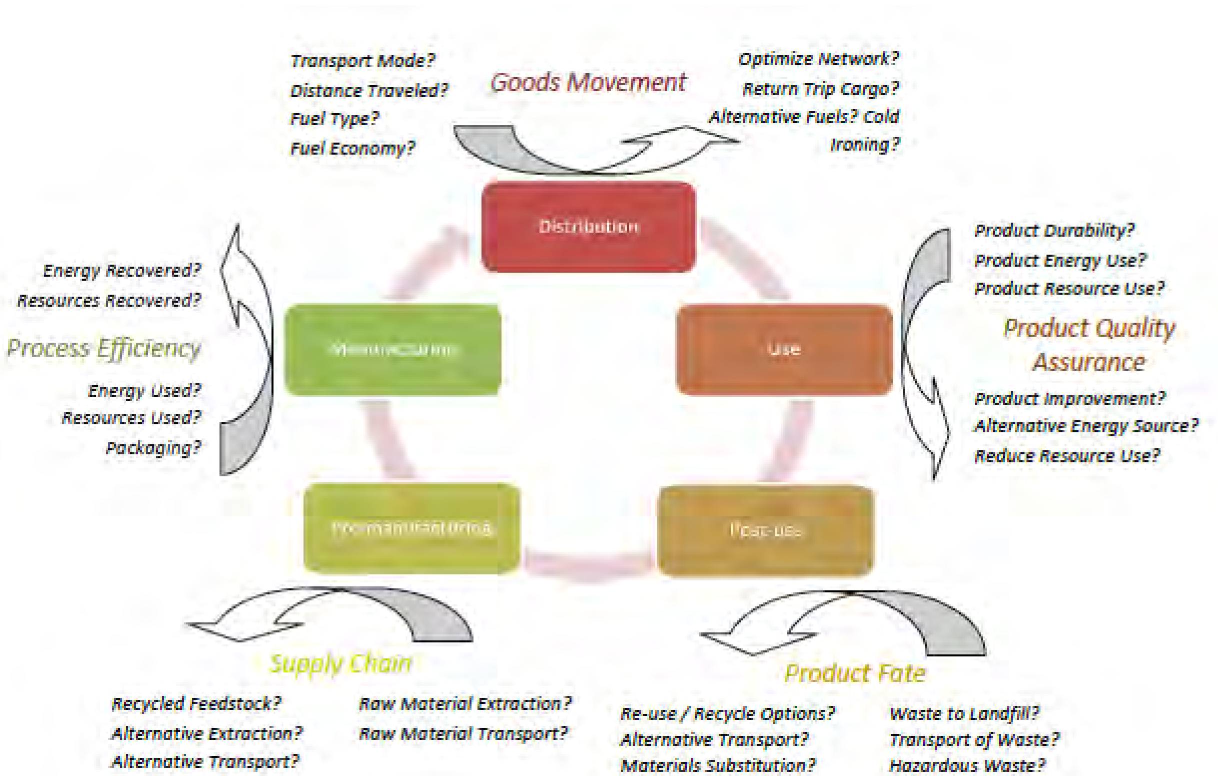
The methods in this Report generally include those reductions over which a project proponent can exercise direct control, as well as indirect emissions associated with electrical generation and the use of natural gas. CAPCOA does not include analysis of full lifecycle emissions in this Report, because of the complexity of the analysis involved and the lack of general standards for incorporating such considerations.

Lifecycle Analysis

Energy and materials are involved in the creation, processing, transport, and disposal of all of the products we use, from the tomatoes on our salads, to the computers we work with, the vehicles we drive (even if they are zero-emission vehicles), and the roadways we travel over. A lifecycle analysis attempts to identify and quantify the GHG emissions associated the energy and materials used at all stages of the product's life, from the gathering of raw materials, through the growing or fabrication, distribution, use, and the ultimate disposal at the end of the product's useful life.

This is a difficult and complicated undertaking; it is challenging to identify all of the inputs that are both necessary and meaningful for this sort of analysis. Even if the inputs can be identified, good data are not readily available to quantify emissions in most cases. Further, there is not yet agreement on methodological approaches to lifecycle analysis for most sectors (Figure 3-3: Lifecycle Analysis shows a basic schematic of some of these considerations.). For these reasons, as stated under the discussion of scope, above, CAPCOA does not include lifecycle analysis in this Report.

Figure 3-3: Lifecycle Analysis



Unfortunately, there are important mitigation projects or measures that cannot be quantified without a lifecycle analysis, and some of them are measures that are highly desirable or commonly encouraged. One example is the recycling and reuse of construction materials; it is intuitively obvious that recycling and reuse avoids both the embedded energy costs in the new material, as well as the energy and emissions associated with disposal. Another example is the push for reusable cloth grocery bags instead of disposable plastic ones, or reusable water bottles filled with tap water instead of disposable bottled water. For some of these measures, it is possible to do a limited lifecycle analysis, if the project scope is well defined and if the data are available. The Report provides a discussion of how to pursue an analysis in such cases, but otherwise identifies these kinds of measures as Best Management Practices.

It is important to note that Appendix F to the CEQA Guidelines Amendments approved in December of 2009 specifically state that a lead agency is not required to perform a project-level energy life-cycle analysis[4]. Because direct GHG emissions from electrical generation, and GHG emissions from electricity associated with water use (as well as other direct emissions associated with water treatment) are well defined and can be

[4] California Natural Resources Agency: Adopted Text of the CEQA Guidelines Amendments (Adopted December 30, 2009, Effective March 18, 2010), Appendix F.

accurately quantified, they are not considered to "lifecycle emissions" for the purposes of this Report, and they are included in these quantification methods.

Accuracy and Reliability

In an effort to standardize the creation of GHG inventories, and improve the quality of the information, the IPCC defines "good practice" for GHG emissions quantifications as those that "contain neither over- nor under-estimates so far as can be judged, and in which uncertainties are reduced as far as practicable."[5]

Part of the challenge in developing methods that meet this standard of good practice is assuring the accuracy of the methods. CAPCOA uses accuracy to mean the closeness of the agreement between the result of a measurement or calculation, and the true value, or a generally accepted reference value. When a method is accurate, it will, for a particular case, produce a quantification of emissions that is as close to the actual emissions as can practicably be done with information that is reasonably available.

To meet the good practice standard, the quantification methods must also be reliable, which is different from being accurate. A reliable method will yield accurate results across a range of different cases, not only in one particular case.

To some extent, the accuracy of the quantification is sacrificed to achieve reliability. This is because a method that can be applied across a range of scenarios must be generalized to some extent. So, for example, the transportation analyses do not, for the most part, differentiate between peak and off-peak vehicle trips, even though off-peak trips will have a lower emission impact because of the effects of congestion on travel time and engine performance. In order to fully address all of the factors that impact the emissions associated with vehicle trips in a specific project, a far more detailed and costly analysis would be needed, and it would not be readily applied to other situations. The methods contained in this Report have been developed to provide the best balance between accuracy and reliability, bearing in mind that ease of use is also important.

In order to ensure both the accuracy and the reliability of the quantification methods in this Report, each method is accompanied by a discussion of the assumptions and limitations of the method. Where either the assumptions are not met, or the limitations are exceeded, the method will not be accurate, and the error can be very large. Further, if the conditions of the project differ from the assumptions and limitations of the method, the quantification may no longer be applicable. It is possible to look at the underlying assumptions and calculation and make adjustments to the method so that it better reflects the conditions of a specific project. Doing this may preserve the accuracy to some extent, but the user is responsible for determining how best to accomplish this, and the reviewing agency will decide whether the results are still acceptable.

[5] IPCC 2006, "2006 IPCC Guidelines for National Greenhouse Gas Inventories," Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds).Published: IGES, Japan. Page 1.6.

Additionality

In order for a project or measure that reduces emissions to count as mitigation of impacts, the reductions have to be "additional." Greenhouse gas emission reductions that are otherwise required by law or regulation would appropriately be considered part of the existing baseline. Thus, any resulting emission reduction cannot be construed as appropriate (or additional) for purposes of mitigation under CEQA. For example, in the draft regulation for cap-and-trade, ARB specifies that in order to be eligible for offset credit, "emission reductions must be in addition to any greenhouse gas reduction, avoidance or sequestration otherwise required by law or regulation, or any greenhouse gas reduction, avoidance or sequestration that would otherwise occur."[6] What this means in practice is that if there is a rule that requires, for example, increased energy efficiency in a new building, the project proponent cannot count that increased efficiency as a mitigation or credit unless the project goes beyond what the rule requires; and in that case, only the efficiency that is in excess of what is required can be counted. It also means that if there is a rule that requires a boiler to be replaced with one that releases fewer smog-forming pollutants, and the new boiler is more efficient and also releases less CO_2, the reduced CO_2 can't be counted as mitigation or credit, because the reductions were going to happen anyway. But if the boiler were replaced with a solar-powered water heater, the difference in emissions between a typical new boiler and the solar water heater could be counted.

From a practical standpoint, any reductions that are *not* additional have to be either included in the baseline or subtracted from the project, whichever is more appropriate. In preparing this Report, CAPCOA made determinations about requirements to include in or exclude from the baseline. A more complete discussion of those determinations is included in Appendix B.

Verification

Verification is the process by which we demonstrate that the emission reductions we have quantified for a project actually occurred. While not important for purely voluntary projects, verification in some form is a necessary step in most other circumstances. Verification is an important component in establishing the value of reductions that are made. It allows others to have confidence in the quality of the reductions. If the reductions are being made to satisfy an obligation to mitigate impacts, the agency with jurisdiction should be consulted to determine what standard of verification is needed. In some cases, independent, third-party verification is required. Not all regulatory programs specify third-party verification, however. For example, the U.S. EPA's Mandatory Reporting Rule relies instead on routine compliance verification through a permit system.

[6] ARB: "Preliminary Draft Regulation for a California Cap-and-Trade Program," Section 95802 (a)(4), Dec., 2009; page 6.

This chapter of the Report provides an explanation of how the quantification methods were developed, and the limitations of the sources used. There is also an overview of the presentation of the quantification methods in the Report. Finally this section discusses the limitations of the methods themselves, and how these limitations should be considered when applying the methods to actual mitigation projects.

General Emission Quantification Approach

The emission quantification methods in this Report are designed to provide GHG estimates using readily available, user-specified information for a source or activity. In general, GHG emissions associated with a given source or activity are estimated using data for a physical quantity or metric, on the underlying assumption that CO_2 emissions are directly proportional to that metric. For example, emissions related to vehicles are estimated using vehicle trips and mileage data. For sources of indirect emissions such as buildings, swimming pools, municipal lighting and water distribution, the metric is energy use as electricity or natural gas[1]. When site-specific energy use data are not available, energy use can be estimated using a physical metric such as the volume of water supplied, the size of building, and the number of lamps.

For each source metric there are emission factors that quantify the amount of emissions released as a result of the source or activity. These emission factors have been developed by various governmental agencies, public utilities and other entities though data analysis and numerical models. The factors are based on certain assumptions that define the typical or "baseline" emissions scenario. For example, emission factors for vehicles assume a particular type of fuel and driving speed, and emission factors for electricity use assume a certain mix of electricity generating methods. .

Individual GHGs are converted to carbon dioxide equivalent units by multiplying values by their global warming potential (GWP). The GWP values used in this report are based on the IPCC Second Assessment Report (SAR, 1996), even though more recent (and slightly different) GWP values were developed in the IPCC's Third Assessment Report (TAR, 2001) and Fourth Assessment Report (FAR, 2007). The values in the SAR were used in this Report because they are still used by international convention.

The general equation for emissions quantification is shown below for each GHG:

$$\text{GHG Emissions} = [\text{source metric}] \times [\text{emission factor}] \times [\text{GWP}]$$

Then, all GHGs are summed from an individual source.

$$\text{GHG Emissions}_{total} = \sum_{n=1}^{i} [\text{GHG Emissions}]_n$$

[1] Note that emissions from natural gas use are not always indirect in nature. For more discussion of direct and indirect emissions and types of mitigation, please see Chapter 3.

Where "source metric" and "emission factor" are defined as follows:

Source Metric: The "source metric" is the unit of measure of the source of the emissions. For example, for transportation sources, the metric is vehicle miles traveled; for building energy use, it is "energy intensity", that is, the energy demand per square foot of building space. Mitigation measures that involve source reduction are measures that reduce the source metric. This can include for example, reducing the miles traveled by a vehicle because the reduction in miles traveled will reduce the emissions generated from vehicle travel. Similarly, a reduction in dwelling unit electricity use by installing energy efficient appliances and lighting will reduce the emissions associated with total electricity assigned to dwelling units.

Emissions associated with source reduction measures are generally avoided emissions. As discussed in Chapter 3, there are often additional benefits to these kinds of reductions. Source reduction promotes efficient use and management of resources and utilities, in addition to avoiding emissions. Thus, source reduction can also result in a decreased need for downstream emissions control. From a quantification standpoint, for this type of measure, it is the "source metric" in the basic emissions equation (above) that changes.

Emission Factor: The "emission factor" is the rate at which emissions are generated per unit of source metric (see above). Reductions in the emission factor happen when fewer emissions are generated per unit of source metric, for example, a decrease in the amount emissions that are released per kilowatt hour, per gallon of water, etc. Such a decrease may apply if a carbon-neutral electricity source (e.g. from photovoltaics) is used in place of grid electricity, which has higher associated emissions; or if electricity is used instead of combustion fuel, such as with electric cars. Reductions can also occur if a fuel with lower GHG emissions is used in the place of one with higher GHG emissions. From a quantification standpoint, for this type of measure, it is the "emission factor" in the equation that changes.

For both kinds of measures, mitigated emissions are calculated using the same general equation, but the emissions will change based on whether the values change for the source metric or the emission factor. Several mitigation measures may apply to the same source, changing both the source metric and the emission factor, and the estimation of the overall impact of simultaneous measures must be carefully evaluated. In some cases the reductions are additive, but in others they must be evaluated sequentially. Other sets of mitigation measures may require additional analysis to avoid double-counting. Furthermore, not all types of mitigation measures will be feasible in all situations. Chapter 6 provides a detailed discussion of considerations in quantifying the combination of mitigation measures, as well as a set of rules to guard against over-estimation of reductions.

Quantification of Baseline Emissions

In order to ensure that similar assumptions and methodologies are being used to quantify both the baseline and project emissions, a consistent set of methodologies for determining the GHG emission baseline emissions was defined. This was the first step in establishing quantitative methods for assessing GHG mitigation reductions. The results of this effort are contained in Appendix B and should be utilized or considered when establishing baseline emission levels. This same set of methodologies was used to develop the quantification methods for each mitigation measure.

Quantification of Emission Reductions for Mitigation Measures

There is a wide array of mitigation measures that could reduce direct or indirect GHG emissions for a project; however, not all of them can be readily quantified with the information and tools currently available. Other measures may be individually quantifiable, but the quantification cannot be reliably extrapolated to other similar projects. The goal in developing this Quantification Report was to provide accurate and reliable methods that can be easily applied across a range of projects and settings. This section explains how the list of measures included in this guidance was developed, and how the measures are presented.

Screening of Mitigation Measures: An initial list of candidate measures was developed with about 75 types of greenhouse gas mitigation measures related to site design, land use, building components, parking measures, energy, solid waste management, etc. These were identified because they were commonly seen in land use permit applications or were measures that air districts have been frequently asked for guidance on. A literature review was done to identify potential additional measures.

Measures from this compiled list were screened based on the following criteria:

- Relevance to project-level CEQA analysis;
- Availability of empirical evidence or reliable research to credibly establish baselines and level of effectiveness; and
- Non-negligible level of effectiveness determined by credible research.

Measures or grouped measures that did not meet all three of these criteria were evaluated for the possibility of grouping measures with synergistic effects or describing as a Best Management Practice (BMP). Where measures were determined to be BMPs, the Report describes the relevant literature and, where applicable, provides methods that could be used if substantial evidence is available to support the reduction effectiveness. In addition some measures had substantial evidence of reductions when implemented at a general Plan (GP) level rather than a project level. These measures were retained as applicable for General Plans, only. Local Agencies may decide to provide incentives or allocate the General Plan level reductions to specific projects by weighting the overall effect by the number of projects to which the General Plan reduction would apply.

Information Sources and Their Limitations: The quantified effect that different mitigation measures have on source quantities or emission intensities must be based on substantial evidence and should be enforceable (to ensure that the commitments are adhered to) and verifiable (to confirm that the mitigation measures were implemented).

Examples of credible sources for supporting evidence include government agency-sponsored studies, peer-reviewed scientific literature, case studies, government-approved modeling software and widely adopted protocols. In order for the supporting evidence or data for a given mitigation measure to be deemed applicable, it must be based on similar or scalable assumptions and conditions in terms of period of study, physical scale, site-specific parameters, operating conditions, technology, population type, etc.

There are uncertainties associated with any type of estimation method. Some of these methods attempt to predict future behavior with respect to water and energy use using historical data and trends, which may not accurately reflect changes in behavior due to increasing awareness of resource conservation. Despite these uncertainties, the methods presented in Chapter 7 provide the best available estimations of GHG emissions and are therefore suitable for the project-level inventories.

Enforceable Reductions: As discussed in Chapter 2, emission reductions (whether as mitigation under CEQA, for regulatory purposes, or for trading) have to be enforceable. For that reason, in this Report the quantity of reductions or applicability of mitigation measures is limited to elements which the project proponent can control. Additional reductions in GHG emissions may be feasible in the broader sense and may occur; however, because the project proponent does not have control over these elements, those other reductions are not considered in the quantification methods here.

For instance, in the context of a building project, source reductions that rely on individual occupant behavior are generally not enforceable by the builder. A residential dwelling, when occupied, will contain a variety of electrical appliances. An individual occupant may decide to purchase energy efficient appliances and would therefore reduce energy use. This reduction in energy use is not enforceable, however, because the project proponent can't dictate individual occupants' purchases; these types of reductions are not counted in the methods in this Report. There may be some instances, however, where the project proponent is the occupant and would have the ability to enforce behavior. In these instances additional emission reductions not quantified in this document may be feasible and enforceable.

Some reductions in emissions are not enforceable when voluntary, but become enforceable when implemented as part of a regulatory scheme. Once regulations that result in emissions reductions are enacted, the project should be reviewed to determine how the requirements affect the baseline, and the reductions that can be quantified for mitigation credit.

When the emission reductions from a project are not enforceable, and therefore not quantified under these protocols, they may still have value for mitigation purposes and a qualitative analysis should be considered. Decisions about whether such reductions will be considered, and what sort of qualitative analysis is appropriate, are the responsibility of the agency reviewing the project.

Creation of Mitigation Measure Fact Sheets: Once the list of mitigation measures was determined, detailed Fact Sheets were developed for each mitigation measure. Each fact sheet presents a summary of the measure's applicability; the required calculation inputs from the actual project; the baseline emissions method; the mitigation calculation method and associated assumptions; a discussion of the calculation and an example calculation; and finally a summary of the preferred and alternative literature sources for measure efficacy. The fact sheets begin with a measure description. This description includes two critical components: (1) specific language regarding the measure implementation (which should be consistent with the implementation method for the actual project), and (2) a discussion of key support strategies that are assumed to also be in place for the reported range of effectiveness. Chapter 6 provides a discussion of the Fact Sheets and a brief description of their intended use. The Fact Sheets themselves are included in Chapter 7.

Quantification Methods

In this Report, emissions reductions are presented in terms of percentage reductions. For mitigation measures where the source metric is reduced, reductions were generally assessed based on a ratio comparison of a common "denominator" source metric for each source category in order to assist in the quantification of strategy impacts:

- Building Energy Use will utilize natural gas and electricity use.
- Water will utilize outdoor and indoor water use.
- Solid waste will utilize waste disposed.
- Mobile sources will utilize changes in vehicle miles travelled (VMT).

For mitigation measures involving emission factor reductions, a ratio comparing the mitigated and baseline emissions factor is utilized to quantify the emission reductions.

Because a ratio comparison is utilized, in most cases the reductions quantified for GHGs will also be the same reduction assessed for criteria pollutants and toxic air contaminants provided the reduction in emission factors also occurs for the other types of pollutants. This is not always the case and in some cases a reduction for one pollutant may result in an increase for another pollutant.

There is one exception to the quantitative approach described above, for off-road and on-road vehicles that affects the quantification of the emissions of ROGs. The underlying data and methods available to quantify these emissions were limited to running emissions (that is, emissions from the tailpipe while the engine is running). There are also evaporative emissions, however, which occur when pollutants evaporate from the fuel in the fuel tank and escape to the atmosphere. The evaporative emissions of most pollutants are very small when compared to the running emissions, but evaporative emissions of ROGs are not small compared to the running emissions. Because the underlying data and methods available did not address evaporative emissions, they are not part of the emission factor ratio and must be accounted for separately. Accordingly, an estimate of the ratio of running to evaporative emissions for ROGs was determined and used to adjust the reductions for ROGs from vehicles.

Limitations to Quantification of Emission Reductions for Mitigation Measures

In order to properly apply the quantification methods in this Report, it is important to understand the limitations of the methods. The following discusses the limitations of the underlying data and methods used to develop the quantification in this Report. A discussion of the limits on applying the methods in the Report is contained in Chapter 6. Further, the Fact Sheet for each individual measure identifies specific limitations and considerations that affect the application of that particular measure.

Prediction of Future Behavior: In order to assess the emissions associated with a project that does not yet exist, it is necessary to make assumptions regarding anticipated amounts of energy use, VMT, water use, etc, that will characterize the project once it occurs. These values may be based on estimates of source metrics from surveys of current values for those metrics, or from recent historical values. When such data are used, they are typically assumed to remain constant when applied to the project unless a there is a specific action (such as the application of a mitigation measure) that would alter the value(s). Although this is a commonly accepted practice, in reality, current behavior is not likely to remain constant over time in the way it is assumed. For instance, the occupant of a building determines the set point of thermostats, the duration of showers, and the usage of air conditioning, among other things. The project proponent will have little, if any, influence over these choices made by the future occupants.

Understanding the limits of these predictions, they are still the best basis for estimating future behavior. For this Report, quantification was based on current median behavior attributes. The limitations of the predictions can be minimized, however. Information about what influences behavior in specific circumstances is often available. Where data are available to show the relationship between external factors and the source metrics used to quantify a particular measure (such as fuel prices and VMT, for example), and more specific information is available about those external factors to predict future trends, that information could be used to further refine the quantification presented here. Again, the quality of the data used will substantially affect the accuracy and reliability of the results. It is also important to be aware of, and to minimize if possible, the error that can result from combining data from different sources (see below).

Combination of Data Sources: The quantification of some of the measures in this Report required the use of multiple sources of data. Any time data are derived from different sources there may be slight discrepancies the underlying in methodologies and data set characteristics; when the information between two data sets is combined, the discrepancies may affect the ultimate quantification of emissions, either over- or underestimating them. For example, some energy efficient appliances were not directly called out in the study of primary energy use based on end use. To obtain information on specific end uses, a secondary source was consulted that quantified energy use by end uses, and the values from this study were used to provide the detail where the end use data were lacking in the first study. It is not possible to determine the precise magnitude of the error that combining these two data sets induced in the final quantification, however every effort was made to minimize potential errors through thorough review of available data and exclusion of incompatible data sets.

There may be data sets available when considering a specific project that address the particulars of the project but are not generally applicable. Such case-specific data could be substituted for the more general data used to develop the quantifications in this Report. If such a substitution is considered, it is important to understand that it can result in an error in the quantification of the mitigation measure reductions because the methods used to derive the case-specific data may contain different assumptions that are not considered in, or are not consistent with the mitigation measure as characterized in the Fact Sheet. Anyone proposing the use of alternative underlying data for source metrics or emission factors must have a good understanding of the assumptions used in estimating the metrics/factors used in the baseline methodology and measure quantification for this Report. The discussion of sources and methods in the measure Fact Sheets as well as the baseline methodology in Appendix B should provide sufficient information to make this assessment.

Understanding these caveats, use of source-specific data is generally an improvement over that of generalized data, and where good quality source-specific data are available, they should be used. CAPCOA will not be able to review case-specific changes to the methods in this Report; however, the local air district may be able to provide assistance or recommendations. The decision to allow alterations to methods, including substitution of underlying data sets, rests with the agency reviewing the project.

Projects That Involve More Than One Mitigation Measure: Each mitigation measure was quantified using a specific set of underlying data and assumptions, and will provide the most accurate and reliable results when the project precisely matches the description of the measure, with all of its assumptions and limitations. In reality, projects may differ from the described measures, or may involve the application of more than one measure. In order to ensure that the resulting quantification is appropriate and accurate, specific procedures are provided in Chapter 6 for combining mitigation measures.

Lack of Detailed Information: The quantification methods provided in this report have been developed to allow them to be applied to a range of project conditions and still yield accurate and reliable results. In order to do this, the methods require data inputs that reflect the specific conditions of the project. Because the project has not yet been completed, however, certain information about the project will not be known and must be either estimated or assumed based on standard procedures. For example, at the time of the CEQA process a project proponent might know the number of residential dwelling units that will be in the project, but not know the actual square footage individual units will have. Similarly, while the project proponent may know a general type of non-residential land uses planned, these are often generalized categories such as retail and do not reflect the true diversity and range of source category parameters that would occur between the specific types of retail that the project eventually has. Nor can a project proponent predict specific appliances that will be in buildings or frequency of use. Further, most projects rely on generalized trip rate and trip lengths information that are not specific to the project; these estimates may over or underestimate the actual trip rates and trip lengths generated by the project. In each of these cases, estimates of future conditions are made based on accepted procedures and available data. This Report does not provide, or in any way alter, guidance on the level of detail required for the review or approval of any project. For the purposes of CEQA documents, the current CEQA guidelines address the information that is needed.[2]

The lack of precise and accurate data inputs limits the quality of the quantified project baseline and mitigated emissions, however. This limitation can be minimized to the extent the project proponent is able to provide better predictive data, or establish incentives, agreements, covenants, deeds, or other means of defining and restricting future uses to allow more precise estimates of the emissions associated with them. Some of these means of refining the data may also be creditable as mitigation of the project. The approval of any such enhancements of the data, or credit as mitigation, is at the discretion of the agency reviewing the project.

Use of Case Studies: One method of enhancing the data available for a project is the use of case studies. Case studies generally have detailed information regarding a particular effect. However, there are limitations of using this information to quantify emissions in other situations since adequate controls may not have been studied to separate out combined effects. There may be features or characteristics in the case-study that do not translate to the project and therefore may over or underestimate the GHG emission reductions. For the most part, case studies were not used as the primary source in the development of the quantification methods in this report. Where case studies were used to enhance underlying data, the studies were carefully reviewed to ensure that appropriate controls were used and the data meet the quality requirements of this Report.

[2] See: California Natural Resources Agency: 2007 CEQA Guidelines – Title 14 California Code of Regulations, Sections 15125, 15126.2, 15144, and 15146.

Extent Reductions Are Demonstrated in Practice: Some of the GHG mitigation measures in this Report are open-ended with regards to the amount of reductions that are theoretically possible. There are, however, practical limitations to the amount of reductions that can actually be achieved. These limitations can include the cost to implement the measure, physical constraints (e.g., roof space for photovoltaic panels), mainstream availability of technology, regulatory constraints, and other practical considerations. In applying the quantification methods for these types of measures, it is important to evaluate the reasonableness and practicability of the assumptions regarding these parameters.

Over time, some of these limitations may change. Implementation costs decrease as advanced technology is reaches mass production scale, for example, technological innovation can address physical constraints, and regulations change. The determination of feasibility for project assumptions should therefore be reconsidered for future applications based on the best available information at the time.

Biogenic CO_2 Emissions: This document did not address biogenic CO_2 emissions. Biogenic CO_2 emissions result from materials that are derived from living cells, as opposed to CO_2 emissions derived from fossil fuels, limestone, and other materials that have been transformed by geological processes. Biogenic CO_2 contains carbon that is present in organic materials that include, but are not limited to, wood, paper, vegetable oils, animal fat, and waste from food, animals, and vegetation (such as yard or forest waste). Biogenic CO_2 emissions are excluded from these GHG emissions quantification methods because they are the result of materials in the biological/physical carbon cycle, rather than the geological carbon cycle.

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Introduction

The mitigation measures quantified for this Report fall into general categories within which the quantification methods follow a common approach. The following sections summarize the select categories and subcategories of measures and discuss the quantification methods used for each one. In general, emission reductions are quantified (1) as a percentage of the baseline emissions; or (2) by calculating mitigated emissions and determining the change in emissions relative to the baseline case. More detailed explanation of the parameters and equations used to calculate the emission reductions for each individual measure are provided in the Fact Sheets in Chapter 7.

Building Energy Use

The emissions associated with building energy use come from power generation that provides the energy used to operate the building. Power is typically generated by a remote, central electricity generating plant, or onsite generation by fuel combustion. These emissions can be reduced by lowering the amount of electricity and natural gas required for building operations. This can be achieved by designing a more energy-efficient building structure and/or installing energy-efficient appliances. Replacing high-emitting energy generation with clean energy will also reduce emissions, and that type of mitigation is discussed in "On-site Energy Generation" below.

NREL.gov

As discussed in Chapter 3, this Report does not include a lifecycle analysis for GHG emissions. However, if a project proposes mitigation in the form of improved building energy use, a limited analysis of indirect emissions will be needed to quantify the associated reductions in GHG emissions. Emissions associated with energy use to light and heat buildings are, as stated previously, well-defined and not considered to be "lifecycle emissions" for the purposes of this Report. The quantification methods in this Report that deal with building energy use provide a specific method for conducting that analysis.

Emission reductions in this category are quantified as percentage reductions in specific baseline energy end uses, such as Title 24-regulated energy or household appliance energy use. The baseline values are determined using California-specific energy end use databases such as California Commercial End-Use Survey (CEUS) and Residential Appliance Saturation Study (RASS). The percentage reduction in Title-24 regulated energy is a project-specific input, whereas the percentage reductions in energy use for energy-efficient models of various household appliances can be obtained from literature sources (for example, through the Energy Star program).

Outdoor Water Use

Energy use associated with pumping, treating and conveying water generates indirect GHG emissions. The amount of energy required depends on both the volume of water and energy intensity associated with the water source. For example, it generally takes less energy to pump and convey water from a local source than to transport water across long distances. As a result, the GHG emission factor associated with locally-sourced water will also be lower. Indirect GHG emissions associated with water use can be decreased by reducing the water demand and/or by using a less energy-intensive water source. As discussed in Chapter 3, these emissions are well-defined and are not considered to be “lifecycle emissions” for the purposes of this report.

Outdoor water use at mixed-use developments is associated with irrigation for landscaping. The volume of water required for landscaping will depend on the areal extent of landscaping; the specific watering needs for the type of vegetation; and the water efficiency of the irrigation system. A reduction in outdoor water demand can be achieved by designing water-efficient landscapes that include plants with relatively low watering needs; minimizing areas of water-intensive turf; and installing smart irrigation systems to avoid excessive water use. Emission reductions associated with water-efficient design are quantified as the difference between mitigated and baseline values, which in turn are estimated using established models from government agencies or scientific literature. Emission reductions associated with smart irrigation systems and turf minimization are quantified as percentage reductions from the baseline. The implementation of gray water systems, where allowed, and the use of recycled water can also reduce emissions; however, it is important to consider the energy used to operate the gray water or water recycling system. These percentages are either taken from literature or estimated using site-specific data. The quantification methods in this Report include estimates of electricity use for recycled water systems, but not for gray water systems, because those emissions are generally more site specific.

As described previously, the energy use intensity for water supply will depend on the water source and its associated treatment and conveyance requirements. The typical or baseline scenario water source for Southern California is the State Water Project; however, other less-energy intensive supplies such as locally-treated recycled wastewater may instead be used to satisfy some of the project’s non-potable water demand. Energy intensity values for different water sources can be obtained from California Energy Commission reports on water-related energy use, and are provided in Appendix E (Table E-2). Emissions associated with water use are estimated by multiplying the volume of water by the energy intensity value for the water source. The associated emission reduction is quantified by calculating emissions associated with water supplied by the lower impact water source (which can include the gray water or recycled water systems mentioned above), and subtracting it from the emissions associated with the same volume of water using the typical or baseline scenario water source.

Indoor Water Use

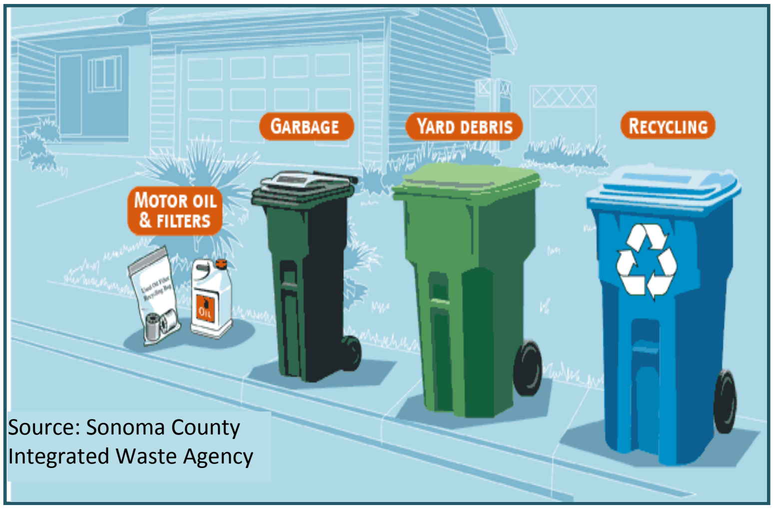
Similar to outdoor water use, indirect GHG emissions from indoor water use can be reduced by decreasing water demand or using a less energy-intensive water source. A project can reduce its indoor water demand relative to the baseline scenario by installing low-flow and high-efficiency water fixtures and appliances such as toilets, showerheads, faucets, clothes washers, and dishwashers.

Emission reductions associated with reduced water demand will be directly proportional to the decrease in demand. The total percentage reduction can be estimated by summing the reductions associated with each type of water-saving feature, which can be obtained from such sources as the California Green Building Standards Code or Energy Star standards. This total percentage would then be multiplied by the project's baseline demand, which should be available from the project's water assessment report. If the water assessment also has an estimate of mitigated water demand, which incorporates the reductions associated with water-saving features, then the reduction can be directly calculated as the difference between baseline and mitigated values.

Emission reductions associated with lower-impact water sources can be quantified as described above for outdoor water use.

Municipal Solid Waste

Solid waste generated at a site can directly produce GHG emissions via decomposition or incineration; it also generates vehicle-based emissions from trucks required to transport waste from its source to the waste handling facility. A reduction in the mass of municipal solid waste sent to landfills would lower emissions associated with its transport and treatment. This can be achieved by reducing the rate at which waste is generated, or by diverting material away from the landfill via on-site composting, reuse, or recycling operations (although direct and transport-related emissions associated with the alternate fates must be accounted for too).



Source: Sonoma County Integrated Waste Agency

Most methods to quantify municipal solid waste involve life-cycle assessments. The fact sheets describe the inventory emissions and the available tools that should be used if the Local Agency or project Applicant would like to quantify the benefits of a solid waste measure with respect to a reduction in life-cycle emissions.

Public Area and Traffic Signal Lighting

Energy use for lighting generates indirect GHG emissions. The amount of energy required for lighting depends in part on the number and energy needs of the lamps. Indirect emissions from lighting energy use can be reduced by installing energy-efficient lamps that maintain the same efficacy beyond what is required to meet any government standards. The replacement of existing, incandescent traffic signal lamps with light-emitting diode (LED) versions will reduce traffic light energy use relative to the baseline. New public lighting fixtures outfitted with energy-efficiency lamps will also use less electricity than the existing baseline energy use. However, because regulations require all new traffic lights to be LED-based, the methods in this Report do not quantify a reduction associated with LED traffic lights for new traffic intersections. Emissions reductions for lighting-based mitigation measures are quantified as percentages of the baseline emissions. The percentage reductions for energy-efficiency lighting are based on a survey of literature data.

Vegetation (including Trees)

As discussed in Chapter 3, vegetation incorporates carbon into its structure during its growth phase, and thereby can remove a finite amount of carbon from the atmosphere. The sequestration capacity of on-site vegetation is determined by the area available for vegetation, and the types of vegetation installed. A project can increase the area available for vegetation by converting previously developed land into vegetated open space. Conversions from one type of vegetated land to another may increase or decrease carbon sequestration, depending on the relative sequestration capacities of the land types. A third way to increase sequestration is by planting new trees on either developed or undeveloped land.

The increase in carbon sequestration capacity is determined by calculating the total sequestration capacity of converted land, new vegetated land and trees; and then subtracting the combined capacity of vegetated land or trees that are removed. Carbon sequestration capacities for different land types (e.g. cropland, forest land) and for different tree species classes are available from IPCC guidelines, and summarized in Table E-2, in Appendix E.

Construction Equipment

Construction equipment typically uses diesel fuel and releases emissions based on the amount of fuel combusted and emission factor of the equipment. Emissions can be reduced by using equipment that emits fewer pollutants for the same amount of work.

This is typically equipment powered through grid electricity or hybrid technology. The exclusive use of grid electricity eliminates the diesel emissions at the site but would increase indirect electricity emissions. However, grid-based emissions are typically small compared to the emissions from the diesel-fueled equipment (depending on the source of grid power). Hybrid-powered equipment would decrease but not completely eliminate fuel use. The electricity for hybrid equipment is self-generated unless the equipment has plug-in capability, so it would not increase grid-based electrical generation and the associated emissions there.

The emissions reductions in this category are determined by finding the difference between the estimated mitigation emissions and the baseline emissions for construction equipment. Emissions for the mitigated scenario may consist of direct emissions from combustion fuel use, and/or indirect emissions from grid electricity. These would be calculated using resources described previously, such as the OFFROAD database and literature-based methodologies and values.

Transportation

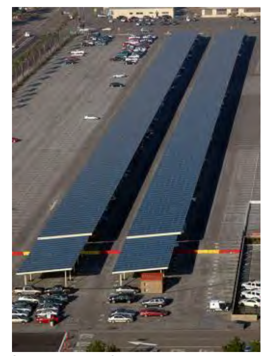
Transportation emissions can be reduced by improving the emissions profile of the vehicle fleet that travels the roads, or by reducing the vehicle miles traveled by the fleet. The majority of the measures quantified for this report focus on the reduction of VMT. This can be accomplished by optimizing the location and types of land uses in the project and its immediate vicinity, and by site enhancements to roads, and to bike and pedestrian networks to encourage the use of alternative modes of transportation. Mode shifts are also encouraged by implementing parking policies, transit system improvements, and trip reduction coordination or incentive programs.

The emission reductions in this category are determined by evaluating the elasticity of a measure relative to the amount of vehicle miles traveled that may be reduced as a result of the mitigation measure.

A few transportation measures in this Report are aimed at improving the emissions profile of the vehicle fleet. These measures promote alternative fuel, hybrid or electrical vehicles. The emission reductions in these measures are based on the improved emission factors and on changes to the assumed vehicle fleet mix.

On-Site Energy Generation

Different modes of energy generation have different GHG emission intensities. Fossil fuel-based generation emits GHG gases from combustion of the fuel, with the amount of emissions depending on the quantity and type of fuel used. Renewable energy generation, on the other hand, typically has significantly fewer emissions, and some types do not have any associated GHG emissions, such as photovoltaic systems and solar hot water heaters (excluding lifecycle emissions, as previously described in Chapter 3).


Solar Array at Coronado Naval Base

The emission reductions associated with using renewable non-emitting energy generated on-site are quantified as the emissions avoided because an equivalent amount of grid energy is not used. To calculate this, the energy generated by the on-site system(s) must be quantified, and then multiplied by the utility-specific emission factor for the type of energy (e.g. electricity, natural gas) being replaced. Energy generated on site is usually used for building operations; hence, it is generally considered a mitigation measure for building energy use.

Miscellaneous

The following miscellaneous mitigation measures are also discussed:

Loading Docks: A project applicant may elect to limit idling of engines beyond what is required by regulation at loading docks, or provide electrified loading docks. Electrified loading docks reduce the need for diesel auxiliary engines to run in order to keep refrigerated transportation units temperature controlled. The emission reduction is a comparison of the GHG emissions associated with the electricity compared to the diesel fuel combustion.

Off-site Mitigation: At the discretion of the reviewing agency, emission reductions may be created with offsite mitigation projects, as described in Chapter 2. If an off-site mitigation project is approved, the amount of emission reductions generated depends on the type of project implemented.

The numerical emission reductions would be quantified using the methods described for the different project categories above, with baseline values derived for the off-site location (instead of the project's baseline scenario). Once the numerical reductions have been estimated, they can be compared to the project's baseline emissions in order to determine the relative percentage reductions. Certain types of off-site projects may result in one-time emissions and others may result in a continuing stream of emissions reductions.

Carbon Sequestration: Emission reductions may be generated by implementing a carbon sequestration project. Carbon sequestration may be biological, chemical, or physical in nature, as described in Chapter 3. This Report does not address chemical or physical sequestration projects.

For biological sequestration, emission reductions are calculated as for vegetation projects (see above). The amount of the sequestration equals the amount of carbon removed by the vegetation.

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This chapter of the Report explains how the quantification of individual strategies is presented in Fact Sheets, how those fact sheets are designed and organized, and how to use them. This chapter also explains how and why mitigation measures have been grouped, and provides detailed discussion of how to apply the quantification methods when more than one strategy is being applied to the same project. A summary of the range of effectiveness for different measures is also provided for general information purposes, in table form, however it is very important that those generalized ranges NOT be used in place of the more specific quantification methods for the measure as detailed in the measure Fact Sheet. Finally, at the end of the Chapter there are step-by-step instructions on using the Fact Sheets, including an example.

Mitigation Strategies and Fact Sheets:

Accurate and reliable quantification depends on properly identifying the important variables that affect the emissions from an activity or source, and from changes to that activity or source. In order to provide a clear summary of those variables and usable instructions on how to find and apply the data needed, we have designed a Fact Sheet format to present each strategy or measure.

Types of Mitigation Strategies: There are three different types of mitigation strategies described in Chapter 7: Quantified measures, Best Management Practices, and General Plan strategies.

<u>Quantified Measures</u>: Quantified measures are fully quantified, project-level mitigation strategies. They are presented in categories where the nature of the underlying emissions sources are the same; the categories are discussed under “Organization of Fact Sheets” below. In addition, the measures may either stand alone, or be considered in connection with one or more other measures (that is, “grouped”). Groups of measures are always within a category; more detailed explanation is provided in “Grouping of Strategies” below. The majority of the strategies in this Report are fully Quantified Measures, and a strategy may be assumed to be of this type unless the Fact Sheet notes otherwise.

<u>Best Management Practices</u>: Several strategies are denoted as Best Management Practice (BMP). These measures are of two types. The first type of BMPs are quantifiable and describe methods that can be used to quantify the GHG mitigation reductions provided the project Applicant can provide substantial evidence supporting the values needed to quantify the reduction. These are listed as BMPs since there is not adequate literature at this time to generalize the mitigation measure reductions. However, the project Applicant may be able to provide the site specific information necessary to quantify a reduction. The second type of BMPs do not have methods for quantifying GHG mitigation reductions. These measures have preliminary evidence suggesting they will reduce GHG emissions if implemented, however, at this time adequate literature and methodologies are not available to quantify these reductions or

they involve life-cycle GHG emission benefits. The measures are encouraged to be implemented nonetheless. Local Agencies may decide to provide incentives to encourage implementation of these measures.

General Plan Strategies: The measures listed under the General Plan category are measures that will have the most benefit when implemented at a General Plan level, but are not quantifiable or applicable at the project specific level. While on a project basis some of these measures may not be quantifiable, at the General Plan level they may be quantified under the assumption that this will be implemented on a widespread basis. Local Agencies may decide to provide incentives or allocate the General Plan level reductions to specific projects by weighting the overall effect by the number of projects the General Plan reduction would apply to.

Introduction to the Fact Sheets: This Report presents the quantification of each mitigation measure in a Fact Sheet format. Each Fact Sheet includes: a detailed summary of each measure's applicability; the calculation inputs for the specific project; the baseline emissions method; the mitigation calculation method and associated assumptions; a discussion of the calculation and an example calculation; and finally a summary of the preferred and alternative literature sources for measure efficacy. The Fact Sheets are found in Chapter 7.

Layout of the Fact Sheets: Each Fact Sheet describes one mitigation measure. The mitigation measure has a unique number and is provided at the bottom of each page in that measure's Fact Sheet. This will assist the end user in determining where a mitigation measure fact sheet begins and ends while still preserving consecutive page numbers in the overall Report.

At the top of each Fact Sheet, the name of the measure category appears on the left, and the subcategory on the right. Cross-references to prior CAPCOA documents appear at the top left, below the category name. Specifically, measures labeled CEQA #: are from the *CAPCOA 2008 CEQA & Climate Change*[1] and measures labeled MP#: are from the *CAPCOA 2009 Model Policies for Greenhouse Gases in General Plans*[2]. This cross-referencing is also included in the list of measures at the beginning of Chapter 7, and is intended to allow the user to move easily between the documents. The measure number is at the bottom of the page, on the right-hand side.

The fact sheets begin with a measure description. This description includes two critical components:

(1) Specific language regarding the measure implementation – which should be consistent with the implementation method suggested by the project Applicant; and

[1] Available online at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf
[2] Available online at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-ModelPolicies-6-12-09-915am.pdf

(2) A discussion of key support strategies that are required for the reported range of effectiveness.

Appendices with additional calculations and assumptions for some of the fact sheets are provided at the end of this document. Default assumptions should be carefully reviewed for project applicability. Appendix B details the methodologies that should be used to calculate baseline GHG emissions for a project.

Organization of the Fact Sheets – Categories and Subcategories: The Fact Sheets are organized by general emission category types as follows:

- Energy
- Transportation
- Water
- Landscape Equipment
- Solid Waste
- Vegetation
- Construction
- Miscellaneous Categories
- General Plans

Several of these main categories are split into subcategories, for ease of understanding how to properly address the effects of combining the measures. Strategies are organized into categories and subcategories where they affect similar types of emissions sources. As an example, the category of "Energy" includes measures that reduce emissions associated with energy generation and use. Within that category, there are subcategories of measures that address "Building Energy Use," "Alternative Energy," and "Lighting," each with one or more measures in it. The measures in the subcategory are closely related to each other.

Categories and subcategories for the measures are illustrated in Charts 6-1 and 6-2, below. Chart 6-1 shows all of the measure categories EXCEPT the Transportation category, including their subcategories; note that not all categories have subcategories. Measures in the Transportation category are shown in Chart 6-2. There are a number of subcategories associated with the Transportation category. As shown in Chart 6-2, the primary measures in each subcategory are indicated in bold type, and the measures shown in normal type are either support measures, or they are explicitly "grouped" measures.

It is important to note that subcategories are NOT the same as "grouped" measures / strategies. The grouping of strategies connotes a specific relationship, and is explained in the next section, below.

Chart 6-1: Non-Transportation Strategies Organization

Energy

BE – **Building Energy**
- **Exceed Title 24**
- **Install Energy Efficient Appliances**
- Install Programmable Thermostats Reduction: Grouped
- Obtain 3rd Party Commissioning Reduction: Grouped

AE – **Alternative Energy**
- **Onsite Renewable Energy**
- **Utilize Combined Heat & Power**
- **Establish Methane Recovery**

LE – **Lighting**
- **Install High Efficacy Lighting**
- **Limit Outdoor Lighting**
- Replace Traffic Lights with LED Reduction: Additional

Water

- **Adopt a Water Conservation Strategy**

OR

WSW – **Water Supply**
- **Use Reclaimed Water**
- **Use Graywater**
- **Use Locally Sourced Water**

WUW – **Water Use**
- **Install Low-Flow Fixtures**
- **Design Water-Efficient Landscapes**
- **Use Water-Efficient Irrigation**
- **Reduce Turf**
- Plant Native or Drought-Resistant Vegetation

Area Landscaping

A – **Landscaping Equipment**
- **Prohibit gas Powered Landscape Equipment**
- Implement Lawnmower Exchange Program Reduction: Grouped
- Electric Yard Equipment Compatibility Reduction Grouped

Solid Waste

SW – **Solid Waste**
- Institute or Extend Recycling & Composting Services
- Recycle Demolished Construction Material

Vegetation

V – **Vegetation**
- **Plant Urban Trees**
- **New Vegetated Open Space**

Construction

C – **Construction**
- **Use Alternative Fuels for Construction Equipment**
- **Use Electric or Hybrid Construction Equipment**
- Limit Construction Equipment Idling
- Institute a Heavy-Duty Off-Road Vehicle Plan
- Implement a Construction Vehicle Inventory Tracking System

Miscellaneous

Misc – **Miscellaneous**
- **Establish Carbon Sequestration**
- **Establish Off-site Mitigation**
- **Implement an Innovative Strategy**
- Use Local and Sustainable Building Materials
- Require BMP in Agriculture and Animal Operations
- Require Environmentally Responsible Purchasing

General Plans

GP – **General Plans**
- Fund Incentives for Energy Efficiency
- Establish a Local Farmer's Market
- Establish Community Gardens
- Plant Urban Shade Trees
- Implement Strategies to Reduce Urban Heat-Island Effect

Note: Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.

Chart 6-2: Transportation Strategies Organization

Transportation Measures (Five Subcategories) Global Maximum Reduction (all VMT): urban = 75%; compact infill = 40%; suburban center or suburban with NEV = 20%; suburban = 15%

Global Cap for Road Pricing needs further study

Transportation Measures (Four Categories) Cross-Category Max Reduction (all VMT): urban = 70%; compact infill = 35%; suburban center or suburban with NEV = 15%; suburban = 10%

Max Reduction = 15% overall; work VMT = 25%; school VMT = 65%;

Max Reduction = 25% (all VMT)

Land Use / Location	Neighborhood / Site Enhancement	Parking Policy / Pricing	Transit System Improvements	Commute Trip Reduction (assumes mixed use)	Road Pricing Management	Vehicles
Max Reduction: urban = 65%; compact infill = 30%; suburban center = 10%; suburban = 5%	Max Reduction: without NEV = 5%; with NEV = 15%	Max Reduction = 20%	Max Reduction = 10%	Max Reduction = 25% (work VMT)	Max Reduction = 25%	
Density (30%)	Pedestrian Network (2%)	Parking Supply Limits (12.5%)	Network Expansion (8.2%)	CTR Program Required = 21% work VMT Voluntary = 6.2% work VMT	Cordon Pricing (22%)	Electrify Loading Docks
Design (21.3%)	Traffic Calming (1%)	Unbundled Parking Costs (13%)	Service Frequency / Speed (2.5%)	Transit Fare Subsidy (20% work VMT)	Traffic Flow Improvements (45% CO2)	Utilize Alternative Fueled Vehicles
Location Efficiency (65%)	NEV Network (14.4) <NEV Parking>	On-Street Market Pricing (5.5%)	Bus Rapid Transit (3.2%)	Employee Parking Cash-out (7.7% work VMT)	Required Contributions by Project	Utilize Electric or Hybrid Vehicles
Diversity (30%)	Car Share Program (0.7%)	Residential Area Parking Permits	Access Improvements	Workplace Parking Pricing (19.7% work VMT)		
Destination Accessibility (20%)	Bicycle Network <Lanes> <Parking> <Land Dedication for Trails>		Station Bike Parking	Alternative Work Schedules & Telecommute (5.5% work VMT)		
Transit Accessibility (25%)	Urban Non-Motorized Zones		Local Shuttles	CTR Marketing (5.5% work VMT)		
BMR Housing (1.2%)			Park & Ride Lots*	Employer-Sponsored Vanpool/Shuttle (13.4% work VMT)		
Orientation Toward Non-Auto Corridor				Ride Share Program (15% work VMT)		
Proximity to Bike Path				Bike Share Program		
				End of Trip Facilities		
				Preferential Parking Permit		
				School Pool (15.8% school VMT)		
				School Bus (6.3% school VMT)		

Note: Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.

Grouping of Strategies

Strategies noted as “grouped” are separately documented in individual Fact Sheets but must be paired with other strategies within the category. When these “grouped” strategies are implemented together, the combination will result in either an enhancement to the primary strategy by improving its effectiveness or a non-negligible reduction in effectiveness that would not occur without the combination.

Rules for Combining Strategies or Measures

Mitigation measures or strategies are frequently implemented together with other measures. Often, combining measures can lead to better emission reductions than implementing a single measure by itself. Unfortunately, the effects of combining the measures are not always as straightforward as they might at first appear. When more and more measures are implemented to mitigate a particular source of emissions, the benefit of each additional measure diminishes. If it didn’t, some odd results would occur. For example, if there were a series of measures that each, independently, was predicted to reduce emissions from a source by 10%, and if the effect of each measure was independent of the others, then implementing ten measures would reduce all of the emissions; and what would happen with the eleventh measure? Would the combination reduce 110% of the emissions? No. In fact, each successive measure is slightly less effective than predicted when implemented on its own.

On the other hand, some measures enhance the performance of a primary measure when they are combined. This Report includes a set of rules that govern different ways of combining measures. The rules depend on whether the measures are in the *same* category, or different categories. Remember, the categories include: Energy, Transportation, Water, Landscape Equipment, Solid Waste, Vegetation, Construction, Miscellaneous Categories, and General Plans.

Combinations <u>Between</u> Categories: The following procedures must be followed when combining mitigation measures that fall in separate categories. In order to determine the overall reduction in GHG emissions compared to the baseline emissions, the relative magnitude of emissions between the source categories needs to be considered. To do this, the user should determine the percent contribution made by each individual category to the overall baseline GHG emissions. This percent contribution by a category should be multiplied by the reduction percentages from mitigation measures in that category to determine the scaled GHG emission reductions from the measures in that category. This is done for each category to be combined. The scaled GHG emissions for each category can then be added together to give a total GHG reduction for the combined measures in all of the categories.

For example, consider a project whose total GHG emissions come from the following categories: transportation (50%), building energy use (40%), water (6%), and other (4%). This project implements a transportation mitigation measure that results in a 10% reduction in VMT. The project also implements mitigation measures that result in a 30% reduction in water usage. The overall reduction in GHG emissions is as follows:

Reduction from Transportation: 0.50 x 0.10 = 0.5 or 5%
Reduction from Water: 0.06 x 0.30 = 0.018 or 1.8%

Total Reduction: 5% + 1.8% = 6.8%

This example illustrates the importance of the magnitude of a source category and its influence on the overall GHG emission reductions.

The percent contributions from source categories will vary from project to project. In a commercial-only project it may not be unusual for transportation emissions to represent greater than 75% of all GHG emissions whereas for a residential or mixed use project, transportation emissions would be below 50%.

Combinations Within Categories: The following procedures must be followed when combining mitigation measures that fall within the same category.

Non-Transportation Combinations: When combining non-transportation subcategories, the total amount of reductions for that category should not exceed 100% except for categories that would result in additional excess capacity that can be used by others, but which the project wants to take credit for (subject to approval of the reviewing agency). This may include alternative energy generation systems tied into the grid, vegetation measures, and excess graywater or recycled water generated by the project and used by others. These excess emission reductions may be used to offset other categories of emissions, with approval of the agency reviewing the project. In these cases of excess capacity, the quantified amounts of excess emissions must be carefully verified to ensure that any credit allowed for these additional reductions is truly surplus.

Category Maximum- Each category has a maximum allowable reduction for the combination of measures in that category. It is intended to ensure that emissions are not double counted when measures within the category are combined. Effectiveness levels for multiple strategies within a subcategory (as denoted by a column in the appropriate chart, above) may be multiplied to determine a combined effectiveness level up to a maximum level. This should be done first to mitigation measures that are a source reduction followed by those that are a reduction to emission factors. Since the combination of mitigation measures and independence of mitigation measures are both complicated, this Report recommends that mitigation measure reductions within a category be multiplied unless a project applicant can provide substantial evidence indicating that emission reductions are independent of one another. This will take the following form:

GHG emission reduction for category = 1-[(1-A) x (1-B) x (1-C)]

Where:

A, B and C = Individual mitigation measure reduction percentages for the strategies to be combined in a given category.

Global Maximum- A separate maximum, referred to as a global maximum level, is also provided for a combination across subcategories. Effectiveness levels for multiple strategies across categories may also be multiplied to determine a combined effectiveness level up to global maximum level.

For example, consider a project that is combining 3 mitigation strategies from the water category. This project will install low-flow fixtures (measure WUW-1), use water-efficient irrigation (measure WUW-4, and reduce turf (measure WUW-5). Reductions from these measures will be:

• low-flow fixtures	20% or 0.20 (A)
• water efficient irrigation	10% or 0.10 (B)
• turf reductions	20% or 0.20 (C)

To combine measures within a category, the reductions would be
= 1-[(1-A) x (1-B) x (1-C)]
= 1-[(1-.20) x (1-.10) x (1-.20)]
= 1-[(0.8) x (0.9) x (.8)]
= 1-0.576 = 0.424
= 42.4%

Transportation Combinations: The interactions between the various categories of transportation-related mitigation measures is complex and sometimes counter-intuitive. Combining these measures can have a substantive impact on the quantification of the associated emission reductions. In order to safeguard the accuracy and reliability of the methods, while maintaining their ease of use, the following rules have been developed and should be followed when combining transportation-related mitigation measures. The rules are presented by sub-category, and reference Chart 6-2 Transportation Strategies Organization. The maximum reduction values also reflect the highest reduction levels justified by the literature. The chart indicates maximum reductions for individual mitigation measures just below the measure name.

Cross-Category Maximum- A cross-category maximum is provided for any combination of land use, neighborhood enhancements, parking, and transit strategies (columns A-D in Chart 6-1, with the maximum shown in the top row). The total project VMT reduction across these categories should be capped at these levels based on empirical evidence.[3] Caps are provided for the location/development type of the project. VMT reductions may be multiplied across the four categories up to this maximum. These include:

- Urban: 70% VMT
- Compact Infill: 35%
- Suburban Center (or Suburban with NEV): 15%
- Suburban: 10% (note that projects with this level of reduction must include a diverse land use mix, workforce housing, and project-specific transit; limited empirical evidence is available)

(See blue box, pp. 58-59.)

[3] As reported by Holtzclaw, et al for the State of California.

As used in this Report, location settings are defined as follows:

Urban: A project located within the central city and may be characterized by multi-family housing, located near office and retail. Downtown Oakland and the Nob Hill neighborhood in San Francisco are examples of the typical urban area represented in this category. The urban maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average (assumed analogous to an ITE baseline) for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Central Berkeley	-48%
San Francisco	-49%
Pacific Heights (SF)	-79%
North Beach (SF)	-82%
Mission District (SF)	-75%
Nob Hill (SF)	-63%
Downtown Oakland	-61%

The average reflects a range of 48% less VMT/capita (Central Berkeley) to 82% less VMT/capita (North Beach, San Francisco) compared to the statewide average. The urban locations listed above have the following characteristics:

- Location relative to the regional core: these locations are within the CBD or less than five miles from the CBD (downtown Oakland and downtown San Francisco).
- Ratio or relationship between jobs and housing: jobs-rich (jobs/housing ratio greater than 1.5)
- Density character
  - typical building heights in stories: six stories or (much) higher
  - typical street pattern: grid
  - typical setbacks: minimal
  - parking supply: constrained on and off street
  - parking prices: high to the highest in the region
- Transit availability: high quality rail service and/or comprehensive bus service at 10 minute headways or less in peak hours

Compact infill: A project located on an existing site within the central city or inner-ring suburb with high-frequency transit service. Examples may be community redevelopment areas, reusing abandoned sites, intensification of land use at established transit stations, or converting underutilized or older industrial buildings. Albany and the Fairfax area of Los Angeles are examples of typical compact infill area as used here. The compact infill maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Franklin Park, Hollywood	-22%
Albany	-25%
Fairfax Area, Los Angeles	-29%
Hayward	-42%

The average reflects a range of 22% less VMT/capita (Franklin Park, Hollywood) to 42% less VMT/capita (Hayward) compared to the statewide average. The compact infill locations listed above have the following characteristics:

- Location relative to the regional core: these locations are typically 5 to 15 miles outside a regional CBD
- Ratio or relationship between jobs and housing: balanced (jobs/housing ratio ranging from 0.9 to 1.2)
- Density character
  - typical building heights in stories: two to four stories
  - typical street pattern: grid
  - typical setbacks: 0 to 20 feet
  - parking supply: constrained
  - parking prices: low to moderate
- Transit availability: rail service within two miles, or bus service at 15 minute peak headways or less

As used in this Report, additional location settings are defined as follows:

Suburban Center: A project typically involving a cluster of multi-use development within dispersed, low-density, automobile dependent land use patterns (a suburb). The center may be an historic downtown of a smaller community that has become surrounded by its region's suburban growth pattern in the latter half of the 20th Century. The suburban center serves the population of the suburb with office, retail and housing which is denser than the surrounding suburb. The suburban center maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Sebastopol	0%
San Rafael (Downtown)	-10%
San Mateo	-17%

The average reflects a range of 0% less VMT/capita (Sebastopol) to 17% less VMT/capita (San Mateo) compared to the statewide average. The suburban center locations listed above have the following characteristics:

- Location relative to the regional core: these locations are typically 20 miles or more from a regional CBD
- Ratio or relationship between jobs and housing: balanced
- Density character
  - typical building heights in stories: two stories
  - typical street pattern: grid
  - typical setbacks: 0 to 20 feet
  - parking supply: somewhat constrained on street; typically ample off-street
  - parking prices: low (if priced at all)
- Transit availability: bus service at 20-30 minute headways and/or a commuter rail station

While all three locations in this category reflect a suburban "downtown," San Mateo is served by regional rail (Caltrain) and the other locations are served by bus transit only. Sebastopol is located more than 50 miles from downtown San Francisco, the nearest urban center. San Rafael and San Mateo are located 20 miles from downtown San Francisco.

Suburban: A project characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city (a suburb). Suburbs typically have the following characteristics:

- Location relative to the regional core: these locations are typically 20 miles or more from a regional CBD
- Ratio or relationship between jobs and housing: jobs poor
- Density character
  - typical building heights in stories: one to two stories
  - typical street pattern: curvilinear (cul-de-sac based)
  - typical setbacks: parking is generally placed between the street and office or retail buildings; large-lot residential is common
  - parking supply: ample, largely surface lot-based
  - parking prices: none
- Transit availability: limited bus service, with peak headways 30 minutes or more

The maximum reduction provided for this category assumes that regardless of the measures implemented, the project's distance from transit, density, design, and lack of mixed use destinations will keep the effect of any strategies to a minimum.

Global Maximum- A global maximum is provided for any combination of land use, neighborhood enhancements, parking, transit, and commute trip reduction strategies (the first five columns in the organization chart). This excludes reductions from road-pricing measurements which are discussed separately below. The total project VMT reduction across these categories, which can be combined through multiplication, should be capped at these levels based on empirical evidence.[4] Maximums are provided for the location/development type of the project. The Global Maximum values can be found in the top row of Chart 6-2.

These include:

- Urban: 75% VMT
- Compact Infill: 40% VMT
- Suburban Center (or Suburban with NEV): 20%
- Suburban: 15% (limited empirical evidence available)

Specific Rules for Subcategories within Transportation- Because of the unique interactions of measures within the Transportation Category, each subcategory has additional rules or criteria for combining measures.

❖ Land Use/Location Strategies – Maximum Reduction Factors: Land use measures apply to a project area with a radius of ½ mile. If the project area under review is greater than this, the study area should be divided into subareas of radii of ½ mile, with subarea boundaries determined by natural "clusters" of integrated land uses within a common walkshed. If the project study area is smaller than ½ mile in radius, other land uses within a ½ mile radius of the key destination point in the study area (i.e. train station or employment center) should be included in design, density, and diversity calculations. Land use measures are capped based on empirical evidence for location setting types as follows:[5]

- Urban: 65% VMT
- Compact Infill: 30% VMT
- Suburban Center: 10% VMT
- Suburban: 5% VMT

❖ Neighborhood/Site Enhancements Strategies – Maximum Reduction Factors: The neighborhood/site enhancements category is capped at 12.7% VMT reduction (with Neighborhood Electric Vehicles (NEVs)) and 5% without NEVs based on empirical evidence (for NEVs) and the multiplied combination of the non-NEV measures.

❖ Parking Strategies – Maximum Reduction Factors: Parking strategies should be implemented in one of two combinations:

- Limited (reduced) off-street supply ratios plus residential permit parking and priced on-street parking (to limit spillover), or
- Unbundled parking plus residential permit parking and priced on-street parking (to limit spillover).

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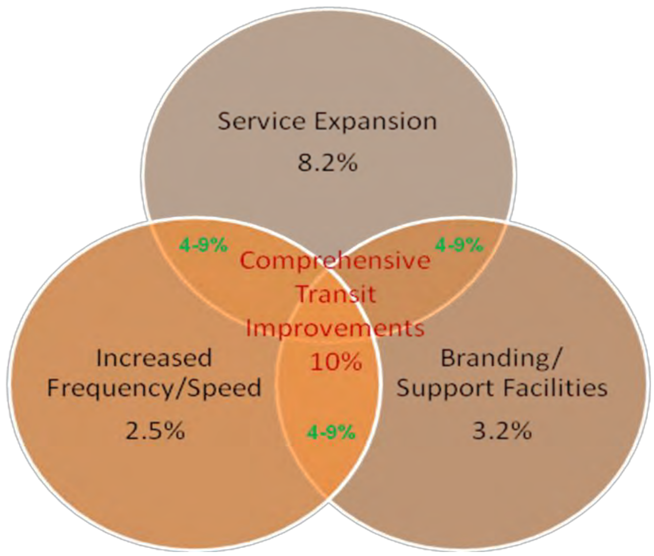
[4] As reported by Holtzclaw, et al for the State of California. Note that CTR strategies must be converted to overall VMT reductions (from work-trip VMT reductions) before being combined with strategies in other categories.

[5] As reported for California locations in Holtzclaw, et al. "Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and San Francisco." *Transportation Planning and Technol*ogy, 2002, Vol. 25, pp. 1–27.

Note: The reduction maximum of 20% VMT reflects the combined (multiplied) effect of unbundled parking and priced on-street parking.

- Transit System Strategies – Maximum Reduction Factors: The 10% VMT reduction maximum for transit system improvements reflects the combined (multiplied) effect of network expansion and service frequency/speed enhancements. A comprehensive transit improvement would receive this type of reduction, as shown in the center overlap in the Venn diagram, below.



- Commuter Trip Reductions (CTR) Strategies – Maximum Reduction Factors: The most effective commute trip reduction measures combine incentives, disincentives, and mandatory monitoring, often through a transportation demand management (TDM) ordinance. Incentives encourage a particular action, for example parking cash-out, where the employee receives a monetary incentive for not driving to work, but is not punished for maintaining status quo. Disincentives establish a penalty for a status quo action. An example is workplace parking pricing, where the employee is now monetarily penalized for driving to work. The 25% maximum for work-related VMT applies to comprehensive CTR programs. TDM strategies that include only incentives, only disincentives, and/or no mandatory monitoring, should have a lower total VMT reduction than those with a comprehensive approach. Support strategies to strengthen CTR programs include guaranteed-ride-home, taxi vouchers, and message boards/marketing materials. A 25% reduction in work-related VMT is assumed equivalent to a 15% reduction in overall project VMT for the purpose of the global maximum; this can be adjusted for project-specific land use mixes.

  Two school-related VMT reduction measures are also provided in this category. The maximum reduction for these measures should be 65% of school-related VMT based on the literature.

- Road Pricing/Management Strategies – Maximum Reduction Factors: Cordon pricing is the only strategy in this category with an expected VMT reduction potential. Other forms of road pricing would be applied at a corridor or region-wide level rather than as mitigation applied to an individual development project. No domestic case studies are available for cordon pricing, but international studies suggest a VMT reduction maximum of 25%. A separate, detailed, and project-specific study should be conducted for any project where road pricing is proposed as a VMT reduction measure.

Additional Rules for Transportation Measures- There are also restrictions on the application of measures in rural applications, and application to baseline, as follows:

- Rural Application: Few empirical studies are available to suggest appropriate VMT reduction caps for strategies implemented in rural areas. Strategies likely to have the largest VMT reduction in rural areas include vanpools, telecommute or alternative work schedules, and master planned communities (with design and land use diversity to encourage intra-community travel). NEV networks may also be appropriate for larger scale developments. Because of the limited empirical data in the rural context, project-specific VMT reduction estimates should be calculated.

- Baseline Application: As discussed in previous sections of this report, VMT reductions should be applied to a baseline VMT expected for the project, based on the Institute of Transportation Engineers' 8th Edition *Trip Generation Manual* and associated typical trip distance for each land use type. Where trip generation rates and project VMT provided by the project Applicant are derived from another source, the VMT reductions must be adjusted to reflect any "discounts" already applied.

Range of Effectiveness of Mitigation Measures

The following charts provide the range of effectiveness for the quantified mitigation measures. Each chart shows one category of measures, with subcategories identified. The charts also show the basis for the quantification, and indicate applicable groupings. IMPORTANT: these ranges are approximate and should NOT be used in lieu of the specific quantification method provided in the fact sheet for each measure. Restrictions on combining measures must be observed.

Table 6-1: Energy Category

Energy						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness: Percent Reduction in GHG Emissions	Range of Effectiveness: Basis
Building Energy Use	BE-1	Buildings exceed Title 24 Building Envelope Energy Efficiency Standards by X% (X is equal to the percentage improvement selected for the project			For a 10% improvement over 2008 Title 24: Non-Residential electricity use: 0.2-5.5%; natural gas use: 0.7-10% Residential electricity use: 0.3-2.6%; natural gas use: 7.5-9.1%	
	BE-2	Install Programmable Thermostat Timers	x		BMP	
	BE-3	Obtain Third-party HVAC Commissioning and Verification of Energy Savings	x	BE-1	BMP	
	BE-4	Install Energy Efficient Appliances			Residential building: 2-4% Grocery Stores: 17-22%	Appliance Electricity Use
	BE-5	Install Energy Efficient Boilers			1.2-18.4%	Fuel Use
Alternative Energy Generation	AE-1	Establish Onsite Renewable Energy Systems-Generic			0-100%	
	AE-2	Establish Onsite Renewable Energy Systems-Solar Power			0-100%	
	AE-3	Establish Onsite Renewable Energy Systems-Wind Power			0-100%	
	AE-4	Utilize a Combined Heat and Power System			0-46%	
	AE-5	Establish Methane Recovery in Landfills			73-77%	
	AE-6	Establish Methane Recovery in Wastewater Treatment Plants			95-97%	
Lighting	LE-1	Install Higher Efficacy Public Street and Area Lighting			16-40%	Outdoor Lighting Electricity Use
	LE-2	Limit Outdoor Lighting Requirements	x		BMP	
	LE-3	Replace Traffic Lights with LED Traffic Lights			90%	Traffic Light Electricity Use

Table 6-2: Transportation Category

Transportation						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Land Use / Location	LUT-1	Increase Density			1.5-30.0%	VMT
	LUT-2	Increase Location Efficiency			10-65%	VMT
	LUT-3	Increase Diversity of Urban and Suburban Developments (Mixed Use)			9-30%	VMT
	LUT-4	Incr. Destination Accessibility			6.7-20%	VMT
	LUT-5	Increase Transit Accessibility			0.5-24.6%	VMT
	LUT-6	Integrate Affordable and Below Market Rate Housing			0.04-1.20%	VMT
	LUT-7	Orient Project Toward Non-Auto Corridor			NA	
	LUT-8	Locate Project near Bike Path/Bike Lane			NA	
	LUT-9	Improve Design of Development			3.0-21.3%	VMT
Neighborhood / Site Design	SDT-1	Provide Pedestrian Network Improvements			0-2%	VMT
	SDT-2	Traffic Calming Measures			0.25-1.00%	VMT
	SDT-3	Implement a Neighborhood Electric Vehicle (NEV) Network			0.5-12.7%	VMT
	SDT-4	Urban Non-Motorized Zones		SDT-1	NA	
	SDT-5	Incorporate Bike Lane Street Design (on-site)		LUT-9	NA	
	SDT-6	Provide Bike Parking in Non-Residential Projects		LUT-9	NA	
	SDT-7	Provide Bike Parking in Multi-Unit Residential Projects		LUT-9	NA	
	SDT-8	Provide EV Parking		SDT-3	NA	
	SDT-9	Dedicate Land for Bike Trails		LUT-9	NA	
Parking Policy / Pricing	PDT-1	Limit Parking Supply			5-12.5%	
	PDT-2	Unbundle Parking Costs from Property Cost			2.6-13%	
	PDT-3	Implement Market Price Public Parking (On-Street)			2.8-5.5%	
	PDT-4	Require Residential Area Parking Permits		PDT-1, 2 & 3	NA	

Transportation - continued						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Trip Reduction Programs	TRT-1	Implement Voluntary CTR Programs			1.0-6.2%	Commute VMT
	TRT-2	Implement Mandatory CTR Programs – Required Implementation/Monitoring			4.2-21.0%	Commute VMT
	TRT-3	Provide Ride-Sharing Programs			1-15%	Commute VMT
	TRT-4	Implement Subsidized or Discounted Transit Prog.			0.3-20.0%	Commute VMT
	TRT-5	Provide End of Trip Facilities		TRT-1, 2 & 3	NA	
	TRT-6	Telecommuting and Alternative Work Schedules			0.07-5.50%	Commute VMT
	TRT-7	Implement Commute Trip Reduction Marketing			0.8-4.0%	Commute VMT
	TRT-8	Implement Preferential Parking Permit Program		TRT-1, 2 & 3	NA	
	TRT-9	Implement Car-Sharing Program			0.4-0.7%	VMT
	TRT-10	Implement School Pool Program			7.2-15.8%	School VMT
	TRT-11	Provide Employer-Sponsored Vanpool/Shuttle			0.3-13.4%	Commute VMT
	TRT-12	Implement Bike-Sharing Program		SDT-5, LUT-9	NA	
	TRT-13	Implement School Bus Program			38-63%	School VMT
	TRT-14	Price Workplace Parking			0.1-19.7%	Commute VMT
	TRT-15	Implement Employee Parking "Cash-Out"			0.6-7.7%	Commute VMT

Transportation - continued						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Transit System Improvements	TST-1	Provide a Bus Rapid Transit System			0.02-3.2%	VMT
	TST-2	Implement Transit Access Improvements		TST-3, TST-4	NA	
	TST-3	Expand Transit Network			0.1-8.2%	VMT
	TST-4	Increase Transit Service Frequency/Speed			0.02-2.5%	VMT
	TST-5	Provide Bike Parking Near Transit		TST-3, TST-4	NA	
	TST-6	Provide Local Shuttles		TST-3, TST-4	NA	
Road Pricing / Management	RPT-1	Implement Area or Cordon Pricing			7.9-22.0%	VMT
	RPT-2	Improve Traffic Flow			0-45%	VMT
	RPT-3	Require Project Contributions to Transportation Infrastructure Improvement Projects		RPT-2, TST-1 to 6	NA	
	RPT-4	Install Park-and-Ride Lots		RPT-1, TRT-11, TRT-3, TST-1 to 6	NA	
Vehicles	VT-1	Electrify Loading Docks and/or Require Idling-Reduction Systems			26-71%	Truck Idling Time
	VT-2	Utilize Alternative Fueled Vehicles			Varies	
	VT-3	Utilize Electric or Hybrid Vehicles			0.4-20.3%	Fuel Use

Table 6-3: Water Category

Water						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Water Supply	WSW-1	Use Reclaimed Water			up to 40% for Northern Californiaup to 81% for Southern California	Outdoor Water Use
	WSW-2	Use Gray Water			0-100%	Outdoor Water Use
	WSW-3	Use Locally-Sourced Water Supply			0-60% for Northern and Central California; 11-75% for Southern California	Indoor and Outdoor Water Use
Water Use	WUW-1	Install Low-Flow Water Fixtures.			Residential: 20% Non-Residential: 17-31%	Indoor Water Use
	WUW-2	Adopt a Water Conservation Strategy.			varies	
	WUW-3	Design Water-Efficient Landscapes			0-70%	Outdoor Water Use
	WUW-4	Use Water-Efficient Landscape Irrigation Systems			6.1%	Outdoor Water Use
	WUW-5	Reduce Turf in Landscapes and Lawns			varies	
	WUW-6	Plant Native or Drought-Resistant Trees and Vegetation			BMP	

Table 6-4: Area Landscaping

Area Landscaping						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Area Landscaping	A-1	Prohibit Gas Powered Landscape Equipment.			LADWP: 2.5-46.5% PG&E: 64.1-80.3% SCE: 49.5-72.0% SDGE: 38.5-66.3% SMUD: 56.3-76.0%	Fuel Use
	A-2	Implement Lawnmower Exchange Program			BMP	
	A-3	Electric Yard Equipment Compatibility		A-1 or A-2	BMP	

Table 6-5: Solid Waste Category

Solid Waste						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Solid Waste	SW-1	Institute or Extend Recycling and Composting Services			BMP	
	SW-2	Recycle Demolished Construction Material			BMP	

Table 6-6: Vegetation Category

Vegetation						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Vegetation	V-1	Urban Tree Planting		GP-4	varies	
	V-2	Create new vegetated open space.			varies	

Table 6-7: Construction Category

Construction						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Construction	C-1	Use Alternative Fuels for Construction Equipment			0-22%	Fuel Use
	C-2	Use Electric and Hybrid Construction Equipment			2.5-80%	Fuel Use
	C-3	Limit Construction Equipment Idling beyond Regulation Requirements			varies	
	C-4	Institute a Heavy-Duty Off-Road Vehicle Plan		Any C	BMP	
	C-5	Implement a Vehicle Inventory Tracking System		Any C	BMP	

Table 6-8: Miscellaneous Category

Miscellaneous						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Miscellaneous	Misc-1	Establish a Carbon Sequestration Project			varies	
	Misc-2	Establish Off-Site Mitigation			varies	
	Misc-3	Use Local and Sustainable Building Materials	x		BMP	
	Misc-4	Require Best Management Practices in Agriculture and Animal Operations	x		BMP	
	Misc-5	Require Environmentally Responsible Purchasing	x		BMP	
	Misc-6	Implement an Innovative Strategy for GHG Mitigation	x		BMP	

Table 6-9: General Plans

General Plan Strategies						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
General Plans	GP-1	Fund Incentives for Energy Efficiency	x		BMP	
	GP-2	Establish a Local Farmer's Market	x		BMP	
	GP-3	Establish Community Gardens	x		BMP	
	GP-4	Plant Urban Shade Trees	x	V-1	BMP	
	GP-5	Implement Strategies to Reduce Urban Heat-Island Effect	x		BMP	

Applicability of Quantification Fact Sheets Outside of California
In order to apply the quantification methods in this Report to projects located outside of California, the assumptions and methods in the baseline methodology and in the Fact Sheets should be reviewed prior to applying them. First, evaluate the basis for use metrics and emission factors for applicability outside of California. The Report references various sources for use metrics and emission factors; if these are California-specific, the method should be evaluated to determine if these same use metrics and emission factors are applicable to the project area. If they are not applicable, factors appropriate for the project area should be substituted in the baseline and project methods. Key factors to consider are climate zone[6], precipitation, building standards, end-user behavior, and transportation environment (land use and transportation characteristics). Use metrics likely to vary outside of California include:

- Building Energy Use
- Water Use
- Vehicle Trip Lengths and Vehicle Miles Traveled
- Building Standards
- Waste Disposal Rates
- Landscape Equipment Annual Usage

Emission factors relate the use metric to carbon intensity to estimate GHG emissions. Depending on the type of emission factor, these values may or may not change based on location. For instance, the emission factor for combustion of a specific amount of fuel does not typically change; however the engine mix may change by location, and fuel use by those engines may be different. Other emission factors are regionally dependent and alternative sources should be investigated. Emission factors likely to vary outside of California include:

- Electricity associated with water and wastewater supply and treatment
- Carbon intensity of electricity supplied
- Fleet and model year distribution of vehicles which influences emission factors

The user should be able to adjust the methodologies to: (1) calculate the baseline for a given mitigation measure; and then (2) incorporate the appropriate data and assumptions into the calculations for the emission mitigation associated with the measure.

There is at least one mitigation measure that will not be applicable outside of California unless adjustments are made by substituting location-specific factors in the baseline methodology: the improvement beyond Title 24 (BE-1) is not applicable outside of California since buildings outside California would be subject to different building codes. The project Applicant may be able to estimate a baseline energy use for building envelope systems under other building standards and estimate the change in energy use for improvements to building envelope systems using building energy software or literature surveys.

[6] Climate zones are specific geographic areas of similar climatic characteristics, including temperature, weather, and other factors which affect building energy use. The California Energy Commission identified 16 Forecasting Climate Zones (FCZs) within California.

How to Use a Fact Sheet to Quantify a Project

This section provides step-by-step instructions and an example regarding how a fact sheet can be used. After choosing the appropriate fact sheet(s), follow these general steps. Steps may need to be adjusted for different types of fact sheets.

Step 1: Does this fact sheet apply?
Carefully read the measure's description and applicability to ensure that you are using the correct fact sheet.

Step 2: Is the measure "grouped"?
Check Tables 6-1 to 6-9 to see if the measure is "grouped" with other measures. If it is, then all measures in the group must be implemented together.

Step 3: Review defaults
Review the default assumptions in the fact sheet.

Step 4: Data inputs
Determine the type of data and data sources necessary. Refer to Appendix B and other suggested documents.

Step 5: Calculate baseline emissions
Calculate baseline emissions using formulas provided in the fact sheet.

Step 6: Percent reductions
If applicable, calculate the percent reduction for the specific action in the measure.

Step 7: Quantify reductions
Quantify emission reductions for a particular mitigation measure using the provided formula.

Step 8: Grouped measures
If you are using a mitigation measure that is grouped with another measure, refer to Tables 6-1 to 6-9 and complete the calculations for all measures that are grouped together for a particular mitigation strategy.

Step 9: Multiple measures
See Chapter 6 for how to combine reductions from multiple measures.

IMPORTANT: Clearly document information such as data sources, data used, and calculations.

Example:

The following is an example calculation for a building project that will use Fact Sheet 2.1.1 - *Exceed Title 24 Building Envelope Energy Efficiency Standards by X%*. In this example, a large office building is being built, and it will be designed to do 10% more than Title 24 standards for both electricity and natural gas.

- **Step 1 – Does this fact sheet apply?**
  The project and fact sheet have been reviewed, and YES, this fact sheet is appropriate to use to estimate reductions from the project.

- **Step 2 - Is the measure "grouped"?**
  NO, this is a measure that does not have to be done with other measures.

- **Step 3 – Review defaults**
  Default assumptions and emission factors have been reviewed and used, as appropriate.

- **Steps 4 – Data inputs**
  The table below shows the data needed for the example, the sample data input, and the source of the sample data. Make sure the data use the units specified in the equation. *

Data for Fact Sheet 2.1.1 Example

Data Needed	Input	Source of Data
Project type	Commercial land use = Large Office	User Input
Size	100,000 sq. ft	User Input
Climate Zone	1	From Figure BE 1.1
Electricity $Intensity_{baseline}$	8.32 kWh/SF/yr	From Fact Sheet 2.1.1
Utility Provider	PG&E	User Input
Emission $Factor_{Electricity}$	2.08E-4 MT CO_2e/kWh	Fact Sheet 2.1.1
Natural Gas $Intensity_{baseline}$	18.16 kBTU/SF/yr	From Fact Sheet 2.1.1
Emission $Factor_{NaturalGas}$	5.32E-5 MT CO_2e/therm	From Fact Sheet 2.1.1
% Reduction Commitment	10% over 2008 Title 24 Standards	User Input

- **Step 5 – Calculate baseline emissions**
  Once all necessary information has been obtained, use the equation provided to determine the baseline emissions. Round results to the nearest MT.

⇨ GHG Emissions $Baseline_{Electicity}$ = Electricity $Intensity_{Baseline}$ x Size x Emission $Factor_{Electricity}$

= 8.32 kWh/SF/yr x 100,000 SF x (2.08E-4 MT CO_2e/kWh)
= **173 MT CO_2e/yr [Baseline GHG Emissions for Electricity]**

⇨ GHG Emissions $Baseline_{Natural\ Gas}$ = Natural Gas $Intensity_{Baseline}$ x Size x Emission $Factor_{NaturalGas}$

= 18.16 kBTU/SF/yr x 100,000 SF x (5.32E-5 MT CO_2e/kBTU)
= **97 MT CO_2e/yr [Baseline GHG Emissions for Natural Gas]**

⇨ GHG $Emissions_{Baseline}$ = GHG Emissions $Baseline_{Electricity}$ + GHG Emissions $Baseline_{Natural\ Gas}$

= 173 MT CO_2e/yr + 97 MT CO_2e/yr
= 270 MT CO_2e/yr

- **Step 6 – Percent reductions**

Now calculate the percent GHG emission reduction based on the stated improvement goal. In this example the goal is a 10% reduction over Title 24 Energy Efficiency Standards. See Table BE-1.1 for data used for this step.

- Reduction$_{Electricity}$ from 1% over 2008 Title 24 Standards = 0.20%
  Reduction$_{NaturalGas}$ from 1% over 2008 Title 24 Standards = 1.00%

  From Table BE-1.1

- Multiply the Percent Factor from Table BE-1.1 by the Percent Reduction Commitment (10% for this example)

Reduction in GHG emissions from electricity generation:

= 0.20% x 10
= 2%

Reduction Percentage X 10% goal

Reduction in GHG emissions from natural gas combustion:

= 1% x 10
= 10%

Reduction Percentage X 10% goal

- **Step 7 – Quantify reductions**
  Using the percent reductions, the emission reductions can be calculated, as shown below.

- Total Building GHG emissions = GHG Emissions Baseline$_{Electricity.}$ x (Reduction$_{Electricity}$) + GHG Emissions Baseline$_{NaturalGas}$ x (Reduction$_{NaturalGas}$)

= 173 MT CO_2e/yr x $(\frac{100\%-2\%}{100})$ + 97 MT CO_2e/yr x $(\frac{100\%-10\%}{100})$
= **257 MT CO_2e/yr**

Net reductions are the difference between the baseline emissions and the emissions calculated above for what will occur with this strategy implemented.

- Net reductions = Baseline – Total Building GHG Emissions

= 270 MT CO_2e/yr - 257 MT CO_2e/yr
= **13 MT CO_2e/yr**

This shows that a 10% improvement in energy consumption over 2008 Title 24 Standards from electricity and natural gas will result in a GHG reduction of 13 MT CO_2e/yr.

- **Step 8 – Grouped measures**
  In this example, the measure is not grouped. For grouped measures, refer to Tables 6-1 to 6-9 in Chapter 6 for how to combine reductions.

- **Step 9 – Multiple measures**
  See "Rules for Combining Strategies or Measures" section in Chapter 6 for how to add reductions from multiple measures

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1.0 Introduction

Chapter 7 is made up of a series of Fact Sheets. Each sheet summarizes the quantification methodology for a specific mitigation measure. As described in Chapter 6, the measures are grouped into Categories, and, in some cases, into subcategories. For information about the development of the Fact Sheets, please see Chapter 4. For a discussion of specific quantification issues in select measure categories or subcategories, please refer to Chapter 5. Chapter 6 provides a detailed explanation of the organization and layout of the Fact Sheets, including rules that govern the quantification of measures that have been, or will be, implemented in combination.

In order to facilitate navigation through, and the use of, the Fact Sheets, they have been color coded to reflect the Category the measure is in, and if applicable, the subcategory. The color scheme is shown in Charts 6-1 and 6-2, and also in Table 7-1 (below).

The colored bar at the top of each Fact Sheet corresponds to the Category color as shown in Charts 6-1 and 6-2, and in Table 7-1; the Category name is shown in the colored bar at the left hand margin. The second colored bar, immediately below the first one, shows the name of the subcategory, if any, and corresponds to subcategory color in those charts and tables. The subcategory name appears at the right hand margin.

At the left hand margin, below the Category name, is a cross-reference to the corresponding measure in the previous two CAPCOA reports (*CEQA and GHG*; and *Model Polices for GHG in General Plans*). The term "MP#" refers to a measure in the Model Policies document. The term CEQA# refers to a measure in the CEQA and GHG report.

At the bottom of the page is a colored bar that corresponds to the Category, and, where applicable, there is a colored box at the right hand margin, contiguous with the colored bar. This color of the box corresponds to the subcategory, where applicable. The box contains the measure number.

The layout of information in each Fact Sheet is covered in detail in Chapter 6.

Table 7-1, below, provides an index and cross-reference for the measure Fact Sheets. It is color-coded, as explained above, and may be used as a key to more quickly and easily navigate through the Fact Sheets

Table 7-1: Measure Index & Cross Reference

Section	Category	Page #	Measure #	BMP	MP #	CEQA #
2.0	**Energy**	**85**				
2.1	Building Energy Use	85				
2.1.1	Buildings Exceed Title 24 Building Envelope Energy Efficiency Standards By X%	85	BE-1		EE-2	MM-E6
2.1.2	Install Programmable Thermostat Timers	99	BE-2	x	EE-2	-
2.1.3	Obtain Third-party HVAC Commissioning and Verification of Energy Savings	101	BE-3	x	EE-2	-
2.1.4	Install Energy Efficient Appliances	103	BE-4		EE-2.1.6	MM E-19
2.1.5	Install Energy Efficient Boilers	111	BE-5		-	-
2.2	Lighting	115				
2.2.1	Install Higher Efficacy Public Street and Area Lighting	115	LE-1		EE-2.1.5	-
2.2.2	Limit Outdoor Lighting Requirements	119	LE-2	x	EE-2.3	
2.2.3	Replace Traffic Lights with LED Traffic Lights	122	LE-3		EE-2.1.5	-
2.3	Alternative Energy Generation	125				
2.3.1	Establish Onsite Renewable Energy Systems-Generic	125	AE-1		AE-2.1	MM E-5
2.3.2	Establish Onsite Renewable Energy Systems-Solar Power	128	AE-2		AE-2.1	MM E-5
2.3.3	Establish Onsite Renewable Energy Systems-Wind Power	132	AE-3		AE-2.1	MM E-5
2.3.4	Utilize a Combined Heat and Power System	135	AE-4		AE-2	-
2.3.5	Establish Methane Recovery in Landfills	143	AE-5		WRD-1	-
2.3.6	Establish Methane Recovery in Wastewater Treatment Plants	149	AE-6			
3.0	**Transportation**	**155**				
3.1	Land Use/Location	155				
3.1.1	Increase Density	155	LUT-1		LU-1.5 & LU-2.1.8	MM D-1 & D-4
3.1.2	Increase Location Efficiency	159	LUT-2		LU-3.3	-
3.1.3	Increase Diversity of Urban and Suburban Developments (Mixed Use)	162	LUT-3		LU-2	MM D-9 & D-4
3.1.4	Increase Destination Accessibility	167	LUT-4		LU-2.1.4	MM D-3
3.1.5	Increase Transit Accessibility	171	LUT-5		LU-1,LU-4	MM D-2
3.1.6	Integrate Affordable and Below Market Rate Housing	176	LUT-6		LU-2.1.8	MM D-7
3.1.7	Orient Project Toward Non-Auto Corridor	179	LUT-7		LU-4.2	LUT-3
3.1.8	Locate Project near Bike Path/Bike Lane	181	LUT-8		-	LUT-4
3.1.9	Improve Design of Development	182	LUT-9		-	-
3.2	Neighborhood/Site Enhancements	186				
3.2.1	Provide Pedestrian Network Improvements	186	SDT-1		LU-4	MM-T-6
3.2.2	Provide Traffic Calming Measures	190	SDT-2		LU-1.6	MM-T-8
3.2.3	Implement a Neighborhood Electric Vehicle (NEV) Network	194	SDT-3		TR-6	MM-D-6
3.2.4	Create Urban Non-Motorized Zones	198	SDT-4		LU-3.2.1 & 4.1.4	SDT-1
3.2.5	Incorporate Bike Lane Street Design (on-site)	200	SDT-5		TR-4.1	LUT-9
3.2.6	Provide Bike Parking in Non-Residential Projects	202	SDT-6		TR-4.1	MM T-1
3.2.7	Provide Bike Parking with Multi-Unit Residential Projects	204	SDT-7		TR-4.1.2	MM T-3
3.2.8	Provide Electric Vehicle Parking	205	SDT-8		TR-5.4	MM T-17 & E-11
3.2.9	Dedicate Land for Bike Trails	206	SDT-9		TR-4.1	LUT-9
3.3	Parking Policy/Pricing	207				
3.3.1	Limit Parking Supply	207	PDT-1		LU-1.7 & LU-2.1.1.4	-
3.3.2	Unbundle Parking Costs from Property Cost	210	PDT-2		LU-1.7	-
3.3.3	Implement Market Price Public Parking (On-Street)	213	PDT-3		-	-
3.3.4	Require Residential Area Parking Permits	217	PDT-4		-	PDT-1, PDT-2, PDT-3

Section		Category	Page #	Measure #	BMP	MP #	CEQA #
5.0		**Area Landscaping**	**384**				
5.1		Landscaping Equipment	384				
	5.1.1	Prohibit Gas Powered Landscape Equipment.	384	A-1		-	-
	5.1.2	Implement Lawnmower Exchange Program	389	A-2	x	EE-4.2	MM D-13
	5.1.3	Electric Yard Equipment Compatibility	391	A-3	x	MO-2.4	A-1 or A-2; MM D-14
6.0		**Solid Waste**	**392**				
6.1		Solid Waste	392				
	6.1.1	Institute or Extend Recycling and Composting Services	401	SW-1	x	WRD-2	MM D-14
	6.1.2	Recycle Demolished Construction Material	402	SW-2	x	WRD-2.3	MM C-4
7.0		**Vegetation**	**402**				
7.1		Vegetation	402				
	7.1.1	Urban Tree Planting	402	V-1		COS-3.3, COS 3.2	GP-4, MM T-14
	7.1.2	Create New Vegetated Open Space	406	V-2		COS-4.1	-
8.0		**Construction**	**410**				
8.1		Construction	410				
	8.1.1	Use Alternative Fuels for Construction Equipment	410	C-1		TR-6, EE-1	MM C-2
	8.1.2	Use Electric and Hybrid Construction Equipment	420	C-2		TR-6, EE-1	-
	8.1.3	Limit Construction Equipment Idling beyond Regulation Requirements	428	C-3		TR-6.2	-
	8.1.4	Institute a Heavy-Duty Off-Road Vehicle Plan	431	C-4	x	TR-6.2, EE-1	Any C
	8.1.5	Implement a Construction Vehicle Inventory Tracking System	432	C-5	x	-	-
9.0		**Miscellaneous**	**433**				
9.1		Miscellaneous	433				
	9.1.1	Establish a Carbon Sequestration Project	433	Misc-1		LU-5	-
	9.1.2	Establish Off-Site Mitigation	435	Misc-2		-	-
	9.1.3	Use Local and Sustainable Building Materials	437	Misc-3	x	EE-1	MM C-3, E-17
	9.1.4	Require Best Management Practices in Agriculture and Animal Operations	439	Misc-4	x	-	-
	9.1.5	Require Environmentally Responsible Purchasing	440	Misc-5	x	MO-6.1	-
	9.1.6	Implement an Innovative Strategy for GHG Mitigation	442	Misc-6	x	-	-
10.0		**General Plans**	**444**				
10.1		General Plans	444				
	10.1.1	Fund Incentives for Energy Efficiency	444	GP-1	x	-	-
	10.1.2	Establish a Local Farmer's Market	446	GP-2	x	LU-2.1.4	MM D-18
	10.1.3	Establish Community Gardens	448	GP-3	x	LU-2.1.4	MM D-19
	10.1.4	Plant Urban Shade Trees	450	GP-4	x	COS-3.2	V-1, MM T-14
	10.1.5	Implement Strategies to Reduce Urban Heat-Island Effect	455	GP-5	x	LU-6.1	MM E-8, E-12

2.0 Energy

2.1 Building Energy Use

To determine overall reductions, the ratio of building energy associated GHG emissions to the other project categories needs to be determined. This percent contribution to the total is multiplied by the percentage reduction.

2.1.1 Buildings Exceed Title 24 Building Envelope Energy Efficiency Standards By X%[1]

(X is equal to the percentage improvement selected by Applicant such as 5%, 10%, or 20%)

Range of Effectiveness:

For a 10% improvement beyond Title 24 the range of effectiveness is:

	Electricity	Natural Gas
Non-residential	0.2 – 5.5%	0.7 – 10%
Residential	0.3 – 2.6%	7.5 – 9.1%

This is dependent on building type and climate zones.

Measure Description:

Greenhouse gases (GHGs) are emitted as a result of activities in residential and commercial buildings when electricity and natural gas are used as energy sources. New California buildings must be designed to meet the building energy efficiency standards of Title 24, also known as the California Building Standards Code. Title 24 Part 6 regulates energy uses including space heating and cooling, hot water heating, and ventilation[2]. By committing to a percent improvement over Title 24, a development reduces its energy use and resulting GHG emissions.

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[1] Compliance with Title 24 is determined from the total daily valuation (TDV) of energy use in the built-environment (on a per square foot per year basis). TDV energy use is a parameter that reflects the burden that a building imposes on an electricity supply system. In general, there is a larger electricity demand and, hence, stress on the supply system during the day (peak times) than at night (off peak). Since a TDV analysis requires significant knowledge about the actual building which is not typically available during the CEQA process, the estimate of the energy and GHG savings from an improvement over Title 24 energy use from a TDV basis is proportional to the actual energy use.

[2] Hardwired lighting is part of Title 24 part 6. However, it is not part of the building envelope energy use and therefore not considered as part of this mitigation measure.

The energy use of a building is dependent on the building type, size and climate zone it is located in.

The *California Commercial Energy Use Survey* (CEUS) and *Residential Appliance Saturation Survey* (RASS) datasets can be used for these calculations since the data is scalable size and available for several land use categories in different climate zones in California.

The Title 24 standards have been updated twice (in 2005 and 2008) since some of these data were compiled. The California Energy Commission (CEC) has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end user can be used to account for reductions in electricity and natural gas use due to updates to Title 24. Since energy use for each different system type (i.e., heating, cooling, water heating, and ventilation) as well as appliances is defined, this method will also easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Measure Applicability:

- Electricity and natural gas use in residential and commercial buildings subject to California's Title 24 building requirements.
- This measure is part of a grouped measure. To ensure the measure effectiveness, this measure also requires third-party HVAC commissioning and verification of energy savings such as including the results from an alternative compliance model indicating the energy savings.

Inputs:

The following information needs to be provided by the Project Applicant:

- Square footage of non-residential buildings
- Number of dwelling units
- Building/Housing Type
- Climate Zone[3]
- Total electricity demand (KWh) per dwelling unit or per square feet
- % reduction commitment (over 2008 Title 24 standards)

Baseline Method:

The baseline GHG emissions from electricity and natural gas usage (reflecting 2008 Title 24 standards with no energy-efficient appliances) are calculated as follows:

[3] See Figure BE-1.1.

$$\text{GHG Emissions Baseline}_{Electricity} = \text{Electricity Intensity}_{baseline} \times \text{Size} \times \text{Emission Factor}_{Electricity}$$

$$\text{GHG Emissions Baseline}_{NaturalGas} = \text{Natural Gas Intensity}_{baseline} \times \text{Size} \times \text{Emission Factor}_{NaturalGas}$$

Where:

Electricity $\text{Intensity}_{baseline}$ = Total electricity demand (kWh) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards (calculated based on CEUS and RASS)[4]

Natural Gas $\text{Intensity}_{baseline}$ = Total natural gas demand (kBTU or therms) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards (calculated based on CEUS and RASS)[5]

Emission $\text{Factor}_{Electricity}$ = Carbon intensity of local utility (CO_2e/kWh)[6]

Emission $\text{Factor}_{NaturalGas}$ = Carbon intensity of natural gas use (CO_2e/kBTU or CO_2e/therm)[7]

Size = Number of dwelling units or square footage of commercial land uses

Mitigation Method:

$$\text{GHG reduction \%}_{Mitigated\_Electricity} = \text{Reduction}_{Electricity} \times \text{Reduction Commitment}$$

$$\text{GHG reduction \%}_{Mitigated\_NaturalGas} = \text{Reduction}_{NaturalGas} \times \text{Reduction Commitment}$$

Where:

Reduction = Applicable reduction based on climate zone, building type, and energy type from Tables BE-1.1 and BE-1.2

Reduction Commitment = Project's reduction commitment beyond 2008 Title 24 standards (expressed as a whole number)

This should be done for each individual building type. If the project involves multiple building types or only a percentage of buildings will have reductions the total for all buildings needs to be determined. This percentage should be applied as follows and summed over all buildings types:

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[4] See Appendix B for baseline inventory calculation methodologies to assist in determining these values.
[5] See Appendix B for baseline inventory calculation methodologies to assist in determining these values.
[6] Ibid.
[7] Ibid.

$$\sum_i (Reduction \times Commitment)\left(\frac{buildingGHG_i}{TotalGHG_i}\right)(\%BuildingType)$$

$buildingGHG_i$	=	GHG emissions for specific building type for either electricity or natural gas
$TotalGHG_i$	=	Total GHG emissions for all buildings for either electricity or natural gas
i	=	electricity or natural gas
$\%BuildingType$	=	portion of building(s) of this type

Tables BE-1.1 and BE-1.2 tabulate the percent reductions from building energy use for each land use type in the various climate zones in California. There is one table for residential land uses and another for non-residential land uses. There is a column for electricity reductions and another for natural gas reductions.

Assumptions:

See Figure BE-1.1 below for a map showing the 16 Climate Zones. Data for some Climate Zones is not presented in the CEUS and RASS studies. However, data from similar Climate Zones is representative and can be used as follows:

For non-residential building types:

Climate Zone 9 should be used for Climate Zone 11.
Climate Zone 9 should be used for Climate Zone 12.
Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.

For residential building types:

Climate Zone 2 should be used for Climate Zone 6.
Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.

Data based upon the following references:

- CEC. 2009. Residential Compliance Manual for California's 2008 Energy Efficiency Standards. Available online at: http://www.energy.ca.gov/title24/2008standards/residential_manual.html
- CEC. 2009. Nonresidential Compliance Manual for California's 2008 Energy Efficiency Standards. Available online at: http://www.energy.ca.gov/title24/2008standards/nonresidential_manual.html
- CEC. 2004. Residential Appliance Saturation Survey. Available online at: http://www.energy.ca.gov/appliances/rass/

- CEC. 2006. Commercial End-Use Survey. Available online at: http://www.energy.ca.gov/ceus/

Emission Reduction Ranges and Variables:

[Refer to Attached Tables BE-1.1 and BE-1.2 for climate zone and land use specific percentages]

This information uses 2008 Title 24 information. To adjust to 2005 Title 24, see Table BE-1.3.

Pollutant	Category Emissions Reductions
CO_2e	See Tables BE-1.1 and BE-1.2 for percentage reductions for every 1% improvement over 2008 Title 24.
PM	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
CO	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
SO_2	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
NOx	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.

Discussion:

If the applicant selects to commit beyond requirements for 2008 Title 24 standards, the applicant would reduce the amount of GHG emissions associated with electricity generation and natural gas combustion.

Example:

Commercial land use = Large Office

Square footage = 100,000 sq. ft.

Climate Zone = 1

Utility Provider = PG&E

% Reduction Commitment = 10% over 2008 Title 24 Standards

Electricity Intensity$_{baseline}$ = 8.32 kWh/SF/yr (adjusted to reflect 2008 Title 24 standards)

Emission Factor$_{Electricity}$ = 2.08E-4 MT CO_2e/kWh

Electricity $Emissions_{baseline}$ = 8.32 kWh/SF/yr x 100,000 SF x (2.08E-4 MT CO_2e/kWh)
= 173 MT CO_2e/yr

Natural Gas $Intensity_{baseline}$ = 18.16 kBTU/SF/yr (adjusted to reflect 2008 Title 24 standards)

Emission $Factor_{NaturalGas}$ = 5.32E-5 MT CO_2e/therm

Natural Gas $Emissions_{baseline}$ = 18.16 kBTU/SF/yr x 100,000 SF x (5.32E-5 MT CO_2e/kBTU)
= 97 MT CO_2e/yr

GHG $emissions_{baseline}$ = 173 MT CO_2e/yr + 97 MT CO_2e/yr
= 270 MT CO_2e/yr

From Table BE-1.1:

$Reduction_{Electricity}$ from 1% over 2008 Title 24 Standards = 0.20%
$Reduction_{NaturalGas}$ from 1% over 2008 Title 24 Standards = 1.00%

Reduction in GHG emissions from electricity generation: 0.20% x 10 = 2%
Reduction in GHG emissions from natural gas combustion: 1% x 10 = 10%
Mitigated Building GHG emissions = 173 MT CO_2e/yr x (100% - 2%) + 97 MT CO_2e/yr x (100% - 10%) = 257 CO_2e/yr

Preferred Literature:

GHG reductions from a percent improvement over Title 24 can be quantified by calculating baseline energy usage using methodologies based on the California Energy Commission (CEC)'s Residential Appliance Saturation Survey (RASS) and Commercial End-Use Survey (CEUS), or an applicable Alternative Calculation Method (ACM). RASS and CEUS data are based on CEC Forecasting Climate Zones (FCZs); therefore, differences in project energy usage due to different climates are accounted for. The percent improvement is applied to Title 24 built environment energy uses, and overall GHG emissions are calculated using local utility emission factors. This methodology allows the Project Applicant flexibility in choosing which specific measures it will pursue to achieve the percent reductions (for example, installing higher quality building insulation, or installing a more efficient water heating system), while still making the mitigation commitment at the time of California Environmental Quality Act (CEQA) analysis.

Alternative Literature:

Alternatively, a Project Applicant could use the "prescriptive package" approach to demonstrate compliance with Title 24. Using this approach, the Project Applicant would commit to specific design elements above Title 24 prescriptive package requirements at the time of CEQA analysis, such as using solar water heating or improved insulation. Rather than calculating an overall percent reduction in GHG emissions based on an overall baseline value as presented above, the prescriptive approach requires the Project Applicant to break down building energy use by end-use. The Project Applicant would need to provide substantial evidence supporting the GHG reductions attributable to mitigation measures for each end-use. There are several references for quantifying GHG reductions from prescriptive measures. One example of a prescriptive measure is installing tankless or on-demand water heaters. These systems use a gas burner or electric element to heat water as needed and therefore do not use energy to store heated water. According to the U.S. Department of Energy (USDOE), typical tankless water heaters can be 24-34% more energy efficient than conventional storage tank water heaters [1]. Another example of a prescriptive measure is installing geothermal (ground-source or water-source) heat pumps. This measure takes advantage of the fact that the temperature beneath the ground surface is relatively constant. Fluid circulating through underground pipe loops is either heated or cooled and the heat is either upgraded or reduced in the heat pump depending on whether the building requires heating or cooling [2]. United States Environmental Protection Agency (USEPA) reports that ENERGY STAR - qualified geothermal heat pump systems are 30-45% more efficient than conventional heat pumps [3].

Alternative Literature References:

[1] USDOE. Energy Savers: Demand (Tankless or Instantaneous) Water Heaters. Accessed February 2010. Available online at: http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=12820

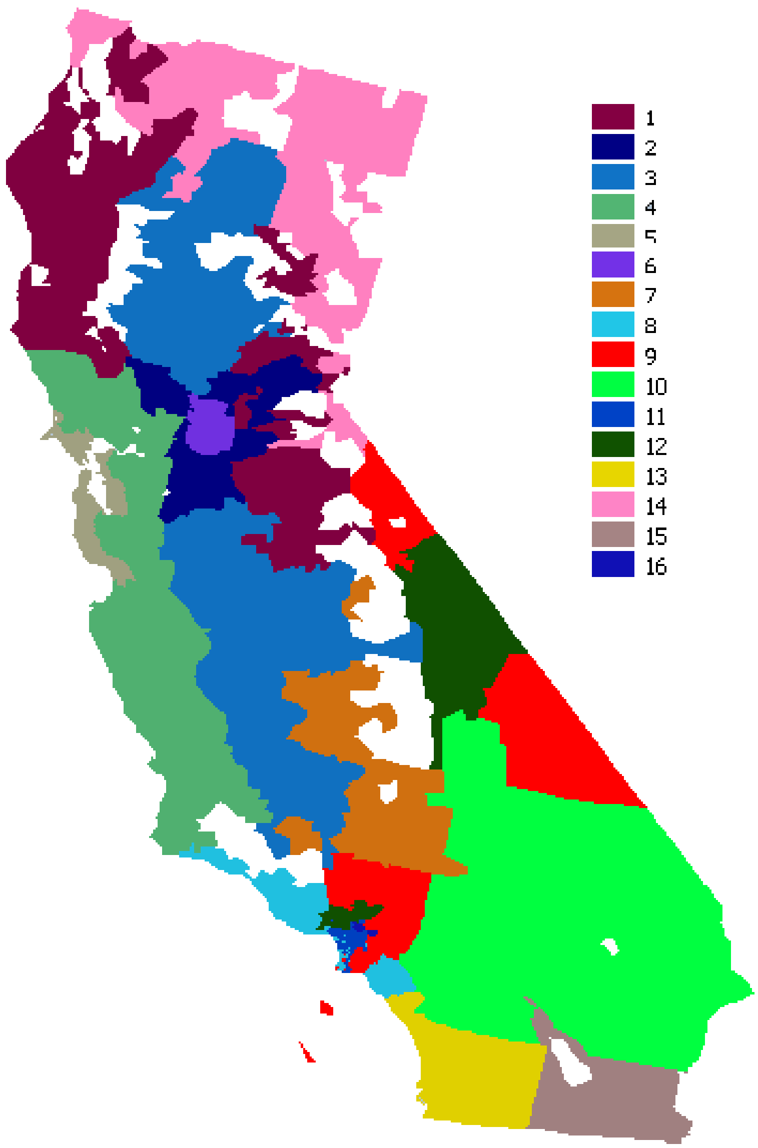
[2] CEC. Consumer Energy Center: Geothermal or Ground Source Heat Pumps. Accessed February 2010. Available online at: http://www.consumerenergycenter.org/home/heating_cooling/geothermal.html

[3] USEPA. ENERGY STAR: Heat Pumps, Geothermal. Accessed February 2010. Available online at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=HP

Other Literature Reviewed:

None

Figure BE-1.1
CEC Forecast Climate Zones[8,9]



[8] Adapted from Figure 2 of CEC. 2004. Residential Appliance Saturation Survey. Available online at: http://www.energy.ca.gov/appliances/rass/
[9] White spaces represent national parks and forests.

Table BE-1.1
Non-Residential
Reduction for 1% Improvement over 2008 Title 24

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
1	All Commercial	0.22%	0.76%
	All Office	0.36%	1.00%
	All Warehouses	0.02%	0.00%
	College	0.28%	1.00%
	Grocery	0.08%	0.96%
	Health	0.33%	1.00%
	Large Office	0.20%	1.00%
	Lodging	0.30%	1.00%
	Miscellaneous	0.16%	0.91%
	Refrigerated Warehouse	0.02%	0.00%
	Restaurant	0.19%	0.25%
	Retail	0.40%	1.00%
	School	0.26%	0.94%
	Small Office	0.37%	1.00%
	Unrefrigerated Warehouse	0.00%	0.00%
2	All Commercial	0.24%	0.86%
	All Office	0.35%	0.97%
	All Warehouses	0.07%	1.00%
	College	0.45%	1.00%
	Grocery	0.17%	1.00%
	Health	0.35%	0.72%
	Large Office	0.31%	1.00%
	Lodging	0.30%	0.99%
	Miscellaneous	0.22%	1.00%
	Refrigerated Warehouse	0.02%	1.00%
	Restaurant	0.22%	0.38%
	Retail	0.36%	0.97%
	School	0.36%	0.96%
	Small Office	0.38%	0.96%
	Unrefrigerated Warehouse	0.12%	1.00%
3	All Commercial	0.26%	0.66%
	All Office	0.32%	0.98%
	All Warehouses	0.03%	0.95%
	College	0.28%	0.94%
	Grocery	0.14%	0.53%
	Health	0.43%	0.82%
	Large Office	0.34%	0.97%
	Lodging	0.55%	0.73%

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Miscellaneous	0.25%	0.82%
	Refrigerated Warehouse	0.02%	1.00%
	Restaurant	0.26%	0.18%
	Retail	0.29%	0.81%
	School	0.33%	0.93%
	Small Office	0.30%	1.00%
	Unrefrigerated Warehouse	0.13%	0.94%
4	All Commercial	0.27%	0.71%
	All Office	0.38%	1.00%
	All Warehouses	0.06%	0.77%
	College	0.37%	0.87%
	Grocery	0.12%	0.75%
	Health	0.45%	0.85%
	Large Office	0.41%	1.00%
	Lodging	0.30%	0.90%
	Miscellaneous	0.20%	0.76%
	Refrigerated Warehouse	0.02%	0.20%
	Restaurant	0.18%	0.30%
	Retail	0.29%	1.00%
	School	0.32%	0.95%
	Small Office	0.30%	1.00%
	Unrefrigerated Warehouse	0.10%	0.98%
5	All Commercial	0.26%	0.72%
	All Office	0.36%	0.95%
	All Warehouses	0.06%	0.46%
	College	0.44%	0.98%
	Grocery	0.09%	0.67%
	Health	0.40%	0.84%
	Large Office	0.37%	0.94%
	Lodging	0.29%	0.81%
	Miscellaneous	0.18%	0.73%
	Refrigerated Warehouse	0.04%	0.29%
	Restaurant	0.11%	0.25%
	Retail	0.24%	0.85%
	School	0.16%	0.91%
	Small Office	0.29%	1.00%
	Unrefrigerated Warehouse	0.07%	0.85%
6	All Commercial	0.31%	0.73%
	All Office	0.38%	0.95%
	All Warehouses	0.07%	0.86%
	College	0.43%	0.99%

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Grocery	0.16%	0.64%
	Health	0.46%	0.86%
	Large Office	0.39%	0.94%
	Lodging	0.40%	0.86%
	Miscellaneous	0.25%	0.66%
	Refrigerated Warehouse	0.03%	0.58%
	Restaurant	0.24%	0.35%
	Retail	0.31%	0.83%
	School	0.31%	0.96%
	Small Office	0.34%	1.00%
	Unrefrigerated Warehouse	0.09%	1.00%
7	All Commercial	0.25%	0.88%
	All Office	0.32%	0.94%
	All Warehouses	0.02%	0.64%
	College	0.25%	0.99%
	Grocery	0.12%	0.90%
	Health	0.32%	0.93%
	Large Office	0.34%	1.00%
	Lodging	0.41%	0.94%
	Miscellaneous	0.18%	0.99%
	Refrigerated Warehouse	0.02%	0.64%
	Restaurant	0.27%	0.19%
	Retail	0.34%	0.99%
	School	0.29%	0.96%
	Small Office	0.31%	0.91%
	Unrefrigerated Warehouse	0.00%	0.00%
8	All Commercial	0.30%	0.62%
	All Office	0.37%	0.94%
	All Warehouses	0.12%	0.99%
	College	0.43%	0.67%
	Grocery	0.14%	0.50%
	Health	0.45%	0.85%
	Large Office	0.38%	0.94%
	Lodging	0.34%	0.86%
	Miscellaneous	0.22%	0.68%
	Refrigerated Warehouse	0.02%	0.93%
	Restaurant	0.27%	0.31%
	Retail	0.28%	0.49%
	School	0.33%	0.92%
	Small Office	0.33%	0.96%
	Unrefrigerated Warehouse	0.16%	0.99%

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
9	All Commercial	0.28%	0.60%
	All Office	0.39%	0.96%
	All Warehouses	0.13%	0.95%
	College	0.33%	0.98%
	Grocery	0.14%	0.46%
	Health	0.44%	0.85%
	Large Office	0.43%	0.98%
	Lodging	0.37%	0.84%
	Miscellaneous	0.23%	0.76%
	Refrigerated Warehouse	0.03%	0.91%
	Restaurant	0.21%	0.19%
	Retail	0.32%	0.71%
	School	0.32%	0.90%
	Small Office	0.31%	0.94%
	Unrefrigerated Warehouse	0.18%	0.96%
10	All Commercial	0.30%	0.61%
	All Office	0.35%	1.00%
	All Warehouses	0.11%	0.58%
	College	0.27%	1.00%
	Grocery	0.19%	0.67%
	Health	0.46%	0.92%
	Large Office	0.34%	1.00%
	Lodging	0.39%	0.92%
	Miscellaneous	0.24%	0.49%
	Refrigerated Warehouse	0.03%	0.07%
	Restaurant	0.29%	0.29%
	Retail	0.36%	0.87%
	School	0.37%	0.80%
	Small Office	0.36%	1.00%
	Unrefrigerated Warehouse	0.15%	0.98%
13	All Commercial	0.29%	0.66%
	All Office	0.38%	0.80%
	All Warehouses	0.19%	0.95%
	College	0.33%	0.86%
	Grocery	0.11%	0.40%
	Health	0.39%	0.88%
	Large Office	0.41%	0.80%
	Lodging	0.40%	0.82%
	Miscellaneous	0.17%	0.39%

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Refrigerated Warehouse	0.07%	1.00%
	Restaurant	0.24%	0.21%
	Retail	0.28%	0.53%
	School	0.31%	0.92%
	Small Office	0.32%	0.76%
	Unrefrigerated Warehouse	0.26%	0.93%

Table BE-1.2
Residential
Reduction for 1% Improvement over 2008 Title 24

Climate Zone	Housing	Reduction	
		Electricity	Natural Gas
1	Multi	0.24%	0.86%
	Single	0.17%	0.87%
	Townhome	0.22%	0.87%
2	Multi	0.15%	0.89%
	Single	0.14%	0.91%
	Townhome	0.11%	0.89%
3	Multi	0.23%	0.90%
	Single	0.18%	0.91%
	Townhome	0.16%	0.90%
4	Multi	0.12%	0.88%
	Single	0.09%	0.91%
	Townhome	0.09%	0.90%
5	Multi	0.09%	0.88%
	Single	0.04%	0.91%
	Townhome	0.05%	0.90%
7	Multi	0.25%	0.87%
	Single	0.16%	0.88%
	Townhome	0.18%	0.85%
8	Multi	0.09%	0.77%
	Single	0.07%	0.82%
	Townhome	0.07%	0.80%
9	Multi	0.08%	0.77%
	Single	0.11%	0.82%
	Townhome	0.09%	0.80%
10	Multi	0.26%	0.80%
	Single	0.18%	0.83%
	Townhome	0.22%	0.81%

11	Multi	0.05%	0.77%
	Single	0.05%	0.83%
	Townhome	0.03%	0.81%
12	Multi	0.15%	0.75%
	Single	0.15%	0.83%
	Townhome	0.13%	0.80%
13	Multi	0.09%	0.79%
	Single	0.06%	0.83%
	Townhome	0.05%	0.81%

2.1.2 Install Programmable Thermostat Timers

Range of Effectiveness:

Best Management Practice influences building energy use for heating and cooling.

Measure Description:

Programmable thermostat timers allow users to easily control when the HVAC system will heat or cool a certain space, thereby saving energy. Because most commercial buildings already have timed HVAC systems, this mitigation measure focuses on residential programmable thermostats.

The DOE reports [1] that residents can save around 10% on heating and cooling bills per year by lowering the thermostat by 10-15 degrees for eight hours[10]. This can be accomplished using an automatic timer or programmable thermostat, such that the heat is reduced while the residents are at work or otherwise out of the house. The energy savings from a programmable thermostat, however, depend on the user. Some users preset the thermostat to heat the house before they come home, thereby increasing energy usage, while others use it to avoid heating the house when they are not home or asleep. Because of the large variability in individual occupant behavior and because it is unclear whether programmable thermostats systematically reduce energy use, this measure cannot be reasonably quantified. This mitigation measure should be incorporated as a Best Management Practice to allow for educated occupants to have the most efficient means at controlling their heating and cooling energy use. In order to take quantitative credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting a reduction in energy use and associated GHG emissions.

Measure Applicability:

- Electricity use in residential dwellings.
- Best Management Practice only.

Assumptions:

Data based upon the following references:

[1] USDOE. Energy Savers: Thermostats and Control Systems. Available online at: http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12720

[10] Such a large drop in thermostat temperatures may not be applicable in parts of California; more applicable may be the raising of the thermostat for airconditioned spaces.

Emission Reduction Ranges and Variables:

This is a best management practice and therefore at this time there is no quantifiable reduction. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

If substantial evidence was provided, the GHG reductions would equal the percent savings in total electricity or natural gas. The total reduction would be:

GHG reduction = (% thermostat reduce heat/cool energy use) x
(% end use heat/cool of total energy use)

Preferred Literature:

The DOE reports [1] that residents can save approximately 10% on heating and cooling bills per year by lowering the thermostat by 10-15 degrees for eight hours. This can be accomplished using an automatic timer or programmable thermostat, such that the heat is reduced while the residents are at work or otherwise out of the house. The energy savings from a programmable thermostat, however, depend on the user. Some users preset the thermostat to heat the house before they come home, thereby increasing energy usage, while others use it to avoid heating the house when they are not home or asleep.

Alternative Literature:

None

Other Literature Reviewed:

Pacific Northwest National Laboratory. 2007. GridWise Demonstration Project Fast Facts. Available online at: http://gridwise.pnl.gov/docs/pnnl_gridwiseoverview.pdf.

2.1.3 Obtain Third-party HVAC Commissioning and Verification of Energy Savings

Range of Effectiveness:

Not applicable on its own. This measure enhances effectiveness of BE-1.

Measure Description:

Ensuring the proper installation and construction of energy reduction features is essential to achieving high thermal efficiency in a house. In practice, HVAC systems commonly do not operate at the designed efficiency due to errors in installation or adjustments. A Project Applicant can obtain HVAC commissioning and third-party verification of energy savings in thermal efficiency components including HVAC systems, insulation, windows, and water heating.

This measure is required to be grouped with measure "Exceed Title 24 Energy Efficiency Standards by X% (BE-1).

Measure Applicability:

- This measure is part of a grouped measure. This measure also requires third-party HVAC commissioning and verification of energy savings.
- Buildings subject to California's Title 24 building requirements.

Preferred Literature:

While Title 24 requires that a home's ducts be tested for leaks whenever the central air conditioner or furnace is installed or replaced, a third-party verifier such as the California Home Energy Efficiency Rating Service (CHEERS) and ENERGY STAR Home Energy Rating Service (HERS) can ensure that ducts were properly sealed [1-3]. These certified raters can also verify other energy efficiency measures, such as HVAC controls, insulation performance, and the air-tightness of the building envelope. Furthermore, these raters can analyze a home and make climate-specific recommendations for further improving the home's energy efficiency. Since this mitigation measure ensures that the building envelope systems are properly installed and sealed, there is no quantifiable reduction for this measure. It is recommended as a Best Management Practice grouped with the Title 24 improvement mitigation measure.

Alternative Literature:

None

Literature References:

[1] California Home Energy Efficiency Rating Services. What is CHEERS? Available online at: http://www.cheers.org/Home/Overview/tabid/124/Default.aspx. Accessed March 2010.

[2] USEPA. ENERGY STAR: Features of ENERGY STAR Qualified New Homes. Available online at: http://www.energystar.gov/index.cfm?c=new_homes.nh_features. Accessed March 2010.

[3] USEPA. ENERGY STAR: Independent Inspection and Testing. Available online at: http://www.energystar.gov/ia/new_homes/features/HERSrater_062906.pdf. Accessed March 2010.

2.1.4 Install Energy Efficient Appliances

Range of Effectiveness:

Residential 2-4% GHG emissions from electricity use. Grocery Stores: 17-22% of GHG emissions from electricity use.

Measure Description:

Using energy-efficient appliances reduces a building's energy consumption as well as the associated GHG emissions from natural gas combustion and electricity production. To take credit for this mitigation measure, the Project Applicant (or contracted builder) would need to ensure that energy efficient appliances are installed. For residential dwellings, typical builder-supplied appliances include refrigerators and dishwashers. Clothes washers and ceiling fans would be applicable if the builder supplied them. For commercial land uses, energy-efficient refrigerators have been evaluated for grocery stores. See Mitigation Method section on how project applicant may quantify additional building types and appliances.

The energy use of a building is dependent on the building type, size and climate zone it is located in. The *California Commercial Energy Use Survey* (CEUS) and *Residential Appliance Saturation Survey* (RASS) datasets for this calculation since the data is scalable by size and available for several land use categories in different climate zones in California. Typical reductions for energy-efficient appliances can be found in the *Energy Star and Other Climate Protection Partnerships 2008 Annual Report* or subsequent Annual Reports. ENERGY STAR refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively.

RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the Miscellaneous category which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not specified, a value from the National Renewable Energy Laboratory (NREL) Building American Research Benchmark Definition (BARBD) is used. BARBD reports that the average energy use per ceiling fan is 84.1 kWh per year. In this mitigation measure, it is assumed that each multi-family, single-family, and townhome residence has one ceiling fan. The electricity savings shown here is based on installing an ENERGY STAR ceiling fan and does not account for an occupant's decreased use of cooling devices such as air conditioners. For ceiling fans, the 50% reduction was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category.

Measure Applicability:

- Electricity use in residential dwellings and commercial grocery stores.
- This mitigation measure applies only when appliance installation can be specified as part of the Project.

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of dwelling units and/or size of grocery store
- Climate Zone
- Housing Type (if residential)
- Utility provider
- Total natural gas demand (kBTU or therms) per dwelling unit or per square foot
- Types of energy efficient appliances to be installed (refrigerator, dishwasher, or clothes washer for residential land uses and refrigerators for grocery stores)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity Intensity}_{baseline} \times \text{Size} \times \text{Emission Factor}_{Electricity} + \text{Natural Gas Intensity}_{baseline} \times \text{Size} \times \text{Emission Factor}_{NaturalGas}$$

Where:

GHG emissions = MT CO_2e (reflecting 2008 Title 24 standards with no energy-efficient appliances)

$\text{Electricity Intensity}_{baseline}$ = Total electricity demand (kWh) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards[11]

$\text{Natural Gas Intensity}_{baseline}$ = Total natural gas demand (kBTU or therms) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards[12]

$\text{Emission Factor}_{Electricity}$ = Carbon intensity of local utility (CO2e/kWh)[13]

$\text{Emission Factor}_{NaturalGas}$ = Carbon intensity of natural gas use (CO_2e/kBTU or CO_2e/therm)[14]

Size = Number of dwelling units or square footage of commercial land uses

Mitigation Method:

$$\text{GHG emissions}_{mitigated} = \text{Electricity Emissions}_{baseline} \times (1-(\text{Sum of Reductions})) +$$

[11] See Appendix B for baseline inventory calculation methodologies to assist in determining these values.
[12] Ibid
[13] Ibid.
[14] Ibid.

Natural Gas Emissions$_{baseline}$

Where:

Electricity Emissions$_{baseline}$	=	Emissions due to electricity generation, adjusted for 2008 Title 24 Standards (calculated based on CEUS and RASS)
Sum of Reductions	=	Applicable reduction based on energy efficient appliances installed (expressed as a decimal)
Natural Gas Emissions$_{baseline}$	=	Emissions due to natural gas combustion, adjusted for 2008 Title 24 Standards (calculated based on CEUS and RASS)
Building GHG reduction Percentage	=	[GHG emissions mitigated/GHG emissions baseline]

Tables BE-4.1 and BE-4.2 tabulate the percent reductions from installing specific ENERGY STAR appliances for each land use type in the various climate zones in California. There is one table for residential land uses and another for non-residential land uses. This will only result in reductions associated with electricity use and does not apply to natural gas since there are no major Energy Star appliances that use natural gas. The energy efficient heating, cooling, and water heating systems that may use natural gas are included in improvements over Title 24 (see measure BE-1).

For other building types and energy efficient appliances, the reductions similar to those in the tables can be quantified as follows:

Reduction = (Appliance End Use %) x (1 – efficiency)

Where:

Appliance End Use %	=	portion of energy for this appliance compared to total electricity use
Efficiency	=	percent reduction in energy use for efficient appliance compared to standard.

Assumptions:

Data for some Climate Zones is not presented in the CEUS and RASS studies. However, data from similar Climate Zones is representative and can be used as follows:

For non-residential building types:
Climate Zone 9 should be used for Climate Zone 11.
Climate Zone 9 should be used for Climate Zone 12.

Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.
For residential building types:
Climate Zone 2 should be used for Climate Zone 6.
Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.

Data based upon the following references:

[1] USEPA. 2008. ENERGY STAR 2008 Annual Report. Available online at: http://www.epa.gov/cpd/annualreports/annualreports.htm

[2] CEC. 2004. Residential Appliance Saturation Survey. Available online at: http://www.energy.ca.gov/appliances/rass/

[3] CEC. 2006. Commercial End-Use Survey. Available online at: http://www.energy.ca.gov/ceus/

[4] NREL. 2010. Building America Research Benchmark Definition. Available online at: http://www.nrel.gov/docs/fy10osti/47246.pdf

Emission Reduction Ranges and Variables:

[Refer to Attached Tables BE-4.1 and BE-4.2 for climate zone and land use specific percentages]

If more than one type of appliance is considered the percentage for each appliance should be added together.

Pollutant	Category Emissions Reductions
CO_2e	See Tables BE-4.1 and BE-4.2 for percentage reductions.
PM	Not Quantified[15]
CO	Not Quantified
SO_2	Not Quantified
NOx	Not Quantified

Discussion:

If the applicant commits to installing energy efficient appliances, the applicant would reduce the amount of GHG emissions associated with electricity generation because

[15] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

more energy efficient appliances will require less electricity to run. This reduces GHG emissions from power plants.

Example:

Housing Type = Single Family Home

Number of Dwelling Units = 100

Climate Zone = 1

Utility Provider = PG&E

Energy efficient appliances to be installed = refrigerator and dishwasher

Electricity $\text{Intensity}_{\text{baseline}}$	=	7,196 kWh/DU/yr (adjusted to reflect 2008 Title 24 standards)
Emission $\text{Factor}_{\text{Electricity}}$	=	2.08E-4 MT /kWh
Electricity $\text{Emissions}_{\text{baseline}}$	=	7,196 kWh/DU/yr x 100 DU x (2.08E-4 MT CO_2e/kWh)
	=	150 MT CO_2e/yr
Natural Gas $\text{Intensity}_{\text{baseline}}$	=	365 therms/DU/yr (adjusted to reflect 2008 Title 24 standards)
Emission $\text{Factor}_{\text{NaturalGas}}$	=	5.32E-3 MT CO_2e/kBTU
Natural Gas $\text{Emissions}_{\text{baseline}}$	=	365 therm/DU/yr x 100 DU x (5.32E-3 MT CO_2e/therm)
	=	194 MT CO_2e/yr
GHG $\text{emissions}_{\text{baseline}}$	=	150 MT CO_2e/yr + 194 MT CO_2e/yr
	=	344 MT CO_2e/yr

Sum of Reductions associated with electricity generation from Table BE-4.2 = 2.05%
Reductions associated with natural gas combustion = 0%

GHG $\text{emissions}_{\text{mitigated}}$ = 150*(1-.0205) + 194

= 341

Building GHG reduction = 1 - 341 / 344 = 0.9%

Preferred Literature:

The USEPA ENERGY STAR Program has identified energy efficient residential and consumer appliances including air conditioners, refrigerators, freezers, clothes washers, dishwashers, fryers, steamers, and vending machines. The ENERGY STAR Annual Report presents the average percent energy savings from using an ENERGY STAR-qualified appliance instead of a standard appliance. GHG emissions reductions are calculated based on local utility emission factors and the baseline appliance energy use derived from the CEC RASS and CEUS methodologies. RASS and CEUS data are climate-specific; therefore, differences in project energy usage due to different climates are accounted for.

Alternative Literature:

None

Other Literature Reviewed:

None

Table BE-4.1
Non-Residential
Reduction for ENERGY STAR Refrigerators in Grocery Stores

Climate Zone	Electricity Reduction
1	20%
2	17%
3	18%
4	21%
5	22%
6	19%
7	18%
8	19%
9	20%
10	18%
13	21%

Table BE-4.2
Residential
Reduction for ENERGY STAR Appliances

Climate Zone	Housing	Refrigerator[1,3]	Clothes Washer[1,3]	Dishwasher[1,3]	Ceiling Fan[2,3]
		Total Electricity Reduction			
1	Multi	2.59%	0.03%	0.10%	1.01%
	Single	1.72%	0.50%	0.12%	0.58%
	Townhome	2.28%	0.28%	0.11%	0.83%
2	Multi	2.86%	0.03%	0.11%	1.12%
	Single	1.79%	0.53%	0.13%	0.61%
	Townhome	2.61%	0.32%	0.13%	0.96%
3	Multi	2.62%	0.03%	0.10%	1.02%
	Single	1.69%	0.50%	0.12%	0.58%
	Townhome	2.44%	0.30%	0.12%	0.89%
4	Multi	2.97%	0.03%	0.12%	1.16%
	Single	1.90%	0.56%	0.14%	0.65%
	Townhome	2.64%	0.33%	0.13%	0.97%
5	Multi	3.07%	0.03%	0.12%	1.20%
	Single	1.99%	0.58%	0.14%	0.68%
	Townhome	2.78%	0.35%	0.14%	1.02%
7	Multi	2.54%	0.03%	0.10%	0.99%
	Single	1.74%	0.51%	0.12%	0.59%
	Townhome	2.39%	0.30%	0.12%	0.88%
8	Multi	3.08%	0.03%	0.12%	1.20%
	Single	1.94%	0.57%	0.14%	0.66%
	Townhome	2.71%	0.34%	0.14%	0.99%
9	Multi	3.13%	0.03%	0.12%	1.22%
	Single	1.85%	0.54%	0.13%	0.63%
	Townhome	2.65%	0.33%	0.13%	0.97%
10	Multi	2.52%	0.03%	0.10%	0.98%
	Single	1.71%	0.50%	0.12%	0.58%
	Townhome	2.27%	0.28%	0.11%	0.83%
11	Multi	3.21%	0.03%	0.13%	1.25%
	Single	1.97%	0.58%	0.14%	0.67%
	Townhome	2.83%	0.35%	0.14%	1.04%
12	Multi	2.89%	0.03%	0.11%	1.13%
	Single	1.76%	0.51%	0.13%	0.60%
	Townhome	2.53%	0.32%	0.13%	0.93%
13	Multi	3.09%	0.03%	0.12%	1.21%
	Single	1.95%	0.57%	0.14%	0.66%
	Townhome	2.76%	0.34%	0.14%	1.01%

Notes:

1. Percent reductions are based on the saturation values presented in RASS. The Project Applicant may use project-specific saturation values (i.e. if 100% of homes have clothes washers, then saturation = 1).

Notes:

2. CEC's RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the Miscellaneous category, which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not specified, a value from NREL's BARBD was used. BARBD reports that the average energy use per ceiling fan is 84.1 kWh per year. In this table, it is assumed that each multi-family, single-family, and townhome residence has one ceiling fan. The electricity savings shown here is based on installing an ENERGY STAR ceiling fan and does not account for an occupant's decreased use of cooling devices such as air conditioners.

3. Total electricity reduction is based on installing ENERGY STAR appliances instead of standard appliances. ENERGY STAR refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively. For ceiling fans, the 50% reduction was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category.

Abbreviations:

BARBD - Building America Research Benchmark Definition
CEC - California Energy Commission
NREL - National Renewable Energy Laboratory
RASS - Residential Appliance Saturation Survey
USEPA - United States Environmental Protection Agency

Sources:

CEC. 2004. Residential Appliance Saturation Survey. Available online at: http://www.energy.ca.gov/appliances/rass/

NREL. 2010. Building America Research Benchmark Definition. Available online at: http://www.nrel.gov/docs/fy10osti/47246.pdf

USEPA. 2008. ENERGY STAR 2008 Annual Report. Available online at: http://www.epa.gov/cpd/annualreports/annualreports.htm

2.1.5 Install Energy Efficient Boilers

Range of Effectiveness: 1.2-18.4% of boiler GHG emissions

Measure Description:

Boilers are used in many non-residential and multi-family housing buildings to provide space heating or steam or facility operations. Boilers combust natural gas to produce steam which can be used directly or as a method to heat a building space. Boilers represent 12% of installed building heating equipment for commercial and other buildings. Boiler efficiencies are regulated and commonly presented as annualized fuel utilization efficiency (AFUE), a ratio of the total useful heat delivered to the heat value from the annual amount of fuel consumed. Improving boiler efficiency decreases natural gas consumption for the same amount of energy output, thus reducing GHG emissions.

Only natural gas boilers are considered under this mitigation measure. The Project Applicant would only need to provide the annual natural gas consumptions to calculate the baseline emissions using heat content and carbon intensity factors from CCAR [3]. To determine the emission reduction, boiler efficiency is also needed, and should be obtainable from manufacturer specifications. The Consortium for Energy Efficiency (CEE) reports that the rate of high efficiency boilers (≥ 85%) has gone from 5-15% of sales in 2002 to 50%-60% of sales in 2007 [2]. The CEE study also noted that technical improvements can be made to existing boiler types to improve efficiency to 88%. Efficiency can be further enhanced to up to 98% using the condensing boiler.

A range of efficiencies from the CEE study has been presented for reference, but to take credit for this mitigation measure, the Project Applicant would also need to provide evidence from manufacturers supporting the higher efficiency from a retrofit or new boiler.

Measure Applicability:

- Natural Gas Boilers

Inputs:

The following information needs to be provided by the Project Applicant:

- Natural gas consumption of boiler
- Original or baseline efficiency of boiler
- Improved efficiency of boiler

Baseline Method:

$$\text{Emission} = \text{Consumption} \times \text{HC} \times \text{EF} \times \text{C}$$

Where:

Emission = MT CO_2e
Consumption = Natural gas consumption (ft^3)
HC = Natural gas heat content = 1,029 BTU/ft^3 (CCAR 2009)
EF = Natural gas carbon intensity factor = 0.1173 lbs CO_2e/kBTU (CCAR 2009)
C = Unit conversion factor

In this case, C = 4.54×10^{-7} kBTU x MT/BTU/lbs

Mitigation Method:

The GHG emission from a boiler with improved efficiency is:

$$\text{Mitigated GHG Emission} = \text{Consumption} \times \frac{E_O}{E_I} \times HC \times EF \times C$$

Where:

Emission = MT CO_2e
Consumption = Natural gas consumption (ft^3)
E_O = Original efficiency of boiler
E_I = Improved efficiency of boiler
HC = Natural gas heat content = 1,029 BTU/ft^3 (CCAR 2009)
EF = Natural gas carbon intensity factor = 0.1173 lbs CO_2e/kBTU (CCAR 2009)
C = Unit conversion factor

Emission Reduction Ranges and Variables:

Percentage of emissions reduction using a boiler with improved efficiency for all pollutants are the same and is calculated as follows:

$$\text{Reduction} = 1 - \frac{E_O}{E_I}$$

Where:

E_O = Original efficiency of boiler
E_I = Improved efficiency of boiler

Technology	Range of Efficiencies	Range of Emission Reduction
Atmospheric	80 – 84%	-
Fan assisted, non-condensing	85 – 88%	1.2% – 9.1%
Fan assisted, condensing	88 – 98%	4.5% – 18.4%

Discussion:

Boiler efficiency is included in product specification from manufacturer. ENERGY STAR boilers require minimum efficiency of 85%. The Consortium for Energy Efficiency (CEE) reports natural efficiency breakpoints of 85-88% for fan assisted, non-condensing commercial boilers, and 88-98% for fan assisted, condensing boilers.

Assumptions:

Data based upon the following references:

- California Climate Action Registry 2009. General Reporting Protocol, Version 3.1. Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf
- Energy Star. Boilers key Product Criteria. Available at: http://www.energystar.gov/index.cfm?c=boilers.pr_crit_boilers
- Science Applications International Corporation 2009. Prepared for California Climate Action Registry. Development of Issue Papers for GHG Reduction Project Types: Boiler Efficiency Projects. Available at: http://www.climateactionreserve.org/wp-content/uploads/2009/03/future-protocol-development_boiler-efficiency.pdf

Preferred Literature:

Boilers represent 12% of installed building heating equipment. Boiler efficiencies are regulated and commonly presented as annualized fuel utilization efficiency (AFUE), a ratio of the total useful heat delivered to the heat value from the annual amount of fuel consumed. The Climate Action Registry (CAR) Boiler Efficiency Projects estimated potential annual CO_2e emission reductions of 22,673,929 and 6,584,231 MT for commercial and residential boilers, respectively, from boiler efficiency improvement from 77% to 83% [1]. The Consortium for Energy Efficiency (CEE) reports that the rate of high efficiency boilers (≥ 85%) has gone from 5-15% of sales in 2002 to 50%-60% of sales in 2007 [2]. The CEE study also noted that technical improvements can be made to existing boiler types to improve efficiency to 88%. Efficiency can be further enhanced to up to 98% using the condensing boiler.

Only natural gas boilers are considered under this mitigation measure. The Project Applicant would only need to provide the annual natural gas consumptions to calculate the baseline emissions using heat content and carbon intensity factors from CCAR [3]. To determine the emission reduction, boiler efficiency is also needed, and should be obtainable from manufacturer specifications. A range of efficiencies from the CEE study has been presented for reference, but to take credit for this mitigation measure, the Project Applicant would also need to provide evidence from manufacturers supporting the higher efficiency from a retrofit or new boiler.

Alternative Literature:

None

Notes:

[1] Science Applications International Corporation 2009. Prepared for Climate Action Registry (CAR). Development of Issue Papers for GHG Reduction Project Types: Boiler Efficiency Projects. Available at: http://www.climateactionreserve.org/wp-content/uploads/2009/03/future-protocol-development_boiler-efficiency.pdf

[2] Consortium of Energy Efficiency (CEE) Winter Program Meeting 2008. Market Characterization of Commercial Gas Boilers.

[3] CCAR 2009. General Reporting Protocol, Version 3.1. Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

Other Literature Reviewed:

None

2.2 Lighting

2.2.1 Install Higher Efficacy Public Street and Area Lighting

Range of Effectiveness:

16-40% of outdoor lighting

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Public street and area lighting includes streetlights, pedestrian pathway lights, area lighting for parks and parking lots, and outdoor lighting around public buildings. Lighting design should consider the amount of light required for the area intended to be lit. Lumens are the measure of the amount of light perceived by the human eye. Different light fixtures have different efficacies or the amount of lumens produced per watt of power supplied. This is different than efficiency, and it is important that lighting improvements are based on maintaining the appropriate lumens per area when applying this measure. Installing more efficacious lamps will use less electricity while producing the same amount of light, and therefore reduces the associated indirect GHG emissions.

Measure Applicability:

- Public street and area lighting

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of lighting heads (for baseline only)
- Power rating of public street and area lights
- Carbon intensity of local utility (for baseline only)

Baseline Method:

$$\text{GHG emissions} = \text{Heads} \times \text{Hours} \times \text{Days} \times \text{Power}_{baseline} \times \text{Utility}$$

Where:

GHG emissions	=	MT CO_2e/yr
Heads	=	Number of public street and area lighting heads. Provided by Applicant.
Hours	=	Hours of operation per day (12).
Days	=	Days of operation per year (365).
$\text{Power}_{baseline}$	=	Power rating of public street and area lights (kW).
Utility	=	Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

The minimum reduction in annual energy cost associated with higher efficacy street lighting systems is 16%. Note that a 16% reduction in power rating and GHG emissions is the estimated minimum percent reduction associated with installing higher efficacy public street and area lighting. NYSERDA reports that a 16% reduction is expected for installing metal halide post top lights as opposed to typical mercury cobrahead lights. The percent reduction is expected to increase to 35% for installing metal halide cobrahead or metal halide cutoff lights, and 40% for installing high pressure sodium cutoff lights. For lights operating with a single local utility district, the 16% energy cost reduction is equivalent to a 16% reduction in power rating because the energy cost comparison assumes an equal number of lighting heads and equal operation times. As all other variables remain equal between the baseline and mitigated scenarios, the reduction in GHG emissions is in turn 16%. Therefore, the reduction in GHG emissions associated with installing higher efficacy public street and area lighting is:

$$\text{GHG emission reduction} = \frac{\text{Power}_{\text{baseline}} - \text{Power}_{\text{mitigated}}}{\text{Power}_{\text{baseline}}} = 16\%$$

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for public street and area lighting.
$\text{Power}_{\text{baseline}}$	=	Power rating of public street and area lights (kW).
$\text{Power}_{\text{mitigated}}$	=	Power rating of public street and area lights (kW).

If different types of lampheads result in less heads needing to be installed, the reduction will be as follows:

$$\frac{\text{Head}_{\text{baseline}} \times \text{Power}_{\text{baseline}} - \text{Head}_{\text{mitigated}} \times \text{Power}_{\text{mitigated}}}{\text{Head}_{\text{baseline}} \times \text{Power}_{\text{baseline}}}$$

Where:

$\text{Head}_{\text{baseline}}$	=	the number of heads in the baseline scenario
$\text{Power}_{\text{baseline}}$	=	the number of heads in the mitigated scenario

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Note that a 16% reduction in power rating and GHG emissions is the estimated minimum percent reduction associated with installing higher efficacy public street and area lighting. NYSERDA reports that a 16% reduction is expected for installing metal halide post top lights as opposed to typical mercury cobrahead lights. The percent reduction is expected to increase to 35% for installing metal halide cobrahead or metal halide cutoff lights, and 40% for installing high pressure sodium cutoff lights.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	16% for installing metal halide post top lights; 35% for installing metal halide cobrahead or cutoff lights; 40% for installing high pressure sodium cutoff lights
All other pollutants	Not Quantified[16]

Discussion:

If the applicant uses public street and area lighting, they would calculate baseline emissions as described in the baseline methodologies section. If the applicant then selects to mitigate public street and area lighting by committing to higher efficacy options, the applicant would reduce the amount of GHG emissions associated with public street and area lighting by 16%.

GHG Emissions Reduced = 16%

Assumptions:

Data based upon the following reference:

[1] New York State Energy Research and Development Authority (NYSERDA). 2002. NYSERDA How-to Guide to Effective Energy-Efficient Street Lighting for Municipal Elected/Appointed Officials.

Preferred Literature:

The New York State Energy Research and Development Authority (NYSERDA)'s 2002 How-to Guide to Effective Energy-Efficient Street Lighting reports a minimum reduction in electricity demand of 16% due to the installation of energy-efficient street lights such as metal halide and high-pressure sodium models (see page 4).

Alternative Literature:

None

Other Literature Reviewed:

[16] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

[2] The University of Rochester. Light-Emitting Diode (LED), Organic Light-Emitting Diode (OLED), and laser research for lighting applications. Homepage available online at: http://www.rochester.edu/research/sciences.html. Accessed February 2010.

[3] Chittenden County Regional Planning Commission. 1996. Outdoor Lighting Manual for Vermont Municipalities.

2.2.2 Limit Outdoor Lighting Requirements

Range of Effectiveness:

Best Management Practice, but may be quantified.

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. When the operational hours of a light are reduced, GHG emissions are reduced. Strategies for reducing the operational hours of lights include programming lights in public facilities (parks, swimming pools, or recreational centers) to turn off after-hours, or installing motion sensors on pedestrian pathways. Since literature guidance for quantifying these reductions does not exist, this mitigation measure would be employed as a Best Management Practice. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial documentation of the reduction in operational hours of lights.

Measure Applicability:

- Outdoor lighting
- Best Management Practice unless Project Applicant supplies substantial evidence.

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of outdoor lights
- Power rating of outdoor lights
- Carbon intensity of local utility (for baseline only)
- Limited hours of operation of outdoor lights

Baseline Method:

$$\text{GHG emissions} = \text{Heads} \times \text{Hours} \times \text{Power}_{baseline} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e/yr

Heads = Number of outdoor lighting heads. Provided by Applicant.

Hours = Annual hours of operation (4,280)[17].

$\text{Power}_{baseline}$ = Power rating of outdoor lights (kW).

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

[17] Estimated based on the annual number of dark hours (hours between sunset and sunrise) for Los Angeles, California.

Mitigation Method:

Limiting the hours of operation of outdoor lights in turn limits the indirect GHG emissions associated with their electricity usage. Therefore, the reduction in GHG emissions associated with limiting outdoor lighting is:

$$\text{GHG emission reduction} = \frac{\text{Hours}_{\text{baseline}} - \text{Hours}_{\text{limited}}}{\text{Hours}_{\text{baseline}}}$$

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for outdoor lighting.
$\text{Hours}_{\text{baseline}}$	=	Annual hours of operation (4,280).
$\text{Hours}_{\text{limited}}$	=	Limited hours of operation per day. Provided by Applicant.

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

This is a best management practice measure unless the Project Applicant supplies substantial evidence justifying a reduction in hours of operation. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Pollutant	Category Emissions Reductions
CO_2e	0 to 100%
All other pollutants	Not Quantified[18]

Discussion:

If the applicant uses outdoor lighting, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate outdoor lighting by limiting operation to 10 hours per day, the applicant would reduce the amount of GHG emissions associated with outdoor lighting by 20%.

$$\text{GHG Emissions Reduced} = \frac{12-10}{10} = 0.20 \text{ or } 20\%$$

Assumptions:

[18] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

None

Preferred Literature:

None

Other Literature Reviewed:

None

2.2.3 Replace Traffic Lights with LED Traffic Lights

Range of Effectiveness:

90% of emissions associated with existing traffic lights.

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Installing higher efficiency traffic lights reduces energy demand and associated GHG emissions. As high efficiency light-emitting diodes (LEDs), which consume about 90% less energy than traditional incandescent traffic lights while still providing adequate light or lumens when viewed, are currently required to meet minimum federal efficiency standards for new traffic lights. Project Applicants may take credit only if they are retrofitting existing incandescent traffic lights.

Measure Applicability:

- Traffic lighting – retrofitting incandescent traffic lights

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of incandescent traffic lights being retrofitted
- Power rating of incandescent traffic lights being retrofitted
- Carbon intensity of local utility (for baseline only)

Baseline Method:

$$\text{GHG emissions} = \text{Lights} \times \text{Hours} \times \text{Days} \times \text{Power}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e/yr

Lights = Number of incandescent traffic lights being retrofitted. Provided by Applicant.

Hours = Hours of operation per day (24).

Days = Days of operation per year (365).

$\text{Power}_{\text{baseline}}$ = Power rating of incandescent traffic lights being retrofitted (kW).

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Traffic lights using LEDs consume about 90% less power than traditional incandescent traffic lights. Therefore, the reduction in GHG emissions associated with replacing incandescent traffic lights with LED-based traffic lights is:

$$\text{GHG emission reduction} = \frac{Power_{baseline} - Power_{mitigated}}{Power_{baseline}} = 90\%$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for traffic lighting.
$Power_{baseline}$ = Power rating of incandescent traffic lights (kW).
$Power_{mitigated}$ = Power rating of LED traffic lights (kW).

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	90%
All other pollutants	Not Quantified[19]

Discussion:

If the applicant uses traffic lights, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate traffic lights by committing to replacing all existing incandescent traffic lights with LED traffic lights, the applicant would reduce the amount of GHG emissions associated with traffic lights in an existing area by 90%.

GHG Emissions Reduced = 90%

Assumptions:

Data based upon the following references:

[1] USDOE. 2004. NREL. State Energy Program Case Studies: California Says "Go" to Energy-Saving Traffic Lights. Available online at: http://www.nrel.gov/docs/fy04osti/35551.pdf

[2] USEPA. ENERGY STAR: Traffic Signals. Available online at: http://www.energystar.gov/index.cfm?c=traffic.pr_traffic_signals. Accessed February 2010.

19 Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Preferred Literature:

NREL reports that traffic lights based on light-emitting diodes (LEDs) consume about 90% less power than traditional incandescent traffic lights. All traffic lights manufactured on or after January 1, 2006 must meet minimum federal efficiency standards, which are consistent with ENERGY STAR specifications for LED traffic lights.

Alternative Literature:

None

Other Literature Reviewed:

[3] The University of Rochester. LED, OLED, and laser research for lighting applications. Homepage available online at: http://www.rochester.edu/research/sciences.html. Accessed February 2010.

2.3 Alternative Energy Generation

2.3.1 Establish Onsite Renewable or Carbon-Neutral Energy Systems-Generic

Range of Effectiveness:

0-100% of emissions associated with electricity use. Note some systems could increase energy use.

Measure Description:

Using electricity generated from renewable or carbon-neutral power systems displaces electricity demand which would ordinarily be supplied by the local utility. Different sources of electricity generation that local utilities use have varying carbon intensities. Renewable energy systems such as fuel cells may have GHG emissions associated with them. Carbon-neutral power systems, such as photovoltaic panels, do not emit GHGs and will be less carbon intense than the local utility. This mitigation measure describes a method to calculate GHG emission reductions from displacing utility electricity with electricity generated from an on-site power system, which may incorporate technology which has not yet been established at the time this document was written.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total annual electricity demand (kWh)
- Annual amount of electricity to be provided by the on-site power system (kWh) or percent of total electricity demand to be provided by the on-site power system (%)
- Carbon intensity of local utility and on-site power system if not carbon neutral

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{baseline} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Electricity}_{baseline}$ = Total electricity demand (kWh) Provided by Applicant

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

If the total amount of electricity to be provided by the carbon-neutral power system is known, then the GHG emission reduction is equivalent to the ratio of electricity from the carbon-neutral power system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{carbon-neutral}}}{\text{Electricity}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for electricity use

$\text{Electricity}_{\text{carbon-neutral}}$ = Electricity to be provided by the carbon-neutral power system (kWh)

$\text{Electricity}_{\text{baseline}}$ = Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the carbon-neutral power system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions for carbon neutral systems.

If the total amount of electricity to be provided by a renewable energy system that is not carbon neutral, then the GHG emission reduction is equivalent to the following equation:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{renewable}}}{\text{Electricity}_{\text{baseline}}} \times \frac{(\text{Utility} - \text{Renewable})}{\text{Utility}}$$

Where

$\text{Electricity}_{\text{renewable}}$ = Electricity provided by renewable power system (kWh)

Renewable = Carbon intensity of renewable system (CO_2e/kWh)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming all electricity demand is provided by a carbon-neutral power system
All other pollutants	Not Quantified[20],[21]

Discussion:

[20] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.
[21] Assumes that the onsite carbon-neutral system displaces electricity use only.

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by the carbon-neutral system, then the GHG emission reduction is 10%

$$\text{GHG Emission Reduced} = \frac{1,000}{10,000} = 0.10 \text{ or } 10\%$$

If a project instead uses a renewable system with carbon intensity of 500 CO_2e/kWh and the local utility is 100 CO_2e/kWh, then the GHG emission reduction is 5%.

$$\text{GHG Emission Reduced} = \frac{1,000}{10,000} \times \frac{(1,000 - 500)}{1,000} = 0.05 \text{ or } 5\%$$

2.3.2 Establish Onsite Renewable Energy Systems-Solar Power

Range of Effectiveness: 0-100% of GHG emissions associated with electricity use.

Measure Description:

Using electricity generated from photovoltaic (PV) systems displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with electricity generation from PV systems[22], the GHG emissions reductions from this mitigation measure are equivalent to the emissions that would have been produced had electricity been supplied by the local utility.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total electricity demand (kWh)
- Amount of electricity to be provided by the PV system (kWh) or percent of total electricity demand to be provided by the PV system (%)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{baseline} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Electricity}_{baseline}$ = Total electricity demand (kWh) Provided by Applicant

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

If the total amount of electricity to be provided by the PV system is known, then the GHG emission reduction is equivalent to the ratio of electricity from the PV system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{PV}}{\text{Electricity}_{baseline}}$$

[22] This mitigation measure does not account for GHG emissions associated with the embodied energy of PV systems.

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for electricity use
$Electricity_{PV}$	=	Electricity to be provided by PV system (kWh)
$Electricity_{baseline}$	=	Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the PV system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

The amount of electricity generated by a PV system depends on the size and type of the PV system and the location of the project. The Project Applicant can use a publically-available solar calculator, such as California's Public Utilities and Energy Commissions Go Solar Clean Power Estimator[23], to estimate the size of the PV system needed to generate the desired amount of electricity. The only input required for this calculator is the location (zip code). Estimates of the amount of electricity that can be generated from 1.5, 3, 5, and 10 kW PV systems in cities around California are shown in Table AE-2.1 below.

Since there is a range of PV system efficiencies, the local agency may consider checking the type of PV efficiency assumed to ensure the system that is installed meets this capacity.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming all electricity demand is provided by a PV system. Percent reduction would scale down linearly as the percent of electricity provided by a PV system decreases.
All other pollutants	Not Quantified[24]

Discussion:

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by a PV system, then the GHG emission reduction is 10%

[23] Available online at http://gosolarcalifornia.cleanpowerestimator.com/gosolarcalifornia.htm.
[24] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

$$\text{GHG Emission Reduced} = \frac{1{,}000}{10{,}000} = 0.10 \text{ or } 10\%$$

Assumptions:

The data in Table AE-2.1 was generated from California's Public Utilities and Energy Commissions Go Solar Clean Power Estimator, a publically-available solar calculator which the Project Applicant can use to estimate the PV system size needed to generate the desired amount of electricity. It is available online at: http://gosolarcalifornia.cleanpowerestimator.com/gosolarcalifornia.htm.

Other publically-available solar calculators include:

- USDOE. NREL: PVWatts Calculator. Available online at: http://www.nrel.gov/rredc/pvwatts/.
- SolarEstimate.Org. Solar & Wind Estimator. Available online at: http://www.solar-estimate.org/index.php?page=solar-calculator.
- SharpUSA. Solar Calculator. Available online at: http://sharpusa.cleanpowerestimator.com/sharpusa.htm.

Preferred Literature:

None

Other Literature Reviewed:

None

Table AE-2.1
Estimated Electricity Generation from Typical PV Systems

Location			Annual kWh Generated		
Air District	**Major City**	**Zip Code**	**3 kW PV System**	**5 kW PV System**	**10 kW PV System**
Amador County	Ione	95640	4,857	8,094	16,189
Antelope Valley	Lancaster	93534	5,034	8,390	16,781
Bay Area	San Francisco	94101	4,926	8,218	16,436
Butte County	Chico	95926	4,857	8,094	16,189
Calaveras County	Rancho Calaveras	95252	4,857	8,094	16,189
Colusa County	Colusa	95932	4,857	8,094	16,189
El Dorado County	South Lake Tahoe	96150	5,275	8,792	17,584
Feather River	Yuba City	95991	4,857	8,094	16,189
Glenn County	Orland	95963	4,857	8,094	16,189
Great Basin Unified	Bishop	93514	5,507	9,179	18,358
Imperial County	El Centro	92243	5,117	8,528	17,056
Kern County	Bakersfield	93301	5,082	8,470	16,939
Lake County	Lakeport	95453	4,857	8,094	16,189
Lassen County	Susanville	96130	5,275	8,792	17,584
Mariposa County	Mariposa	95338	5,065	8,441	16,882
Mendocino County	Ukiah	95482	4,926	8,218	16,436
Modoc County	Alturas	96101	5,275	8,792	17,584
Mojave Desert	Victorville	92392	5,885	9,808	19,617
Monterey Bay Unified	Monterey	93940	4,926	8,218	16,436
North Coast Unified	Eureka	95501	4,081	6,801	13,602
Northern Sierra	Grass Valley	95949	4,857	8,094	16,189
Northern Sonoma County	Healdsburg	95448	4,931	8,218	16,436
Placer County	Roseville	95678	4,857	8,094	16,189
Sacramento Metro	Sacramento	95864	4,857	8,094	16,189
San Diego County	San Diego	92182	5,102	8,528	17,056
San Joaquin Valley Unified	Fresno	93650	5,065	8,441	16,882
San Luis Obispo County	San Luis Obispo	93405	5,320	8,932	17,865
Santa Barbara County	Santa Barbara	93101	5,320	8,932	17,865
Shasta County	Redding	96001	4,081	6,801	13,602
Siskiyou County	Yreka	96097	4,363	7,271	14,543
South Coast	Los Angeles	90071	5,034	8,390	16,781
Tehama County	Red Bluff	96080	4,857	8,094	16,189
Tuolumne County	Sonora	95370	4,857	8,094	16,189
Ventura County	Oxnard	93030	5,034	8,390	16,781
Yolo-Solano	Davis	95616	4,857	8,094	16,189

2.3.3 Establish Onsite Renewable Energy Systems-Wind Power

Range of Effectiveness: 0-100% of GHG emissions associated with electricity use.

Measure Description:

Using electricity generated from wind power systems displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with electricity generation from wind turbines[25], the GHG emissions reductions from this mitigation measure are equivalent to the emissions that would have been produced had electricity been supplied by the local utility.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total electricity demand (kWh)
- Amount of electricity to be provided by the wind power system (kWh) or percent of total electricity demand to be provided by the wind power system (%)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Electricity}_{\text{baseline}}$ = Total electricity demand (kWh) Provided by Applicant

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

The GHG emission reduction is equivalent to the ratio of electricity from the wind power system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{wind}}}{\text{Electricity}_{\text{baseline}}}$$

[25] This mitigation measure does not account for GHG emissions associated with the embodied energy of wind turbines.

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for electricity use
$Electricity_{wind}$	=	Electricity to be provided by wind power system (kWh)
$Electricity_{baseline}$	=	Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the wind power system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming all electricity demand is provided by a wind power system. Percent reduction would scale down linearly as the percent of electricity provided by a wind power system decreases.
All other pollutants	None[26]

Discussion:

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by a wind system, then the GHG emission reduction is 10%

$$\text{GHG Emission Reduced} = \frac{1{,}000}{10{,}000} = 0.10 \text{ or } 10\%$$

Assumptions:

None

Preferred Literature:

None

[26] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Other Literature Reviewed:

None

2.3.4 Utilize a Combined Heat and Power System

Range of Effectiveness: 0-46% of GHG emissions associated with electricity use.

Measure Description:

For the same level of power output, combined heat and power (CHP) systems utilize less input energy than traditional separate heat and power (SHP) generation, resulting in fewer CO_2 emissions. In traditional SHP systems, heat created as a by-product is wasted by being released into the environment. In contrast, CHP systems harvest the thermal energy and use it to heat onsite or nearby processes, thus reducing the amount of natural gas or other fuel that would otherwise need to be combusted to heat those processes. In addition CHP systems lower the demand for grid electricity, thereby displacing the CO_2 emissions associated with the production of grid electricity.

This mitigation measure describes how to estimate CO_2 emissions savings (in MT per year) from utilizing a CHP system to supply energy demands which would otherwise be provided by separate heat and power systems (e.g. grid electricity for electricity demand and boilers for thermal demand). CO_2 emissions savings are quantified using the USEPA CHP Emission Calculator which allows users to estimate the CO_2 emissions savings associated with displaced electricity and thermal production from five CHP technologies: microturbine, fuel cell, reciprocating engine, combustion turbine, and backpressure steam turbine. The first three technologies have electricity generation capacities on a scale appropriate for residential neighborhoods, planned communities, and mixed-use and commercial developments. Combustion turbines and backpressure steam turbines are more appropriate for industrial processes or very large commercial developments. The user has the option to input project-specific data such as specific fuels, duct burner operation, cooling demand, and boiler efficiencies.

Table AE-4.1 provides examples of expected CO_2 savings for microturbines, fuel cells, and reciprocating engines of a range of electricity generating capacities for the five major California utilities (Southern California Edison (SCE), Los Angeles Department of Water and Power (LADWP), San Diego Gas and Electric (SDGE), Pacific Gas and Electric (PGE), and the Sacramento Municipal Utility District (SMUD). Default values provided by the USEPA CHP Calculator were used wherever possible (see the Assumptions section below). The magnitude of CO_2 reductions depends on the baseline power sources. For thermal demand, the baseline is assumed to be a new boiler with 80% efficiency. For electricity demand, the baseline is the carbon intensity of the local utility, which varies by utility. For reference, Table AE-4.2 provides the 2006 carbon intensity of delivered electricity for the five utilities. As shown in Table AE-4.1, certain CHP systems may not be appropriate for certain locations, especially in Northern California where PGE and SMUD have relatively low carbon intensities.

Measure Applicability:

- Grid electricity use
- Natural gas combustion

Inputs:

The following information needs to be provided by the Project Applicant:

- Expected CHP technology (microturbine, fuel cell, or reciprocating engine)
- Expected electricity demand

Baseline Method:

GHG emissions = CO_2 emissions displaced

Where:

GHG emissions	=	MT CO_2e
CO_2 emissions displaced	=	MT CO_2 from separate heat and power system Provided in Table AE-4.1 or calculated using USEPA CHP Calculator

Here it is assumed that all GHG emissions produced from fuel combustion and electricity generation are CO_2 emissions.

Mitigation Method:

GHG emission reduction = Percent Reduction in CO_2 emissions
Provided in Table A E-4.1 or calculated using USEPA CHP Calculator

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming all electricity demand is provided by a CHP system. Percent reduction would scale down linearly as the percent of electricity provided by a CHP system decreases.
All other pollutants	0-70%[27] Depends on CHP technology, electricity generating capacity, sulfur content of fuel, and displaced thermal generation technology. Reductions in CO_2 may produce increases in SO_2 and/or NOx, or vice versa.

[27] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Discussion:

Assume a project is located in SCE's service area and has an expected electricity demand of 100 kW. Using Table AE-4:

- A 100 kW microturbine will generate more CO_2 emissions than a separate heat and power system of equivalent power capacity.
- A 100 kW fuel cell will generate about the same CO_2 emissions than a separate heat and power system of equivalent power capacity.
- A 100 kW reciprocating engine will generate 14% less CO_2 emissions as a separate heat and power system of equivalent power capacity.

Therefore, the Project Applicant should choose the reciprocating engine. This system would generate 568 MT CO_2 compared to 657 MT CO_2 from the separate heat and power system.

Assumptions:

Table AE-4.1 was prepared using the 2009 USEPA CHP Calculator, a publically-available tool found online at: http://www.epa.gov/chp/basic/calculator.html. The following defaults and assumptions were made to generate the data in Table AE-4.1:

- The range of electricity generating capacity shown in Table AE-4.1 is based on the normal range for the technology (as per Calculator default)
- Operates 8,760 hours per year
- Provides heat only (no cooling)
- Combusts natural gas fuel (116.7 CO_2/MMBtu emission rate and 1,020 Btu/scf HHV as per Calculator defaults)
- No supplementary duct burner
- Assumes 8% transmission loss for displaced electricity

Table AE-4.2 was prepared using data from the California Climate Action Registry (CCAR) Power/Utility Protocol (PUP) public reports for reporting year 2006. These PUP reports are available online at:
https://www.climateregistry.org/CARROT/public/reports.aspx.

Preferred Literature:

The USEPA CHP Emissions Calculator compares the anticipated emissions from a CHP system to the emissions from SHP systems. The Calculator was developed by the U.S. Department of Energy's Distributed Energy Program, Oak Ridge National Laboratory, and the U.S. Environmental Protection Agency's CHP Partnership. Users can choose from five different CHP technologies (microturbine, fuel cell, reciprocating engine, combustion turbine, and backpressure steam turbine) and compare their performance to a number of different SHP systems (e.g. local electricity utility and existing or new gas boiler, fuel oil boiler, or heat bump). Additionally, users have the option to refine the analysis with project-specific inputs such as the cooling demand and additional duct burning. Details such as the cooling efficiency of the displaced cooling system must be known to perform more detailed analysis. The calculator can be used to estimate expected reductions in CO_2, SO_2, and NOx emissions as well as fuel usage.

Alternative Literature:

The USEPA Combined Heat and Power Partnership Catalog of CHP Technologies presents performance details of six CHP technologies: gas turbine, microturbine, spark and compression ignition reciprocating engines, steam turbine, and fuel cell. Table I of the Introduction presents the equations necessary to calculate the percent fuel savings from using a CHP system instead of traditional separate heat and power generation. Subsequent chapters describe performance details of each of the CHP technologies, including estimated CO_2 emissions. The GHG emissions reductions associated with this mitigation measure are the change in emissions from using a CHP system rather than a SHP system in a building. The USEPA CHP Calculator methodologies are based in part on this Catalog of CHP Technologies document.

Other Literature Reviewed:

None

Table AE-4.1
Estimated CO_2 Emissions Savings from CHP Systems in California[1,2]

Utility	CHP Technology	Electricity Generating Capacity	Electric Efficiency	Power to Heat Ratio	CO_2 Emissions from CHP	CO_2 Emissions Displaced	Percent Reduction in CO_2 Emissions[3]
		(kW)	(% HHV)	--	(MT/year)	(MT/year)	(%)
SCE	Microturbine	30	24%	0.51	200	200	0%
		50	24%	0.51	334	333	0%
		100	26%	0.7	607	559	-9%
		250	26%	0.92	1517	1229	-23%
	Fuel Cell	5	30%	0.79	26	26	0%
		100	30%	0.79	527	527	0%
		1000	43%	1.95	3679	3783	3%
		2000	46%	1.92	6884	7597	9%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	325	11%
		100	28%	0.52	568	657	14%
		1000	29%	0.64	5514	5859	6%
		1200	28%	0.63	6759	7052	4%
LADWP	Microturbine	30	24%	0.51	200	277	28%
		50	24%	0.51	334	462	28%
		100	26%	0.7	607	817	26%
		250	26%	0.92	1517	1875	19%
	Fuel Cell	5	30%	0.79	26	39	33%
		100	30%	0.79	527	786	33%
		1000	43%	1.95	3679	6366	42%
		2000	46%	1.92	6884	12762	46%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	466	38%
		100	28%	0.52	568	915	38%
		1000	29%	0.64	5514	8441	35%
		1200	28%	0.63	6759	10188	34%
SDGE	Microturbine	30	24%	0.51	200	218	8%
		50	24%	0.51	334	363	8%
		100	26%	0.7	607	620	2%
		250	26%	0.92	1517	1381	-10%
	Fuel Cell	5	30%	0.79	26	30	12%
		100	30%	0.79	527	588	10%
		1000	43%	1.95	3679	4387	16%
		2000	46%	1.92	6884	8806	22%

Utility	CHP Technology	Electricity Generating Capacity	Electric Efficiency	Power to Heat Ratio	CO_2 Emissions from CHP	CO_2 Emissions Displaced	Percent Reduction in CO_2 Emissions[3]
		(kW)	(% HHV)	--	(MT/year)	(MT/year)	(%)
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	358	19%
		100	28%	0.52	568	717	21%
		1000	29%	0.64	5514	6463	15%
		1200	28%	0.63	6759	7814	14%
PGE	Microturbine	30	24%	0.51	200	175	-15%
		50	24%	0.51	334	293	-14%
		100	26%	0.7	607	479	-27%
		250	26%	0.92	1517	1030	-47%
	Fuel Cell	5	30%	0.79	26	23	-16%
		100	30%	0.79	527	447	-18%
		1000	43%	1.95	3679	2984	-23%
		2000	46%	1.92	6884	5999	-15%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	280	-4%
		100	28%	0.52	568	577	2%
		1000	29%	0.64	5514	5059	-9%
		1200	28%	0.63	6759	6130	-10%
SMUD	Microturbine	30	24%	0.51	200	188	-7%
		50	24%	0.51	334	314	-6%
		100	26%	0.7	607	522	-16%
		250	26%	0.92	1517	1137	-33%
	Fuel Cell	5	30%	0.79	26	24	-7%
		100	30%	0.79	527	490	-8%
		1000	43%	1.95	3679	3411	-8%
		2000	46%	1.92	6884	6855	0%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	304	4%
		100	28%	0.52	568	620	8%
		1000	29%	0.64	5514	5487	0%
		1200	28%	0.63	6759	6643	-2%

Abbreviations:
CHP - combined heat and power
CO_2 - carbon dioxide
HHV - higher heating value
kW - kilowatt
LADWP - Los Angeles Department of Water and Power

PGE - Pacific Gas and Electric
SCE - Southern California Edison
SDGE - San Diego Gas and Electric
SMUD - Sacramento Municipal Utility District
USEPA - United State Environmental Protection Agency

Notes:
1. All data in this table generated using the USEPA CHP Calculator using utility-specific CO_2 intensity factors (see Table B). The following defaults and assumptions for the CHP system were used:
   - electricity generating capacity based on normal range for the technology (as per Calculator default)
   - operate 8,760 hours per year
   - heating only (no cooling)
   - natural gas fuel (116.7 CO_2/MMBtu emission rate and 1,020 Btu/scf HHV as per Calculator defaults)
   - no duct burner
   - assumed 8% transmission loss for displaced electricity
2. All CHP systems were compared to a baseline separate heat and power system consisting of a "new gas boiler" (assumed 80% efficiency as per Calculator default) and the local utility CO_2 intensity factor as provided in Table B.
3. A negative value indicates that the proposed CHP system is expected to generate more CO_2 emissions than the baseline separate heat and power system.

Source:
USEPA. 2009. CHP Emissions Calculator. Available online at: http://www.epa.gov/chp/basic/calculator.html. Accessed April 2010.

Table AE-4.2
Carbon Intensity of California Utilities

Utility	Total From All Generation Sources[1]		
	Electricity	CO_2 Emissions	CO_2 intensity factor
	(MWh)	(MT)	(lb/MWh)
SCE	82,776,309	24,077,133	641
LADWP	29,029,883	16,308,526	1,239
SDGE	19,108,166	6,767,326	781
PGE	79,211,982	16,377,172	456
SMUD	15,133,569	3,811,571	555
eGRID National Average (default in USEPA CHP Calculator)[2,3]			540
eGRID National Fossil Fuel Average (default in USEPA CHP Calculator)[2,4]			1,076

Abbreviations:
CHP - combined heat and power
CO_2 - carbon dioxide
eGRID - Emissions and Generation Resource Integrated Database
LADWP - Los Angeles Department of Water and Power
lb - pound
MWh - megawatt-hour
PGE - Pacific Gas and Electric
SCE - Southern California Edison
SDGE - San Diego Gas and Electric
SMUD - Sacramento Municipal Utility District
USEPA - United State Environmental Protection Agency

Notes:
1. Total electricity and CO_2 emissions reported by the utility in the California Climate Action Registry Power/Utility Protocol (PUP) Reports for reporting year 2006. PUP Reports available online at: https://www.climateregistry.org/CARROT/public/reports.aspx.
2. eGRID is a comprehensive inventory of environmental attributes of electricity generation (such as the carbon intensity of power generation), compiled from data from three federal agencies: EPA, the Energy Information Administration (EIA), and the Federal Energy Regulatory Commission (FERC). The USEPA CHP Calculator provides default 2005 eGRID carbon intensities for the U.S. and California. For more information, see: http://www.epa.gov/rdee/energy-resources/egrid/index.html.
3. eGRID National Average represents the national average carbon intensity for electricity generation from all power sources (hydropower, nuclear, renewables, and fossil fuels including oil, natural gas, and coal).
4. eGRID National Fossil Fuel Average represents the national average carbon intensity for electricity generation from fossil fuel sources only (oil, natural gas, and coal).

2.3.5 Establish Methane Recovery in Landfills

Range of Effectiveness: 73-77% reduction in GHG emissions from landfills without methane recovery

Measure Description:

One of the U.S.'s largest sources of methane emissions is from the decomposition of waste in landfills. Methane (CH_4) is a potent GHG and has a global warming potential (GWP) over 20 times that of CO_2. Capturing methane in landfills and combusting it to generate electricity for on-site energy needs reduces GHG emissions in two ways: it reduces direct methane emissions, and it displaces electricity demand and the associated indirect GHG emissions from electricity production.

Measure Applicability:

- Electricity from utility
- Note: this mitigation measure does not include energy generation from burning municipal solid waste.

Inputs:

The following information needs to be provided by the Project Applicant:

- Amount of mixed solid waste (short tons)

Baseline Method:

In landfills without landfill gas recovery systems, greenhouse gases are emitted directly to the atmosphere.

$$CO_2e_{baseline} = MSW \times LFM \times (44/12)$$

Where

$CO_2e_{baseline}$	=	Amount of CO_2e generated from landfilling mixed solid waste (MT)
MSW	=	Amount of mixed solid waste (short tons) Provided by Applicant
LFM	=	Landfill methane generated from mixed solid waste 0.580 MTCE / short ton MSW
(44/12)	=	Conversion from MTCE to MT CO_2e

Mitigation Method:

Mitigation Option 1 – Methane is captured and flared

USEPA assumes that 10% of the landfill CH4 generated is either converted by bacteria or chemically oxidized to CO_2. The remaining 90% remains as CH4 and is either captured and flared[28] or released directly to the atmosphere as fugitive CH_4 emissions. Assume a 99% combustion conversion efficiency.

$$CO_2e_{Mit1} = MSW \times LFM \times 1/(12/44 \times 21) \times [(CO_{2oxidation} + CO_{2flare}) \times 1 + (CH_{4fugitive} + CH_{4unflare}) \times 21]$$

Where

CO_2e_{Mit1}	=	Amount of CO_2e from flaring landfill methane (MT)
MSW	=	Amount of mixed solid waste (short tons) Provided by Applicant
LFM	=	MTCE[29] methane generated per short ton MSW 0.580 MTCE / short ton MSW
1/(12/44 x 21)	=	Conversion from MTCE to MT CH_4
$CO_{2oxidation}$	=	Contribution from CO_2 generated from chemical or biological oxidation. 0.10
CO_{2flare}	=	Contribution from CO_2 generated from the flaring of methane. (1-0.10) x 0.75 x 0.99 = 0.66825
1	=	Global warming potential of CO_2, used to convert from CO_2 to CO_2e
$CH_{4fugitive}$	=	Contribution from CH_4 which remains unoxidized to CO_2 and is not captured for flaring, and therefore is released directly to the atmosphere. (1-0.10) x (1-0.75) = 0.225

[28] Seek local agency guidance on whether to include CO_{2flare} emissions. USEPA and IPCC consider these emissions to be biogenic; therefore, the emissions are not included in USEPA and IPCC greenhouse gas emissions inventories.
[29] MTCE = metric MTMTMTMT carbon equivalent. The MTCE equivalent of 1 MT of a greenhouse gas is (12/44) multiplied by the greenhouse gas global warming potential.

$CH_{4unflare}$ = Contribution from CH_4 which remains unoxidized and is captured for flaring, but remains unconverted due to incomplete combustion.
(1-0.10) x 0.75 x (1-0.99) = 0.00675

21 = Global warming potential of CH_4, used to convert from CH_4 to CO_2e

Therefore:

CO_2e_{Mit1} = MSW x 0.580 x 1/(12/44 x 21) x [(0.76825 x 1) + (0.23175 x 21)]

CO_2eMit1 = MSW x 0.571

And then the percent reduction in GHG emissions from Mitigation Option 1 is:

$$\text{GHG reduction}_{Mit1} = \frac{CO_2e_{baseline} - CO_2e_{Mit1}}{CO_2e_{baseline}}$$

GHG reduction$_{Mit1}$ = 73%

As shown from this equation, the percent reduction in greenhouse gas emissions does not depend on the amount of mixed solid waste in the landfill.

Mitigation Option 2 – Methane is captured and combusted for cogeneration

If a cogeneration system is used to generate electricity from the combusted methane, the following equation is used to calculate the amount of electricity generated:

Electricity = MSW x LFM x 1/(12/44 x 21) x Combust x Density x 10^6 x HHV x ECF x EFF x

Where

Electricity = Amount of electricity generated from combustion of methane (kWh)

LFM = MTCE methane generated per short ton MSW
0.580 MTCE / short ton MSW

1/(12/44 x 21) = Conversion from MTCE to MT CH_4

Combust = Fraction of CH_4 captured and combusted for cogeneration

(1-0.10) x 0.75 = 0.675; assumes 10% of methane is oxidized prior to capture and 75% capture efficiency

Density = Density of CH_4
0.05 ft^3 CH_4 / gram CH_4

10^6 = Conversion from grams to MT

HHV = Heating value of CH4
1,012 BTU / ft^3 CH_4

ECF = Energy conversion factor
0.00009 kWh/BTU

EFF = Efficiency Factor
0.85; USEPA assumes a 15% system efficiency loss to account for system down-time

Therefore:

Electricity = MSW x 265

Since this amount of electricity is generated on-site and no longer needs to be supplied by the local electricity utility, the indirect CO_2e emissions associated with that utility electricity generation are also avoided:

$$CO_2e_{displaced} = \text{Electricity} \times \text{Utility}$$

Where

Utility = Carbon intensity of Local Utility (MT CO_2e/kWh) from table below

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\mathbf{CO_2e_{Mit2} = CO_2e_{Mit1} - CO_2e_{displaced}}$$

And then the percent reduction in GHG emissions from Mitigation 2 is:

$$\text{GHG reduction}_{Mit2} = \frac{CO_2e_{baseline} - (CO_2e_{Mit1} - CO_2e_{displaced})}{CO_2e_{baseline}}$$

$$\textbf{GHG reductionMit2} = \frac{1.556 + (265 \times \text{Utility})}{2.127}$$

As shown from these equations, the percent reduction in GHG emissions does not depend on the amount of mixed solid waste in the landfill.

Note that further reductions could be achieved if the heat generated from combustion and cogeneration were recovered and used to displace thermal energy that otherwise would have been generated from a separate heat system, such as a boiler. The magnitude of reductions depends on the system being displaced, including the boiler efficiency and the heating value of the fuel as compared to the heating value of methane. To take credit for this additional reduction, the Project Applicant would need to quantify displaced GHG emissions using the baseline document and the Mitigation Measure BE-5, Install Energy Efficient Boilers.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	73-77%
All other pollutants	Not Quantified[30]

Discussion:

In Southern California Edison's service area, a landfill which captures and flares methane achieves a 73% reduction in GHG emissions compared to a landfill without a methane recovery system. A landfill which captures and combusts methane for cogeneration achieves a 77% reduction in GHG emissions compared to a landfill without a methane recovery system:

$$\text{GHG reduction Mit2} = \frac{1.556 + (265 \times 2.909 \times 10^{-4})}{2.127} = 77\%$$

Assumptions:

[30] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Data based upon the following reference:

- USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks, 3rd Ed. Available online at: http://www.epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf

Preferred Literature:

Section 6 of USEPA's Solid Waste Management and Greenhouse Gases report presents methodology for calculating greenhouse gas emissions associated with three different landfill management systems: landfills which do not capture landfill gas, landfills which recover methane and flare it, and landfills which recover methane and combust it for cogeneration. Column (b) of Exhibit 6-6 shows methane generation factors for various types of landfill waste in MTCE per short ton of waste. For this analysis, the value for mixed solid waste is used. Section 6.2 provides USEPA defaults for percent of methane chemically or biologically oxidized to CO_2 (10%) and the efficiency of methane capture systems (75%). Exhibit 6-7 provides USEPA defaults used for calculating the amount of electricity generated from methane combustion and cogeneration.

Alternative Literature:

None

Other Literature Reviewed:

- CAR. 2009. Landfill Project Protocol: Collecting and Destroying Methane from Landfills. Version 3.0. Available online at: http://www.climateactionreserve.org/how/protocols/adopted/landfill/current-landfill-project-protocol/
- CalRecycle (CIWMB). Climate Change and Solid Waste Management: Draft Final Report and Draft GHG Calculator Tool. Available online at: http://www.calrecycle.ca.gov/Climate/Organics/LifeCycle/default.htm. Accessed February 2010.
- CARB. 2008. Local Government Operations Protocol. Version 1.0. Available online at: http://www.arb.ca.gov/cc/protocols/localgov/pubs/final_lgo_protocol_2008-09-25.pdf
- American Carbon Registry. Standards. Available online at: http://www.americancarbonregistry.org/carbon-accounting/standards/?searchterm=landfill. Accessed February 2010.

2.3.6 Establish Methane Recovery in Wastewater Treatment Plants

Range of Effectiveness: 95-97% reduction in GHG emissions from wastewater treatment plants without recovery.

Measure Description:

Methane (CH_4) is a potent GHG and has a global warming potential (GWP) over 20 times that of CO_2. Capturing methane from wastewater treatment (WWT) plants and combusting it to generate electricity for on-site energy needs reduces GHG emissions in two ways: it reduces direct methane emissions, and it displaces electricity demand and the associated indirect GHG emissions from electricity production.

Measure Applicability:

- Electricity from utility

Inputs:

The following information needs to be provided by the Project Applicant:

- Liters of wastewater

Baseline Method:

Centralized wastewater treatment facilities may use anaerobic or facultative lagoons or anaerobic digesters to treat wastewater. The methane emissions expected from anaerobic or facultative lagoons is calculated using the following equation from the California Air Resources Board (CARB)'s Local Government Reporting Protocol:

$$CO_2e_{baseline} = \text{Wastewater} \times BOD_5 \text{ load} \times 10^{-6} \times Bo \times MCF_{anaerobic} \times 10^{-3} \times 21$$

Where

$CO_2e_{baseline}$	=	Amount of CO_2e generated from wastewater treatment (MT)
Wastewater	=	Volume of wastewater (liters) Provided by Applicant
BOD_5 load	=	Concentration of BOD_5 in wastewater 200 mg / liter wastewater
10^{-6}	=	Conversion from mg to kg
Bo	=	Maximum CH_4-producing capacity for domestic wastewater 0.6 kg CH_4 / kg BOD_5 removed
$MCF_{anaerobic}$	=	CH_4 correction factor for anaerobic systems 0.8
10^{-3}	=	Conversion from kg to MT

21	=	Global warming potential of CH_4, used to convert from CH_4 to CO_2e

Therefore:

$$CO_2e_{baseline} = \text{Wastewater} \times 2.02 \times 10^{-6}$$

Mitigation Method:

Mitigation Option 1 – Methane is captured and flared

Anaerobic digesters produce methane-rich biogas which can be combusted and converted to CO_2.[31] Inherent inefficiencies in the system results in incomplete combustion of the biogas, which results in remaining methane emissions:

$$CO_2e_{Mit1} = \text{Wastewater} \times 0.2642 \times \text{Digester Gas} \times FCH_4 \times (CH_4unflare + CO_2flare)$$

Where

CO_2e_{Mit1}	=	Amount of CO_2e generated from flaring methane from wastewater treatment plant (MT)
Wastewater	=	Volume of wastewater (liters) Provided by Applicant
0.2642	=	Conversion from liters to gallons
Digester Gas	=	Volume of biogas generated per volume of wastewater treated ft^3 biogas / gallon wastewater 0.01
F_{CH4}	=	Fraction of CH_4 in biogas 0.65
$CH_{4unflare}$	=	Contribution from CH_4 which is captured for flaring, but remains unconverted due to incomplete combustion $CH_{4unflare} = \rho_{CH4} \times (1-DE) \times 0.0283 \times 10^{-6} \times 21 = 3.93 \times 10^{-6}$
ρ_{CH4}	=	Density of CH4 at standard conditions 662 g/m^3
DE	=	CH_4 destruction efficiency 0.99
0.0283	=	Conversion factor from ft^3 to m^3
10^{-6}	=	Conversion factor from g to MT
21	=	Global warming potential of CH_4, used to convert from CH_4 to CO_2e
CO_2flare	=	Contribution from CO_2 generated from the flaring of methane
CO_2flare	=	$EF / 2204.623 \times 1 = 5.44 \times 10^{-5}$
EF	=	Emission factor for methane combustion

[31] Seek local agency guidance on whether to include CO_2 combustion emissions. USEPA and IPCC consider these emissions to be biogenic; therefore, the emissions are not included in USEPA and IPCC greenhouse gas emissions inventories.

		0.120 lb CO_2/ft^3 CH_4
2204.623	=	Conversion factor from lb to MT
1	=	Global warming potential of CO_2, used to convert from CO_2 to CO_2e

Therefore:

$$\mathbf{CO_2e_{Mit1} = Wastewater \times 1.00 \times 10^{-7}}$$

And then the percent reduction in GHG emissions from Mitigation Option 1 is:

$$\text{GHG reduction}_{Mit1} = \frac{CO_2e_{baseline} - CO_2e_{Mit1}}{CO_2e_{baseline}}$$

$$\mathbf{GHG\ reduction_{Mit1} = 95\%}$$

As shown from this equation, the percent reduction in greenhouse gas emissions does not depend on the amount of wastewater being treated.

Mitigation Option 2 – Methane is captured and combusted for cogeneration

If a cogeneration system is used to generate electricity from the combusted biogas, the following equation is used to calculate the amount of electricity generated:

$$\text{Electricity} = \text{Wastewater} \times 0.2642 \times \text{Digester Gas} \times F_{CH4} \times HHV_{CH4} \times ECF \times EFF$$

Where:

Electricity	=	Amount of electricity generated from combustion of methane (kWh)
Wastewater	=	Volume of wastewater (liters) Provided by Applicant
0.2642	=	Conversion from liters to gallons
Digester Gas	=	Volume of biogas generated per volume of wastewater treated 0.01 ft^3 biogas / gallon wastewater
F_{CH4}	=	Fraction of CH_4 in biogas 0.65
HHV	=	Heating value of methane 1,012 BTU / ft^3 CH_4
ECF	=	Energy conversion factor 0.00009 kWh/BTU
EFF	=	Efficiency Factor 0.85; USEPA assumes a 15% system efficiency loss to account for system down-time

Therefore:

$$\text{Electricity} = \text{Wastewater} \times 1.33 \times 10^{-4}$$

Since this amount of electricity is generated on-site and no longer needs to be supplied by the local electricity utility, the indirect CO_2e emissions associated with that utility electricity generation are also avoided:

$$CO_2e_{displaced} = \text{Electricity} \times \text{Utility}$$

Where

Utility = Carbon intensity of Local Utility (MT CO_2e/kWh) from table below

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\mathbf{CO_2e_{Mit2} = CO_2e_{Mit1} - CO_2e_{displaced}}$$

And then the percent reduction in GHG emissions from Mitigation 2 is:

$$\text{GHG reduction}_{Mit2} = \frac{CO2e_{baseline} - (CO2e_{Mit1} - CO2e_{displaced})}{CO2e_{baseline}}$$

$$\textbf{GHG reductionMit2} = \frac{1.92 \times 10^{-6} + (1.33 \times 10^{-4} \times \text{Utility})}{2.02 \times 10^{-6}}$$

As shown from these equations, the percent reduction in GHG emissions does not depend on the amount of wastewater being treated.

Note that further reductions could be achieved if the heat generated from combustion and cogeneration were recovered and used to displace thermal energy that otherwise would have been generated from a separate heat system, such as a boiler. The magnitude of reductions depends on the system being displaced, including the boiler efficiency and the heating value of the fuel as compared to the heating value of methane. To take credit for this additional reduction, the Project Applicant would need to quantify displaced GHG emissions using the baseline document and the Mitigation Measure BE-5, Install Energy Efficient Boilers.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	95-97%
All other pollutants	Not Quantified[32]

Discussion:

In Southern California Edison's service area, a WWT plant which captures and flares methane achieves a 95% reduction in GHG emissions compared to a WWT plant without a methane recovery system. A WWT plant which captures and combusts methane for cogeneration achieves a 97% reduction in GHG emissions compared to a landfill without a methane recovery system:

$$\text{GHG reduction Mit2} = \frac{1.92\times10^{-6} + \left(1.33\times10^{-4}\times2.909\times10^{-4}\right)}{2.02\times10^{-6}} = 97\%$$

Assumptions:

Data based upon the following references:

- CARB. 2008. Local Government Operations Protocol. Chapter 10: Wastewater Treatment Facilities. Available online at: http://www.arb.ca.gov/cc/protocols/localgov/pubs/final_lgo_protocol_2008-09-25.pdf
- USEPA. 2008. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. Chapter 8: Waste. Available online at: http://www.epa.gov/climatechange/emissions/downloads/08_CR.pdf
- USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks, 3rd Ed. Available online at: http://www.epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf

Preferred Literature: Chapter 10 of CARB's Local Government Operations Protocol (LGOP) provides the methodology for calculating methane emissions from wastewater treatment. Centralized wastewater treatment facilities may use anaerobic or facultative lagoons or anaerobic digesters to treat wastewater. Equation 10.3 of the LGOP calculates methane emissions from anaerobic or facultative lagoons. Equation 10.1 of the LGOP calculates the methane emissions remaining due to incomplete combustion of anaerobic digester gas. Default values for the amount of digester gas produced per volume of wastewater and the fraction of methane in digester gas are taken from the 2008 USEPA Inventory of U.S. Greenhouse Gas Emissions and Sinks. Exhibit 6-7 of

[32] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

USEPA's Solid Waste Management and Greenhouse Gases report provides the methodology for calculating the amount of electricity generated from methane combustion and cogeneration.

Alternative Literature:

None

Other Literature Reviewed:

None

3.0 Transportation

3.1 Land Use/Location

3.1.1 Increase Density

Range of Effectiveness: 0.8 – 30.0% vehicle miles traveled (VMT) reduction and therefore a 0.8 – 30.0% reduction in GHG emissions.

Measure Description:

Designing the Project with increased densities, where allowed by the General Plan and/or Zoning Ordinance reduces GHG emissions associated with traffic in several ways. Density is usually measured in terms of persons, jobs, or dwellings per unit area. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. This strategy also provides a foundation for implementation of many other strategies which would benefit from increased densities. For example, transit ridership increases with density, which justifies enhanced transit service.

The reductions in GHG emissions are quantified based on reductions to VMT. The relationship between density and VMT is described by its elasticity. According to a recent study published by Brownstone, et al. in 2009, the elasticity between density and VMT is 0.12. Default densities are based on the typical suburban densities in North America which reflects the characteristics of the ITE Trip Generation Manual data used in the baseline estimates.

Measure Applicability:

- Urban and suburban context
  - Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of housing units per acre or jobs per job acre

Mitigation Method:

% VMT Reduction = A * B [not to exceed 30%]

Where:

A = Percentage increase in housing units per acre or jobs per job acre[33] = (number of housing units per acre or jobs per job acre – number of housing units per acre or jobs per job acre for typical ITE development) / (number of housing units per acre or jobs per job acre for typical ITE development) For small and medium sites (less than ½ mile in radius) the calculation of housing and jobs per acre should be performed for the development site as a whole, so that the analysis does not erroneously attribute trip reduction benefits to measures that simply shift jobs and housing within the site with no overall increase in site density. For larger sites, the analysis should address the development as several ½-mile-radius sites, so that shifts from one area to another would increase the density of the receiving area but reduce the density of the donating area, resulting in trip generation rate decreases and increases, respectively, which cancel one another.
B = Elasticity of VMT with respect to density (from literature)

Detail:

- A: [not to exceed 500% increase]
  - If housing: (Number of housing units per acre – 7.6) / 7.6
    (See Appendix C for detail)
  - If jobs: (Number of jobs per acre – 20) / 20
    (See Appendix C for detail)
- B: 0.07 (Boarnet and Handy 2010)

Assumptions:

Data based upon the following references:

- Boarnet, Marlon and Handy, Susan. 2010. "DRAFT Policy Brief on the Impacts of Residential Density Based on a Review of the Empirical Literature." http://arb.ca.gov/cc/sb375/policies/policies.htm; Table 1.

[33] This value should be checked first to see if it exceeds 500% in which case A = 500%.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[34]
CO_2e	1.5-30% of running
PM	1.5-30% of running
CO	1.5-30% of running
NOx	1.5-30% of running
SO_2	1.5-30% of running
ROG	0.9-18% of total

Discussion:

The VMT reductions for this strategy are based on changes in density versus the typical suburban residential and employment densities in North America (referred to as "ITE densities"). These densities are used as a baseline to mirror those densities reflected in the ITE Trip Generation Manual, which is the baseline method for determining VMT.

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of housing units or jobs per acre (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing residential density by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as density). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below for housing:

Low Range % VMT Reduction (8.5 housing units per acre)

$$= (8.5 - 7.6) / 7.6 * 0.07 = 0.8\%$$

High Range % VMT Reduction (60 housing units per acre)

$$= \frac{60 - 7.6}{7.6} = 6.9 \text{ or } 690\% \quad \text{Since greater than 500\%, set to 500\%}$$

$$= 500\% \times 0.07 = 0.35 \text{ or } 35\% \quad \text{Since greater than 30\%, set to 30\%}$$

[34] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Sample calculations are provided below for jobs:

Low Range % VMT Reduction (25 jobs per acre)
$= (25 – 20) / 20 *0.12 = 3\%$
High Range % VMT Reduction (100 jobs per acre)
$$= \frac{100 - 20}{20} = 4 \text{ or } 400\%$$
=400% x 0.12 = 0.48 or 48% Since greater than 30%, set to 30%

Preferred Literature:

- -0.07 = elasticity of VMT with respect to density

Boarnet and Handy's detailed review of existing literature highlighted three individual studies that used the best available methods for analyzing data for individual households. These studies provided the following elasticities: -0.12 - Brownstone (2009), -0.07 – Bento (2005), and -0.08 – Fang (2008). To maintain a conservative estimate of the impacts of this strategy, the lower elasticity of -0.07 is used in the calculations.

Alternative Literature:

- -0.05 to -0.25 = elasticity of VMT with respect to density

The *TRB Special Report 298* literature suggests that doubling neighborhood density across a metropolitan area might lower household VMT by about 5 to 12 percent, and perhaps by as much as 25 percent, if coupled with higher employment concentrations, significant public transit improvements, mixed uses, and other supportive demand management measures.

Alternative Literature References:

TRB, 2009. *Driving and the Built Environment*, Transportation Research Board Special Report 298. http://onlinepubs.trb.org/Onlinepubs/sr/sr298.pdf . Accessed March 2010. (p. 4)

Other Literature Reviewed:

None

3.1.2 Increase Location Efficiency

Range of Effectiveness: 10-65% vehicle miles traveled (VMT) reduction and therefore 10-65% reduction in GHG emissions

Measure Description:

This measure is not intended as a separate strategy but rather a documentation of empirical data to justify the “cap” for all land use/location strategies. The location of the Project relative to the type of urban landscape such as being located in an urban area, infill, or suburban center influences the amount of VMT compared to the statewide average. This is referred to as the location of efficiency since there are synergistic benefits to these urban landscapes.

To receive the maximum reduction for this location efficiency, the project will be located in an urban area/ downtown central business district. Projects located on brownfield sites/infill areas receive a lower, but still significant VMT reduction. Finally, projects in suburban centers also receive a reduction for their efficient location. Reductions are based on the typical VMT of a specific geographic area relative to the average VMT statewide.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

Inputs:

- No inputs are needed. VMT reduction ranges are based on the geographic location of the project within the region.

Mitigation Method:

% VMT reduction =

- Urban: 65% (representing VMT reductions for the average urban area in California versus the statewide average VMT)
- Compact Infill: 30% (representing VMT reductions for the average compact infill area in California versus the statewide average VMT)
- Suburban Center: 10% (representing VMT reductions for the average suburban center in California versus the statewide average VMT)

Assumptions:

Data based upon the following references:

- Holtzclaw, et al. 2002. "Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and Chicago." *Transportation Planning and Technology*, Vol. 25, pp. 1–27.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[35]
CO_2e	10-65% of running
PM	10-65% of running
CO	10-65% of running
NOx	10-65% of running
SO_2	10-65% of running
ROG	6-39% of total

Discussion:

Example:

N/A – no calculations needed

Alternative Literature:

- 13-72% reduction in VMT for infill projects

Preferred Literature:

Holtzclaw, et al., [1] studied relationships between auto ownership and mileage per car and neighborhood urban design and socio-economic characteristics in the Chicago, Los

[35] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Angeles, and San Francisco metro areas. In all three regions, average annual vehicle miles traveled is a function of density, income, household size, and public transit, as well as pedestrian and bicycle orientation (to a lesser extent). The annual VMT for each neighborhood was reviewed to determine empirical VMT reduction “caps” for this report. These location-based caps represent the average and maximum reductions that would likely be expected in urban, infill, suburban center, and suburban locations.

Growing Cooler looked at 10 studies which have considered the effects of regional location on travel and emissions generated by individual developments. The studies differ in methodology and context but they tend to yield the same conclusion: infill locations generate substantially lower VMT per capita than do greenfield locations, ranging from 13 - 72% lower VMT.

Literature References:

[1] Holtzclaw, et al. 2002. “Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and Chicago.” *Transportation Planning and Technology*, Vol. 25, pp. 1–27.

[2] Ewing, et al, 2008. Growing Cooler – The Evidence on Urban Development and Climate Change. Urban Land Institute. (p.88, Figure 4-30)

Other Literature Reviewed:

None

3.1.3 Increase Diversity of Urban and Suburban Developments (Mixed Use)

Range of Effectiveness: 9-30% vehicle miles traveled (VMT) reduction and therefore 9-30% reduction in GHG emissions.

Measure Description:

Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example when residential areas are in the same neighborhood as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs. A description of diverse uses for urban and suburban areas is provided below.

Urban:

The urban project will be predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial/institutional locations (and vice versa). The residential units should be within ¼-mile of parks, schools, or other civic uses. The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.

Suburban:

The suburban project will have at least three of the following on site and/or offsite within ¼-mile: Residential Development, Retail Development, Park, Open Space, or Office. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context (unless the project is a master-planned community)
- Appropriate for mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of each land use type in the project (to calculate land use index)

Mitigation Method:

% VMT Reduction = Land Use * B [not to exceed 30%]

Where

Land Use = Percentage increase in land use index versus single use development

= (land use index – 0.15)/0.15 (see Appendix C for detail)

Land use index = -a / ln(6) (from [2])

$$a = \sum_{i=1}^{6} a_i \times \ln(a_i)$$

a_i = building floor area of land use i / total square feet of area considered

- a_1 = single family residential
- a_2 = multifamily residential
- a_3 = commercial
- a_4 = industrial
- a_5 = institutional
- a_6 = park

if land use is not present and a_i is equal to 0, set a_i equal to 0.01

B = elasticity of VMT with respect to land use index (0.09 from [1])

not to exceed 500% increase

Assumptions:

Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.

[2] Song, Y., and Knaap, G., "Measuring the effects of mixed land uses on housing values." *Regional Science and Urban Economics 34 (2004) 663-680.* (p. 669) http://urban.csuohio.edu/~sugie/papers/RSUE/RSUE2005_Measuring%20the%20effects%20of%20mixed%20land%20use.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[36]
CO_2e	9-30% of running
PM	9-30% of running
CO	9-30% of running
NOx	9-30% of running
SO_2	9-30% of running
ROG	5.4-18% of total

Discussion:

In the above calculation, a land use index of 0.15 is used as a baseline representing a development with a single land use (see Appendix C for calculations).

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of land use index (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing the land use index by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as diversity). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

[36] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Example:

Sample calculations are provided below:

90% single family homes, 10% commercial

- Land use index = -[0.9*ln(0.9)+ 0.1*ln(0.1)+ 4*0.01*ln(0.01)] / ln(6) = 0.3
- Low Range % VMT Reduction = (0.3 – 0.15)/0.15 *0.09 = 9%

1/6 single family, 1/6 multi-family, 1/6 commercial, 1/6 industrial, 1/6 institutional, 1/6 parks

- Land use index = -[6*0.17*ln(0.17)] / ln(6) = 1
- High Range % VMT Reduction (land use index = 1)
- Land use = (1-0.15)/0.15 = 5.6 or 566%. Since this is greater than 500%, set to 500%.
- % VMT Reduction = (5 x 0.09) = 0.45 or 45%. Since this is greater than 30%, set to 30%.

Preferred Literature:

- -0.09 = elasticity of VMT with respect to land use index

The land use (or entropy) index measurement looks at the mix of land uses of a development. An index of 0 indicates a single land use while 1 indicates a full mix of uses. Ewing's [1] synthesis looked at a total of 10 studies, where none controlled for self-selection[37]. The weighted average elasticity of VMT with respect to the land use mix index is -0.09. The methodology for calculating the land use index is described in Song and Knaap [2].

Alternative Literature:

- Vehicle trip reduction = [1 - (ABS(1.5*h-e) / (1.5*h+e)) - 0.25] / 0.25*0.03

Where :
h = study area housing units, and
e = study area employment.

Nelson\Nygaard's report [3] describes a calculation adapted from Criterion and Fehr & Peers [4]. The formula assumes an "ideal" housing balance of 1.5 jobs per household and a baseline diversity of 0.25. The maximum trip reduction with this method is 9%.

[37] Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

Alternative Literature References:

[3] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p.12).
http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf

[4] Criteron Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.

Other Literature Reviewed:

None

3.1.4 Increase Destination Accessibility

Range of Effectiveness: 6.7 – 20% vehicle miles traveled (VMT) reduction and therefore 6.7-20% reduction in GHG emissions.

Measure Description:

The project will be located in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the VMT.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Distance to downtown or major job center

Mitigation Method:

% VMT Reduction = Center Distance * B [not to exceed 30%]

Where

Center Distance = Percentage decrease in distance to downtown or major job center versus typical ITE suburban development = (distance to downtown/job center for typical ITE development – distance to downtown/job center for project) / (distance to downtown/job center for typical ITE development)

Center Distance = 12 - Distance to downtown/job center for project) / 12
See Appendix C for detail

B = Elasticity of VMT with respect to distance to downtown or major job center (0.20 from [1])

Assumptions:
Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." Journal of the American Planning Association, <to be published> (2010). Table 4.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[38]
CO_2e	6.7 – 20% of running
PM	6.7 – 20% of running
CO	6.7 – 20% of running
NOx	6.7 – 20% of running
SO_2	6.7 – 20% of running
ROG	4 – 12% of total

Discussion:
The VMT reductions for this strategy are based on changes in distance to key destinations versus the standard suburban distance in North America. This distance is used as a baseline to mirror the distance to destinations reflected in the land uses for the ITE Trip Generation Manual, which is the baseline method for determining VMT.

The purpose for the 30% cap on % VMT reduction is to limit the influence of any single environmental factor (such as destination accessibility). This emphasizes that community designs that implement multiple land use strategies (such as density,

[38] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

design, diversity, destination, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (8 miles to downtown/job center) =
$$\frac{12-8}{12}\times 0.20 = 6.7\%$$
- High Range % VMT Reduction (0.1 miles to downtown/job center) =
$$\frac{12-0.1}{12}\times 0.20 = 20.0\%$$

Preferred Literature:

- -0.20 = elasticity of VMT with respect to job accessibility by auto
- -0.20 = elasticity of VMT with respect to distance to downtown

The Ewing and Cervero report [1] finds that VMT is strongly related to measures of accessibility to destinations. The weighted average elasticity of VMT with respect to job accessibility by auto is -0.20 (looking at five total studies). The weighted average elasticity of VMT with respect to distance to downtown is -0.22 (looking at four total studies, of which one controls for self selection[39]).

Alternative Literature:

- 10-30% reduction in vehicle trips

The VTPI literature [2] suggests a 10-30% reduction in vehicle trips for “smart growth” development practices that result in more compact, accessible, multi-modal communities where travel distances are shorter, people have more travel options, and it is possible to walk and bicycle more.

Alternative Literature References:

[2] Litman, T., 2009. “Win-Win Emission Reduction Strategies.” Victoria Transport Policy Institute (VTPI). Website: http://www.vtpi.org/wwclimate.pdf. Accessed March 2010. (p. 7, Table 3)

[39] Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

Other Literature Reviewed:

None

3.1.5 Increase Transit Accessibility

Range of Effectiveness: 0.5 – 24.6% VMT reduction and therefore 0.5-24.6% reduction in GHG emissions.[40]

Measure Description:

Locating a project with high density near transit will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:

- A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly ¼ mile from stop to edge of development), and/or
    - A rail station located within a 20 minute walk (or roughly ½ mile from station to edge of development)
- Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations
- Neighborhood designed for walking and cycling

In addition to the features listed above, the following strategies may also be implemented to provide an added benefit beyond what is documented in the literature:

- Mixed use development [LUT-3]
- Traffic calmed streets with good connectivity [SDT-2]
- Parking management strategies such as unbundled parking, maximum parking requirements, market pricing implemented to reduce amount of land dedicated to vehicle parking [see PPT-1 through PPT-7]

Measure Applicability:

- Urban and suburban context
- Appropriate in a rural context if development site is adjacent to a commuter rail station with convenient rail service to a major employment center
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

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[40] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Distance to transit station in project

Mitigation Method:

% VMT = Transit * B [not to exceed 30%]

Where

Transit = Increase in transit mode share = % transit mode share for project - % transit mode share for typical ITE development (1.3% as described in Appendix C)

% transit mode share for project (see Table)

Distance to transit	Transit mode share calculation equation (where x = distance of project to transit)
0 – 0.5 miles	-50*x + 38
0.5 to 3 miles	-4.4*x + 15.2
> 3 miles	no impact
Source: Lund et al, 2004; Fehr & Peers 2010 (see Appendix C for calculation detail)	

B = adjustments from transit ridership increase to VMT (0.67, see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Lund, H. and R. Cervero, and R. Willson (2004). *Travel Characteristics of Transit-Oriented Development in California*. (p. 79, Table 5-25)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[41]
CO_2e	0.5 – 24.6% of running
PM	0.5 – 24.6% of running
CO	0.5 – 24.6% of running
NOx	0.5 – 24.6% of running
SO_2	0.5 – 24.6% of running
ROG	0.3 – 14.8% of total

Discussion:

The purpose for the 30% cap on % VMT reduction is to limit the influence of any single environmental factor (such as transit accessibility). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, transit accessibility, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below for a rail station:

- Low Range % VMT Reduction (3 miles from station) = [(-4.4*3+15.2) – 1.3%] * 0.67 = 0.5%
- High Range % VMT Reduction (0 miles from station) = [(-50*0+38) – 1.3%] * 0.67 = 24.6%

Preferred Literature:

- 13 to 38% transit mode share (residents in TODs with ½ mile of rail station)
- 5 to 13% transit mode share (residents in TODs from ½ mile to 3 miles of rail station)

The *Travel Characteristics* report [1] surveyed TODs and surrounding areas in San Diego, Los Angeles, San Jose, Sacramento, and Bay Area regions. Survey sites are all located in non-central business district locations, are within walking distance of a transit station with rail service headways of 15 minutes or less, and were intentionally developed as TODs.

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[41] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Alternative Literature:

Alternate:

- -0.05 = elasticity of VMT with respect to distance to nearest transit stop

Ewing and Cervero's meta-analysis [2] provides this weighted average elasticity based on six total studies, of which one controls for self-selection. The report does not provide the range of distances where this elasticity is valid.

Alternate:

- 5.9 – 13.3% reduction in VMT

The Bailey, et al. 2008 report [3] predicted a reduction of household daily VMT of 5.8 miles for a location next to a rail station and 2.6 miles for a location next to a bus station. Using the report's estimate of 43.75 daily average miles driven, the estimated reduction in VMT for rail accessibility is 13.3% (5.8/43.75) and for bus accessibility is 5.9% (2.6/43.75).

Alternate:

- 15% reduction in vehicle trips
- 2 to 5 times higher transit mode share

TCRP Report 128 [4] concludes that transit-oriented developments, compared to typical developments represented by the *ITE Trip Generation Manual*, have 47% lower vehicle trip rates and have 2 to 5 times higher transit mode share. *TCRP Report 128* notes that the *ITE Trip Generation Manual* shows 6.67 daily trips per unit while detailed counts of 17 residential TODs resulted in 3.55 trips per unit (a 47% reduction in vehicle trips). This study looks at mid-rise and high-rise apartments at the residential TOD sites. A more conservative comparison would be to look at the *ITE Trip Generation Manual* rates for high-rise apartments, 4.2 trips per unit. This results in a 15% reduction in vehicle trips.

Alternative Literature References:

[2] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.

[3] Bailey, L., Mokhtarian, P.L., & Little, A. (2008). "The Broader Connection between Public Transportation, Energy Conservation and Greenhouse Gas Reduction." ICF International. (Table 4 and 5)

[4] TCRP, 2008. *TCRP Report 128 - Effects of TOD on Housing, Parking, and Travel.* http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_128.pdf (p. 11, 69).

Other Literature Reviewed:

None

3.1.6 Integrate Affordable and Below Market Rate Housing

Range of Effectiveness: 0.04 – 1.20% vehicle miles traveled (VMT) reduction and therefore 0.04-1.20% reduction in GHG emissions.

Measure Description:

Income has a statistically significant effect on the probability that a commuter will take transit or walk to work [4]. BMR housing provides greater opportunity for lower income families to live closer to jobs centers and achieve jobs/housing match near transit. It also addresses to some degree the risk that new transit oriented development would displace lower income families. This strategy potentially encourages building a greater percentage of smaller units that allow a greater number of families to be accommodated on infill and transit-oriented development sites within a given building footprint and height limit. Lower income families tend to have lower levels of auto ownership, allowing buildings to be designed with less parking which, in some cases, represents the difference between a project being economically viable or not.

Residential development projects of five or more dwelling units will provide a deed-restricted low-income housing component on-site.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context unless transit availability and proximity to jobs/services are existing characteristics
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of units in project that are deed-restricted BMR housing

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MP# **LU-2.1.8**

LUT-6

Land Use / Location

Mitigation Method:

% VMT Reduction = 4% * Percentage of units in project that are deed-restricted BMR housing [1]

Assumptions:

Data based upon the following references:

[1] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p.15). http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf
Criteron Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.
Holtzclaw, John; Clear, Robert; Dittmar, Hank; Goldstein, David; and Haas, Peter (2002), "Location Efficiency: Neighborhood and Socio-Economic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles and San Francisco", *Transportation Planning and Technology*, 25 (1): 1-27.

All trips affected are assumed average trip lengths to convert from percentage vehicle trip reduction to VMT reduction (%VT = %VMT)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[42]
CO_2e	0.04 – 1.20% of running
PM	0.04 – 1.20% of running
CO	0.04 – 1.20% of running
NOx	0.04 – 1.20% of running
SO_2	0.04 – 1.20% of running
ROG	0.024 – 0.72% of total

Discussion:

At a low range, 1% BMR housing is assumed. At a medium range, 15% is assumed (based on the requirements of the San Francisco BMR Program[5]). At a high range, the San Francisco program is doubled to reach 30% BMR. Higher percentages of BMR are possible, though not discussed in the literature or calculated.

[42] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction = 4% * 1% = 0.04%
- High Range % VMT Reduction = 4% * 30% = 1.20%

Preferred Literature:

Nelson\Nygaard [1] provides a 4% reduction in vehicle trips for each deed-restricted BMR unit. This is calculated from Holtzclaw [3], with the following assumptions: 12,000 average annual VMT per vehicle, $33,000 median per capita income (2002 figures per CA State Department of Finance), and average income in BMR units 25% below median. With a coefficient of -0.0565 (estimate for VMT/vehicle as a function of $/capita) from [3], the VMT reduction is 0.0565*33,000*0.25/12,000 = 4%.

Alternative Literature:

- 50% greater transit school trips than higher income households

Fehr & Peers [6] developed Direct Ridership Models to predict the Bay Area Rapid Transit (BART) ridership activity. One of the objectives of this assessment was to understand the land use and system access factors that influence commute period versus off-peak travel on BART. The analysis focused on the Metropolitan Transportation Commission 2000 Bay Area Travel Survey [7], using the data on household travel behavior to extrapolate relationships between household characteristics and BART mode choice. The study found that regardless of distance from BART, lower income households generate at least 50% higher BART use for school trips than higher income households. More research would be needed to provide more applicable information regarding other types of transit throughout the state.

Other Literature Reviewed:

[4] Bento, Antonio M., Maureen L. Cropper, Ahmed Mushfiq Mobarak, and Katja Vinha. 2005. “The Effects of Urban Spatial Structure on Travel Demand in the United States.” *The Review of Economics and Statistics* 87,3: 466-478. (cited in Measure Description section)

[5] San Francisco BMR Program: http://www.ci.sf.ca.us/site/moh_page.asp?id=48083 (p.1) (cited in Discussion section).

[6] Fehr & Peers. *Access BART*. 2006.

[7] BATS. 2000. 2000 Bay Area Travel Survey.

3.1.7 Orient Project Toward Non-Auto Corridor

Range of Effectiveness: Grouped strategy. [See LUT-3]

Measure Description:

A project that is designed around an existing or planned transit, bicycle, or pedestrian corridor encourages alternative mode use. For this measure, the project is oriented towards a planned or existing transit, bicycle, or pedestrian corridor. Setback distance is minimized.

The benefits of Orientation toward Non-Auto Corridor have not been sufficiently quantified in the existing literature. This measure is most effective when applied in combination of multiple design elements that encourage this use. There is not sufficient evidence that this measure results in non-negligible trip reduction unless combined with measures described elsewhere in this report, including neighborhood design, density and diversity of development, transit accessibility and pedestrian and bicycle network improvements. Therefore, the trip reduction percentages presented below should be used only as reasonableness checks. They may be used to assess whether, when applied to projects oriented toward non-auto corridors, analysis of all of those other development design factors presented in this report produce trip reductions at least as great as the percentages listed below.

Measure Applicability:

- Urban or suburban context; may be applicable in a master-planned rural community
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.25 – 0.5% reduction in vehicle miles traveled (VMT)

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions attributes 0.5% reduction for a project oriented towards an *existing* corridor. A 0.25% reduction is attributed for a project oriented towards a *planned* corridor. The planned transit, bicycle, or pedestrian corridor must be in a General Plan, Community Plan, or similar plan.

Alternate:

- 0.5% reduction in VMT per 1% improvement in transit frequency
- 0.5% reduction in VMT per 10% increase in transit ridership

The *Center for Clean Air Policy (CCAP) Guidebook* [2] attributes a 0.5 % reduction per 1% improvement in transit frequency. Based on a case study presented in the CCAP report, a 10% increase in transit ridership would result in a 0.5% reduction. (This information is based on a TIAX review for SMAQMD).

The sources cited above reflect existing guidance rather than empirical studies.

Alternative Literature References:

[1] Sacramento Metropolitan Air Quality Management District (SMAQMD). "Recommended Guidance for Land Use Emission Reductions." http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

[2] Center for Clean Air Policy (CCAP). *Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html
TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD

Other Literature Reviewed:

None

3.1.8 Locate Project near Bike Path/Bike Lane

Range of Effectiveness: Grouped strategy. [See LUT-4]

Measure Description:

A Project that is designed around an existing or planned bicycle facility encourages alternative mode use. The project will be located within 1/2 mile of an existing Class I path or Class II bike lane. The project design should include a comparable network that connects the project uses to the existing offsite facilities.

This measure is most effective when applied in combination of multiple design elements that encourage this use. Refer to Increase Destination Accessibility (LUT-4) strategy. The benefits of Proximity to Bike Path/Bike Lane are small as a standalone strategy. The strategy should be grouped with the Increase Destination Accessibility strategy to increase the opportunities for multi-modal travel.

Measure Applicability:

- Urban or suburban context; may be applicable in a rural master planned community
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.625% reduction in vehicle miles traveled (VMT)

As a rule of thumb, the *Center for Clean Air Policy (CCAP) Guidebook* [1] attributes a 1% to 5% reduction associated with comprehensive bicycle programs. Based on the CCAP guidebook, the TIAX report allots 2.5% reduction for all bicycle-related measures and a 1/4 of that for this measure alone. (This information is based on a TIAX review for SMAQMD).

Alternative Literature References:

[1] Center for Clean Air Policy (CCAP). *Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html; TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD.

Other Literature Reviewed:

None

3.1.9 Improve Design of Development

Range of Effectiveness: 3.0 – 21.3% vehicle miles traveled (VMT) reduction and therefore 3.0-21.3% reduction in GHG emissions.

Measure Description:

The project will include improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of intersections per square mile

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Intersections} * B$$

Where

Intersections = Percentage increase in intersections versus a typical ITE suburban development

$$= \frac{\text{Intersections per square mile of project - Intersections per square mile of typical ITE suburban development}}{\text{Intersections per square mile of typical ITE suburban development}}$$

$$= \frac{\text{Intersections per square mile of project} - 36}{36}$$

See Appendix C for detail [not to exceed 500% increase]

B = Elasticity of VMT with respect to percentage of intersections (0.12 from [1])

Assumptions:

Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[43]
CO_2e	3.0 – 21.3% of running
PM	3.0 – 21.3% of running
CO	3.0 – 21.3% of running
NOx	3.0 – 21.3% of running
SO_2	3.0 – 21.3% of running
ROG	1.8 – 12.8% of total

Discussion:

The VMT reductions for this strategy are based on changes in intersection density versus the standard suburban intersection density in North America. This standard density is used as a baseline to mirror the density reflected in the *ITE Trip Generation Manual*, which is the baseline method for determining VMT.

The calculations in the Example section look at a low and high range of intersection densities. The low range is simply a slightly higher density than the typical ITE

[43] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

development. The high range uses an average intersection density of mixed use/transit-oriented development sites (TOD Site surveys in the Bay Area for *Candlestick-Hunters Point Phase II TIA,* Fehr & Peers, 2009).

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of intersections per square mile (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing intersection density by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as design). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (45 intersections per square mile) = (45 – 36) / 36 * 0.12 = 3.0%
- High Range % VMT Reduction (100 intersections per square mile) = (100 – 36) / 36 * 0.12 = 21.3%

Preferred Literature:

- -0.12 = elasticity of VMT with respect to design (intersection/street density)
- -0.12 = elasticity of VMT with respect to design (% of 4-way intersections)

Ewing and Cervero's [1] synthesis showed a strong relationship of VMT to design elements, second only to destination accessibility. The weighted average elasticity of VMT to intersection/street density was -0.12 (looking at six studies). The weighted average elasticity of VMT to percentage of 4-way intersections was -0.12 (looking at four studies, of which one controlled for self-selection[44]).

Alternative Literature:

Alternate:

- 2-19% reduction in VMT

[44] Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

Growing Cooler [2] looked at various reports which studied the effect of site design on VMT, showing a range of 2-19% reduction in VMT. In each case, alternative development plans for the same site were compared to a baseline or trend plan. Results suggest that VMT and CO_2 per capita decline as site density increases as well as the mix of jobs, housing, and retail uses become more balanced. *Growing Cooler* notes that the limited number of studies, differences in assumptions and methodologies, and variability of results make it difficult to generalize.

Alternate:

- 3 – 17% shift in mode share from auto to non-auto

The Marshall and Garrick paper [3] analyzes the differences in mode shares for grid and non-grid ("tree") neighborhoods. For a city with a tributary tree street network, a neighborhood with a tree network had auto mode share of 92% while a neighborhood with a grid network had auto mode share of 89% (3% difference). For a city with a tributary radial street network, a tree neighborhood had auto mode share of 97% while a grid neighborhood had auto mode share of 84% (13% difference). For a city with a grid network, a tree neighborhood had auto mode share of 95% while a grid neighborhood had auto mode share of 78% (17% difference). The research is based on 24 California cities with populations between 30,000 and 100,000.

Alternative Literature References:

[2] Ewing, et al, 2008. Growing Cooler – The Evidence on Urban Development and Climate Change. Urban Land Institute.

[3] Marshall and Garrick, 2009. "The Effect of Street Network Design on Walking and Biking." Submitted to the 89th Annual Meeting of Transportation Research Board, January 2010. (Table 3)

Other Literature Reviewed:

None

3.2 Neighborhood/Site Enhancements

3.2.1 Provide Pedestrian Network Improvements

Range of Effectiveness: 0 - 2% vehicle miles traveled (VMT) reduction and therefore 0 - 2% reduction in GHG emissions.

Measure Description:

Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Reduction benefit only occurs if the project has both pedestrian network improvements on site and connections to the larger off-site network.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The project applicant must provide information regarding pedestrian access and connectivity within the project and to/from off-site destinations.

Mitigation Method:

Estimated VMT Reduction	Extent of Pedestrian Accommodations	Context
2%	Within Project Site and Connecting Off-Site	Urban/Suburban
1%	Within Project Site	Urban/Suburban
< 1%	Within Project Site and Connecting Off-Site	Rural

Assumptions:

Data based upon the following references:

- Center for Clean Air Policy (CCAP) Transportation Emission Guidebook. http://www.ccap.org/safe/guidebook/guide_complete.html (accessed March 2010)
- 1000 Friends of Oregon (1997) "Making the Connections: A Summary of the LUTRAQ Project" (p. 16): http://www.onethousandfriendsoforegon.org/resources/lut_vol7.html

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[45]
CO_2e	0 - 2% of running
PM	0 - 2% of running
CO	0 - 2% of running
NOx	0 - 2% of running
SO_2	0 - 2% of running
ROG	0 – 1.2% of total

Discussion:

As detailed in the preferred literature section below, the lower range of 1 – 2% VMT reduction was pulled from the literature to provide a conservative estimate of reduction potential. The literature does not speak directly to a rural context, but an assumption was made that the benefits will likely be lower than a suburban/urban context.

Example:

N/A – calculations are not needed.

Preferred Literature:

[45] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- 1 - 2% reduction in VMT

The Center for Clean Air Policy (CCAP) attributes a 1% reduction in VMT from pedestrian-oriented design assuming this creates a 5% decrease in automobile mode share (e.g. auto split shifts from 95% to 90%). This mode split is based on the Portland Regional Land Use Transportation and Air Quality (LUTRAQ) project. The LUTRAQ analysis also provides the high end of 10% reduction in VMT. This 10% assumes the following features:

– Compact, mixed-use communities
– Interconnected street network
– Narrower roadways and shorter block lengths
– Sidewalks
– Accessibility to transit and transit shelters
– Traffic calming measures and street trees
– Parks and public spaces

Other strategies (development density, diversity, design, transit accessibility, traffic calming) are intended to account for the effects of many of the measures in the above list. Therefore, the assumed effectiveness of the Pedestrian Network measure should utilize the lower end of the 1 - 10% reduction range. If the pedestrian improvements are being combined with a significant number of the companion strategies, trip reductions for those strategies should be applied as well, based on the values given specifically for those strategies in other sections of this report. Based upon these findings, and drawing upon recommendations presented in the alternate literature below, the recommended VMT reduction attributable to pedestrian network improvements, above and beyond the benefits of other measures in the above bullet list, should be 1% for comprehensive pedestrian accommodations within the development plan or project itself, or 2% for comprehensive internal accommodations and external accommodations connecting to off-site destinations.

Alternative Literature:

Alternate:

- Walking is three times more common with enhanced pedestrian infrastructure
- 58% increase in non-auto mode share for work trips

The Nelson\Nygaard [1] report for the City of Santa Monica Land Use and Circulation Element EIR summarized studies looking at pedestrian environments. These studies have found a direct connection between non-auto forms of travel and a high quality pedestrian environment. Walking is three times more common with communities that have pedestrian friendly streets compared to less pedestrian friendly communities. Non-auto mode share for work trips is 49% in a pedestrian friendly community, compared to 31% in an auto-oriented community. Non-auto mode share for non-work trips is 15%, compared to 4% in an auto-oriented community. However, these effects also depend upon other aspects of the pedestrian friendliness being present, which are accounted for separately in this report through land use strategy mitigation measures such as density and urban design.

Alternate:

- 0.5% - 2.0% reduction in VMT

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions [2] attributes 1% reduction for a project connecting to *existing* external streets and pedestrian facilities. A 0.5% reduction is attributed to connecting to *planned* external streets and pedestrian facilities (which must be included in a pedestrian master plan or equivalent). Minimizing pedestrian barriers attribute an additional 1% reduction in VMT. These recommendations are generally in line with the recommended discounts derived from the preferred literature above.

Preferred and Alternative Literature Notes:

[1] Nelson\Nygaard, 2010. City of Santa Monica Land Use and Circulation Element EIR Report, Appendix – Santa Monica Luce Trip Reduction Impacts Analysis (p.401). http://www.shapethefuture2025.net/

Nelson\Nygaard looked at the following studies: Anne Vernez Moudon, Paul Hess, Mary Catherine Snyder and Kiril Stanilov (2003), Effects of Site Design on Pedestrian Travel in Mixed Use, Medium-Density Environments, http://www.wsdot.wa.gov/research/reports/fullreports/432.1.pdf; Robert Cervero and Carolyn Radisch (1995), Travel Choices in Pedestrian Versus Automobile Oriented Neighborhoods, http://www.uctc.net/papers/281.pdf;

[2] Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions. (p. 11) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

Other Literature Reviewed:

None

3.2.2 Provide Traffic Calming Measures

Range of Effectiveness: 0.25 – 1.00% vehicle miles traveled (VMT) reduction and therefore 0.25 – 1.00% reduction in GHG emissions.

Measure Description:

Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT. Project design will include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of streets within project with traffic calming improvements
- Percentage of intersections within project with traffic calming improvements

Mitigation Method:

		% of streets with improvements			
		25%	50%	75%	100%
		% VMT Reduction			
% of intersections with improvements	25%	**0.25%**	**0.25%**	**0.5%**	**0.5%**
	50%	**0.25%**	**0.5%**	**0.5%**	**0.75%**
	75%	**0.5%**	**0.5%**	**0.75%**	**0.75%**
	100%	**0.5%**	**0.75%**	**0.75%**	**1%**

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.*(p. B-25) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

[2] Sacramento Metropolitan Air Quality Management District (SMAQMD) *Recommended Guidance for Land Use Emission Reductions.* (p.13) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[46]
CO_2e	0.25 – 1.00% of running
PM	0.25 – 1.00% of running
CO	0.25 – 1.00% of running
NOx	0.25 – 1.00% of running
SO_2	0.25 – 1.00% of running
ROG	0.15 – 0.6% of total

Discussion:

The table above allows the Project Applicant to choose a range of street and intersection improvements to determine an appropriate VMT reduction estimate. The Applicant will look at the rows on the left and choose the percent of intersections within

[46] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

the project which will have traffic calming improvements. Then, the Applicant will look at the columns along the top and choose the percent of streets within the project which will have traffic calming improvements. The intersection cell of the row and column selected in the matrix is the VMT reduction estimate.

Though the literature provides some difference between a suburban and urban context, the difference is small and thus a conservative estimate was used to be applied to all contexts. Rural context is not specifically discussed in the literature but is assumed to have similar impacts.

For a low range, a project is assumed to have 25% of its streets with traffic calming improvements and 25% of its intersections with traffic calming improvements. For a high range, 100% of streets and intersections are assumed to have traffic calming improvements

Example:

N/A - No calculations needed.

Preferred Literature:

- -0.03 = elasticity of VMT with respect to a pedestrian environment factor (PEF)
- 1.5% - 2.0% reduction in suburban VMT
- 0.5% - 0.6% reduction in urban VMT

Moving Cooler [1] looked at Ewing's synthesis elasticity from the Smart Growth INDEX model (-0.03) to estimate VMT reduction for a suburban and urban location. The estimated reduction in VMT came from looking at the difference between the VMT results for Moving Cooler's strategy of pedestrian accessibility only compared to an aggressive strategy of pedestrian accessibility and traffic calming.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) *Recommended Guidance for Land Use Emission Reductions* [2] attributes 0.25 – 1% of VMT reductions to traffic calming measures. The table above illustrates the range of VMT reductions based on the percent of streets and intersections with traffic calming measures implemented. This range of reductions is recommended because it is generally consistent with the effectiveness ranges presented in the other preferred literature for situations in which the effects of traffic calming are distinguished from the other measures often found to co-exist with calming, and because it provides graduated effectiveness estimates depending on the degree to which calming is implemented.

Alternative Literature:

None

Alternative Literature References:

None

Other Literature Reviewed:

None

3.2.3 Implement a Neighborhood Electric Vehicle (NEV) Network

Range of Effectiveness: 0.5-12.7% vehicle miles traveled (VMT) reduction since Neighborhood Electric Vehicles (NEVs) would result in a mode shift and therefore reduce the traditional vehicle VMT and GHG emissions[47]. Range depends on the available NEV network and support facilities, NEV ownership levels, and the degree of shift from traditional

Measure Description:

The project will create local "light" vehicle networks, such as NEV networks. NEVs are classified in the California Vehicle Code as a “low speed vehicle”. They are electric powered and must conform to applicable federal automobile safety standards. NEVs offer an alternative to traditional vehicle trips and can legally be used on roadways with speed limits of 35 MPH or less (unless specifically restricted). They are ideal for short trips up to 30 miles in length. To create an NEV network, the project will implement the necessary infrastructure, including NEV parking, charging facilities, striping, signage, and educational tools. NEV routes will be implemented throughout the project and will double as bicycle routes.

Measure Applicability:

- Urban, suburban, and rural context
- Small citywide or large multi-use developments
- Appropriate for mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

[47] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

Inputs:

The following information needs to be provided by the Project Applicant:

- low vs. high penetration

Mitigation Method:

% VMT reduction = Pop * Number * NEV

Where

Penetration	=	Number of NEVs per household (0.04 to 1.0 from [1])
NEV	=	VMT reduction rate per household (12.7% from [2])

Assumptions:

Data based upon the following reference:

[1] City of Lincoln, MHM Engineers & Surveyors, *Neighborhood Electric Vehicle Transportation Program Final Report*, Issued 04/05/05
[2] City of Lincoln, *A Report to the California Legislature as required by Assembly Bill 2353, Neighborhood Electric Vehicle Transportation Plan Evaluation,* January 1, 2008.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[48]
CO_2e	0.5 – 12.7% of running
PM	0.5 – 12.7% of running
CO	0.5 – 12.7%of running
NOx	0.5 – 12.7% of running
SO_2	0.5 – 12.7% of running
ROG	0.3 – 7.6% of total

Discussion:

The estimated number of NEVs per household may vary based on what the project estimates as a penetration rate for implementing an NEV network. Adjust according to project characteristics. The estimated reduction in VMT is for non-NEV miles traveled. The calculations below assume that NEV miles traveled replace regular vehicle travel.

▪ [48] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

This may not be the case and the project should consider applying an appropriate discount rate on what percentage of VMT is actually replaced by NEV travel..

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (low penetration) = 0.04 * 12.7% = 0.5%
- High Range % VMT Reduction (high penetration) = 1.0 * 12.7% = 12.7%

Preferred Literature:

- 12.7% reduction in VMT per household
- Penetration rates: 0.04 to 1 NEV / household

The NEV Transportation Program plans to implement the following strategies: charging facilities, striping, signage, parking, education on NEV safety, and NEV/bicycle lines throughout the community. . One estimate of current NEV ownership reported roughly 600 NEVs in the city of Lincoln in 2008[49]. With current estimated households of ~13,500[50], a low estimate of NEV penetration would be 0.04 NEV per household. A high NEV penetration can be estimated at 1 NEV per household. The 2007 survey of NEV users in Lincoln revealed an average use of about 3,500 miles per year [2]. With an estimated annual 27,500 VMT/household[51], this results in a 12.7% reduction in VMT per household.

Alternative Literature:

- 0.5% VMT reduction for neighborhoods with internal NEV connections
- 1% VMT reduction for internal and external connections to surrounding neighborhoods
- 1.5% VMT reduction for internal NEV connections and connections to other existing NEV networks serving all other types of uses.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions notes that current studies show NEVs do not replace gas-fueled vehicles as the primary vehicle. For the purpose

[49] Lincoln, California: A NEV-Friendly Community, Bennett Engineering, the City of Lincoln, and LincolnNEV, August 28, 2008 - http://electrickmotorsports.com/news.php
[50] SACOG Housing Estimates Statistics (http://www.sacog.org/about/advocacy/pdf/fact-sheets/HousingStats.pdf). Linearly interpolated 2008 household numbers between 2005 and 2035 projections.
[51] SACOG SACSim forecasts for VMT per household at 75.4 daily VMT per household * 365 days = 27521 annual VMT per household

of providing incentives for developers to promote NEV use, a project will receive the above listed VMT reductions for implementation.

Alternative Literature Reference:

[1] Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions. (p. 21) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

Other Literature Reviewed:

None

3.2.4 Create Urban Non-Motorized Zones

Range of Effectiveness: Grouped strategy. [See SDT-1]

Measure Description:

The project, if located in a central business district (CBD) or major activity center, will convert a percentage of its roadway miles to transit malls, linear parks, or other non-motorized zones. These features encourage non-motorized travel and thus a reduction in VMT.

This measure is most effective when applied with multiple design elements that encourage this use. Refer to Pedestrian Network Improvements (SDT-1) strategy for ranges of effectiveness in this category. The benefits of Urban Non-Motorized Zones alone have not been shown to be significant.

Measure Applicability:

- Urban context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.01 – 0.2% annual Vehicle Miles Traveled (VMT) reduction

Moving Cooler [1] assumes 2 – 6% of U.S. CBDs/activity centers will convert to non-motorized zones for the purpose of calculating the potential impact. At full implementation, this would result in a range of CBD/activity center annual VMT reduction of 0.07-0.2% and metro VMT reduction of 0.01-0.03%.

Alternate:

Pucher, Dill, and Handy (2010) [2] note several international case studies of urban non-motorized zones. In Bologna, Italy, vehicle traffic declined by 50%, and 8% of those arriving in the CBD came by bicycle after the conversion. In Lubeck, Germany, of those who used to drive, 12% switched to transit, walking, or bicycling with the conversion. In Aachen, Germany, car travel declined from 44% to 36%, but bicycling stayed constant at 3%

Notes:

No literature was identified that quantifies the benefits of this strategy at a smaller scale.

Alternative Literature References:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

[2] Pucher J., Dill, J., and Handy, S. *Infrastructure, Programs and Policies to Increase Bicycling: An International Review.* February 2010. *Preventive Medicine 50 (2010) S106–S125.* http://policy.rutgers.edu/faculty/pucher/Pucher_Dill_Handy10.pdf

Other Literature Reviewed:

None

3.2.5 Incorporate Bike Lane Street Design (on-site)

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

The project will incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments. These on-street bike accommodations will be created to provide a continuous network of routes, facilitated with markings and signage. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people. In addition, improved bicycle facilities can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership. Bicycle access can also reduce parking pressure on heavily-used and/or heavily-subsidized feeder bus lines and auto-oriented park-and-ride facilities.

Refer to Improve Design of Development (LUT-9) strategy for overall effectiveness levels. The benefits of Bike Lane Street Design are small and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and enhance multi-modal environments.

Measure Applicability:

- Urban and suburban context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 1% increase in share of workers commuting by bicycle (for each additional mile of bike lanes per square mile)

Dill and Carr (2003) [1] showed that each additional mile of Type 2 bike lanes per square mile is associated with a 1% increase in the share of workers commuting by bicycle. Note that increasing by 1 mile is significant compared to the current average of 0.34 miles per square mile. Also, an increase in 1% in share of bicycle commuters would double the number of bicycle commuters in many areas with low existing bicycle mode share.

Alternate:

- 0.05 – 0.14% annual greenhouse gas (GHG) reduction
- 258 – 830% increase in bicycle community

Moving Cooler [2], based off of a national baseline, estimates 0.05% annual reduction in GHG emissions and 258% increase in bicycle commuting assuming 2 miles of bicycle lanes per square mile in areas with density > 2,000 persons per square mile. For 4 miles of bicycle lanes, estimates 0.09% GHG reductions and 449% increase in bicycle commuting. For 8 miles of bicycle lanes, estimates 0.14% GHG reductions and 830% increase in bicycle commuting. Companion strategies assumed include bicycle parking at commercial destinations, busses fitted with bicycle carriers, bike accessible rapid transit lines, education, bicycle stations, end-trip facilities, and signage.

Alternate:

- 0.075% increase in bicycle commuting with each mile of bikeway per 100,000 residents

A before-and-after study by Nelson and Allen (1997) [3] of bicycle facility implementation found that each mile of bikeway per 100,000 residents increases bicycle commuting 0.075%, all else being equal.

Alternative Literature References:

[1] Dill, Jennifer and Theresa Carr (2003). "Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Tem, Commuters Will Use Them – Another Look." *TRB 2003 Annual Meeting CD-ROM*.

[2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

[3] Nelson, Arthur and David Allen (1997). "If You Build Them, Commuters Will Use Them; Cross-Sectional Analysis of Commuters and Bicycle Facilities." *Transportation Research Record 1578.*

Other Literature Reviewed:

None

3.2.6 Provide Bike Parking in Non-Residential Projects

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

A non-residential project will provide short-term and long-term bicycle parking facilities to meet peak season maximum demand. Refer to Improve Design of Development (LUT-9) strategy for overall effectiveness ranges. Bike Parking in Non-Residential Projects has minimal impacts as a standalone strategy and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

Measure Applicability:

- Urban, suburban, and rural contexts
- Appropriate for retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.625% reduction in Vehicle Miles Traveled (VMT)

As a rule of thumb, the Center for Clean Air Policy (CCAP) guidebook [1] attributes a 1% to 5% reduction in VMT to the use of bicycles, which reflects the assumption that their use is typically for shorter trips. Based on the *CCAP Guidebook*, the TIAX report allots 2.5% reduction for all bicycle-related measures and a quarter of that for this bicycle parking alone. (This information is based on a TIAX review for Sacramento Metropolitan Air Quality Management District (SMAQMD).)

Alternate:

- 0.05 – 0.14% annual greenhouse gas (GHG) reduction
- 258 – 830% increase in bicycle community

Moving Cooler [2], based off of a national baseline, estimates 0.05% annual reduction in GHG emissions and 258% increase in bicycle commuting assuming 2 miles of bicycle lanes per square mile in areas with density > 2,000 persons per square mile. For 4 miles of bicycle lanes, *Moving Cooler* estimates 0.09% GHG reductions and 449% increase in bicycle commuting. For 8 miles of bicycle lanes, *Moving Cooler* estimates 0.14% GHG reductions and 830% increase in bicycle commuting. Companion strategies assumed include bicycle parking at commercial destinations, busses fitted with bicycle carriers, bike accessible rapid transit lines, education, bicycle stations, end-trip facilities, and signage.

Alternative Literature References:

[1]*Center For Clean Air Policy (CCAP) Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html; Based on results of 2005 literature search conducted by TIAX on behalf of SMAQMD.

[2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

3.2.7 Provide Bike Parking with Multi-Unit Residential Projects

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

Long-term bicycle parking will be provided at apartment complexes or condominiums without garages. Refer to Improve Design of Development (LUT-9) strategy for effectiveness ranges in this category. The benefits of Bike Parking with Multi-Unit Residential Projects have no quantified impacts and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

Measure Applicability:

- Urban, suburban, or rural contexts
- Appropriate for residential projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of including bicycle parking at multi-unit residential sites.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.2.8 Provide Electric Vehicle Parking

Range of Effectiveness: Grouped strategy. [See SDT-3]

Measure Description:

This project will implement accessible electric vehicle parking. The project will provide conductive/inductive electric vehicle charging stations and signage prohibiting parking for non-electric vehicles. Refer to Neighborhood Electric Vehicle Network (SDT-3) strategy for effectiveness ranges in this category. The benefits of Electric Vehicle Parking may be quantified when grouped with the use of electric vehicles and or Neighborhood Electric Vehicle Network.

Measure Applicability:

- Urban or suburban contexts
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of implementing electric vehicle parking.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.2.9 Dedicate Land for Bike Trails

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

Larger projects may be required to provide for, contribute to, or dedicate land for the provision of off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with an adopted citywide or countywide bikeway plan.

Refer to Improve Design of Development (LUT-9) strategy for ranges of effectiveness in this category. The benefits of Land Dedication for Bike Trails have not been quantified and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and improve connectivity to off-site bicycle networks.

Measure Applicability:

- Urban, suburban, or rural contexts
- Appropriate for large residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of implementing land dedication for bike trails.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.3 Parking Policy/Pricing

3.3.1 Limit Parking Supply

Range of Effectiveness: 5 – 12.5% vehicle miles travelled (VMT) reduction and therefore 5 – 12.5% reduction in GHG emissions.

Measure Description:

The project will change parking requirements and types of supply within the project site to encourage "smart growth" development and alternative transportation choices by project residents and employees. This will be accomplished in a multi-faceted strategy:

- Elimination (or reduction) of minimum parking requirements[52]
- Creation of maximum parking requirements
- Provision of shared parking

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Reduction can be counted only if spillover parking is controlled (via residential permits and on-street market rate parking) [See PPT-5 and PPT-7]

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- ITE parking generation rate for project site
- Actual parking provision rate for project site

[52] This may require changes to local ordinances and regulations.

Mitigation Method:

$$\% \text{ VMT Reduction} = \frac{\text{Actual parking provision} - \text{ITE parking generation rate}}{\text{ITE parking generation rate}} \times 0.5$$

Assumptions:

Data based upon the following references:

[1] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p. 16) http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf

All trips affected are assumed average trip lengths to convert from percentage vehicle trip reduction to VMT reduction (% vehicle trips = %VMT).

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[53]
CO_2e	5 – 12.5% of running
PM	5 – 12.5% of running
CO	5 – 12.5% of running
NOx	5 – 12.5% of running
SO_2	5 – 12.5% of running
ROG	3 – 7.5% of total

Discussion:

The literature suggests that a 50% reduction in conventional parking provision rates (per ITE rates) should serve as a typical ceiling for the reduction calculation. The upper range of VMT reduction will vary based on the size of the development (total number of spaces provided). ITE rates are used as baseline conditions to measure the effectiveness of this strategy.

Though not specifically documented in the literature, the degree of effectiveness of this measure will vary based on the level of urbanization of the project and surrounding areas, level of existing transit service, level of existing pedestrian and bicycle networks and other factors which would complement the shift away from single-occupant vehicle travel.

[53] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis.

Example:

If the ITE parking generation rate for the project is 100 spaces, for a low range a 5% reduction in spaces is assumed. For a high range a 25% reduction in spaces is assumed.

- Low range % VMT Reduction = [(100 - 95)/100] * 0.5 = 2.5%
- High range % VMT Reduction = [(100 - 75)/100] * 0.5 = 12.5%

Preferred Literature:

To develop this model, Nelson\Nygaard [1] used the Institute of Transportation Engineers' *Parking Generation* handbook as the baseline figure for parking supply. This is assumed to be unconstrained demand. Trip reduction should only be credited if measures are implemented to control for spillover parking in and around the project, such as residential parking permits, metered parking, or time-limited parking.

Alternative Literature:

- 100% increase in transit ridership
- 100% increase in transit mode share

According to *TCRP Report 95, Chapter 18* [2], the central business district of Portland, Oregon implemented a maximum parking ratio of 1 space per 1,000 square feet of new buildings and implemented surface lot restrictions which limited conditions where buildings could be razed for parking. A "before and after" study was not conducted specifically for the maximum parking requirements and data comes from various surveys and published reports. Based on rough estimates the approximate parking ratio of 3.4 per 1,000 square feet in 1973 (for entire downtown) had been reduce to 1.5 by 1990. Transit mode share increased from 20% to 40%. The increases in transit ridership and mode share are not solely from maximum parking requirements. Other companion strategies, such as market parking pricing and high fuel costs, were in place.

Alternative Literature Sources:

[1] TCRP Report 95, Chapter 18: Parking Management and Supply: Traveler Response to *Transportation System Changes*. (p. 18-6) http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c18.pdf

Other Literature Reviewed:

None

3.3.2 Unbundle Parking Costs from Property Cost

Range of Effectiveness: 2.6 – 13% vehicles miles traveled (VMT) reduction and therefore 2.6 – 13% reduction in GHG emissions.

Measure Description:

This project will unbundle parking costs from property costs. Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost. This removes the burden from those who do not wish to utilize a parking space. Parking will be priced separately from home rents/purchase prices or office leases. An assumption is made that the parking costs are passed through to the vehicle owners/drivers utilizing the parking spaces.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Complementary strategy includes Workplace Parking Pricing. Though not required, implementing workplace parking pricing ensures the market signal from unbundling parking is transferred to the employee.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Monthly parking cost for project site

Mitigation Method:

% Reduction in VMT = Change in vehicle cost * elasticity * A

Where:

- -0.4 = elasticity of vehicle ownership with respect to total vehicle costs (lower end per VTPI)
- Change in vehicle cost = monthly parking cost * (12 / $4,000), with $4,000 representing the annual vehicle cost per VTPI [1]
- A: 85% = adjustment from vehicle ownership to VMT (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Victoria Transport Policy Institute, *Parking Requirement Impacts on Housing Affordability;* http://www.vtpi.org/park-hou.pdf; January 2009; accessed March 2010. (Annual/monthly parking fees estimated by VTPI in 2009) (p. 8, Table 3)

- For the elasticity of vehicle ownership, VTPI cites Phil Goodwin, Joyce Dargay and Mark Hanly (2003), *Elasticities Of Road Traffic And Fuel Consumption With Respect To Price And Income: A Review*, ESRC Transport Studies Unit, University College London (www.transport.ucl.ac.uk), commissioned by the UK Department of the Environment, Transport and the Regions (now UK Department for Transport); J.O. Jansson (1989), "Car Demand Modeling and Forecasting," *Journal of Transport Economics and Policy*, May 1989, pp. 125-129; Stephen Glaister and Dan Graham (2000), *The Effect of Fuel Prices on Motorists*, AA Motoring Policy Unit (www.theaa.com) and the UK Petroleum Industry Association (http://195.167.162.28/policyviews/pdf/effect_fuel_prices.pdf); and Thomas F. Golob (1989), "The Casual Influences of Income and Car Ownership on Trip Generation by Mode", *Journal of Transportation Economics and Policy*, May 1989, pp. 141-162

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[54]
CO_2e	2.6 – 13% of running
PM	2.6 – 13% of running
CO	2.6 – 13% of running

[54] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

NOx	2.6 – 13% of running
SO_2	2.6 – 13% of running
ROG	1.6 – 7.8% of total

Discussion:

As discussed in the preferred literature section, monthly parking costs typically range from $25 to $125. The lower end of the elasticity range provided by VTPI is used here to be conservative.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction = $25* 12 / $4000 * 0.4 * 85% = 2.6%
- High Range % VMT Reduction = $125* 12 / $4000 * 0.4 * 85%= 12.8%

Preferred Literature:

- -0.4 to -1.0 = elasticity of vehicle ownership with respect to total vehicle costs

The above elasticity comes from a synthesis of literature. As noted in the VTPI report [1], a 10% increase in total vehicle costs (operating costs, maintenance, fuel, parking, etc.) reduces vehicle ownership between 4% and 10%. The report, estimating $4,000 in annual costs per vehicle, calculated vehicle ownership reductions from residential parking pricing.

Vehicle Ownership Reductions from Residential Parking Pricing

Annual (Monthly) Parking Fee	-0.4 Elasticity	-0.7 Elasticity	-1.0 Elasticity
$300 ($25)	4%	6%	8%
$600 ($50)	8%	11%	15%
$900 ($75)	11%	17%	23%
$1,200 ($100)	15%	23%	30%
$1,500 ($125)	19%	28%	38%

Alternative Literature:

None

Alternative Literature Notes:

None

Other Literature Reviewed:

None

3.3.3 Implement Market Price Public Parking (On-Street)

Range of Effectiveness: 2.8 – 5.5% vehicle miles traveled (VMT) reduction and therefore 2.8 – 5.5% reduction in GHG emissions.

Measure Description:

This project and city in which it is located will implement a pricing strategy for parking by pricing all central business district/employment center/retail center on-street parking. It will be priced to encourage "park once" behavior. The benefit of this measure above that of paid parking at the project only is that it deters parking spillover from project-supplied parking to other public parking nearby, which undermine the vehicle miles traveled (VMT) benefits of project pricing. It may also generate sufficient area-wide mode shifts to justify increased transit service to the area.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for retail, office, and mixed-use projects
- Applicable in a specific or general plan context only
- Reduction can be counted only if spillover parking is controlled (via residential permits)
- Study conducted in a downtown area, and thus should be applied carefully if project is not in a central business/activity center

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Location of project site: low density suburb, suburban center, or urban location

- Percent increase in on-street parking prices (minimum 25% needed)

Mitigation Method:

% VMT Reduction = Park$ * B

Where:

Park$ = Percent increase in on-street parking prices (minimum of 25% increase [1])

B = Elasticity of VMT with respect to parking price (0.11, from [2])

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-10)
Moving Cooler's parking pricing analysis cited Victoria Transport Policy Institute, *How Prices and Other Factors Affect Travel Behavior* (http://www.vtpi.org/tdm/tdm11.htm#_Toc161022578). The VTPI paper summarized the elasticities found in the Hensher and King paper. David A. Hensher and Jenny King (2001), "Parking Demand and Responsiveness to Supply, Price and Location in Sydney Central Business District," *Transportation Research A*, Vol. 35, No. 3 (www.elsevier.com/locate/tra), March 2001, pp. 177-196.

[2] J. Peter Clinch and J. Andrew Kelly (2003), *Temporal Variance Of Revealed Preference On-Street Parking Price Elasticity*, Department of Environmental Studies, University College Dublin (www.environmentaleconomics.net). (p. 2) http://www.ucd.ie/gpep/research/workingpapers/2004/04-02.pdf As referenced in VTPI: http://www.vtpi.org/tdm/tdm11.htm#_Toc161022578

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[55]
CO_2e	2.8 – 5.5% of running

[55] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

PM	2.8 – 5.5% of running
CO	2.8 – 5.5% of running
NOx	2.8 – 5.5% of running
SO_2	2.8 – 5.5% of running
ROG	1.7 – 3.3% of total

Discussion:

The range of parking price increases should be a minimum of 25% and a maximum of 50%. The minimum is based on Moving Cooler [1] discussions which state that a less than 25% increase would not be a sufficient amount to reduce VMT. The case study [2] looked at a 50% price increase, and thus no conclusions can be made on the elasticities above a 50% increase. This strategy may certainly be implemented at a higher price increase, but VMT reductions should be capped at results from a 50% increase to be conservative.

Example:

Assuming a baseline on-street parking price of $1, sample calculations are provided below:

- Low Range % VMT Reduction (25% increase) = ($1.25 - $1)/$1 * 0.11 = 2.8%
- High Range % VMT Reduction (50% increase) = ($1.50 - $1)/$1 * 0.11 = 5.5%

Preferred Literature:

- -0.11 parking demand elasticity with respect to parking prices

The Clinch & Kelly study [2] of parking meters looked at the impacts of a 50% price increase in the cost of on-street parking. The case study location was a central on-street parking area with a 3-hour time limit and a mix of business and non-business uses. The study concluded the parking increases resulted in an estimated average price elasticity of demand of -0.11, while factoring in parking duration results in an elasticity of -0.2 (cost increases also affect the amount of time cars are parked). Though this study is international (Dublin, Ireland), it represents a solid study of parking meter price increases and provides a conservative estimate of elasticity compared to the alternate literature.

Alternative Literature:

Alternate:

- -0.19 shopper parking elasticity with respect to parking price
- -0.48 commuter parking elasticity with respect to parking price

The *TCRP 95 Chapter 13* [3] report looked at a case study of the city of San Francisco implementing a parking tax on all public and private off-street parking (in 1970). Based on the number of cars parked, the report estimated parking price elasticities of -0.19 to -0.48, an average over a three year period.

Alternate:

- -0.15 VMT elasticity with respect to parking prices (for low density regions)
- -0.47 VMT elasticity with respect to parking prices (for high density regions)

The Moving Cooler analysis assumes a 25 percent increase in on-street parking fees is a starting point sufficient to reduce VMT. Using the elasticities stated above, Moving Cooler estimates an annual percent VMT reduction from 0.42% - 1.14% for a range of regions from a large low density region to a small high density region. The calculations assume that pricing occurs at the urban central business district/employment cent/retail center, one-fourth of all person trips are commute based trips, and approximately 15% of commute trips are to the CBD or regional activity centers.

Alternative Literature References:

[3] TCRP Report 95. *Chapter 13: Parking Pricing and Fees - Traveler Response to Transportation System Changes.* http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c13.pdf. (p.13-42)

Other Literature Reviewed:

None

3.3.4 Require Residential Area Parking Permits

Range of Effectiveness: Grouped strategy. (See PPT-1, PPT-2, and PPT-3)

Measure Description:

This project will require the purchase of residential parking permits (RPPs) for long-term use of on-street parking in residential areas. Permits reduce the impact of spillover parking in residential areas adjacent to commercial areas, transit stations, or other locations where parking may be limited and/or priced. Refer to Parking Supply Limitations (PPT-1), Unbundle Parking Costs from Property Cost (PPT-2), or Market Rate Parking Pricing (PPT-3) strategies for the ranges of effectiveness in these categories. The benefits of Residential Area Parking Permits strategy should be combined with any or all of the above mentioned strategies, as providing RPPs are a key complementary strategy to other parking strategies.

Measure Applicability:

- Urban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

- -0.45 = elasticity of vehicle miles traveled (VMT) with respect to price
- 0.08% greenhouse gas (GHG) reduction
- 0.09-0.36% VMT reduction

Moving Cooler [1] suggested residential parking permits of $100-$200 annually. This mitigation would impact home-based trips, which are reported to represent approximately 60% of all urban trips. The range of VMT reductions can be attributed to the type of urban area. VMT reductions for $100 annual permits are 0.09% for large, high-density; 0.12% for large, low-density; 0.12% for medium, high-density; 0.18% for medium, low-density; 0.18% for small, high-density; and 0.12% for small, low-density. VMT reductions for $200 annual permits are 0.18% for large, high-density; 0.24% for large, low-density; 0.24% for medium, high-density; 0.36% for medium, low-density; 0.36% for small, high-density; and 0.24% for small, low-density.

Alternative Literature References:

[1] Cambridge Systematics. Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions. Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

3.4 Commute Trip Reduction Programs

3.4.1 Implement Commute Trip Reduction Program - Voluntary

Commute Trip Reduction Program – Voluntary, is a multi-strategy program that encompasses a combination of individual measures described in sections 3.4.3 through 3.4.9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reductions that should be permitted for a combined set of strategies within a voluntary program.

Range of Effectiveness: 1.0 – 6.2% commute vehicle miles traveled (VMT) Reduction and therefore 1.0 – 6.2% reduction in commute trip GHG emissions.

Measure Description:

The project will implement a voluntary Commute Trip Reduction (CTR) program with employers to discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The main difference between a voluntary and a required program is:

- Monitoring and reporting is not required
- No established performance standards (i.e. no trip reduction requirements)

The CTR program will provide employees with assistance in using alternative modes of travel, and provide both “carrots” and “sticks” to encourage employees. The CTR program should include all of the following to apply the effectiveness reported by the literature:

- Carpooling encouragement
- Ride-matching assistance
- Preferential carpool parking
- Flexible work schedules for carpools
- Half time transportation coordinator
- Vanpool assistance
- Bicycle end-trip facilities (parking, showers and lockers)

Other strategies may also be included as part of a voluntary CTR program, though they are not included in the reductions estimation and thus are not incorporated in the estimated VMT reductions. These include: new employee orientation of trip reduction and alternative mode options, event promotions and publications, flexible work schedule for all employees, transit subsidies, parking cash-out or priced parking, shuttles, emergency ride home, and improved on-site amenities.

TRT-1 Commute Trip Reduction

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context, unless large employers exist, and suite of strategies implemented are relevant in rural settings
- Appropriate for retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % reduction in commute VMT (from [1])
B = % employees eligible

Detail:

- A: 5.2% (low density suburb), 5.4% (suburban center), 6.2% (urban) annual reduction in commute VMT (from [1])

Assumptions:

Data based upon the following references:

- Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[56]
CO_2e	1.0 – 6.2% of running
PM	1.0 – 6.2% of running
CO	1.0 – 6.2% of running
NOx	1.0 – 6.2% of running
SO_2	1.0 – 6.2% of running
ROG	0.6 –3.7% of total

Discussion:

This set of strategies typically serves as a complement to the more effective workplace CTR strategies such as pricing and parking cash out.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (low density suburb and 20% eligible) = 5.2% * 0.2 = 1.0%
- High Range % VMT Reduction (urban and 100% eligible) = 6.2% * 1 = 6.2%

Preferred Literature:

- 5.2 - 6.2% commute VMT reduction

Moving Cooler assumes the employer support program will include: carpooling, ride-matching, preferential carpool parking, flexible work schedules for carpools, a half-time transportation coordinator, vanpool assistance, bicycle parking, showers, and locker facilities. The report assigns 5.2% reduction to large metropolitan areas, 5.4% to medium metropolitan areas, and 6.2% to small metropolitan areas.

[56] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Alternative Literature:

Alternate:

- 15-19% reduction in commute vehicle trips

TCRP 95 Draft Chapter 19 [2] looked at a sample of 82 Transportation Demand Management (TDM) programs. Low support TDM programs had a 15% reduction, medium support programs 15.9%, and high support 19%. Low support programs had little employer effort. These programs may include rideshare matching, distribution of transit flyers, but have little employer involvement. With medium support programs, employers were involved with providing information regarding commute options and programs, a transportation coordinator (even if part-time), and assistance for ridesharing and transit pass purchases. With high support programs, the employer was providing most of the possible strategies. The sample of programs should not be construed as a random sample and probably represent above average results.

Alternate:

- 4.16 – 4.76% reduction in commute VMT

The Herzog study [3] compared a group of employees, who were eligible for comprehensive commuter benefits (with financial incentives, services such as guaranteed ride home and carpool matching, and informational campaigns) and general marketing information, to a reference group of employees not eligible for commuter benefits. The study showed a 4.79% reduction in VMT, assuming 75% of the carpoolers were traveling to the same worksite. There was a 4.16% reduction in VMT, assuming only 50% of carpoolers were traveling to the same worksite.

Alternate:

- 8.5% reduction in vehicle commute trips

Employer survey results [4] showed that employees at the surveyed companies made 8.5% fewer vehicle trips to work than had been found in the baseline surveys conducted by large employers under the area's trip reduction regulation (i.e. comparing voluntary program with a mandatory regulation). This implied that the 8.5% reduction is a conservative estimate as it is compared to another trip reduction strategy, rather than comparing to a baseline with no reduction strategies implemented. Another survey also showed that 68% of commuters drove alone to work when their employer did not encourage trip reduction. It revealed that with employer encouragement, the drive-alone rate fell 5 percentage points to 63%.

This strategy assumes a companion strategy of employer encouragement. The literature did not specify what commute options each employer provided as part of the program. Options provided may have ranged from simply providing public transit information to implementing a full TDM program with parking cash out, flex hours, emergency ride home, etc. This San Francisco Bay Area survey worked to determine the extent and impact of the emissions saved through voluntary trip reduction efforts (www.cleanairpartnership.com). It identified 454 employment sites with voluntary trip reduction programs and conducted a selected random survey of the more than 400,000 employees at those sites. The study concluded that employer encouragement makes a significant difference in employees' commute choices.

Alternative Literature References:

[2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.

[3] Herzog, Erik, Stacey Bricka, Lucie Audette, and Jeffra Rockwell. 2006. "Do Employee Commuter Benefits Reduce Vehicle Emissions and Fuel Consumption? Results of Fall 2004 Survey of Best Workplaces for Commuters." *Transportation Research Record 1956*, 34-41. (Table 8)

[4] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 25-28) http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

Other Literature Reviewed:

None

3.4.2 Implement Commute Trip Reduction Program – Required Implementation/Monitoring

Commute Trip Reduction Program – Required, is a multi-strategy program that encompasses a combination of individual measures described in sections 3.4.3 through 3.4.9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reduction that should be permitted for a combined set of strategies within a program that is contractually required of the development sponsors and managers and accompanied by a regular performance monitoring and reporting program.

Range of Effectiveness: 4.2 – 21.0% commute vehicle miles traveled (VMT) reduction and therefore 4.2 – 21.0% reduction in commute trip GHG emissions.

Measure Description:

The jurisdiction will implement a Commute Trip Reduction (CTR) ordinance. The intent of the ordinance will be to reduce drive-alone travel mode share and encourage alternative modes of travel. The critical components of this strategy are:

- Established performance standards (e.g. trip reduction requirements)
- Required implementation
- Regular monitoring and reporting

Regular monitoring and reporting will be required to assess the project's status in meeting the ordinance goals. The project should use existing ordinances, such as those in the cities of Tucson, Arizona and South San Francisco, California, as examples of successful CTR ordinance implementations. The City of Tucson requires employers with 100+ employees to participate in the program. An Alternative Mode Usage (AMU) goal and VMT reduction goal is established and each year the goal is increased. Employers persuade employees to commute via an alternative mode of transportation at least one day a week (including carpooling, vanpooling, transit, walking, bicycling, telecommuting, compressed work week, or alternatively fueled vehicle). The Transportation Demand Management (TDM) Ordinance in South San Francisco requires all non-residential developments that produce 100 average daily vehicle trips or more to meet a 35% non-drive-alone peak hour requirement with fees assessed for non-compliance. Employers have established significant CTR programs as a result.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context, unless large employers exist, and suite of strategies implemented are relevant in rural settings
- Jurisdiction level only
- Strategies in this case study calculations included:

- ○ Parking cash out
- ○ Employer sponsored shuttles to transit station
- ○ Employer sponsored bus servicing the Bay Area
- ○ Transit subsidies

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % shift in vehicle mode share of commute trips (from [1])
B = % employees eligible
C = Adjustment from vehicle mode share to commute VMT

Detail:

- A: 21% reduction in vehicle mode share (from [1])
- C: 1.0 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Nelson/Nygaard (2008). *South San Francisco Mode Share and Parking Report for Genentech, Inc.*(p. 8)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[57]
CO_2e	4.2 – 21.0% of running
PM	4.2 – 21.0% of running
CO	4.2 – 21.0% of running
NOx	4.2 – 21.0% of running
SO_2	4.2 – 21.0% of running
ROG	2.5 – 12.6% of total

Discussion:

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (20% eligibility) = 21% * 20% = 4.2%
- High Range % VMT Reduction (100% eligibility) = 21% * 100% = 21%

Preferred Literature:

- 21% reduction in vehicle mode share

Genentech, in South San Francisco [1], achieved a 34% non-single-occupancy vehicle (non-SOV) mode share (66% SOV) in 2008. Since 2006 when SOV mode share was 74% (26% non-SOV), there has been a reduction of over 10% in drive alone share. Carpool share was 12% in 2008, compared to 11.57% in 2006. Genentech has a significant TDM program including parking cash out ($4/day), express GenenBus service around the Bay Area, free shuttles to Bay Area Rapid Transit (BART) and Caltrain, and transit subsidies. The Genentech campus surveyed for this study is a large, single-tenant campus. Taking an average transit mode share in a suburban development of 1.3% (NHTS,

[57] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_Stw Travel Survey WkdayRpt.pdf (SCAG, SANDAG, Fresno County)), this is an estimated decrease from 98.7% to 78% vehicle mode share (66% SOV + 12% carpool), a 21% reduction in vehicle mode share.

Alternative Literature:

Alternate:

- 10.7% average annual increase in use of non-SOV commute modes

For the City of Tucson [2], use of alternative commute modes increased 64.3% between 1989 and 1995. Employers integrated several key activities into their TDM plans: disseminating information, developing company policies to support TDM, investing in facility enhancements, conducting promotional campaigns, and offering subsidies or incentives to encourage AMU.

Alternative Literature References:

[2] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 17-19) http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

Other Literature Reviewed:

None

3.4.3 Provide Ride-Sharing Programs

Range of Effectiveness: 1 – 15% commute vehicle miles traveled (VMT) reduction and therefore 1 - 15% reduction in commute trip GHG emissions.

Measure Description:

Increasing the vehicle occupancy by ride sharing will result in fewer cars driving the same trip, and thus a decrease in VMT. The project will include a ride-sharing program as well as a permanent transportation management association membership and funding requirement. Funding may be provided by Community Facilities, District, or County Service Area, or other non-revocable funding mechanism. The project will promote ride-sharing programs through a multi-faceted approach such as:

- Designating a certain percentage of parking spaces for ride sharing vehicles
- Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles
- Providing a web site or message board for coordinating rides

Measure Applicability:

- Urban and suburban context
- Negligible impact in many rural contexts, but can be effective when a large employer in a rural area draws from a workforce in an urban or suburban area, such as when a major employer moves from an urban location to a rural location.
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

% VMT Reduction = Commute * Employee

Where

Commute = % reduction in commute VMT (from [1])
Employee = % employees eligible

Detail:

- Commute: 5% (low density suburb), 10% (suburban center), 15% (urban) annual reduction in commute VMT (from [1])

Assumptions:

Data based upon the following references:

[1] VTPI. *TDM Encyclopedia*. http://www.vtpi.org/tdm/tdm34.htm; Accessed 3/5/2010.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[58]
CO_2e	1 – 15% of running
PM	1 – 15% of running
CO	1 – 15% of running
NOx	1 – 15% of running
SO_2	1 – 15% of running
ROG	0.6 – 9% of total

Discussion:

This strategy is often part of Commute Trip Reduction (CTR) Program, another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

Example:

Sample calculations are provided below:

[58] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- Low Range % VMT Reduction (low density suburb and 20% eligible) = 5% * 20% = 1%
- High Range % VMT Reduction (urban and 100% eligible) = 15% * 1 = 15%

Preferred Literature:

- 5 – 15% reduction of commute VMT

The *Transportation Demand Management (TDM) Encyclopedia* notes that because rideshare passengers tend to have relatively long commutes, mileage reductions can be relatively large with rideshare. If ridesharing reduces 5% of commute trips it may reduce 10% of vehicle miles because the trips that are reduced are twice as long as average. Rideshare programs can reduce up to 8.3% of commute VMT, up to 3.6% of total regional VMT, and up to 1.8% of regional vehicle trips (Apogee, 1994; TDM Resource Center, 1996). Another study notes that ridesharing programs typically attract 5-15% of commute trips if they offer only information and encouragement, and 10-30% if they also offer financial incentives such as parking cash out or vanpool subsidies (York and Fabricatore, 2001).

Alternative Literature:

- Up to 1% reduction in VMT (if combined with two other strategies)

Per the Nelson\Nygaard report [2], ride-sharing would fall under the category of a minor TDM program strategy. The report allows a 1% reduction in VMT for projects with at least three minor strategies.

Alternative Literature References:

[2] Nelson\Nygaard, 2005. *Crediting Low-Traffic Developments* (p.12). http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf

Criteron Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.

Other Literature Reviewed:

None

3.4.4 Implement Subsidized or Discounted Transit Program

Range of Effectiveness: 0.3 – 20.0% commute vehicle miles traveled (VMT) reduction and therefore a 0.3 – 20.0% reduction in commute trip GHG emissions.

Measure Description:

This project will provide subsidized/discounted daily or monthly public transit passes. The project may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer, school, or development. Many entities use revenue from parking to offset the cost of such a project.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of project employees eligible
- Transit subsidy amount
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B * C$$

Where

A = % reduction in commute vehicle trips (VT) (from [1])

B = % employees eligible

C = Adjustment from commute VT to commute VMT

Detail:

- A:

	Daily Transit Subsidy			
	$0.75	$1.49	$2.98	$5.96
Worksite Setting	**% Reduction in Commute VT**			
Low density suburb	**1.5%**	**3.3%**	**7.9%**	**20.0%***
Suburban center	**3.4%**	**7.3%**	**16.4%**	**20.0%***
Urban location	**6.2%**	**12.9%**	**20.0%***	**20.0%***
* Discounts greater than 20% will be capped, as they exceed levels recommended by TCRP 95 Draft Chapter 19 and other literature.				

- C: 1.0 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Nelson\Nygaard, 2010. *City of Santa Monica Land Use and Circulation Element EIR Report, Appendix – Santa Monica Luce Trip Reduction Impacts Analysis* (p.401).

[2] Nelson\Nygaard used the following literature sources: VTPI, Todd Litman, *Transportation Elasticities, http://www.vtpi.org/elasticities.pdf*. Comsis Corporation (1993), *Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience*, USDOT and Institute of Transportation Engineers (www.ite.org); www.bts.gov/ntl/DOCS/474.html.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[59]
CO_2e	0.3 - 20% of running
PM	0.3 - 20% of running
CO	0.3 - 20% of running
NOx	0.3 - 20% of running
SO_2	0.3 - 20% of running
ROG	0. 18 - 12% of total

[59] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Discussion:

This strategy is often part of a Commute Trip Reduction (CTR), another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

The literature evaluates this strategy in relation to the employer, but keep in mind that this strategy can also be implemented by a school or the development as a whole.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction ($0.75, low density suburb, 20% eligible) = 1.5% * 20% = 0.3%
- High Range % VMT Reduction ($5.96, urban, 100% eligible) = 20% * 100% = 20%

Preferred Literature:

Commute Vehicle Trip Reduction	Daily Transit Subsidy			
Worksite Setting	**$0.75**	**$1.49**	**$2.98**	**$5.96**
Low density suburb, rideshare oriented	0.1%	0.2%	0.6%	1.9%
Low density suburb, mode neutral	1.5%	3.3%	7.9%	21.7%*
Low density suburb, transit oriented	2.0%	4.2%	9.9%	23.2%*
Activity center, rideshare oriented	1.1%	2.4%	5.8%	16.5%
Activity center, mode neutral	3.4%	7.3%	16.4%	38.7%*
Activity center, transit oriented	5.2%	10.9%	23.5%*	49.7%*
Regional CBD/Corridor, rideshare oriented	2.2%	4.7%	10.9%	28.3%*
Regional CBD/Corridor, mode neutral	6.2%	12.9%	26.9%*	54.3%*
Regional CBD/Corridor, transit oriented	9.1%	18.1%	35.5%*	64.0%*

* Discounts greater than 20% will be capped, as they exceed levels recommended by *TCRP 95 Draft Chapter 19* and other literature.

Nelson\Nygaard (2010) updated a commute trip reduction table from VTPI Transportation Elasticities to account for inflation since the data was compiled. Data regarding commute vehicle trip reductions was originally from a study conducted by Comsis Corporation and the Institute of Transportation Engineers (ITE).

Alternative Literature:

Alternate:

- 2.4-30.4% commute vehicle trip reduction (VTR)

TCRP 95 Draft Chapter 19 [2] indicates transit subsidies in areas with good transit and restricted parking have a commute VTR of 30.4%; good transit but free parking, a commute VTR of 7.6%; free parking and limited transit 2.4%. Programs with transit subsidies have an average commute VTR of 20.6% compared with an average commute VTR of 13.1% for sites with non-transit fare subsidies.

Alternate:

- 0.03-0.12% annual greenhouse gas (GHG) reduction

Moving Cooler [3] assumed price elasticities of -0.15, -0.2, and -0.3 for lower fares 25%, 33%, and 50%, respectively. *Moving Cooler* assumes average vehicle occupancy of 1.43 and a VMT/trip of 5.12.

Alternative Literature References:

[2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

3.4.5 Provide End of Trip Facilities

Range of Effectiveness: Grouped strategy (see TRT-1 through TRT-3)

Measure Description:

Non-residential projects will provide "end-of-trip" facilities for bicycle riders including showers, secure bicycle lockers, and changing spaces. End-of-trip facilities encourage the use of bicycling as a viable form of travel to destinations, especially to work. End-of-trip facilities provide the added convenience and security needed to encourage bicycle commuting.

End-of-trip facilities have minimal impacts when implemented alone. This strategy's effectiveness in reducing vehicle miles traveled (VMT) depends heavily on the suite of other transit, pedestrian/bicycle, and demand management measures offered. End-of-trip facilities should be grouped with Commute Trip Reduction (CTR) Programs (TRT-1 through TRT-2).

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 22% increase in bicycle mode share

The bicycle study documents a multivariate analysis of UK National Travel Survey (Wardman et al. 2007) which found significant impacts on bicycling to work. Compared to base bicycle mode share of 5.8% for work trips, outdoor parking would raise the share to 6.3%, indoor secure parking to 6.6%, and indoor parking plus showers to 7.1%. This results in an estimate 22% increase in bicycle mode share ((7.1%-5.8%)/5.8% = 22%). This suggests that such end of trip facilities have an important impact on the decision to bicycle to work. However, these effects represent reductions in VMT no greater than 0.02% (see Appendix C for calculation detail).

Alternate:

- 2 - 5% reduction in commute vehicle trips

The *Transportation Demand Management (TDM) Encyclopedia*, citing Ewing (1993), documents Sacramento's TDM ordinance. The City allows developers to claim trip reduction credits for worksite showers and lockers of 5% in central business districts, 2% within 660 feet of a transit station, and 2% elsewhere.

Alternate:

- 0.625% reduction in VMT

The *Center for Clean Air Policy (CCAP) Guidebook* attributes a 1% to 5% reduction associated with the use of bicycles, which reflects the assumption that their use is typically for shorter trips. Based on the *CCAP Guidebook*, a 2.5% reduction is allocated for all bicycle-related measures and a 1/4 of that for this measure alone. (This information is based on a TIAX review for SMAQMD).

Alternative Literature References:

[1] Pucher J., Dill, J., and Handy, S. *Infrastructure, Programs and Policies to Increase Bicycling: An International Review.* February 2010. (Table 2, pg. S111) http://policy.rutgers.edu/faculty/pucher/Pucher_Dill_Handy10.pdf

[2] Victoria Transportation Policy Institute (VTPI). *TDM Encyclopedia,* http://www.vtpi.org/tdm/tdm9.htm; accessed 3/4/2010; last update 1/25/2010). VTPI citing: Reid Ewing (1993), "TDM, Growth Management, and the Other Four Out of Five Trips," *Transportation Quarterly*, Vol. 47, No. 3, Summer 1993, pp. 343-366.

[3] Center for Clean Air Policy (CCAP), *CCAP Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html; TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD

Other Literature Reviewed:

None

3.4.6 Encourage Telecommuting and Alternative Work Schedules

Range of Effectiveness: 0.07 – 5.50% commute vehicle miles traveled (VMT) reduction and therefore 0.07 – 5.50% reduction in commute trip GHG emissions.

Measure Description:

Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees participating (1 – 25%)
- Strategy implemented: 9-day/80-hour work week, 4-day/40-hour work week, or 1.5 days of telecommuting

Mitigation Method:

% Commute VMT Reduction = Commute

Where

Commute = % reduction in commute VMT (See table below)

	Employee Participation				
	1%	**3%**	**5%**	**10%**	**25%**
	% Reduction in Commute VMT				
9-day/80-hour work week	0.07%	0.21%	0.35%	0.70%	1.75%
4-day/40-hour work week	0.15%	0.45%	0.75%	1.50%	3.75%
telecommuting 1.5 days	0.22%	0.66%	1.10%	2.20%	5.5%
Source: Moving Cooler Technical Appendices, Fehr & Peers Notes: The percentages from Moving Cooler incorporate a discount of 25% for rebound effects. The percentages beyond 1% employee participation are linearly extrapolated.					

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-54) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[60]
CO_2e	0.07 – 5.50% of running
PM	0.07 – 5.50% of running
CO	0.07 – 5.50% of running
NOx	0.07 – 5.50% of running
SO_2	0.07 – 5.50% of running
ROG	0.04 – 3.3% of total

Discussion:

This strategy is often part of a Commute Trip Reduction Program, another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

The employee participation rate should be capped at a maximum of 25%. *Moving Cooler* [1] notes that roughly 50% of a typical workforce could participate in alternative

▪ [60] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

work schedules (based on job requirements) and roughly 50% of those would choose to participate.

The 25% discount for rebound effects is maintained to provide a conservative estimate and support the literature results. The project may consider removing this discount from their calculations if deemed appropriate.

Example:

N/A – no calculations are needed.

Preferred Literature:

- 0.07% - 0.22% reduction in commuting VMT

Moving Cooler [1] estimates that if 1% of employees were to participate in a 9 day/80 hour compressed work week, commuting VMT would be reduced by 0.07%. If 1% of employees were to participate in a 4 day/40 hour compressed work week, commuting VMT would reduce by 0.15%; and 1% of employees participating in telecommuting 1.5 days per week would reduce commuting VMT by 0.22%. These percentages incorporate a discounting of 25% to account for rebound effects (i.e., travel for other purposes during the day while not at the work site). The percentages beyond 1% employee participation are linearly extrapolated (see table above).

Alternative Literature:

Alternate:

- 9-10% reduction in VMT for participating employees

As documented in *TCRP 95 Draft Chapter 19* [2], a Denver federal employer's implementation of compressed work week resulted in a 14-15% reduction in VMT for participating employees. This is equivalent to the 0.15% reduction for each 1% participation cited in the preferred literature above. In the Denver example, there was a 65% participation rate out of a total of 9,000 employees. *TCRP 95* states that the compressed work week experiment has no adverse effect on ride-sharing or transit use. Flexible hours have been shown to work best in the presence of medium or low transit availability.

Alternate:

- 0.5 vehicle trips reduced per employee per week
- 13 – 20 VMT reduced per employee per week

As documented in *TCRP 95 Draft Chapter 19* [2], a study of compressed work week for 2,600 Southern California employees resulted in an average reduction of 0.5 trips per week (per participating employee). Participating employees also reduced their VMT by 13-20 miles per week. This translates to a reduction of between 5% and 10% in commute VMT, and so is lower than the 15% reduction cited for Denver government employees.

Alternative Literature References:

[2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.

Other Literature Reviewed:

None

3.4.7 Implement Commute Trip Reduction Marketing

Range of Effectiveness: 0.8 – 4.0% commute vehicle miles traveled (VMT) reduction and therefore 0.8 – 4.0% reduction in commute trip GHG emissions.

Measure Description:

The project will implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip reduction strategies. Implementing commute trip reduction strategies without a complementary marketing strategy will result in lower VMT reductions. Marketing strategies may include:

- New employee orientation of trip reduction and alternative mode options
- Event promotions
- Publications

CTR marketing is often part of a CTR program, voluntary or mandatory. CTR marketing is discussed separately here to emphasis the importance of not only providing employees with the options and monetary incentives to use alternative forms of transportation, but to clearly and deliberately promote and educate employees of the various options. This will greatly improve the impact of the implemented trip reduction strategies.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of project employees eligible (i.e. percentage of employers choosing to participate)

Mitigation Method:

% Commute VMT Reduction = A * B * C

Where

A = % reduction in commute vehicle trips (from [1])

B = % employees eligible

C = Adjustment from commute VT to commute VMT

Detail:

- A: 4% (per [1])
- C: 1.0 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Pratt, Dick. Personal communication regarding the *Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.* Transit Cooperative Research Program.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[61]
CO_2e	0.8 – 4.0% of running
PM	0.8 – 4.0% of running
CO	0.8 – 4.0% of running
NOx	0.8 – 4.0% of running
SO_2	0.8 – 4.0% of running
ROG	0.5 – 2.4% of total

[61] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Discussion:

The effectiveness of commute trip reduction marketing in reducing VMT depends on which commute reduction strategies are being promoted. The effectiveness levels provided below should only be applied if other programs are offered concurrently, and represent the total effectiveness of the full suite of measures.

This strategy is often part of a CTR Program, another strategy documented separately (see strategy T# E1). Take care not to double count the impacts.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (20% eligible) = 4% * 20% = 0.8%
- High Range % VMT Reduction (100% eligible) = 4% * 100% = 4.0%

Preferred Literature:

- 4-5% commute vehicle trips reduced with full-scale employer support

TCRP 95 Draft Chapter 19 notes the average empirically-based estimate of reductions in vehicle trips for full-scale, site-specific employer support programs alone is 4-5%. This effectiveness assumes there are alternative commute modes available which have on-going employer support. For a program to receive credit for such outreach and marketing efforts, it should contain guarantees that the program will be maintained permanently, with promotional events delivered regularly and with routine performance monitoring.

Alternative Literature:

- 5-15% reduction in commute vehicle trips
- 3% increase in effectiveness of marketed transportation demand management (TDM) strategies

VTPI [2] notes that providing information on alternative travel modes by employers was one of the most important factors contributing to mode shifting. One study (Shadoff,1993) estimates that marketing increases the effectiveness of other TDM strategies by up to 3%. Given adequate resources, marketing programs may reduce vehicle trips by 5-15%. The 5 – 15% range comes from a variety of case studies across the world. U.S. specific case studies include: 9% reduction in vehicle trips with TravelSmart in Portland (12% reduction in VMT), 4-8% reduction in vehicle trips from four cities with individualized marketing pilot projects from the Federal Transit Administration (FTA). Averaged across the four pilot projects, there was a 6.75% reduction in VMT.

Alternative Literature References:

[2] VTPI, TDM Encyclopedia – TDM Marketing; http://www.vtpi.org/tdm/tdm23.htm; accessed 3/5/2010. Table 7 (citing FTA, 2006)

Other Literature Reviewed:

None

3.4.8 Implement Preferential Parking Permit Program

Range of Effectiveness: Grouped strategy (see TRT-1 through TRT-3)

Measure Description:

The project will provide preferential parking in convenient locations (such as near public transportation or building front doors) in terms of free or reduced parking fees, priority parking, or reserved parking for commuters who carpool, vanpool, ride-share or use alternatively fueled vehicles. The project will provide wide parking spaces to accommodate vanpool vehicles.

The impact of preferential parking permit programs has not been quantified by the literature and is likely to have negligible impacts when implemented alone. This strategy should be grouped with Commute Trip Reduction (CTR) Programs (TRT-1 and TRT-2) as a complementary strategy for encouraging non-single occupant vehicle travel.

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No quantitative results are available. The case study in the literature implemented a preferential parking permit program as a companion strategy to a comprehensive TDM program. Employees who carpooled at least three times a week qualified to use the spaces.

Alternative Literature References:

[1] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

Other Literature Reviewed:

None

3.4.9 Implement Car-Sharing Program

Range of Effectiveness: 0.4 – 0.7% vehicle miles traveled (VMT) reduction and therefore 0.4 – 0.7% reduction in GHG emissions.

Measure Description:

This project will implement a car-sharing project to allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees. The car-sharing program could be created through a local partnership or through one of many existing car-share companies. Car-sharing programs may be grouped into three general categories: residential- or citywide-based, employer-based, and transit station-based. Transit station-based programs focus on providing the “last-mile” solution and link transit with commuters’ final destinations. Residential-based programs work to substitute entire household based trips. Employer-based programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Urban or suburban context

Mitigation Method:

% VMT Reduction = A * B / C

Where
A = % reduction in car-share member annual VMT (from the literature)
B = number of car share members per shared car (from the literature)
C = deployment level based on urban or suburban context

Detail:

- A: 37% *(per [1])*
- B: 20 *(per [2])*
- C:

Project setting	1 shared car per X population
Urban	1,000
Suburban	2,000
Source: *Moving Cooler*	

Assumptions:

Data based upon the following references:

[1] Millard-Ball, Adam. "Car-Sharing: Where and How it Succeeds," (2005) Transit Cooperative Research Program (108). P. 4-22
[2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-52, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[62]
CO_2e	0.4 – 0.7% of running
PM	0.4 – 0.7% of running
CO	0.4 – 0.7% of running
NOx	0.4 – 0.7% of running
SO_2	0.4 – 0.7% of running
ROG	0.24 – 0.42% of total

▪ [62] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Discussion:
Variable C in the mitigation method section represents suggested levels of deployment based on the literature. Levels of deployment may vary based on the characteristics of the project site and the needs of the project residents and employees. This variable should be adjusted accordingly.

The methodology for calculation of VMT reduction utilizes *Moving Cooler's* rule of thumb[63] for the estimated number of car share members per vehicle. An estimate of 50% reduction in car-share member annual VMT (from *Moving Cooler*) was high compared to other literature sources, and *TCRP 108's* 37% reduction was used in the calculations instead.

Example:
Sample calculations are provided below:

- Low Range % VMT Reduction (suburban) = 37% * 20 / 2000 = 0.4%
- High Range % VMT Reduction (urban) = 37% * 20 / 1000 = 0.7%

Preferred Literature:
- 37% reduction in car-share member VMT

The *TCRP 108* [1] report conducted a survey of car-share members in the United States and Canada in 2004. The results of the survey showed that respondents, on average, drove only 63% of the average mileage they previously drove when not car-share members.

Alternative Literature:
Alternate – Residential or Citywide Based:

- 0.05-0.27% reduction in GHG
- 0.33% reduction in VMT in urban areas

Moving Cooler [2] assumed an aggressive deployment of one car per 2,000 inhabitants of medium-density census tracks and of one car per 1,000 inhabitants of high-density census tracks. This strategy assumes providing a subsidy to a public, private, or nonprofit car-sharing organization and providing free or subsidized lease for usage of public street parking. *Moving Cooler* assumed 20 members per shared car and 50% reduction in VMT per equivalent car. The percent reduction calculated assumes a percentage of urban areas are low, medium, and high density, thus resulting in a lower

[63] See discussion in Alternative Literature section for "rule of thumb" detail.

than expected reduction in VMT assuming an aggressive deployment in medium and high density areas.

Alternate – Transit Station and Employer Based:

- 23-44% reduction in drive-alone mode share
- Average daily VMT reduction of 18 – 23 miles

TCRP 95 Draft Chapter 19 [3] looked at two demonstrations, CarLink I and CarLink II, in the San Francisco Bay Area. CarLink I ran from January to November 1999. It involved 54 individuals and 12 rental cars stationed at the Dublin-Pleasanton BART station. CarLink II ran from July 2001 to June 2002 and involved 107 individuals and 19 rental cars. CarLink II was based in Palo Alto in conjunction with Caltrain commuter rail service and several employers in the Stanford Research Park. Both CarLink demonstrations were primarily targeted for commuters. CarLink I had a 23% increase in rail mode share, a reduction in drive-alone mode share of 44%, and a decrease in Average Daily VMT of 18 miles. CarLink II had a VMT for round-trip commuters decrease of 23 miles per day and a mode share for drive alone decrease of 22.9%.

Alternate:

- 50% reduction in driving for car-share members

A UC Berkeley study of San Francisco's City CarShare [4] found that members drive nearly 50% less after joining. The study also found that when people joined the car-sharing organization, nearly 30% reduced their household vehicle ownership and two-thirds avoided purchasing another car. The UC Berkeley study found that almost 75% of vehicle trips made by car-sharing members were for social trips such as running errands and visiting friends. Only 25% of trips were for commuting to work or for recreation. Most trips were also made outside of peak periods. Therefore, car-sharing may generate limited impact on peak period traffic.

Alternative Literature References:

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-52, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

[4] Pratt, Dick. *Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.* Transit Cooperative Research Program.

Cervero, Robert and Yu-Hsin Tsai. *San Francisco City CarShare: Travel-Demand Trends and Second-Year Impacts,* 2005. (Figure 7, p. 35, Table 7, Table 12) http://escholarship.org/uc/item/4f39b7b4

Other Literature Reviewed:

None

3.4.10 Implement a School Pool Program

Range of Effectiveness: 7.2 – 15.8% school vehicle miles traveled (VMT) Reduction and therefore 7.2 – 15.8% reduction in school trip GHG emissions.

Measure Description:

This project will create a ridesharing program for school children. Most school districts provide bussing services to public schools only. SchoolPool helps match parents to transport students to private schools, or to schools where students cannot walk or bike but do not meet the requirements for bussing.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Degree of implementation of SchoolPool Program(moderate to aggressive)

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Families} * B$$

Where

Families = % families that participate (from [1] and [2])
B = adjustments to convert from participation to daily VMT to annual school VMT

Detail:

- Families: 16% (moderate implementation), 35% (aggressive implementation), (from [1] and [2])
- B: 45% (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 10, 36-38) http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

[2] Denver Regional Council of Governments (DRCOG). *Survey of Schoolpool Participants, April 2008.* http://www.drcog.org/index.cfm?page=SchoolPool. Obtained from Schoolpool Coordinator, Mia Bemelen.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[64]
CO_2e	7.2 – 15.8% of running
PM	7.2 – 15.8% of running
CO	7.2 – 15.8% of running
NOx	7.2 – 15.8% of running
SO_2	7.2 – 15.8% of running
ROG	4.3 – 9.5% of total

Discussion:

This strategy reflects the findings from only one case study.

Example:

Sample calculations are provided below:

- Low Range % School VMT Reduction (moderate implementation) = 16% * 45% = 7.2%
- High Range % School VMT Reduction (aggressive implementation) = 35% * 45% = 15.8%

[64] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Preferred Literature:

- 7,711 – 18,659 daily VMT reduction

As presented in the TDM Case Studies [1] compilation, the SchoolPool program in Denver saved 18,659 VMT per day in 1995, compared with 7,711 daily in 1994 – a 142% increase. The Denver Regional Council of Governments (DRCOG) [2] enrolled approximately 7,000 families and 32 private schools in the program. The DRCOG staff surveyed a school or interested families to collect home location and schedules of the students. The survey also identified prospective drivers. DRCOG then used carpool-matching software and GIS to match families. These match lists were sent to the parents for them to form their own school pools. 16% of families in the database formed carpools. The average carpool carried 3.1 students.

The SchoolPool program is still in effect and surveys are conducted every few years to monitor the effectiveness of the program. The latest survey report received was in 2008. The report showed that the participant database had increased to over 10,000 families, an 18% increase from 2005. 29% of participants used the list to form a school carpool. This percentage was lower than 35% in 2005 but higher than prior to 2005, at 24%. The average number of families in each carpool ranged from 2.1 prior to 2005 to 2.8 in 2008. The average number of carpool days per week was roughly 4.7. The number of school weeks per year was 39. Per discussions with the Schoolpool Coordinator, a main factor of success was establishing a large database. This was achieved by having parents opt-out of the database versus opting-in.

Alternative Literature:

None

Alternative Literature References:

None

Other Literature Reviewed:

None

3.4.11 Provide Employer-Sponsored Vanpool/Shuttle

Range of Effectiveness: 0.3 – 13.4% commute vehicle miles traveled (VMT) reduction and therefore 0.3 – 13.4% reduction in commute trip GHG emissions.

Measure Description:

This project will implement an employer-sponsored vanpool or shuttle. A vanpool will usually service employees' commute to work while a shuttle will service nearby transit stations and surrounding commercial centers. Employer-sponsored vanpool programs entail an employer purchasing or leasing vans for employee use, and often subsidizing the cost of at least program administration, if not more. The driver usually receives personal use of the van, often for a mileage fee. Scheduling is within the employer's purview, and rider charges are normally set on the basis of vehicle and operating cost.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B * C$$

Where
A = % shift in vanpool mode share of commute trips (from [1])
B = % employees eligible
C = adjustments from vanpool mode share to commute VMT

Detail:

- A: 2-20% annual reduction in vehicle mode share (*from [1]*)
  - Low range: low degree of implementation, smaller employers
  - High range: high degree of implementation, larger employers
- C: 0.67 (See Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] TCRP Report 95. *Chapter 5: Vanpools and Buspools - Traveler Response to Transportation System Changes.* http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c5.pdf. (p.5-8)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[65]
CO_2e	0.3 – 13.4% of running
PM	0.3 – 13.4% of running
CO	0.3 – 13.4% of running
NOx	0.3 – 13.4% of running
SO_2	0.3 – 13.4% of running
ROG	0.18 – 8.0% of total

Discussion:

Vanpools are generally more successful with the largest of employers, as large employee counts create the best opportunities for employees to find a suitable number of travel companions to form a vanpool. In the San Francisco Bay Area several large companies (such as Google, Apple, and Genentech) provide regional bus transportation for their employees. No specific studies of these large buspools were identified in the literature. However, the GenenBus serves as a key element of the overall commute trip reduction (CTR) program for Genentech, as discussed in the CTR Program – Required strategy.

This strategy is often part of a CTR Program, another strategy documented separately (see strategy T# E1). Take care not to double count the impacts.

Example:

Sample calculations are provided below:

[65] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- Low Range % VMT Reduction (low implementation/small employer, 20% eligible) = 2% * 20% * 0.67 = 0.3%
- High Range % VMT Reduction (high implementation/large employer, 100% eligible) = 20% * 100% * 0.67 = 13.4%

Preferred Literature:

- 2-20% vanpool mode share

TCRP Report 95 [1] notes that vanpools can capture 2 to 20% mode share. This range can be attributed to differences in programs, access to high-occupancy vehicle (HOV) lanes, and geographic range. The *TCRP Report* highlights a case study of the 3M Corporation, which with the implementation of a vanpooling program saw drive alone mode share decrease by 10 percentage points and vanpooling mode share increase to 7.8 percent. The *TCRP Report* notes most vanpools programs do best where one-way trip lengths exceed 20 miles, where work schedules are fixed and regular, where employer size is sufficient to allow matching of 5 to 12 people from the same residential area, where public transit is inadequate, and were some congestion or parking problems exist.

Alternative Literature:

In *TDM Case Studies* [2], a case study of Kaiser Permanente Hospital has shown their employer-sponsored shuttle service eliminated 380,100 miles per month, or nearly 4 million miles of travel per year, and four tons of smog precursors annually.

Alternative Literature References:

[2] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

Other Literature Reviewed:

None

3.4.12 Implement Bike-Sharing Programs

Range of Effectiveness: Grouped strategy (see SDT-5 and LUT-9)

Measure Description:

This project will establish a bike sharing program. Stations should be at regular intervals throughout the project site. The number of bike-share kiosks throughout the project area should vary depending on the density of the project and surrounding area. Paris' bike-share program places a station every few blocks throughout the city (approximately 28 bike stations/square mile). Bike-station density should increase around commercial and transit hubs.

Bike sharing programs have minimal impacts when implemented alone. This strategy's effectiveness is heavily dependent on the location and context. Bike-sharing programs have worked well in densely populated areas (examples in Barcelona, London, Lyon, and Paris) with existing infrastructure for bicycling. Bike sharing programs should be combined with **Bike Lane Street Design (SDT-5)** and **Improve Design of Development (LUT-9)**.

Taking evidence from the literature, a 135-300% increase in bicycling (of which roughly 7% are shifting from vehicle travel) results in a negligible impact (around 0.03% vehicle miles traveled (VMT) reduction (see Appendix C for calculations)).

Measure Applicability:

- Urban and suburban-center context only
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

The International Review [1] found bike mode share increases:

- from 0.75% in 2005 to 1.76% in 2007 in Barcelona (Romero, 2008) (135% increase)
- From 1% in 2001 to 2.5% in 2007 in Paris (Nadal, 2007; City of Paris, 2007) (150% increase)
- From 0.5% in 1995 to 2% in 2006 in Lyon (Bonnette, 2007; Velo'V, 2009) (300% increase)

London [2] is the only study that reports the breakdown of the prior mode In London: 6% of users reported shifting from driving, 34% from transit, 23% said they would not have travelled (Noland and Ishaque, 2006). Additionally, 68% of the bike trips were for leisure or recreation. Companion strategies included concurrent improvements in bicycle facilities.

The London program was implemented west of Central London in a densely populated area, mainly residential, with several employment centers. A relatively well developed bike network existed, including over 1,000 bike racks. The program implemented 25 locker stations with 70 bikes total.

Alternate:

- 1/3 vehicle trip reduced per day per bicycle (1,000 vehicle trips reduced per day in Lyon)

The Bike Share Opportunities [3] report looks at two case studies of bike-sharing implementation in France. In Lyon, the 3,000 bike-share system shifts 1,000 car trips to bicycle each day. Surveys indicate that 7% of the bike share trips would have otherwise been made by car. Lyon saw a 44% increase in bicycle riding within the first year of their program while Paris saw a 70% increase in bicycle riding and a 5% reduction in car use and congestion within the first year and a half of their program. The Bike Share Opportunities report found that population density is an important part of a successful program. Paris' bike share subscription rates range between 6% and 9% of the total population. This equates to an average of 75,000 rentals per day. The effectiveness of bike share programs at sub-city scales are not addressed in the literature.

Alternative Literature References:

[1] Pucher J., Dill, J., and Handy, S. Infrastructure, Programs and Policies to Increase Bicycling: An International Review. February 2010. (Table 4)

[2] Noland, R.B., Ishaque, M.M., 2006. "Smart Bicycles in an urban area: Evaluation of a pilot scheme in London." *Journal of Public Transportation*. 9(5), 71-95. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.117.8173&rep=rep1&type=pdf#page=76

[3] NYC Department of City Planning, *Bike-Share Opportunities in New York City,* 2009. (p. 11, 14, 24, 68) http://www.nyc.gov/html/dcp/html/transportation/td_bike_share.shtml

Other Literature Reviewed:

None

3.4.13 Implement School Bus Program

Measure Effectiveness Range: 38 – 63% School VMT Reduction and therefore 38 – 63% reduction in school trip GHG emissions[66]

Measure Description:

The project will work with the school district to restore or expand school bus services in the project area and local community.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of families expected to use/using school bus program

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % families expected to use/using school bus program

B = adjustments to convert from participation to school day VMT to annual school VMT

---

[66] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

Detail:

- A: a typical range of 50 – 84% (see discussion section)
- B: 75% (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] JD Franz Research, Inc.; *Lamorinda School Bus Program, 2003 Parent Survey, Final Report;* January 2004; obtained from Juliet Hansen, Program Manager. (p. 5)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[67]
CO_2e	38 – 63% of running
PM	38 – 63% of running
CO	38 – 63% of running
NOx	38 – 63% of running
SO_2	38 – 63% of running
ROG	23 – 38% of total

Discussion:

The literature presents a high range of effectiveness showing 84% participation by families. 50% is an estimated low range assuming the project has a minimum utilization goal. Note that the literature presents results from a single case study.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (50% participation) = 50% * 75% = 38%
- High Range % VMT Reduction (85% participation) = 84% * 75% = 63%

Preferred Literature:

- 84% penetration rate
- 2,451 – 2,677 daily vehicle trips reduced
- 441,180 – 481,860 annual vehicle trips reduced

[67] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

The Lamorinda School Bus Program was implemented to reduce traffic congestion in the communities of Lafayette, Orinda, and Moraga, California. In 2003, a parent survey was conducted to determine the extent to which the program diverted or eliminated vehicle trips. This survey covered a representative sample of all parents (not just those signed up for the school bus program). The range of morning trips prevented is 1,266 to 1,382; the range of afternoon trips prevented is 1,185 to 1,295. Annualized, the estimated total trip prevention is between 441,180 to 481,860. 83% of parents surveyed reported that their child usually rides the bus to school in the morning. 84% usually rode the bus back home in the afternoons. The data came from surveys and the results are unique to the location and extent of the program. The report did not indicate the number of school buses in operation during the time of the survey.

Alternative Literature:

None

Alternative Literature References:

None

Other Literature Reviewed:

None

3.4.14 Price Workplace Parking

Range of Effectiveness: 0.1 – 19.7% commute vehicle miles traveled (VMT) reduction and therefore 0.1 -19.7% reduction in commute trip GHG emissions.

Measure Description:

The project will implement workplace parking pricing at its employment centers. This may include: explicitly charging for parking for its employees, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees about available alternatives.

Though similar to the Employee Parking "Cash-Out" strategy, this strategy focuses on implementing market rate and above market rate pricing to provide a price signal for employees to consider alternative modes for their work commute.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for retail, office, industrial, and mixed-use projects
- Reductions applied only if complementary strategies are in place:
    - Residential parking permits and market rate public on-street parking - to prevent spill-over parking
    - Unbundled parking - is not required but provides a market signal to employers to transfer over the, now explicit, cost of parking to the employees. In addition, unbundling parking provides a price with which employers can utilize as a means of establishing workplace parking prices.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Location of project site: low density suburb, suburban center, or urban location
- Daily parking charge ($1 - $6)
- Percentage of employees subject to priced parking

Mitigation Method:

% VMT Reduction = A * B

Where

A = Percentage reduction in commute VMT (from [1] and [2])

B = Percent of employees subject to priced parking

Detail:

- A:

Project Location	Daily Parking Charge			
	$1	$2	$3	$6
Low density suburb	0.5%	1.2%	1.9%	2.8%
Suburban center	1.8%	3.7%	5.4%	6.8%
Urban Location	6.9%	12.5%	16.8%	19.7%
Moving Cooler, VTPI, Fehr & Peers. Note: 2009 dollars.				

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

[2] VTPI, Todd Litman, *Transportation Elasticities,*(Table 15) *http://www.vtpi.org/elasticities.pdf.*

Comsis Corporation (1993), *Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience*, USDOT and Institute of Transportation Engineers (www.ite.org); www.bts.gov/ntl/DOCS/474.html.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[68]
CO_2e	0.1 – 19.7% of running
PM	0.1 – 19.7% of running
CO	0.1 – 19.7% of running
NOx	0.1 – 19.7% of running
SO_2	0.1 – 19.7% of running
ROG	0.06 – 11.8% of total

Discussion:

Priced parking can result in parking spillover concerns. The highest VMT reductions should be given only with complementary strategies such as parking time limits or neighborhood parking permits are in place in surrounding areas.

Example:

Sample calculations are provided below:

- Low Range % Commute VMT Reduction (low density suburb, $1/day, 20% priced) = 0.5% * 20% = 0.1%
- High Range % Commute VMT Reduction (urban, $6/day, 100% priced) = 19.7% * 100% = 19.7%

Preferred Literature:

The table above (variable A) was calculated using the percent commute VMT reduction from *Moving Cooler* (0.5% - 6.9% reduction for $1/day parking charge). The percentage reductions for $2 - $6 / day parking charges were extrapolated by multiplying the *Moving Cooler* percentages with the ratios from the VTPI table below (percentage increases). For example, to obtain a percent VMT reduction for a $6/day parking charge for a low density suburb, 0.5% * ((36.1%-6.5%) /6.5%) = 2.3%. The methodology was utilized to capture the non-linear effect of parking charges on trip reduction (VTPI) while maintaining a conservative estimate of percent reductions (*Moving Cooler*).

Preferred:

- 0.5-6.9% reduction in commuting VMT
- 0.44-2.07% reduction in greenhouse gas (GHG) emissions

[68] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Moving Cooler Technical Appendices indicate that increasing employee parking costs $1 per day ($0.50 per vehicle for carpool and free for vanpools) can reduce GHG between 0.44% and 2.07% and reduce commuting VMT between 0.5% and 6.9%. The reduction in GHG varies based on how extensive the implementation of the program is. The reduction in commuting VMT differs for type of urban area as shown in the table below. Please note that these numbers are independent of results for employee parking cash-out strategy (discussed in its own fact sheet).

		Percent Change in Commuting VMT					
Strategy	Description	Large Metropolitan (higher transit use)	Large Metropolitan (lower transit use)	Medium Metro (higher)	Medium Metro (lower)	Small Metro (higher)	Small Metro (lower)
Parking Charges	Parking charge of $1/day	6.9%	0.9%	1.8%	0.5%	1.3%	0.5%
Source: *Moving Cooler*							

Preferred:

Commute Vehicle trip reduction	**Daily Parking Charges**			
Worksite Setting	**$0.75**	**$1.49**	**$2.98**	**$5.96**
Suburb	6.5%	15.1%	25.3%*	36.1%*
Suburban Center	12.3%	25.1%*	37.0%*	46.8%*
Central Business District	17.5%	31.8%*	42.6%*	50.0%*
Source: VTPI [2]				

* Discounts greater than 20% should be capped, as they exceed levels recommended by *TCRP 95* and other literature.

The reduction in commute trips varies by parking fee and worksite setting [2]. For daily parking fees between $1.49 and $5.96, worksites set in low-density suburbs could decrease vehicle trips by 6.5-36.1%, worksites set in activity centers could decrease vehicle trips by 12.3-46.8%, and worksites set in regional central business districts could decrease vehicles by 17.5-50%. (Note that adjusted parking fees (from 1993 dollars to 2009 dollars) were used. Adjustments were taken from the *Santa Monica General Plan EIR Report, Appendix*, Nelson\Nygaard).

Alternative Literature:

Alternate:

- 1 percentage point reduction in auto mode share
- 12.3% reduction in commute vehicle trips

TCRP 95 Draft Chapter 19 [4] found that an increase of $8 per month in employee parking charges was necessary to decrease employee SOV mode split rates by one percentage point. *TCRP 95* compared 82 sites with TDM programs and found that programs with parking fees have an average commute vehicle trip reduction of 24.6%, compared with 12.3% for sites with free parking.

Alternate:

- 1% reduction in VMT ($1 per day charge)
- 2.6% reduction in VMT ($3 per day charge)

The Deakin, et al. report [5] for the California Air Resources Board (CARB) analyzed transportation pricing measures for the Los Angeles, Bay Area, San Diego, and Sacramento metropolitan areas.

Alternative Literature References:

[4] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies. (Table 19-9)

[5] Deakin, E., Harvey, G., Pozdena, R., and Yarema, G., 1996. *Transportation Pricing Strategies for California: An Assessment of Congestion, Emissions, Energy and Equity Impacts.* Final Report. Prepared for California Air Resources Board (CARB), Sacramento, CA (Table 7.2)

Other Literature Reviewed:

None

3.4.15 Implement Employee Parking "Cash-Out"

Range of Effectiveness: 0.6 – 7.7% commute vehicle miles traveled (VMT) reduction and therefore 0.6 – 7.7% reduction in commute trip GHG emissions

Measure Description:

The project will require employers to offer employee parking "cash-out." The term "cash-out" is used to describe the employer providing employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to the cost of the parking space to the employer.

Measure Applicability:

- Urban and suburban context
- Not applicable in a rural context
- Appropriate for retail, office, industrial, and mixed-use projects
- Reductions applied only if complementary strategies are in place:
    - Residential parking permits and market rate public on-street parking -to prevent spill-over parking
    - Unbundled parking - is not required but provides a market signal to employers to forgo paying for parking spaces and "cash-out" the employee instead. In addition, unbundling parking provides a price with which employers can utilize as a means of establishing "cash-out" prices.

Baseline Method:

See introduction section.

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % reduction in commute VMT (from the literature)

B = % of employees eligible

Detail:

- A: Change in Commute VMT: 3.0% (low density suburb), 4.5% (suburban center), 7.7% (urban) change in commute VMT (source: Moving Cooler)

Assumptions:

Data based upon the following references:

- Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[69]
CO_2e	0.6 – 7.7% of running
PM	0.6 – 7.7% of running
CO	0.6 – 7.7% of running
NOx	0.6 – 7.7% of running
SO_2	0.6 – 7.7% of running
ROG	0.36 – 4.62% of running

Discussion:

Please note that these estimates are independent of results for workplace parking pricing strategy (see strategy number T# E5 for more information).

If work site parking is not unbundled, employers cannot utilize this unbundled price as a means of establishing "cash-out" prices. The table below shows typical costs for parking facilities in large urban and suburban areas in the US. This can be utilized as a reference point for establishing reasonable "cash-out" prices. Note that the table does not include external costs to parking such as added congestion, lost opportunity cost of land devoted to parking, and greenhouse gas (GHG) emissions.

	Structured (urban)	Surface (suburban)
Land (Annualized)	$1,089	$215
Construction (Annualized)	$2,171	$326

[69] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

O & M Costs	$575	$345
Annual Total	$3,835	$885
Monthly Costs	$320	$74
Source: VTPI, *Transportation Costs and Benefit Analysis II – Parking Costs*, April 2010 (p.5.4-10)		

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (low density suburb and 20% eligible) = 3% * 0.2 = 0.6%
- High Range % VMT Reduction (urban and 100% eligible) = 7.7% * 1 = 7.7%

Preferred Literature:

- 0.44% - 2.07% reduction in GHG emissions
- 3.0% - 7.7% reduction in commute VMT

Moving Cooler Technical Appendices indicate that reimbursing “cash-out” participants $1/day can reduce GHG between 0.44% and 2.07% and reduce commuting VMT between 3.0% and 7.7%. The reduction in GHG varies based on how extensive the implementation of the program is. The reduction in commuting VMT differs for type of urban area is shown in the table below.

		Percent Change in Commuting VMT					
Strategy	Description	Large Metropolitan (higher transit use)	Large Metropolitan (lower transit use)	Medium Metro (higher)	Medium Metro (lower)	Small Metro (higher)	Small Metro (lower)
Parking Cash-Out	Subsidy of $1/day	7.7%	3.7%	4.5%	3.0%	4.0%	3.0%

Alternative Literature:

Alternate:

- 2-6% reduction in vehicle trips

VTPI used synthesis data to determine parking cash out could reduce commute vehicle trips by 10-30%. VTPI estimates that the portion of vehicle travel affected by parking cash-out would be about 20% and therefore there would be only about a 2-6% total reduction in vehicle trips attributed to parking cash-out.

Alternate:

- 12% reduction in VMT per year per employee
- 64% increase in carpooling
- 50% increase in transit mode share
- 39% increase in pedestrian/bike share

Shoup looked at eight California firms that complied with California's 1992 parking cash-out law, applicable to employers of 50 or more persons in regions that do not meet the state's clean air standards. To comply, a firm must offer commuters the option to choose a cash payment equal to any parking subsidy offered. Six of companies went beyond compliance and subsidized one or more alternatives to parking (more than the parking subsidy price). The eight companies ranged in size between 120 and 300 employees, and were located in downtown Los Angeles, Century City, Santa Monica, and West Hollywood. Shoup states that an average of 12% fewer VMT per year per employee is equivalent to removing one of every eight cars driven to work off the road.

Alternative Literature Notes:

Litman, T., 2009. "Win-Win Emission Reduction Strategies." Victoria Transport Policy Institute. Website: http://www.vtpi.org/wwclimate.pdf. Accessed March 2010. (p. 5)

Donald Shoup, "Evaluating the Effects of Cashing Out Employer-Paid Parking: Eight Case Studies." *Transport Policy*, Vol. 4, No. 4, October 1997, pp. 201-216. (Table 1, p. 204)

Other Literature Reviewed:

None

3.5 Transit System Improvements

3.5.1 Provide a Bus Rapid Transit System

Range of Effectiveness: 0.02 – 3.2% vehicle miles traveled (VMT) reduction and therefore 0.02 – 3% reduction in GHG emissions.

Measure Description:

The project will provide a Bus Rapid Transit (BRT) system with design features for high quality and cost-effective transit service. These include:

- Grade-separated right-of-way, including bus only lanes (for buses, emergency vehicles, and sometimes taxis), and other Transit Priority measures. Some systems use guideways which automatically steer the bus on portions of the route.
- Frequent, high-capacity service
- High-quality vehicles that are easy to board, quiet, clean, and comfortable to ride.
- Pre-paid fare collection to minimize boarding delays.
- Integrated fare systems, allowing free or discounted transfers between routes and modes.
- Convenient user information and marketing programs.
- High quality bus stations with Transit Oriented Development in nearby areas.
- Modal integration, with BRT service coordinated with walking and cycling facilities, taxi services, intercity bus, rail transit, and other transportation services.

BRT systems vary significantly in the level of travel efficiency offered above and beyond “identity” features and BRT branding. The following effectiveness ranges represent general guidelines. Each proposed BRT should be evaluated specifically based on its characteristics in terms of time savings, cost, efficiency, and way-finding advantages. These types of features encourage people to use public transit and therefore reduce VMT.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context. Other measures are more appropriate to rural areas, such as express bus service to urban activity centers with park-and-ride lots at system-efficient rural access points.
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Existing transit mode share
- Percentage of lines serving Project converting to BRT

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project specificity if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

% VMT Reduction = Riders * Mode * Lines * D

Where

Riders = % increase in transit ridership on BRT line (28% from [1])
Mode = Existing transit mode share (see table below)
Lines = Percentage of lines serving project converting to BRT
D = Adjustments from transit ridership increase to VMT (0.67, see Appendix C)

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001 http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.) Urban Center from San Francisco County Transportation Authority Countywide Transportation Plan, 2000.	

- D: 0.67 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] FTA, August 2005. "Las Vegas Metropolitan Area Express BRT Demonstration Project", NTD, http://www.ntdprogram.gov/ntdprogram/cs?action=showRegionAgencies&region=9

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[70]
CO_2e	0.02 – 3.2% of running
PM	0.02 – 3.2% of running
CO	0.02 – 3.2% of running
NOx	0.02 – 3.2% of running
SO_2	0.02 – 3.2% of running
ROG	0.012 – 1.9% of total

Discussion:

Increases in transit ridership due to shifts from other lines do not need to be addressed since it is already incorporated in the literature.

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (suburban,10% of lines) = 28% * 1.3% * 10% * 0.67 = 0.02%

[70] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- High Range % VMT Reduction (urban, 100% of lines) = 28% * 17% * 100% * 0.67 = 3.2%

Preferred Literature:

- 28% increase in transit ridership in the existing corridor

The FTA study [1] looks at the implementation of the Las Vegas BRT system. The BRT supplemented an existing route along a 7.5 mile corridor. The existing route was scaled back. Total ridership on the corridor (both routes combined) increased 61,704 monthly riders, 28% increase on the existing corridor and 1.4% increase in system ridership. The route represented an increase in 2.1% of system service miles provided.

Alternative Literature:

Alternate:

- 27-84% increase in total transit ridership

Various bus rapid transit systems obtained the following total transit ridership growth: Vancouver 96B (30%), Las Vegas Max (35-40%), Boston Silver Line (84%), Los Angeles (27-42%), and Oakland (66%). VTPI [3] obtained the BRT data from BC Transit's unpublished research. The effectiveness of a BRT strategy depends largely on the land uses the BRT serves and their design and density.

Alternate:

- 50% increase in weekly transit ridership
- 60 – 80% shorter travel time compared to vehicle trip

The Martin Luther King, Jr. East Busway in Pennsylvania opened in 1983 as a separate roadway exclusively for public buses. The busway was 6.8 miles long with six stations. Ridership has grown from 20,000 to 30,000 weekday riders over 10 years. The busway saves commuters significant time compared with driving: 12 minutes versus 30-45 minutes in the AM or an hour in the PM [4].

Alternative Literature References:

[2] Transit Cooperative Research Program. TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It (p.47-48). 1997. [cited in discussion section above]

[3] TDM Encyclopedia; Victoria Transport Policy Institute (2010). Bus Rapid Transit; (http://www.vtpi.org/tdm/tdm120.htm); updated 1/25/2010; accessed 3/3/2010.

[4] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p.55-56) http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf

3.5.2 Implement Transit Access Improvements

Range of Effectiveness: Grouped strategy. [See TST-3 and TST-4]

Measure Description:

This project will improve access to transit facilities through sidewalk/ crosswalk safety enhancements and bus shelter improvements. The benefits of Transit Access Improvements alone have not been quantified and should be grouped with Transit Network Expansion (TST-3) and Transit Service Frequency and Speed (TST-4).

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of improving transit facilities as a standalone strategy.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.5.3 Expand Transit Network

Range of Effectiveness: 0.1 – 8.2% vehicle miles travelled (VMT) reduction and therefore 0.1 – 8.2% reduction in GHG emissions[71]

Measure Description:

The project will expand the local transit network by adding or modifying existing transit service to enhance the service near the project site. This will encourage the use of transit and therefore reduce VMT.

Measure Applicability:

- Urban and suburban context
- May be applicable in a rural context but no literature documentation available (effectiveness will be case specific and should be based on specific assessment of levels of services and origins/destinations served)
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage increase transit network coverage
- Existing transit mode share
- Project location: urban center, urban, or suburban

[71] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project specificity if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

% VMT Reduction = Coverage * B * Mode * D

Where

Coverage = % increase in transit network coverage
B = elasticity of transit ridership with respect to service coverage (see Table below)
Mode = existing transit mode share
D = adjustments from transit ridership increase to VMT (0.67, from Appendix C)

B:

Project setting	Elasticity
Suburban	1.01
Urban	0.72
Urban Center	0.65
Source: TCRP 95, Chapter 10	

Mode: Provide existing transit mode share for project or utilize the following averages

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.) Urban Center from San Francisco County Transportation Authority Countywide Transportation Plan, 2000.	

Assumptions:

Data based upon the following references:

[1] Transit Cooperative Research Program. TCRP Report 95 Traveler Response to System Changes – Chapter 10: Bus Routing and Coverage. 2004. (p. 10-8 to 10-10)

Emission Reduction Ranges and Variables:

Pollut0ant	Category Emissions Reductions[72]
CO_2e	0.1 – 8.2% of running
PM	0.1 – 8.2% of running
CO	0.1 – 8.2% of running
NOx	0.1 – 8.2% of running
SO_2	0.1 – 8.2% of running
ROG	0.06 – 4.9% of total

Discussion:

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (10% expansion, suburban) = 10% * 1.01 * 1.3% * .67 = 0.1%
- High Range % VMT Reduction (100% expansion, urban) = 100% * 0.72 * 17% * .67 = 8.2%

The low and high ranges are estimates and may vary based on the characteristics of the project.

[72] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Preferred Literature:

- 0.65 = elasticity of transit ridership with respect to service coverage/expansion (in radial routes to central business districts)
- 0.72 = elasticity of transit ridership with respect to service coverage/expansion (in central city routes)
- 1.01 = elasticity of transit ridership with respect to service coverage/expansion (in suburban routes)

TCRP 95 Chapter 10 [1] documents the results of system-wide service expansions in San Diego. The least sensitivity to service expansion came from central business districts while the largest impacts came from suburban routes. Suburban locations, with traditionally low transit service, tend to have greater ridership increases compared to urban locations which already have established transit systems. In general, there is greater opportunity in suburban locations.

Alternative Literature:

- -0.06 = elasticity of VMT with respect to transit revenue miles

Growing Cooler [3] modeled the impact of various urban variables (including transit revenue miles and transit passenger miles) on VMT, using data from 84 urban areas around the U.S.

Alternative Literature References:

[2] Transit Cooperative Research Program. TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It (p.47-48). 1997. [cited in discussion section above]

[3] Ewing, et al, 2008. Growing Cooler – The Evidence on Urban Development and Climate Change. Urban Land Institute.

3.5.4 Increase Transit Service Frequency/Speed

Range of Effectiveness: 0.02 – 2.5% vehicle miles traveled (VMT) reduction and therefore 0.02 – 2.5% reduction in GHG emissions[73]

Measure Description:

This project will reduce transit-passenger travel time through more reduced headways and increased speed and reliability. This makes transit service more attractive and may result in a mode shift from auto to transit which reduces VMT.

Measure Applicability:

- Urban and suburban context
- May be applicable in a rural context but no literature documentation available (effectiveness will be case specific and should be based on specific assessment of levels of services and origins/destinations served)
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage reduction in headways (increase in frequency)
- Level of implementation
- Project setting: urban center, urban, suburban
- Existing transit mode share

[73] Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project-specific values if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

% VMT Reduction = Headway * B * C * Mode * E

Where

Headway = % reduction in headways
B = elasticity of transit ridership with respect to increased frequency of service (from [1])
C = adjustment for level of implementation
Mode = existing transit mode share
E = adjustments from transit ridership increase to VMT

Detail:

- Headway: reasonable ranges from 15 – 80%
- B:

Setting	Elasticity
Urban	0.32
Suburban	0.36
Source: TCRP Report 95 Chapter 9	

- C:

Level of implementation = number of lines improved / total number of lines serving project	Adjustment
<50%	50%
>=50%	85%
Fehr & Peers, 2010.	

- Mode: Provide existing transit mode share for project or utilize the following averages

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.)	

Urban Center from San Francisco County Transportation Authority Countywide Transportation Plan, 2000.

- E: 0.67 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Transit Cooperative Research Program. TCRP Report 95 Traveler Response to System Changes – Chapter 9: Transit Scheduling and Frequency (p. 9-14)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[74]
CO_2e	0.02 – 2.5% % of running
PM	0.02 – 2.5% % of running
CO	0.02 – 2.5% % of running
NOx	0.02 – 2.5% % of running
SO_2	0.02 – 2.5% % of running
ROG	0.01 – 1.5% % of total

Discussion:

Reasonable ranges for reductions were calculated assuming existing 30-minute headways reduced to 25 minutes and 5 minutes to establish the estimated low and high reductions, respectively.

The level of implementation adjustment is used to take into account increases in transit ridership due to shifts from other lines. If increases in frequency are only applied to a percentage of the lines serving the project, then we conservatively estimate that 50% of the transit ridership increase is a shift from the existing lines. If frequency increases are applied to a majority of the lines serving the project, we conservatively assume at least some of the transit ridership (15%) comes from existing riders.

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the

[74] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:
Sample calculations are provided below:

- Low Range % VMT Reduction (15% reduction in headways, suburban, <50% implementation) = 15% * 0.36 * 50% * 1.3% *0.67 = 0.02%
- High Range % VMT Reduction (80% reduction in headways, urban, >50% implementation) = 80% * 0.32 * 85% * 17% * 0.67 = 2.5%

Preferred Literature:

- 0.32 = elasticity of transit ridership with respect to transit service (urban)
- 0.36 – 0.38 = elasticity of transit ridership with respect to transit service (suburban)

TCRP 95 Chapter 9 [1] documents the results of frequency changes in Dallas. Increases in frequency are more sensitive in a suburban environment. Suburban locations, with traditionally low transit service, tend to have greater ridership increases compared to urban locations which already have established transit systems. In general, there is greater opportunity in suburban locations

Alternative Literature:

- 0.5 = elasticity of transit ridership with respect to increased frequency of service
- 1.5 to 2.3% increase in annual transit trips due to increased frequency of service
- 0.4-0.5 = elasticity of ridership with respect to increased operational speed
- 4% - 15% increase in annual transit trips due to increased operational speed
- 0.03-0.09% annual GHG reduction (for bus service expansion, increased frequency, and increased operational speed)

For increased frequency of service strategy, *Moving Cooler* [3] looked at three levels of service increases, 3%, 3.5% and 4.67% increases in service, resulting in a 1.5 – 2.3% increase in annual transit trips. For increased speed and reliability, Moving Cooler looked at three levels of speed/reliability increases. Improving travel speed by 10% assumed implementing signal prioritization, limited stop service, etc. over 5 years. Improving travel speed by 15% assumed all above strategies plus signal synchronization and intersection reconfiguration over 5 years. Improving travel speed by 30% assumed all above strategies and an improved reliability by 40%, integrated fare system, and implementation of BRT where appropriate. *Moving Cooler* calculates estimated 0.04-0.14% annual GHG reductions in combination with bus service expansion strategy.

Alternative Literature References:

[2] Transit Cooperative Research Program. TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It (p.47-48). 1997. [cited in discussion section]

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p B-32, B-33, Table D.3) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

3.5.5 Provide Bike Parking Near Transit

Range of Effectiveness: Grouped strategy. [See TST-3 and TST-4]

Measure Description:

Provide short-term and long-term bicycle parking near rail stations, transit stops, and freeway access points. The benefits of Station Bike Parking have no quantified impacts as a standalone strategy and should be grouped with Transit Network Expansion (TST-3) and Increase Transit Service Frequency and Speed (TST-4) to encourage multi-modal use in the area and provide ease of access to nearby transit for bicyclists.

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of including transit station bike parking.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.5.6 Provide Local Shuttles

Range of Effectiveness: Grouped strategy. [See TST-4 and TST-5]

Measure Description:

The project will provide local shuttle service through coordination with the local transit operator or private contractor. The local shuttles will provide service to transit hubs, commercial centers, and residential areas. The benefits of Local Shuttles alone have not been quantified and should be grouped with Transit Network Expansion (TST-4) and Transit Service Frequency and Speed (TST-5) to solve the “first mile/last mile” problem. In addition, many of the CommuteTrip Reduction Programs (Section 2.4, TRP 1-13) also included local shuttles.

Measure Applicability:

- Urban, suburban context
- Appropriate for large residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified to support the effectiveness of this strategy alone.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.6 Road Pricing/Management

3.6.1 Implement Area or Cordon Pricing

Range of Effectiveness: 7.9 – 22.0% vehicle miles traveled (VMT) reduction and therefore 7.9 – 22.0% reduction in GHG emissions.

Measure Description:
This project will implement a cordon pricing scheme. The pricing scheme will set a cordon (boundary) around a specified area to charge a toll to enter the area by vehicle. The cordon location is usually the boundary of a central business district (CBD) or urban center, but could also apply to substantial development projects with limited points of access, such as the proposed Treasure Island development in San Francisco. The cordon toll may be static/constant, applied only during peak periods, or be variable, with higher prices during congested peak periods. The toll price can be based on a fixed schedule or be dynamic, responding to real-time congestion levels. It is critical to have an existing, high quality transit infrastructure for the implementation of this strategy to reach a significant level of effectiveness. The pricing signals will only cause mode shifts if alternative modes of travel are available and reliable.

Measure Applicability:
- Central business district or urban center only

Baseline Method:
See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:
The following information needs to be provided by the Project Applicant:

- Percentage increase in pricing for passenger vehicles to cross cordon
- Peak period variable price or static all-day pricing (London scheme)

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project-specific values if desired. Please see Appendix C for calculation detail:

- % (due to pricing) route shift, time-of-day shift, HOV shift, trip reduction, shift to transit/walk/bike

Mitigation Method:

% VMT Reduction = Cordon$ * B * C

Where

Cordon$ = % increase in pricing for passenger vehicles to cross cordon
B = Elasticity of VMT with respect to price (from [1])
C = Adjustment for % of VMT impacted by congestion pricing and mode shifts

Detail:

- Cordon$: reasonable range of 100 – 500% (See Appendix C for detail))
- B: 0.45 [1]
- C:

Cordon pricing scheme	Adjustment
Peak-period variable pricing	8.8%
Static all-day pricing	21%
Source: See Appendix C for detail	

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. (p. B-13, B-14) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

- Referencing: VTPI, *Transportation Elasticities: How Prices and Other Factors Affect Travel Behavior.* July 2008. www.vtpi.org

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[75]
CO_2e	7.9 - 22.0% of running
PM	7.9 - 22.0% of running
CO	7.9 - 22.0% of running
NOx	7.9 - 22.0% of running
SO_2	7.9 - 22.0% of running
ROG	4.7 – 13.2% of total

Discussion:

The amount of pricing will vary on a case-by-case basis. The 100 – 500% increase is an estimated range of increases and should be adjusted to reflect the specificities of the pricing scheme implemented. Take care in calculating the percentage increase in price if baseline is $0.00. An upper limit of 500% may be a good check point. If baseline is zero, the Project Applicant may want to conduct calculations with a low baseline such as $1.00.

These calculations assume that the project is within the area cordon, essentially assuming that 100% of project trips will be affected. See Appendix C to make appropriate adjustments.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (100% increase in price, peak period pricing) = 100% * 0.45 * 8.8% = 4.0%
- High Range % VMT Reduction (500% increase in price, all-day pricing) = 500% * 0.45 * 21% = 47.3% = 22% (established maximum based on literature)

Preferred Literature:

- -0.45 VMT elasticity with regard to pricing
- 0.04-0.08% greenhouse gas (GHG) reduction

Moving Cooler [1] assumes an average of 3% of regional VMT would cross the CBD cordon. A VMT reduction of 20% was estimated to require an average of 65 cents/mile applied to all congested VMT in the CBD, major employment, and retail centers. The

[75] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

range in GHG reductions is attributed to the range of implementation and start date. *Moving Cooler* reports an elasticity range from -0.15 to -0.47 from VTPI. *Moving Cool*er utilizes a stronger elasticity (0.45) to represent greater impact cordon pricing will have on users compared to other pricing strategies.

Alternative Literature:

- 6.5-14.0% reduction in carbon emissions
- 16-22% reduction in vehicles
- 6-9% increase in transit use

The Center for Clean Air Policy (CCAP) [2] cites two case studies in Europe, one in London and one in Stockholm, which show vehicle reductions of 16% and 22%, respectively. London's fee reduced CO_2 by 6.5%. Stockholm's program reduced injuries by 10%, increased transit use by 6-9%, and reduced carbon emissions by 14% in the central city within months of implementation.

Alternative Literature References:

[2] Center for Clean Air Policy (CCAP), *Short-term Efficiency Measures.* (p. 1)
http://www.ccap.org/docs/resources/715/Short-Term%20Travel%20Efficiency%20Measures%20cut%20GHGs%209%2009%20final.pdf

CCAP cites Transport for London. *Central London Congestion Charging: Impacts Monitoring*, *Sixth Annual Report*. July 2008 http://www.tfl.gov.uk/assets/downloads/sixth-annual-impacts-monitoring-report-2008-07.pdf (p. 6) and Leslie Abboud and Jenny Clevstrom, "Stockholm's Syndrome," August 29, 2006, *Wall Street Journal.*http://transportation.northwestern.edu/mahmassani/Media/WSJ_8.06.pdf (p. 2)

Other Literature Reviewed:

None

3.6.2 Improve Traffic Flow

Range of Effectiveness: 0 - 45% reduction in GHG emissions

Measure Description:

The project will implement improvements to smooth traffic flow, reduce idling, eliminate bottlenecks, and management speed. Strategies may include signalization improvements to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds.

This measure does not take credit for any reduction in GHG emissions associated with changes to non-project traffic VMT. If Project Applicant wants to take credit for this benefit, the non-project traffic VMT would also need to be covered in the baseline conditions.

Measure Applicability:

- Urban, suburban, and rural context

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO_2 emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Average base-year travel speed (miles per hour (mph)) on implemented roads (congested[76] condition)

[76] A roadway is considered "congested" if operating at Level of Service (LOS) E or F

- Future travel speed (mph) on implemented roads for both a) congested and b) free-flow[77] condition
- Total vehicle miles traveled (VMT) on implemented roadways
- Total project-generated VMT

Mitigation Method:

$$\% \ CO_2 \text{ Emissions Reduction} = 1 - \frac{\text{Project GHG Emission}_{\text{post strategy}}}{\text{Project GHG emission}_{\text{baseline}}}$$

Where

Project GHG emission$_{\text{post strategy}}$ = $EF_{running}$ after strategy implementation * project VMT
Project GHG emission$_{\text{baseline}}$ = $EF_{running}$ before strategy implementation * project VMT
$EF_{running}$ = emission factor for running emissions [from table presented under "Detail" below]

Detail:

mph	Grams of CO_2 / mile	
	congested	Free-flow
5	1,110	823
10	715	512
15	524	368
20	424	297
25	371	262
30	343	247
35	330	244
40	324	249
45	323	259
50	325	273
55	328	289
60	332	306
65	339	325
70	353	347
75	377	375
80	420	416
85	497	478
Source: Barth, 2008, Fehr & Peers [1]		

[77] A roadway is considered "free flow" if operating at LOS D or better

By only including the project VMT portion, the reduction is typically on scale with the percentage of cost for traffic improvements and full reduction calculated for project VMT should be used. However, if the project cost is a greater share than their contribution to the VMT on the road, than the project and non-project VMT should be calculated and the percent reduction should be multiplied by the percent cost allocation. The GHG emission reductions associated with non-project VMT (if applicable) would be calculated as follows:

Metric Tonnes GHG reduced due to improving non-Project traffic flow = % Cost Allocation * Non-Project VMT * ($EF_{congested}$ –$EF_{freeflow}$) / (1,000,000 gram/MT)

Where:

Non-Project VMT that the Project's cost share impacts = portion of non-project VMT

$EF_{congested}$ = emissions for congested road in g/VMT

$EF_{freeflow}$ = emissions for freeflow road in g/VMT

Assumptions:

Data based upon the following references:

[1] Barth and Boriboonsomsin, "Real World CO_2 Impacts of Traffic Congestion", *Transportation Research Record, Journal of the Transportation Research Board,* No. 2058, Transportation Research Board, National Academy of Science, 2008.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions[78]
CO_2e	0 - 45% of running
PM	0 - 45% of running
CO	0 - 45% of running

[78] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

NOx	0 - 45% of running
SO_2	0 - 45% of running
ROG	0 - 27% of total

Discussion:

Care must be taken when estimating effectiveness since significantly improving traffic flow essentially lowers the cost and delay involved in travel, which under certain circumstances may induce additional VMT. [See Appendix C for a discussion on induced travel.]

The range of effectiveness presented above is a very rough estimate as emissions reductions will be highly dependent on the level of implementation and degree of congestion on the existing roadways. In addition, the low range of effectiveness was stated at 0% to highlight the potential of induced travel negating benefits achieved from this strategy.

Example:

Sample calculations are provided below:

- Signal timing coordination implementation:
  - Existing congested speeds of 25 mph
  - Conditions post-implementation: would improve to 25 mph free flow speed
  - Proposed project daily traffic generation is 200,000 VMT
  - Project CO_2 Emissions$_{baseline}$ = (371 g CO_2/mile) * (200,000 VMT daily) * (1 MT / 1 x 10^6 g) = 74 MT of CO_2 daily
  - Project CO_2 Emissions$_{post\ strategy}$ = (262 g CO_2/mile) * (200,000 VMT daily) * (1 MT / 1 x 10^6 g) = 52.4 MT of CO_2 daily
  - Percent CO_2emissions reduction = 1- (52.4 MT/ 74 MT) = 29%
- Speed management technique:
  - Existing free-flow speeds of 75 mph
  - Conditions post-implementation: reduce to 55 mph free flow speed
  - Proposed project daily traffic generation is 200,000 VMT
  - Project CO_2 Emissions$_{baseline}$ = (375 g CO_2/mile) * (200,000 VMT daily) * (1 MT / 1 x 10^6 g) = 75 MT of CO_2 daily
  - Project CO_2 Emissions$_{post\ strategy}$ = (289 g CO_2/mile) * (200,000 VMT daily) * (1 MT / 1 x 10^6 g) = 58 MT of CO_2 daily
  - Percent CO_2emissions reduction= 1 – (58 tons/ 75 tons) = 23%

Preferred Literature:

- 7 – 12% reduction in CO_2 emissions

This study [1] examined traffic conditions in Southern California using energy and emissions modeling and calculated the impacts of 1) congestion mitigation strategies to smooth traffic flow, 2) speed management techniques to reduce high free-flow speeds, and 3) suppression techniques to eliminate acceleration/deceleration associated with stop-and-go traffic. Using typical conditions on Southern California freeways, the strategies could reduce emissions by 7 to 12 percent.

The table (in the mitigation method section) was calculated using the CO_2 emissions equation from the report:

$$\ln(y) = b_0 + b_1 * x + b_2 * x^2 + b_3 * x^3 + b_4 * x^4$$

where

y = CO_2 emission in grams / mile
x = average trip speed in miles per hour (mph)

The coefficients for b_i were based off of Table 1 of the report, which then provides an equation for both congested conditions (real-world) and free-flow (steady-state) conditions.

Alternative Literature:

- 4 - 13% reduction in fuel consumption

The FHWA study [2] looks at various case studies of traffic flow improvements. In Los Angeles, a new traffic control signal system was estimated to reduce signal delays by 44%, vehicle stops by 41%, and fuel consumption by 13%. In Virginia, a study of retiming signal systems estimated reductions of stops by 25%, travel time by 10%, and fuel consumption by 4%. In California, optimization of 3,172 traffic signals through 1988 (through California's Fuel Efficient Traffic Signal Management program) documented an average reduction in vehicle stops of 16% and in fuel use of 8.6%. The 4-13% reduction in fuel consumption applies only to that vehicular travel directly benefited by the traffic flow improvements, specifically the VMT within the corridor in which the ITS is implemented and only during the times of day that would otherwise be congested without ITS. For example, signal coordination along an arterial normally congested in peak commute hours would produce a 4-13% reduction in fuel consumption only for the VMT occurring along that arterial during weekday commute hours.

Alternate:

- Up to 0.02% *increase* in greenhouse gas (GHG) emissions

Moving Cooler [3] estimates that bottleneck relief will result in an increase in GHG emissions during the 40-year period, 2010 to 2050. In the short term, however, improved roadway conditions may improve congestion and delay, and thus reduce fuel consumption. VMT and GHG emissions are projected to increase after 2030 as induced demand begins to consume the roadway capacity. The study estimates a maximum increase of 0.02% in GHG emissions.

Alternative Literature References:

[2] FHWA, *Strategies to Reduce Greenhouse Gas Emissions from Transportation Sources*. http://www.fhwa.dot.gov/environment/glob_c5.pdf.

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

3.6.3 Required Project Contributions to Transportation Infrastructure Improvement Projects

Range of Effectiveness: Grouped strategy. [See RPT-2 and TST-1 through 7]

Measure Description:

The project should contribute to traffic-flow improvements or other multi-modal infrastructure projects that reduce emissions and are not considered as substantially growth inducing. The local transportation agency should be consulted for specific needs.

Larger projects may be required to contribute a proportionate share to the development and/or continuation of a regional transit system. Contributions may consist of dedicated right-of-way, capital improvements, easements, etc. The local transportation agency should be consulted for specific needs.

Refer to Traffic Flow Improvements (RPT-2) or the Transit System Improvements (TST-1 through 7) strategies for a range of effectiveness in these categories. The benefits of Required Contributions may only be quantified when grouped with related improvements.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

Although no literature discusses project contributions as a standalone measure, this strategy is a supporting strategy for most operations and infrastructure projects listed in this report.

Other Literature Reviewed:

None

3.6.4 Install Park-and-Ride Lots

Range of Effectiveness: Grouped strategy. [See RPT-1, TRT-11, TRT-3, and TST-1 through 6]

Measure Description:

This project will install park-and-ride lots near transit stops and High Occupancy Vehicle (HOV) lanes. Park-and-ride lots also facilitate car- and vanpooling. Refer to Implement Area or Cordon Pricing (RPT-1), Employer-Sponsored Vanpool/Shuttle (TRT-11), Ride Share Program (TRT-3), or the Transit System Improvement strategies (TST-1 through 6) for ranges of effectiveness within these categories. The benefits of Park-and-Ride Lots are minimal as a stand-alone strategy and should be grouped with any or all of the above listed strategies to encourage carpooling, vanpooling, ride-sharing, and transit usage.

Measure Applicability:

- Suburban and rural context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

Alternate:

- 0.1 – 0.5% vehicle miles traveled (VMT) reduction

A 2005 FHWA [1] study found that regional VMT in metropolitan areas may be reduced between 0.1 to 0.5% (citing Apogee Research, Inc., 1994). The reduction potential of this strategy may be limited because it reduces the trip length but not vehicle trips.

Alternate:

- 0.50% VMT reduction per day

Washington State Department of Transportation (WSDOT) [2] notes the above number applies to countywide interstates and arterials.

Alternative Literature References:

[1] FHWA. Transportation and Global Climate Change: A Review and Analysis of the Literature – Chapter 5: Strategies to Reduce Greenhouse Gas Emissions from Transportation Sources. http://www.fhwa.dot.gov/environment/glob_c5.pdf

[2] Washington State Department of Transportation. *Cost Effectiveness of Park-and-Ride Lots in the Puget Sound Area.* http://www.wsdot.wa.gov/research/reports/fullreports/094.1.pdf

Other Literature Reviewed:

None

3.7 Vehicles

3.7.1 Electrify Loading Docks and/or Require Idling-Reduction Systems

Range of Effectiveness: 26-71% reduction in TRU idling GHG emissions

Measure Description:

Heavy-duty trucks transporting produce or other refrigerated goods will idle at truck loading docks and during layovers or rest periods so that the truck engine can continue to power the cab cooling elements. Idling requires fuel use and results in GHG emissions.

The Project Applicant should implement an enforcement and education program that will ensure compliance with this measure. This includes posting signs regarding idling restrictions as well as recording engine meter times upon entering and exiting the facility.

Measure Applicability:

- Truck refrigeration units (TRU)

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Horsepower of TRU
- Hours of operation

Baseline Method:

$$\text{GHG emission} = \frac{CO_2\ \text{Exhaust}}{\text{Activity} \times \text{AvgHP} \times \text{LF}} \times \text{Hp} \times \text{Hr} \times \text{C} \times \text{LF}$$

Where:

GHG emission = MT CO_2e

CO_2 Exhaust = Statewide daily CO_2 emission from TRU for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Activity = Statewide daily average TRU operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.

AvgHP = Average TRU horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.

Hp = Horsepower of TRU.

Hr = Hours of operation.

C = Unit conversion factor

LF = Load factor of TRU for the relevant horsepower tier (dimensionless). Obtained from OFFROAD 2007.

Note that this method assumes the load factor of the TRU is same as the default in OFFROAD2007.

Mitigation Method:

Electrify loading docks

TRUs will be plugged into electric loading dock instead of left idling. The indirect GHG emission from electricity generation is:

$$\text{GHG emission} = \text{Utility} \times \text{Hp} \times \text{LF} \times \text{Hr} \times \text{C}$$

Where:

GHG emissions = MT CO_2e

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Hp = Horsepower of TRU.

LF = Load factor of TRU for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.

Hr = Hours of operation.

C = Unit conversion factor

GHG Reduction %[79] $= 1 - \dfrac{\text{Utility} \times \text{C}}{\text{EF} \times 10^{-6}}$

Idling Reduction

Emissions from reduced TRU idling periods are calculated using the same methodology for the baseline scenario, but with the shorter hours of operation.

$$\text{GHG Reduction \%} = 1 - \frac{\text{time}_{\text{mitigated}}}{\text{time}_{\text{baseline}}}$$

Electrify loading docks

Power Utility	TRU Horsepower (HP)	Idling Emission Reductions[80]
LADW&P	< 15	26.3%
	< 25	26.3%
	< 50	35.8%

79 This assumes energy from engine losses are the same.
80 This reduction percentage applies to all GHG and criteria pollutant idling emissions.

PG&E	< 15	72.9%
	< 25	72.9%
	< 50	76.3%
SCE	< 15	61.8%
	< 25	61.8%
	< 50	66.7%
SDGE	< 15	53.5%
	< 25	53.5%
	< 50	59.5%
SMUD	< 15	67.0%
	< 25	67.0%
	< 50	71.2%

Idling Reduction

Emission reduction from shorter idling period is same as the percentage reduction in idling time.

Discussion:

The output from OFFROAD2007 shows the same emissions within each horsepower tier regardless of the year modeled. Therefore, the emission reduction is dependent on the location of the Project and horsepower of the TRU only.

Assumptions:

Data based upon the following references:

- California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm
- California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx

Preferred Literature:

The electrification of truck loading docks can allow properly equipped trucks to take advantage of external power and completely eliminate the need for idling. Trucks would need to be equipped with internal wiring, inverter, system, and a heating, ventilation, and air conditioning (HVAC) system. Under this mitigation measure, the direct emissions from fuel combustion are completely displaced by indirect emissions from the CO_2 generated during electricity production. The amount of electricity required depends on the type of truck and refrigeration elements; this data could be determined from manufacturer specifications. The total kilowatt-hours required should be multiplied by the carbon-intensity factor of the local utility provider in order to calculate the amount of indirect CO_2 emissions. To take credit for this mitigation measure, the Project Applicant would need to provide detailed evidence supporting a calculation of the emissions reductions.

Alternative Literature:

None

Other Literature Reviewed:

1. USEPA. 2002. Green Transport Partnership, A Glance at Clean Freight Strategies: Idle Reduction. Available online at: http://nepis.epa.gov/Adobe/PDF/P1000S9K.PDF
2. ATRI. 2009. Research Results: Demonstration of Integrated Mobile Idle Reduction Solutions. Available online at: http://www.atri-online.org/research/results/ATRI1pagesummaryMIRTDemo.pdf

None

3.7.2 Utilize Alternative Fueled Vehicles

Range of Effectiveness: Reduction in GHG emissions varies depending on vehicle type, year, and associated fuel economy.

Measure Description:

When construction equipment is powered by alternative fuels such as biodiesel (B20), liquefied natural gas (LNG), or compressed natural gas (CNG) rather than conventional petroleum diesel or gasoline, GHG emissions from fuel combustion may be reduced.

Measure Applicability:

- Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Vehicle category
- Traveling speed (mph)
- Number of trips and trip length, or Vehicle Miles Traveled (VMT)
- Fuel economy (mpg) or Fuel consumption

Baseline Method:

$$\text{Baseline } CO_2 \text{ Emission} = EF \times \frac{1}{FE} \times VMT \times C$$

Where:

Baseline CO_2 Emission	=	MT of CO_2
EF	=	CO_2 emission factor, from CCAR General Reporting Protocol (g/gallon)
VMT	=	Vehicle miles traveled (VMT) = T x L
FE	=	Fuel economy (mpg)
C	=	Unit conversion factor

$$\text{Baseline } N_2O / CH_4 \text{ Emission} = EF \times VMT \times C$$

Where:

Baseline N_2O/CH_4 Emission	=	MT of N_2O or CH_4
EF	=	N_2O or CH_4 emission factor, from CCAR General Reporting Protocol (g/mile)
VMT	=	Vehicle miles traveled (VMT) = T x L
T	=	Number of one-way trips
L	=	One-way trip length
FC	=	Fuel consumption (gallon) = VMT/FE

FE = Fuel economy (mpg)
C = Unit conversion factor

The total baseline GHG emission is the sum of the emissions of CO_2, N_2O and CH_4, adjusted by their global warming potentials (GWP):

Baseline GHG Emission
= Baseline CO_2 Emission + Baseline N_2O Emission $\times$ 310 +Baseline CH_4 Emission $\times$ 21

Where:

Baseline GHG Emission = MT of CO_2e
310 = GWP of N_2O
21 = GWP of CH_4

Mitigation Method:

Mitigated emissions from using alternative fuel is calculated using the same methodology before, but using emission factors for the alternative fuel, and fuel consumption calculated as follows:

$$GHG emissions = \frac{1}{FE} \times ER \times VMT \times EF_{CO2} + VMT \times EF_{N20} + VMT \times EF_{CH4}$$

Where:

ER = Energy ratio from US Department of Energy (see table below)
EF = Emission Factor for pollutant
VMT = Vehicle miles traveled (VMT)
FE = Fuel economy (mpg)

Fuel	Energy Ratio: Amount of fuel needed to provide same energy as			
	1 gallon of Gasoline		1 gallon of Diesel	
Gasoline	1	gal	1.13	gal
#2 Diesel	0.88	gal	1	gal
B20	0.92	gal	1.01	gal
CNG	126.67	ft^3	143.14	ft^3
LNG	1.56	gal	1.77	gal
LPC	1.37	gal	1.55	gal

Emission reductions can be calculated as:

$$\text{Reduction} = 1 - \frac{\text{Mitigated Emission}}{\text{Running Emission}}$$

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Range Not Quantified[81]
PM	Range Not Quantified
CO	Range Not Quantified
NOx	Range Not Quantified
SO_2	Range Not Quantified
ROG	Range Not Quantified

Discussion:

Using the methodology described above, only the running emission is considered. A hypothetical scenario for a gasoline fueled light duty automobile in 2015 is illustrated below. The CO_2 emission factor from motor gasoline in CCAR 2009 is 8.81 kg/gallon. Assuming the automobile makes two trips of 60 mile each per day, and using the current passenger car fuel economy of 27.5 mpg under the CAFE standards, then the annual baseline CO_2 emission from the automobile is:

$$8.81 \times \frac{2 \times 60 \times 365}{27.5} \times 10^{-3} = 14.0 \text{ MT/year}$$

Where 10^{-3} is the conversion factor from kilograms to MT.

Using the most recent N_2O emission factor of 0.0079 g/mile in CCAR 2009 for gasoline passenger cars, the annual baseline N_2O emission from the automobile is:

$$0.0079 \times 2 \times 365 \times 60 \times 10^{-6} = 0.000346 \text{ MT/year}$$

[81] The emissions reductions varies and depends on vehicle type, year, and the associated fuel economy. The methodology above describes how to calculate the expected GHG emissions reduction assuming the required input parameters are known.

Similarly, using the same formula with the most recent CH_4 emission factor of 0.0147 g/mile in CCAR 2009 for gasoline passenger cars, the annual baseline CH_4 emission from the automobile is calculated to be 0.000644 MT/year.

Thus, the total baseline GHG emission for the automobile is:

$$14.0 + 0.000346 \times 310 + 0.000644 \times 21 = 14.1 \text{ MT/year}$$

If compressed natural gas (CNG) is used as alternative fuel, the CNG consumption for the same VMT is:

$$\frac{2 \times 60 \times 365}{27.5} \times 126.67 = 201{,}751 \text{ ft}^3$$

Using the same formula as for the baseline scenario but with emission factors of CNG and the CNG consumption, the mitigated GHG emission can be calculated as shown in the table below

Pollutant	Emission (MT/yr)
CO_2	11.0
N_2O	0.0022
CH_4	0.0323
CO_2e	12.4

Therefore, the emission reduction is:

$$1 - \frac{12.4}{14.0} = 11.4\%$$

Notice that in the baseline scenario, N_2O and CH_4 only make up <1% of the total GHG emissions, but actually increase for the mitigated scenario and contribute to >10% of total GHG emissions.

Assumptions:

Data based upon the following references:

- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html

- US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: http://www.afdc.energy.gov/afdc/fuels/properties.html

Preferred Literature:

The amount of emissions avoided from using alternative fuel vehicles can be calculated using emission factors from the California Climate Action Registry (CCAR) General Reporting Protocol [1]. Multiplying this factor by the fuel consumption or vehicle miles traveled (VMT) gives the direct emissions of CO_2 and N_2O /CH_4, respectively. Fuel consumption and VMT can be calculated interchangeably with the fuel economy (mpg). The total GHG emission is the sum of the emissions from the three chemicals multiplied by their respective global warming potential (GWP).

Assuming the same VMT, the amount of alternative fuel required to run the same vehicle fleet can be calculated by multiplying gasoline/diesel fuel consumption by the equivalent-energy ratio obtained from the US Department of Energy [2]. Using the alternative fuel consumption and the emission factors for the alternative fuel from CCAR, the mitigated GHG emissions can be calculated. The GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Alternative Literature:

None

Notes:

[1] California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html
[2] US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: http://www.afdc.energy.gov/afdc/fuels/properties.html

Other Literature Reviewed:

None

3.7.3 Utilize Electric or Hybrid Vehicles

Range of Effectiveness: 0.4 - 20.3% reduction in GHG emissions

Measure Description:

When vehicles are powered by grid electricity rather than fossil fuel, direct GHG emissions from fuel combustion are replaced with indirect GHG emissions associated with the electricity used to power the vehicles. When vehicles are powered by hybrid-electric drives, GHG emissions from fuel combustion are reduced.

Measure Applicability:

- Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Vehicle category
- Traveling speed (mph)
- Number of trips and trip length, or Vehicle Miles Traveled (VMT)
- Fuel economy (mpg)

Baseline Method:

$$\text{Baseline Emission} = EF \times (1 - R) \times VMT \times C$$

Where:

Baseline Emission	=	MT of Pollutant
EF	=	Running emission factor for pollutant at traveling speed, from EMFAC.
VMT	=	Vehicle miles traveled (VMT)
R	=	Additional reduction in EF due to regulation (see Table 1)
C	=	Unit conversion factor

Mitigation Method:

<u>Fully Electric Vehicle</u>

Vehicle will run solely on electricity. The indirect GHG emission from electricity generation is:

$$\text{Mitigated Emission} = \text{Utility} \times \frac{1}{FE} \times VMT \times ER \times C$$

Where:

Mitigated Emission = MT of CO_2e
Utility = Carbon intensity of Local Utility (CO_2e/kWh)
VMT = Vehicle miles traveled (VMT)
ER = Energy Ratio = 33.4 kWh/gallon-gasoline or 37.7 kWh/gallon-diesel
FE = Fuel Economy (mpg)
C = Unit conversion factor

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Criteria pollutant emissions will be 100% reduced for equipment running solely on electricity.

Hybrid-Electric Vehicle

The Project Applicant has to determine the fuel consumption reduced from using the hybrid-electric vehicle. The emission reductions for all pollutants are the same as the fuel reduction.

Emission reductions can be calculated as:

$$\text{GHG Reduction\%} = 1 - \frac{\text{Mitigated Emission}}{\text{Running Emission}}$$

Emission Reduction Ranges and Variables:

See Table VT-3.1 below.

Discussion:

Using the methodology described above, only the running emission is considered. A hypothetical scenario for a gasoline fueled light duty automobile with catalytic converter in 2015 is illustrated below. The running CO_2 emission factor at 30 mph from an EMFAC run of the Sacramento county with temperature of 60F and relative humidity of 45% is 336.1 g/mile. From Table VT-3.1, there will be an additional reduction of 9.1% for the emission factor in 2015 due to Pavley standard. Assuming the automobile makes two trips of 60 mile each per day, then annual baseline emission from the automobile is:

$$336.1 \times (100\% - 9.1\%) \times 2 \times 365 \times 60 \times 10^{-6} = 13.4 \text{ MT/year}$$

Where 10^{-6} is the conversion factor from grams to MT. Assuming the current passenger car fuel economy of 27.5 mpg under the CAFE standards, and using the carbon-intensity factor for PG&E, the electric provider for the Sacramento region, the mitigated emission from replacing the automobile described above with electric vehicle would be:

$$\left(456 \times \frac{2 \times 365 \times 60}{27.5} \times 33.4 \times \frac{1}{2{,}204 \times 10^{3}}\right) = 11.0 \text{ MT/year}$$

Therefore, the emission reduction is:

$$1 - \frac{11.0}{13.4} = 17.9\%$$

Assumptions:

Data based upon the following references:

- California Air Resources Board. EMFAC2007. Available online at: http://www.arb.ca.gov/msei/onroad/latest_version.htm
- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html
- California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx
- US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: http://www.afdc.energy.gov/afdc/fuels/properties.html

Preferred Literature:

The amount of emissions avoided from using electric and hybrid vehicles can be calculated using CARB's EMFAC model, which provides state-wide and regional running emission factors for a variety of on-road vehicles in units of grams per mile [1]. Multiplying this factor by the vehicle miles traveled (VMT) gives the direct emissions. For criteria pollutant, emissions can be assumed to be 100% reduced from running on electricity. For GHG, assuming the same VMT, the electricity required to run the same vehicle fleet can be calculated by dividing by the fuel economy (mph) and multiplying the gasoline-electric energy ratio obtained from the US Department of Energy [2]. Multiplying this value by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with electric vehicles. The GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Alternative Literature:

None

Notes:

[1] California Air Resources Board. EMFAC2007. Available online at: http://www.arb.ca.gov/msei/onroad/latest_version.htm
[2] US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: http://www.afdc.energy.gov/afdc/fuels/properties.html

Other Literature Reviewed:

None

Table VT-3.1
Reduction in EMFAC Running Emission Factor from New Regulations

Year	Vehicle Class	Reduction	Pollutant	Regulation
2010	LDA/LDT/MDV	0.4%	CO_2	Pavley Standard
2011	LDA/LDT/MDV	1.6%	CO_2	Pavley Standard
2012	LDA/LDT/MDV	3.5%	CO_2	Pavley Standard
2013	LDA/LDT/MDV	5.3%	CO_2	Pavley Standard
2014	LDA/LDT/MDV	7.1%	CO_2	Pavley Standard
2015	LDA/LDT/MDV	9.1%	CO_2	Pavley Standard
2016	LDA/LDT/MDV	11.0%	CO_2	Pavley Standard
2017	LDA/LDT/MDV	13.1%	CO_2	Pavley Standard
2018	LDA/LDT/MDV	15.5%	CO_2	Pavley Standard
2019	LDA/LDT/MDV	17.9%	CO_2	Pavley Standard
2020	LDA/LDT/MDV	20.3%	CO_2	Pavley Standard
2011	Other Buses	21.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	School Bus	19.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Agriculture	17.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT CA International Registration Plan	4.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Instate	6.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Out-of-state	4.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Agriculture	23.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT CA International Registration Plan	1.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Non-neighboring Out-of-state	0.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Neighboring Out-of-state	2.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Singleunit	10.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Tractor	9.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Other Buses	25.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Power Take Off	28.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	School Bus	45.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Agriculture	20.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT CA International Registration Plan	12.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Instate	11.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
				Regulation
2012	MHDDT Out-of-state	12.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Agriculture	29.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT CA International Registration Plan	8.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Non-neighboring Out-of-state	15.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Neighboring Out-of-state	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage at Other Facilities	9.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage in Bay Area	9.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage near South Coast	7.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Singleunit	14.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Tractor	13.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Other Buses	45.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Power Take Off	57.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	School Bus	68.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Agriculture	31.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT CA International Registration Plan	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Instate	64.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Out-of-state	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Agriculture	48.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT CA International Registration Plan	60.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Non-neighboring Out-of-state	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Neighboring Out-of-state	63.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage at Other Facilities	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage in Bay Area	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage near South Coast	51.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2013	HHDDT Singleunit	66.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Tractor	69.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Other Buses	53.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Power Take Off	63.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	School Bus	71.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Agriculture	33.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT CA International Registration Plan	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Instate	77.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Out-of-state	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Agriculture	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT CA International Registration Plan	63.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Non-neighboring Out-of-state	46.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Neighboring Out-of-state	64.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Singleunit	79.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Tractor	79.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Utility	4.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Other Buses	49.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Power Take Off	61.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	School Bus	71.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Agriculture	34.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT CA International Registration Plan	60.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Instate	74.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Out-of-state	60.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2015	HHDDT Agriculture	53.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT CA International Registration Plan	55.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Non-neighboring Out-of-state	37.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Neighboring Out-of-state	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Singleunit	77.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Tractor	76.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Utility	4.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Other Buses	43.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Power Take Off	75.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	School Bus	70.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Agriculture	32.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT CA International Registration Plan	56.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Instate	73.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Out-of-state	56.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Agriculture	51.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT CA International Registration Plan	45.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Non-neighboring Out-of-state	27.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Neighboring Out-of-state	46.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Singleunit	75.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Tractor	73.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Utility	4.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Other Buses	36.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Power Take Off	71.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	School Bus	67.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2017	MHDDT Agriculture	55.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT CA International Registration Plan	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Instate	70.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Out-of-state	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Agriculture	58.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT CA International Registration Plan	37.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Non-neighboring Out-of-state	18.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Neighboring Out-of-state	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Singleunit	73.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Tractor	70.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Utility	3.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Other Buses	31.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Power Take Off	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	School Bus	74.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Agriculture	53.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT CA International Registration Plan	47.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Instate	68.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Out-of-state	47.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Agriculture	55.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT CA International Registration Plan	30.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Non-neighboring Out-of-state	11.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Neighboring Out-of-state	30.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Singleunit	72.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2018	HHDDT Tractor	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Utility	3.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Other Buses	27.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Power Take Off	76.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	School Bus	73.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Agriculture	53.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT CA International Registration Plan	42.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Instate	65.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Out-of-state	42.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Agriculture	54.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT CA International Registration Plan	24.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Non-neighboring Out-of-state	5.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Neighboring Out-of-state	24.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Singleunit	69.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Tractor	64.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Utility	3.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Other Buses	23.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Power Take Off	74.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	School Bus	71.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Agriculture	52.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT CA International Registration Plan	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Instate	60.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Out-of-state	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2020	HHDDT Agriculture	52.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT CA International Registration Plan	19.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Non-neighboring Out-of-state	3.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Neighboring Out-of-state	20.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Singleunit	66.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Tractor	61.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Utility	2.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Other Buses	21.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Power Take Off	79.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	School Bus	68.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Agriculture	51.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT CA International Registration Plan	33.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Instate	57.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Out-of-state	33.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Utility	5.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Agriculture	50.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT CA International Registration Plan	16.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Non-neighboring Out-of-state	3.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Neighboring Out-of-state	16.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage at Other Facilities	10.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage in Bay Area	9.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage near South Coast	9.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Singleunit	64.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Tractor	59.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Utility	5.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2022	Other Buses	20.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	Power Take Off	79.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	School Bus	66.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Agriculture	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT CA International Registration Plan	28.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Instate	53.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Out-of-state	28.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Utility	6.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Agriculture	49.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT CA International Registration Plan	13.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Non-neighboring Out-of-state	1.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Neighboring Out-of-state	14.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage at Other Facilities	10.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage in Bay Area	8.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage near South Coast	8.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Singleunit	61.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Tractor	55.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Utility	5.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Other Buses	18.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Power Take Off	74.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	School Bus	64.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Agriculture	79.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT CA International Registration Plan	23.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Instate	48.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Out-of-state	23.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2023	MHDDT Utility	7.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Agriculture	68.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT CA International Registration Plan	11.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Non-neighboring Out-of-state	1.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Neighboring Out-of-state	11.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage at Other Facilities	9.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage in Bay Area	8.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage near South Coast	8.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Singleunit	56.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Tractor	51.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Utility	4.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Other Buses	15.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Power Take Off	68.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	School Bus	61.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Agriculture	77.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT CA International Registration Plan	20.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Instate	43.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Out-of-state	20.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Utility	5.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Agriculture	65.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT CA International Registration Plan	9.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Non-neighboring Out-of-state	0.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Neighboring Out-of-state	9.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage at Other Facilities	9.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage in Bay Area	7.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2024	HHDDT Drayage near South Coast	7.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Singleunit	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Tractor	46.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Utility	3.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Other Buses	13.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Power Take Off	62.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	School Bus	58.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Agriculture	75.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT CA International Registration Plan	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Instate	37.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Out-of-state	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Utility	3.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Agriculture	62.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT CA International Registration Plan	6.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Non-neighboring Out-of-state	0.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Neighboring Out-of-state	7.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage at Other Facilities	8.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage in Bay Area	7.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage near South Coast	7.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Singleunit	44.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Tractor	42.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Utility	2.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT CA International Registration Plan	1.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Instate	2.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Out-of-state	1.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2011	HHDDT CA International Registration Plan	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Non-neighboring Out-of-state	0.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Neighboring Out-of-state	1.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Singleunit	4.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Tractor	3.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Power Take Off	13.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	School Bus	2.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT CA International Registration Plan	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Instate	2.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Out-of-state	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT CA International Registration Plan	0.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Non-neighboring Out-of-state	0.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Neighboring Out-of-state	0.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Singleunit	3.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Tractor	3.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Other Buses	18.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Power Take Off	34.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	School Bus	4.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Agriculture	5.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT CA International Registration Plan	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Instate	25.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Out-of-state	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Agriculture	10.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT CA International Registration Plan	8.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Non-neighboring Out-of-state	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2013	HHDDT Neighboring Out-of-state	8.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Singleunit	33.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Tractor	28.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Other Buses	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Power Take Off	37.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	School Bus	6.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Agriculture	9.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT CA International Registration Plan	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Instate	34.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Out-of-state	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Utility	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Agriculture	17.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT CA International Registration Plan	13.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Non-neighboring Out-of-state	4.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Neighboring Out-of-state	14.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Singleunit	45.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Tractor	36.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Utility	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Other Buses	52.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Power Take Off	33.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	School Bus	6.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Agriculture	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT CA International Registration Plan	20.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Instate	31.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Out-of-state	20.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2015	MHDDT Utility	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Agriculture	27.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT CA International Registration Plan	11.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Non-neighboring Out-of-state	2.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Neighboring Out-of-state	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Singleunit	42.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Tractor	34.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Other Buses	54.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Power Take Off	43.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	School Bus	4.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Agriculture	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT CA International Registration Plan	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Instate	32.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Out-of-state	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Utility	0.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Agriculture	29.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT CA International Registration Plan	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Non-neighboring Out-of-state	3.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Neighboring Out-of-state	13.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Singleunit	43.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Tractor	35.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Other Buses	59.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Power Take Off	38.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2017	MHDDT Agriculture	43.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT CA International Registration Plan	27.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Instate	35.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Out-of-state	27.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Utility	1.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Agriculture	45.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT CA International Registration Plan	14.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Non-neighboring Out-of-state	7.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Neighboring Out-of-state	17.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Singleunit	46.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Tractor	38.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Other Buses	56.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Power Take Off	32.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	School Bus	7.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Agriculture	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT CA International Registration Plan	26.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Instate	41.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Out-of-state	26.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Utility	1.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Agriculture	42.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT CA International Registration Plan	15.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Non-neighboring Out-of-state	4.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Neighboring Out-of-state	16.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Singleunit	51.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2018	HHDDT Tractor	43.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Other Buses	52.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Power Take Off	38.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	School Bus	6.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Agriculture	40.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT CA International Registration Plan	22.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Instate	38.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Out-of-state	22.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Utility	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Agriculture	40.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT CA International Registration Plan	12.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Non-neighboring Out-of-state	2.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Neighboring Out-of-state	13.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Singleunit	48.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Tractor	41.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Utility	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Other Buses	49.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Power Take Off	41.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	School Bus	5.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Agriculture	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT CA International Registration Plan	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Instate	34.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Out-of-state	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Utility	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2020	HHDDT Agriculture	38.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT CA International Registration Plan	9.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Non-neighboring Out-of-state	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Neighboring Out-of-state	10.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Singleunit	45.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Tractor	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Utility	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Other Buses	48.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Power Take Off	51.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	School Bus	4.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Agriculture	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT CA International Registration Plan	21.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Instate	41.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Out-of-state	21.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Utility	33.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Agriculture	37.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT CA International Registration Plan	9.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Non-neighboring Out-of-state	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Neighboring Out-of-state	9.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage at Other Facilities	40.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage in Bay Area	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage near South Coast	39.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Singleunit	54.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Tractor	45.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Utility	21.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2022	Other Buses	48.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	Power Take Off	60.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	School Bus	3.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Agriculture	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT CA International Registration Plan	20.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Instate	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Out-of-state	20.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Utility	28.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Agriculture	40.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT CA International Registration Plan	8.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Non-neighboring Out-of-state	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Neighboring Out-of-state	9.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage at Other Facilities	39.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage in Bay Area	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage near South Coast	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Singleunit	54.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Tractor	45.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Utility	18.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Other Buses	47.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Power Take Off	54.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	School Bus	2.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Agriculture	65.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT CA International Registration Plan	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Instate	39.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Out-of-state	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2023	MHDDT Utility	25.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Agriculture	59.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT CA International Registration Plan	7.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Non-neighboring Out-of-state	1.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Neighboring Out-of-state	8.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage at Other Facilities	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage in Bay Area	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage near South Coast	38.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Singleunit	52.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Tractor	44.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Utility	16.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Other Buses	43.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Power Take Off	47.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	School Bus	1.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Agriculture	63.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT CA International Registration Plan	15.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Instate	33.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Out-of-state	15.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Utility	19.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Agriculture	56.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT CA International Registration Plan	6.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Non-neighboring Out-of-state	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Neighboring Out-of-state	6.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage at Other Facilities	38.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage in Bay Area	39.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

Year	Vehicle Class	Reduction	Pollutant	Regulation
2024	HHDDT Drayage near South Coast	37.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Singleunit	47.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Tractor	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Utility	13.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Other Buses	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Power Take Off	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	School Bus	1.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Agriculture	61.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT CA International Registration Plan	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Instate	28.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Out-of-state	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Utility	13.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Agriculture	53.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT CA International Registration Plan	4.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Non-neighboring Out-of-state	0.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Neighboring Out-of-state	4.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage at Other Facilities	37.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage in Bay Area	38.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage near South Coast	37.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Singleunit	41.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Tractor	35.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Utility	10.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

4.0 Water

4.1 Water Supply

4.1.1 Use Reclaimed Water

Range of Effectiveness: Up to 40% in Northern California and up to 81% in Southern California

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. In addition, treating water to potable standards can also require substantial amounts of energy. Reclaimed water is water reused after wastewater treatment for non-potable uses instead of returning the water to the environment. This is different than gray water, which has not been through wastewater treatment. Reclaimed non-potable water requires significantly less energy to collect, treat, and redistribute water to the point of local areas of non-potable water consumption. Since less energy is required to provide reclaimed water, fewer GHGs will be associated with reclaimed water use compared to the average California water supply use.

This measure describes how to calculate GHG savings from using reclaimed water instead of new potable water supplies for outdoor water uses or other non-potable water uses. The baseline scenario document outlines average Northern and Southern California electricity-use water factors, and assumes that all water is treated to potable standards.

Measure Applicability:

- Non-potable water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Reclaimed water use (million gallons)
- Total non-potable water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{non-potable total}} \times \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e
$Water_{non\text{-}potable\ total}$ = Total volume of non-potable water used (million gallons)
Provided by Applicant
$Electricity_{baseline}$ = Electricity required to supply, treat, and distribute water (kWh/million gallons)
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons
Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

A million gallons of reclaimed water would use an average of 2,100 kWh electricity per million gallons of water (range of 1,200 to 3,000 kWh). Therefore the percent reduction in GHG emissions associated with implementing reclaimed water usage is:

$$\text{GHG emission reduction} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\,total}} \times \frac{Electricity_{baseline} - Electricity_{reclaimed}}{Electricity_{baseline}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for non-potable water use.
$Water_{reclaimed}$ = Total volume of reclaimed water used (million gallons)
Provided by Applicant
$Water_{non\text{-}potable\ total}$ = Total volume of non-potable water used (million gallons)
Provided by Applicant
$Electricity_{reclaimed}$ = Electricity required to treat and distribute reclaimed water (2,100 kWh/million gallons)
$Electricity_{baseline}$ = Electricity required to supply and distribute water
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons

Therefore, for projects in Northern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\,total}} \times \frac{(3{,}500 - 2{,}100)}{3{,}500} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\,total}} \times 0.40$$

And for projects in Southern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\,total}} \times \frac{(11{,}111 - 2{,}100)}{11{,}111} = \frac{Water_{reclaimed}}{Water_{non\text{-}potable\,total}} \times 0.81$$

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	N. California: Up to 40% if assuming 100% reclaimed water S. California: Up to 81% if assuming 100% reclaimed water Percent reduction would scale down linearly as the percent reclaimed water decreases.
All other pollutants	Not quantified[82]

Discussion:

If the Project Applicant uses 100 million gallons of non-potable water for a project in Northern California, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate water by committing to using 40 million gallons of reclaimed water in place of the usual water source, the applicant would reduce the amount of GHG emissions associated with outdoor water use by 16%

$$\text{GHG Emission Reduced} = \frac{40}{100} \times 0.40 = 0.16 \text{ or } 16\%$$

Assumptions:

Data based upon the following reference:

[1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

GHG emissions from the mitigated scenario should be calculated based on the 2006 CEC report, which presents regional baseline electricity-use water factors and a factor of 1,200-3,000 kWh per million gallons for reclaimed water. GHG emissions are calculated by multiplying the amount of water (million gallons) by the electricity-use water factor (kWh per million gallons) by the carbon-intensity of the local utility (CO_2e per kWh). The GHG emissions reductions associated with this mitigation measure are

[82] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

associated with the difference between the baseline potable water electricity-use water factor and the mitigated scenario.

Alternative Literature:

None

Other Literature Reviewed:

None

4.1.2 Use Gray Water

Range of Effectiveness: Up to 100% of outdoor water GHG emissions if outdoor water use is replaced completely with graywater

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. In addition, treating water to potable standards can also require substantial amounts of energy. Untreated wastewater generated from bathtubs, showers, bathroom wash basins, and clothes washing machines is known as graywater and is collected and distributed onsite for irrigation of landscape and mulch. Since graywater does not require treatment or energy to redistribute it onsite, there are negligible GHG emissions associated with the use of graywater.

This measure describes how to calculate GHG savings from using graywater instead of new potable water supplies for landscape irrigation and other outdoor uses. The baseline scenario document outlines average Northern and Southern California electricity-use water factors, and assumes that all water is non-potable.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Graywater use[83] (million gallons), or:
  - Type of graywater system, which must be compliant with the California Plumbing Code, and
  - Number of residents in homes with compliant graywater systems
- Total outdoor water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{outdoor total}} \times \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

[83] Note that this is the amount of graywater used, which may be less than the amount of graywater generated. A project may generate and collect more graywater than is needed for landscape irrigation. The Project Applicant should only take credit for the amount of potable water which is displaced by graywater. The amount of landscape irrigation water demand (graywater demand) is calculated according to the methodology described in WUW-3 and the baseline methodologies document.

Where:

GHG emissions = MT CO_2e
$Water_{outdoor\ total}$ = Total volume of outdoor water used (million gallons)
Provided by Applicant
$Electricity_{baseline}$ = Electricity required to supply, treat, and distribute water (kWh/million gallons)
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons
Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

If the Project Applicant cannot provide the total amount of graywater used, the graywater use can be calculated based on the following equation:

$Water_{graywater}$ =

$$\left[\left(25 \times Residents_{graywater\text{-}sbw}\right) + \left(15 \times Residents_{graywater\text{-}laundry}\right)\right] \frac{gallons}{day} \times \frac{365\ days}{year} \times \frac{1\ million\ gallons}{10^6\ gallons}$$

Where:

$Water_{graywater}$ = Total volume of graywater used (million gallons).
$Residents_{graywater\text{-}sbw}$ = Total number of residents in homes with graywater systems based on graywater generated from showers, bathtubs, and wash basins
25 = gallons per day per residential occupant from showers, bathtubs, and washbasins [1]
$Residents_{graywater\text{-}laundry}$ = Total number of residents in homes with graywater systems based on graywater generated from laundry machines
15 = gallons per day per residential occupant from laundry machines [1]

The percent reduction in GHG emissions associated with implementing graywater usage is therefore:

$$\text{GHG emission reduction} = \frac{Water_{graywater}}{Water_{oudoor\ total}} \times \frac{Electricity_{baseline} - Electricity_{graywater}}{Electricity_{baseline}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for outdoor water use.
$Water_{graywater}$ = Total volume of graywater used (million gallons)
Provided by Applicant or calculated using equation above
$Water_{outdoor\ total}$ = Total volume of outdoor water used (million gallons)
Provided by Applicant

$Electricity_{graywater}$ = Electricity required to distribute graywater (0 kWh/million gallons)[84]
$Electricity_{baseline}$ = Electricity required to supply, treat, and distribute water
Northern California Average: 3,500 kWh/million gallons [2]
Southern California Average: 11,111 kWh/million gallons [2]

Therefore, for projects in Northern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{Water_{graywater}}{Water_{outdoor\ total}} \times \frac{(3{,}500 - 0)}{3{,}500} = \frac{Water_{graywater}}{Water_{outdoor\ total}}$$

And for projects in Southern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{Water_{graywater}}{Water_{outdoor\ total}} \times \frac{(11{,}111 - 0)}{11{,}111} = \frac{Water_{graywater}}{Water_{outdoor\ total}}$$

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	N. California: Up to 100% if assuming 100% graywater S. California: Up to 100% if assuming 100% graywater Percent reduction would scale down linearly as the percent reclaimed water decreases.
All other pollutants	Not Quantified[85]

Discussion:

If the Project Applicant uses 100 million gallons of water for outdoor uses in a project in Northern California, they would calculate baseline emissions as described above and in the baseline methodologies document. If the Project Applicant then selects to mitigate water by committing to establishing graywater systems based on graywater recovery from laundry machines in 500 homes with an average of 3 people in each home, the amount of graywater used is then:

[84] In some cases the distribution of graywater will require some amount of electricity; for example, graywater generated at residences and pumped to a nearby park. In those cases, $Electricity_{graywater}$ will be non-zero.
[85] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

$Water_{graywater}$ =

$$[(25 \times 0) + (15 \times 500 \times 3)]\frac{\text{gallons}}{\text{day}} \times \frac{365\,\text{days}}{\text{year}} \times \frac{1\,\text{million gallons}}{10^6\ \text{gallons}} = 8.2 \text{ million gallons}$$

Then the Project Applicant would reduce the amount of GHG emissions associated with outdoor water use by 8.2%

$$\text{GHG Emission Reduced} = \frac{8.2}{100} = 0.082 \text{ or } 8.2\%$$

Assumptions:

Data based upon the following references:

[1] 2007 CPC, Title 24, Part 5, Chapter 16A, Part I – Nonpotable Water Reuse Systems. Available online at: http://www.hcd.ca.gov/codes/shl/2007CPC_Graywater_Complete_2-2-10.pdf
[2] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

Assuming a compliant graywater system is installed, Part 1606A.0 of the California Plumbing Code (CPC) estimates 25 gallons per day per residential occupant of graywater generation from showers, bathtubs, and wash basins, and 15 gallons per day per residential occupant of graywater discharge from laundry machines. Electricity and CO_2 savings from using graywater are determined by comparing to the emissions that would have been associated with the water use if the graywater demand had instead been supplied by potable water. The baseline emissions should be calculated based on the 2006 CEC methodology. A development may generate and collect more graywater than is needed for landscape irrigation. A Project Applicant should only take credit for emissions reductions associated with the amount of potable water which is displaced by graywater. The amount of landscape irrigation water demand (graywater demand) is calculated according to the methodology described in the baseline methodologies document and WUW-3.

Alternative Literature:

None

Other Literature Reviewed:

[3] Arizona Department of Environmental Quality. 2009. Using Gray Water at Home Brochure. Available online at: http://www.azdeq.gov/environ/water/permits/download/graybro.pdf

[4] Arizona Department of Water Resources. Technologies – Irrigation, Rainwater Harvesting, Gray Water Reuse and Artificial Turf. Available online at: http://www.azwater.gov/AzDWR/StatewidePlanning/Conservation2/Technologies/Tech%20pages%20templates/LandscapeIrrigation.htm. Accessed February 2010.

[5] AAC, Title 18, Chapter 9, Article 7. Direct Reuse of Reclaimed Water. Available online at: http://www.azsos.gov/public_services/title_18/18-09.pdf

[6] Oasis Design. Graywater Information Central. Available online at: http://www.graywater.net/. Accessed February 2010.

4.1.3 Use Locally Sourced Water Supply

Range of Effectiveness: 0 – 60% for Northern and Central California, 11 – 75% for Southern California

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. Using locally-sourced water or water from less energy-intensive sources reduces the electricity and indirect CO_2 emissions associated with water supply and transport.

This measure describes how to calculate GHG savings from using local or less energy-intensive water sources instead of water from the typical mix of Northern and Southern California sources. According to the 2006 CEC report [1], water in Northern California (which also includes the Central Coast and San Joaquin Valley for this study) is primarily supplied by deliveries from the State Water Project and groundwater, and to a lesser extent is supplied by the gravity-dominated systems of Hetch Hetchy and the Mokelumne Aqueduct. In contrast, water imported from the State Water Project is Southern California's dominant water source. The baseline scenario uses average Northern and Southern California electricity intensity factors as reported in 2006 CEC and detailed in the Baseline Method below.

Measure Applicability:

- Indoor (potable) and outdoor (non-potable) water use

Inputs:

- Total potable and non-potable water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{baseline} \times \text{Electricity}_{baseline} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Water}_{baseline}$ = Total volume of water used (million gallons)
Provided by Applicant

$\text{Electricity}_{baseline}$ = Electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the resulting wastewater) (kWh/million gallons)
Indoor Uses:
Northern California Average: 5,411 kWh/million gallons [1]
Southern California Average: 13,022 kWh/million gallons [1]

Outdoor Uses:

Northern California Average: 3,500 kWh/million gallons [1]

Southern California Average: 11,111 kWh/million gallons [1]

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Table WSW-3.1 shows that water from local or nearby groundwater basins, nearby surface water, and gravity-dominated systems have smaller energy-intensity factors than the average Northern and Southern California energy-intensity factors. The Project Applicant should use Table WSW-3.1 to identify the outdoor and indoor electricity intensity factors associated with the Project's water source(s). The GHG emission reduction is then calculated as follows:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{mitigated}}}{\text{Water}_{\text{baseline}}} \times \frac{\text{Electricity}_{\text{baseline}} - \text{Electricity}_{\text{mitigated}}}{\text{Electricity}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for water use

$\text{Water}_{\text{mitigated}}$ = Volume of water to be supplied from the mitigated (local or less energy-intensive) source

Provided by Applicant

$\text{Water}_{\text{baseline}}$ = Total volume of water used (million gallons)

Provided by Applicant

$\text{Electricity}_{\text{mitigated}}$ = Electricity required to distribute water for Project from mitigated (local or less-energy intensive) source

$\text{Electricity}_{\text{baseline}}$ = Baseline electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the resulting wastewater) (kWh/million gallons)

Indoor Uses:

Northern California Average: 5,411 kWh/million gallons [1]

Southern California Average: 13,022 kWh/million gallons [1]

Outdoor Uses:

Northern California Average: 3,500 kWh/million gallons [1]

Southern California Average: 11,111 kWh/million gallons [1]

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Assuming 100% of water is sourced locally: Indoor Uses: • 0-40% reduction for Northern and Central California • 11-64% reduction for Southern California Outdoor Uses: • 0-60% reduction for Northern and Central California • 12-75% reduction for Southern California
All other pollutants	Not Quantified[86]

Discussion:

Assume a Project is located in Southern California within the Chino Basin and has a total indoor water demand of 100 million gallons. Assume 70 million gallons will be sourced from a water district which obtains its water from the typical Southern California water sources. Therefore, for these 70 million gallons the baseline outdoor water electricity-intensity factor for Southern California is used. Assume that the Project Applicant chooses to mitigate the Project by sourcing the remaining 30 million gallons from the Chino Basin. The expected GHG emission reduction is then:

$$\text{GHG Emission Reduced} = \frac{30}{100} \times \frac{11{,}111 - 4{,}298}{11{,}111} = 0.18 \text{ or } 18\%$$

Assumptions:

Data based upon the following reference:

[1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

[86] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

[2]CEC. 2005. California's Water-Energy Relationship. Final Staff Report. CEC 700-2005-011-SF. Available online at: http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF
[3]NRDC. 2004. Energy Down the Drain: The Hidden Costs of California's Water Supply. Prepared by NRDC and the Pacific Institute. Available online at: http://www.nrdc.org/water/conservation/edrain/edrain.pdf

Preferred Literature:

Electricity and CO_2 savings from using locally-sourced water or water from sources which require below-average electricity intensities for supply and conveyance (such as gravity-dominated systems or local groundwater basins that are not very deep) are determined by comparing to the emissions that would have occurred if the water had instead been conveyed from typical water sources for the region. According to the 2005 and 2006 CEC reports [1,2], the typical mix of water sources in Northern and Central California is the State Water Project, groundwater, and gravity-dominated systems such as Hetch Hetchy and the Mokelumne Aqueduct. The majority of water in Southern California is supplied by imports from the State Water Project and the Colorado River Aqueduct. Examples of mitigated electricity-intensity factors are shown in Table WSW-3.1 and are based on data provided in 2006 CEC [1], 2005 CEC [2], and 2004 NRDC [3]. GHG emissions are calculated by multiplying the amount of water (million gallons) by the electricity-use water factor (kWh per million gallons) by the carbon-intensity of the local utility (CO_2e per kWh). The GHG emissions reductions associated with this mitigation measure are associated with the difference between the baseline water electricity-intensity factor and the mitigated electricity-intensity factor.

Alternative Literature:

None

Other Literature Reviewed:

None

Table WSW-3.1

Energy Intensity of Water Use (kWh/MG) by Region

REGION	WATER USE SEGMENT						
	Supply & Conveyance[1]		Treatment[1]	Distribution[1]	*OUTDOOR TOTAL (NON-POTABLE)*[2]	Wastewater Treatment[1]	*INDOOR TOTAL (POTABLE)*[3]
Northern California	SWP to Bay Area *surface water*	3,150	111	1,272	***4,533***	1,911	***6,444***
	Hetch Hetchy to Bay Area *gravity dominated*	0	111	1,272	***1,383***	1,911	***3,294***
	Mokelumne Aqueduct to Bay Area *gravity dominated*	160	111	1,272	***1,543***	1,911	***3,454***
Central California	SWP to Central Coast *surface water*	3,150	111	1,272	***4,533***	1,911	***6,444***
	SWP to San Joaquin Valley *surface water*	1,510	111	1,272	***2,893***	1,911	***4,804***
	San Joaquin River Basin & Central Coast[4] *groundwater*	896	111	1,272	***2,279***	1,911	***4,190***
	Tulare Lake Basin[4] *groundwater*	537	111	1,272	***1,920***	1,911	***3,831***
	Fresno and Kings Counties (Westlands WD)[4] *groundwater*	2,271	111	1,272	***3,654***	1,911	***5,565***
Southern California	SWP to L.A. Basin *surface water*	8,325	111	1,272	***9,708***	1,911	***11,619***
	Colorado River Aqueduct to L.A. Basin *surface water*	6,140	111	1,272	***7,523***	1,911	***9,434***
	Chino Basin[5] *groundwater*	2,915	111	1,272	***4,298***	1,911	***6,209***
	Los Angeles[4] *groundwater*	1,780	111	1,272	***3,163***	1,911	***5,074***
	San Diego County (Sweetwater WD)[4] *groundwater*	1,433	111	1,272	***2,816***	1,911	***4,727***
	San Diego County (Yuima WD)[4]	2,029	111	1,272	***3,412***	1,911	***5,323***

REGION	WATER USE SEGMENT						
	Supply & Conveyance[1]		Treatment[1]	Distribution[1]	*OUTDOOR TOTAL (NON-POTABLE)*[2]	Wastewater Treatment[1]	*INDOOR TOTAL (POTABLE)*[3]
	groundwater						
State-wide	Local / Intrabasin	120	111	1,272	***1,503***	1,911	***3,414***
	Groundwater	4.45 kWh / MG / foot of well depth	111	1,272	***TBC***	1,911	***TBC***
	Ocean Desalination	13,800	111	1,272	***15,183***	1,911	***17,094***
	Brackish Water Desalination	3,230	111	1,272	***4,613***	1,911	***6,524***

Abbreviations:
CEC - California Energy Commission
kWh - kilowatt hour
MG - million gallons
NRDC - Natural Resources Defense Council
SWP - State Water Project
TBC - to be calculated based on well depth
WD - Water District

Notes:
1. Treatment, Distribution, and Wastewater Treatment electricity-intensity factors from 2006 CEC. Supply & Conveyance electricity-intensity factors from 2006 CEC unless otherwise noted.
2. Outdoor (Non-Potable) electricity-intensity factor is the sum of the Supply & Conveyance, Treatment, and Distribution electricity-intensity factors.
3. Indoor (Potable) electricity-intensity factor is the sum of the Supply & Conveyance, Treatment, Distribution, and Wastewater Treatment electricity-intensity factors.
4. Supply & Conveyance electricity-intensity factor from 2004 NRDC.
5. Supply & Conveyance electricity-intensity factor from 2005 CEC.

Sources:
CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

CEC. 2005. California's Water-Energy Relationship. Final Staff Report. CEC 700-2005-011-SF. Available online at: http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF

NRDC. 2004. Energy Down the Drain: The Hidden Costs of California's Water Supply. Prepared by NRDC and the Pacific Institute. Available online at: http://www.nrdc.org/water/conservation/edrain/edrain.pdf

4.2 Water Use

4.2.1 Install Low-Flow Water Fixtures

Range of Effectiveness: 20% of GHG emissions associated with indoor Residential water use; 17-31% of GHG emissions associated with Non-Residential indoor water use.

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Installing low-flow or high-efficiency water fixtures in buildings reduces water demand, energy demand, and associated indirect GHG emissions.

This measure describes how to calculate GHG savings from installing low-flow water toilets, urinals, showerheads, or faucets, or high-efficiency clothes washers and dishwashers in residential and commercial buildings. To take credit for this mitigation measure, the Project Applicant must know the total expected indoor water demand before and after installation of low-flow or high-efficiency water fixtures. If expected water demand after implementation of the mitigation measure is not known, it can be calculated based on the information provided below. Water flow rates presented here in Tables WUW-1.1 and WUW-1.3 are based on technical specifications in the California Code of Regulations Title 20 (Appliance Efficiency Regulations) [2], Title 24 (California Green Building Standards Code) [1] and ENERGY STAR [5-8]. Indoor water end-uses for residential and commercial buildings presented here in Tables WUW-1.1 and WUW-1.2 are based on data provided in a 2003 report by the Pacific Institute for Studies in Development, Environment, and Security [3]. This report incorporates data from the most comprehensive end-use survey available to date, the 1999 Residential End Uses of Water survey published by the American Water Works Association [4], as well as California-specific population, water, and appliance data. California-specific data includes local utility water use and market penetration rates of low-flow and high-efficiency water fixtures.

The baseline scenario document describes the method to calculate baseline GHG emissions. It provides average Northern and Southern California electricity-use water factors and assumes that all water is treated to potable standards.

The percent reduction in GHG emissions is calculated based on the baseline scenario water use and the percent reduction in indoor water use achieved from a Project Applicant's commitment to installing low-flow and high-efficiency water fixtures. Table WUW-1.4 lists the estimated percent reductions in GHG emissions by water fixture and land use. The sum of all percent reductions applicable to the Project gives the overall percent reduction in GHG emissions expected from this mitigation measure. The details of these calculations are described below.

Measure Applicability:

- Indoor water use
- To meet CEQA enforcement requirements, the Project Applicant should only take credit for this mitigation measure if the clothes washers and dishwashers are supplied by the Project Applicant/builder.

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected indoor water demand, without installation of low-flow or high-efficiency fixtures (million gallons), AND
- Total expected indoor water demand, after installation of low-flow or high-efficiency fixtures (million gallons), OR
- Commitment to low-flow or high-efficiency water fixtures (toilets, showerheads, sink faucets, dishwashers, clothes washers, or all of the above)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Water}_{\text{baseline}}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant

Electricity = Electricity required to supply, treat, and distribute water and the resulting wastewater (kWh/million gallons)
Northern California Average: 5,411 kWh/million gallons
Southern California Average: 13,022 kWh/million gallons

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption.

The Project Applicant can choose to compute the percent reduction in GHG emissions in one of three ways:

Method A

The Project Applicant can use Table WUW-1.4 to calculate the overall percent reduction in GHG emissions from committing to installing certain low-flow or high-efficiency water fixtures. The Project Applicant may commit to installing fixtures based on three standards: the California Green Building Standards Code (CGBSC) mandatory requirements, the CGBSC voluntary standards, or the ENERGY STAR standards. Table WUW-1.4 presents the percent reductions in GHG emissions for each of these three standards based on water fixture type (toilet, showerhead, clothes washer, etc) and land use type (residential, office, restaurant, etc). Note that in Table WUW-1.4, it is assumed that a Project Applicant commits to installing low-flow or high-efficiency fixtures for 100% of an end-use category (i.e. either 0% or 100% of toilets will be low-flow, either 0% or 100% of clothes washers will be high-efficiency, etc). The total percent reduction in GHG emissions expected from this mitigation measure is then simply the sum of all of the individual percent reductions:

$$\text{GHG emission reduction} = \sum \text{PercentReduction}_{\text{Fixture}}$$

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for indoor water use.
$\text{PercentReduction}_{\text{Fixture}}$	=	Percent reduction in GHG emissions from each individual water fixture (i.e. toilet, bathroom faucet, dishwasher, etc.) Provided in Table WUW-1.4

Method B

If the Project Applicant can provide detailed and substantial evidence to support a calculation of $\text{Water}_{\text{mitigated}}$, then that value can be used to calculate the percent GHG emission reduction using the following equation:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{baseline}} - \text{Water}_{\text{mitigated}}}{\text{Water}_{\text{baseline}}}$$

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions for indoor water use.
$\text{Water}_{\text{baseline}}$	=	Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons) Provided by Applicant
$\text{Water}_{\text{mitigated}}$	=	Total calculated indoor water demand, after installation of low-flow and high-efficiency fixtures (million gallons) Provided by Applicant or calculated using equations below

As shown in this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Method C

The Project Applicant may choose to install fixtures which exceed the requirements of the California Green Building Standards Code but have different flow rates than those specified in the Tables WUW-1.1 and WUW-1.3. To take credit for this mitigation measure, the Project Applicant would need to calculate the percent reduction in GHG emissions using the equations below. In these equations, it is assumed that a Project Applicant commits to installing low-flow or high-efficiency fixtures for 100% of an end-use category (i.e. either 0% or 100% of toilets will be low-flow, either 0% or 100% of clothes washers will be high-efficiency, etc). More complicated equations are necessary to account for less than 100% commitment in one or more end-use categories.

$$\text{Water}_{\text{mitigated}} = \sum \text{EndUseWater}_{\text{mitigated}}$$

End-Uses are toilets, urinals, showerheads, bathroom faucets, kitchen faucets, dishwashers, clothes washers, and leaks and other.

Where,

$$\text{EndUseWater}_{\text{mitigated}} = \text{EndUse}_{\text{PercentIndoor}} \times \text{Water}_{\text{baseline}} \times \frac{\text{EndUseFlowRate}_{\text{mitigated}}}{\text{EndUseFlowRate}_{\text{unmitigated}}}$$

$\text{EndUse}_{\text{PercentIndoor}}$ = % of Indoor Water Use for that end-use
Provided in Table WUW-1.1 for Residential Buildings
Provided in Table WUW-1.1 for Non-Residential Buildings

$\text{Water}_{\text{baseline}}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant

$\text{EndUseFlowRate}_{\text{baseline}}$ = Baseline current California standard water flow rate for that end-use
Provided in Table WUW-1.1 for Residential Buildings
Provided in Table WUW-1.3 for Non-Residential Buildings

$\text{EndUseFlowRate}_{\text{mitigated}}$ = Mitigated water flow rate for that end use
Provided by Applicant, supported by manufacturer specification or technical sheets

For the Leak, Other end use and all end-uses where the Project Applicant makes no commitment to installing low-flow or high-efficiency water fixtures, $\text{EndUseFlowRate}_{\text{mitigated}} = \text{EndUseFlowRate}_{\text{unmitigated}}$, so then $\text{EndUseWater}_{\text{mitigated}} = \text{EndUse}_{\text{PercentIndoor}} \times \text{Water}_{\text{baseline}}$.

Then the percent reduction in GHG emissions is calculated as follows:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{baseline}} - \text{Water}_{\text{mitigated}}}{\text{Water}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for indoor water use.

$Water_{baseline}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant

$Water_{mitigated}$ = Total calculated indoor water demand, after installation of low-flow and high-efficiency fixtures (million gallons)
Calculated by Applicant using equation above

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Estimated 20% reduction for residential buildings, assuming the Project Applicant commits to installing 100% of fixtures with the lowest flow rates presented in Table WUW-1.1. Estimated 17-31% reduction for non-residential buildings, assuming the Project Applicant commits to installing 100% of fixtures with the lowest flow rates presented in Table WUW-1.3.
All other pollutants	Not Quantified[87]

Discussion:

In this example, assume that a Project Applicant commits to installing the following:

For residences:

- 2010 CGBSC Mandatory Requirements for toilet, showerhead, bathroom faucet, and kitchen faucet
- ENERGY STAR residential standard dishwasher

For hotel:

- 2010 CGBSC Voluntary Standards for toilet, urinal, showerhead, bathroom faucet, and kitchen faucet
- ENERGY STAR top-loading clothes washer
- ENERGY STAR commercial dishwasher (high temp, under counter)

Using Method A, the following equation is employed:

$$\text{GHG emission reduction} = \sum PercentReduction_{Fixture}$$

[87] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

From Table WUW-1.4, the percent reduction in GHG emissions associated with indoor water use is then:

For residences:

$$6.6\% + 4.4\% + 5.7\% + 3.3\% + 0.2\% = 20.2\%$$

For hotel:

$$13.8\% + 5.4\% + 1.2\% + 0.8\% + 1.9\% + 6.4\% + 1.5\% = 31.0\%$$

Assumptions:

Data based upon the following references:

[1] CCR Title 24, Part 11. 2010. Draft California Green Building Standards Code. Available online at: http://www.documents.dgs.ca.gov/bsc/documents/2010/Draft-2010-CALGreenCode.pdf
[2] CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605. Appliance Efficiency Regulations.
[3] Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm
[4] Mayer, P.W.; DeOreo, W.B.; Opitz, E.M.; Kiefer, J.C.; Davis, W.Y.; Dziegielewski, B.; Nelson, J.O. 1999. Residential End Uses of Water. Published by the American Water Works Association Research Foundation.
[5] USEPA. ENERGY STAR: Clothes Washers Key Product Criteria. Available online at: http://www.energystar.gov/index.cfm?c=clotheswash.pr_crit_clothes_washers
[6] USEPA. ENERGY STAR: Commercial Clothes Washers for Consumers. Available online at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CCW
[7] USEPA. ENERGY STAR: Dishwashers Key Product Criteria. Available online at: http://www.energystar.gov/index.cfm?c=dishwash.pr_crit_dishwashers
[8] USEPA. ENERGY STAR Commercial Dishwashers Savings Calculator. Available online at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COH

Preferred Literature:

For the baseline scenario, the California Green Building Standards Code [1] specifies baseline water flow rates for toilets, showerheads, urinals, bathroom faucets, and kitchen faucets. The California Appliance Efficiency Regulation (Title 20) [2] specifies baseline water flow rates for residential and commercial dishwashers and clothes washers. For the mitigated scenario, the 2010 CGBSC also specifies water flow rates for toilets, showerheads, urinals, bathroom faucets, and kitchen faucets which become mandatory in 2011, additional voluntary flow rates for these same fixtures, and voluntary flow rates for commercial dishwashers and clothes washers. In addition, ENERGY STAR-certified residential and commercial dishwashers and clothes washers have mitigated water flow rates [5-8].

Alternative Literature:

None

Other Literature Reviewed:

[9] USEPA. Water Sense: Product Factsheets and Final Specifications. Available online at: http://www.epa.gov/watersense/products/index.html. Accessed February 2010.

USEPA WaterSense labeled products include toilets, bathroom sink faucets, and flushing urinals, and are certified to meet USEPA's standards for improved water efficiency. While WaterSense models do perform with greater water efficiency than federal standard models, they are not more efficient than the models required in California starting in 2011 due to the 2010 CGBSC. Furthermore, WaterSense models are compared to federal standard models and calculations would need to be adjusted to account for differences in California standards. USEPA reports that toilets, bathroom faucets, and showers account for 30%, 15%, and 17% of indoor household water use, respectively. USEPA reports that WaterSense toilets use 20% less water than the federal standard model, while WaterSense bathroom faucets use 30% less water. Federal standard showerheads use 2.5 gallons of water per minute while the WaterSense models use 2.0 gallons of water per minute, which is equivalent to the 2010 CGBSC Mandatory Requirement. Further, federal standard flushing urinal models use 1.0 gallons per flush, while WaterSense models uses 0.5 gallons per flush, which is equivalent to the 2010 CGBSC Mandatory Requirement.

Table WUW-1.1
Reduction in Water use from Low-flow or High-efficiency Residential Water Fixtures

Fixture	% of Indoor Water Use[1]	Water Flow Rate				
		Baseline Current California Standard[2]	Mitigated 2010 California Green Building Standards Code (Mandatory in 2011)[3]	Mitigated 2010 California Green Building Standards Code (Voluntary)[4]	Mitigated ENERGY STAR[5]	Unit
Toilet	33%	1.6	1.28	--	--	gallons/flush
Showerhead	22%	2.5	2.0	--	--	gallons/minute @ 60 psi
Bathroom Faucet	18%	2.2	1.5	--	--	gallons/minute @ 60 psi
Kitchen Faucet		2.2	1.8	--	--	gallons/minute @ 60 psi
Standard Dishwasher	1%	6.5	--	5.8	5.0	gallons/cycle
Compact Dishwasher		4.5	--	--	3.5	gallons/cycle
Top-loading Clothes Washer	14%	6.0	--	--	6.0	gallons/cycle/ cubic foot
Front-loading Clothes Washer		6.0	--	--	6.0	gallons/cycle/ cubic foot
Leaks, Other	12%	--	--	--	--	--

Notes:

1. Indoor household end use of water 2000 estimates from Figure 2-4c of the Pacific Institute report.
2. Baseline water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are from the 2010 California Green Building Standards Code. Baseline water flow rates for dishwashers and clothes washers are from CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605.2 (Appliance Efficiency Regulations for appliances sold in California).
3. Mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary in 2010 and mandatory starting January 1, 2011.
4. Mitigated water flow rates for dishwashers and clothes washers are voluntary.
5. In some cases, the 2011 ENERGY STAR dishwasher and clothes washer models have lower flow rates than the 2010 California Green Building Standards Code. Using these ENERGY STAR models results in an additional mitigation beyond what is recommended by the 2010 California Green Building Standards Code.

Table WUW-1.2
Percent Indoor Water Use by End-Use in Non-Residential Buildings

End-Use	OFFICE		HOTEL		RESTAURANT		GROCERY STORE		NON-GROCERY RETAIL STORES		K-12 SCHOOL		OTHER SCHOOL	
	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]	Total[1]	Indoor[2]
Restroom	26%	--	51%	--	34%	--	17%	--	26%	--	20%	--	20%	--
Toilets (72% of Restroom)	--	48%	--	46%	--	27%	--	26%	--	46%	--	51%	--	37%
Urinals (17% of Restroom)	--	11%	--	11%	--	6%	--	6%	--	11%	--	12%	--	9%
Faucets (4% of Restroom)	--	3%	--	3%	--	1%	--	1%	--	3%	--	3%	--	2%
Showers (7% of Restroom)	--	5%	--	4%	--	3%	--	2%	--	4%	--	5%	--	4%
Kitchen	3%	--	10%	--	46%	--	9%	--	4%	--	2%	--	1%	--
Faucets (57% of Kitchen)	--	4%	--	7%	--	29%	--	11%	--	6%	--	4%	--	1%
Dishwashers (24% of Kitchen)	--	2%	--	3%	--	12%	--	5%	--	2%	--	2%	--	1%
Ice Making (19% of Kitchen)	--	1%	--	2%	--	10%	--	4%	--	2%	--	1%	--	0%
Laundry	0%	0%	14%	18%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%
Other	10%	26%	5%	6%	12%	13%	22%	46%	11%	27%	6%	21%	17%	44%
Landscaping	38%	--	10%	--	6%	--	3%	--	38%	--	72%	--	61%	--
Cooling	23%	--	10%	--	2%	--	49%	--	21%	--	unknown	--	unknown	--
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes:

1. Water end-use data from Figures E-1, E-2, E-5, E-6, E-7, E-8, and E-9 of Appendix E of the Pacific Institute report.
2. Indoor end-use data calculated based on the total water use data for the relevant building category and Figure 4-3 and Figure 4-4 of the Pacific Institute report. Figure 4-3 shows the breakdown of restroom water use by end-use in the commercial & industry sector. Figure 4-4 shows the breakdown of kitchen water use by end-use in the commercial & industry sector; it was assumed that all end-uses except dishwashing and ice making are associated with faucet water use.

Table WUW-1.3
Reduction in Water use from Low-flow or High-efficiency Non-Residential Water Fixtures

Fixture	Water Flow Rate				
	Baseline Current California Standard[1]	Mitigated 2010 California Green Building Standards Code (Mandatory in 2011)[2]	Mitigated 2010 California Green Building Standards Code (Voluntary)[3]	Mitigated ENERGY STAR[4]	Unit
Toilet	1.6	1.28	1.12	--	gallons/flush
Urinal	1.0	0.5	0.5	--	gallons/flush
Showerhead	2.5	2.0	1.8	--	gallons/minute @ 60 psi
Bathroom Faucet	0.5	0.4	0.35	--	gallons/minute @ 60 psi
Kitchen Faucet	2.2	1.8	1.6	--	gallons/minute @ 60 psi
Dishwasher: High Temp, Under Counter	1.98	--	0.90	1.00	gallons/rack
Dishwasher: High Temp, Door	1.44	--	0.95	0.95	gallons/rack
Dishwasher: High Temp, Single Tank Conveyor	1.13	--	0.70	0.70	gallons/rack
Dishwasher: High Temp, Multi Tank Conveyor	1.10	--	0.70	0.54	gallons/rack
Dishwasher: Low Temp, Under Counter	1.95	--	0.98	1.70	gallons/rack
Dishwasher: Low Temp, Door	1.85	--	1.16	1.18	gallons/rack
Dishwasher: Low Temp, Single Tank Conveyor	1.23	--	0.62	0.79	gallons/rack
Dishwasher: Low Temp, Multi Tank Conveyor	0.99	--	0.62	0.54	gallons/rack
Top-loading Clothes Washer	9.5	--	8.6	6.0	gallons/cycle/ cubic foot
Front-loading Clothes Washer	9.5	--	8.6	6.0	gallons/cycle/ cubic foot

Notes:

1. Baseline water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are from the 2010 California Green Building Standards Code. Baseline water flow rates for dishwashers are from the ENERGY STAR Commercial Dishwasher Calculator. Baseline water flow rates for clothes washers are from CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605.2 (Appliance Efficiency Regulations for appliances sold in California).

2. These mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary in 2010 and mandatory starting January 1, 2011.

3. These mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary and represent the maximum recommended flow rate in order to achieve an overall 30% reduction in water use. Mitigated water flow rates for dishwashers and clothes washers are also voluntary. The range of values shown here represents different types of commercial dishwashers (high-temperature or chemical; conveyor, door, or undercounter models). See Appendix A5 of the 2010 California Green Building Standards Code for details.

4. In some cases, the ENERGY STAR dishwasher and clothes washer models have lower flow rates than the 2010 California Green Building Standards Code. Using these ENERGY STAR models results in an additional mitigation beyond what is recommended by the 2010 California Green Building Standards Code. See the following ENERGY STAR website for details: http://www.energystar.gov/index.cfm?c=comm_dishwashers.pr_crit_comm_dishwashers

Table WUW-1.4

Percent Reductions in GHG emissions from Installing Low-Flow or High-Efficiency Water Fixtures

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
2010 California Green Building Standards Code (Mandatory Requirements starting in 2011):								
Toilet	6.6%	9.6%	9.2%	5.3%	5.1%	9.1%	10.3%	7.4%
Urinal	N/A	5.7%	5.4%	3.1%	3.0%	5.4%	6.1%	4.4%
Showerhead	4.4%	0.9%	0.9%	0.5%	0.5%	0.9%	1.0%	0.7%
Bathroom Faucet	5.7%	0.5%	0.5%	0.3%	0.3%	0.5%	0.6%	0.4%
Kitchen Faucet	3.3%	0.8%	1.3%	5.2%	1.9%	1.0%	0.7%	0.3%
2010 California Green Building Standards Code (Voluntary Standards):								
Toilet	N/A	14.4%	13.8%	8.0%	7.7%	13.7%	15.4%	11.1%
Urinal	N/A	5.7%	5.4%	3.1%	3.0%	5.4%	6.1%	4.4%
Showerhead	N/A	1.3%	1.2%	0.7%	0.7%	1.2%	1.4%	1.0%
Bathroom Faucet	N/A	0.8%	0.8%	0.4%	0.4%	0.8%	0.9%	0.6%
Kitchen Faucet	N/A	1.2%	1.9%	7.8%	2.9%	1.5%	1.1%	0.4%
Top-Loading Clothes Washer	N/A	N/A	1.8%	N/A	N/A	N/A	N/A	0.3%

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Front-Loading Clothes Washer	N/A	N/A	1.8%	N/A	N/A	N/A	N/A	0.3%
Residential Standard Dishwasher	0.1%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential Compact Dishwasher	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Dishwasher: High Temp, Under Counter	N/A	1.0%	1.6%	6.5%	2.5%	1.3%	0.9%	0.3%
Commercial Dishwasher: High Temp, Door	N/A	0.6%	1.0%	4.1%	1.5%	0.8%	0.6%	0.2%
Commercial Dishwasher: High Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.6%	1.7%	0.9%	0.7%	0.2%
Commercial Dishwasher: High Temp, Multi Tank Conveyor	N/A	0.7%	1.1%	4.4%	1.6%	0.9%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Under Counter	N/A	0.9%	1.5%	6.0%	2.2%	1.2%	0.9%	0.3%
Commercial Dishwasher: Low Temp, Door	N/A	0.7%	1.1%	4.5%	1.7%	0.9%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Single Tank Conveyor	N/A	0.9%	1.5%	6.0%	2.2%	1.2%	0.9%	0.3%

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Commercial Dishwasher: Low Temp, Multi Tank Conveyor	N/A	0.7%	1.1%	4.5%	1.7%	0.9%	0.6%	0.2%
ENERGY STAR Standards:								
Top-Loading Clothes Washer	N/A	N/A	6.4%	N/A	N/A	N/A	N/A	0.9%
Front-Loading Clothes Washer	N/A	N/A	6.4%	N/A	N/A	N/A	N/A	0.9%
Residential Standard Dishwasher	0.2%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential Compact Dishwasher	0.2%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Dishwasher: High Temp, Under Counter	N/A	0.9%	1.5%	5.9%	2.2%	1.2%	0.8%	0.3%
Commercial Dishwasher: High Temp, Door	N/A	0.6%	1.0%	4.1%	1.5%	0.8%	0.6%	0.2%
Commercial Dishwasher: High Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.6%	1.7%	0.9%	0.7%	0.2%
Commercial Dishwasher: High Temp, Multi Tank Conveyor	N/A	0.9%	1.5%	6.1%	2.3%	1.2%	0.9%	0.3%
Commercial Dishwasher: Low Temp, Under Counter	N/A	0.2%	0.4%	1.5%	0.6%	0.3%	0.2%	0.1%

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Water Use

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Commercial Dishwasher: Low Temp, Door	N/A	0.7%	1.1%	4.3%	1.6%	0.8%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.3%	1.6%	0.8%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Multi Tank Conveyor	N/A	0.8%	1.4%	5.5%	2.0%	1.1%	0.8%	0.3%

Notes:

N/A indicates that either (a) an improved standard does not exist, or (b) the percent of indoor water use for that fixture and land use is typically zero. For example, (a) the ENERGY STAR standard for residential clothes washers is the same as the baseline current California standard, and (b) no water is expected to be used for laundry (clothes washers) in the Office land use.

4.2.2 Adopt a Water Conservation Strategy

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. It is equal to the Percent Reduction in water commitment.

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Reducing water use reduces energy demand and associated indirect GHG emissions.

This mitigation measure describes how to calculate GHG emissions reductions from a Water Conservation Strategy which achieves X% reduction in water use (where X% is the specific percentage reduction in water use committed to by the Project Applicant). The steps taken to achieve this X% reduction in water use can vary in nature and may incorporate technologies which have not yet been established at the time this document was written. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting the percent reduction in water use.

The expected percent reduction is applied to the baseline water use, calculated according to the baseline methodology document. The energy-intensity factor associated with water conveyance, treatment, and distribution is provided in the 2006 CEC report [1].

This measure may incorporate other mitigation measures (WUW-1 through 6) of this document. As such, if this measure is used, the other measures cannot be used. These measures can be consulted to assist in determining methods of quantification and typical ranges of effectiveness.

Measure Applicability:

- Indoor and/or Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected water demand, without implementation of Water Conservation Strategy (million gallons)
- Percent reduction in water use after implementation of Water Conservation Strategy (%)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$Water_{baseline}$ = Total expected water demand, without implementation of Water Conservation Strategy (million gallons)

Provided by Applicant

Electricity = Electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the wastewater) (kWh/million gallons)

Northern California Avg (outdoor uses): 3,500 kWh/million gallons [1]

Northern California Avg (indoor uses): 5,411 kWh/million gallons [1]

Southern California Avg (outdoor uses): 11,111 kWh/million gallons [1]

Southern California Avg (indoor uses): 13,022 kWh/million gallons [1]

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

If there are percent reductions associated with both indoor and outdoor water use, the GHG emissions from indoor and outdoor water use should be calculated separately and then summed. Thus,

$$\text{Total GHG emissions} = \text{GHG emissions}_{indoor} + \text{GHG emissions}_{outdoor}$$

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for water use.

PercentReduction = Expected percent reduction in water use after implementation of Water Conservation Strategy (%)

Provided by Applicant

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant

All other pollutants	Not Quantified[88]

Discussion:

The percent reduction in GHG emissions is equivalent to the percent reduction in indoor and outdoor water usage. Therefore, if a Project Applicant implements a Water Conservation Strategy which achieves a 10% reduction in water use, the GHG emissions associated with water use are reduced by 10%.

Assumptions:

Data based upon the following reference:

[1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

2006 CEC report

Alternative Literature:

None

Other Literature Reviewed:

None

[88] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

4.2.3 Design Water-Efficient Landscapes

Range of Effectiveness: 0 – 70% reduction in GHG emissions from outdoor water use

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Designing water-efficient landscapes for a project site reduces water consumption and the associated indirect GHG emissions. Examples of measures which a Project Applicant should consider when designing landscapes are reducing lawn sizes, planting vegetation with minimal water needs such as California native species, choosing vegetation appropriate for the climate of the project site, and choosing complimentary plants with similar water needs or which can provide each other with shade and/or water.

This measure describes how to calculate GHG savings from residential and commercial landscape plantings which have decreased watering demands compared to standard California landscape plantings. The methodology for calculating water demand presented here is based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance [1] and the CDWR 2000 report: "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III" ("WUCOLS") [2].

By January 1, 2010, all local water agencies were required to adopt the CDWR Model Water Efficient Landscape Ordinance or develop their own local ordinance which is at least as effective at conserving water as the Model Ordinance. Some local agencies have published or are in the process of developing local ordinances.[89] A Project Applicant may choose to use the methodology presented in a local ordinance to demonstrate a percent reduction in water use and GHG emissions; however, the calculations will be similar to the methodology presented in the CDWR Model Ordinance and re-described here.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

[89] List of local water agencies and a description of their plans to either adopt the CDWR Model Ordinance or develop their own ordinance: ftp://ftp.water.ca.gov/Model-Water-Efficient-Landscape-Ordinance/Local-Ordinances/

- $Water_{baseline}$, to be calculated by the Project Applicant using the methodology described below
- $Water_{mitigated}$, to be calculated by the Project Applicant using the methodology described below

Baseline Method:

The Project's baseline water use is the Maximum Applied Water Allowance (MAWA) described in the Model Water Efficient Landscape Ordinance:

$$MAWA = ET_0 \times 0.62 \times [(0.7 \times LA) + (0.3 \times SLA)]$$

Where:

MAWA	=	Maximum Applied Water Allowance (gallons per year)
ET_0	=	Annual Reference Evapotranspiration[90] from Appendix A of the Model Water Efficient Landscape Ordinance (inches per year)
0.7	=	ET Adjustment Factor (ETAF)
LA	=	Landscape Area[91] includes Special Landscape Area[92] (square feet)
0.62	=	Conversion factor (to gallons per square foot)
SLA	=	Portion of the landscape area identified as Special Landscape Area (square feet)
0.3	=	the additional ET Adjustment Factor for Special Landscape Area

Then the baseline GHG emissions are calculated as follows:

$$\text{GHG emissions} = \text{MAWA} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions	=	MT CO_2e
Electricity	=	Electricity required to supply, treat, and distribute water (kWh/million gallons) Northern California Average (outdoor uses): 3,500 kWh/million gallons Southern California Average (outdoor uses): 11,111 kWh/million gallons

[90] Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: http://wwwcimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19

[91] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Landscape Area (LA) means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designed for non-development (e.g., open spaces and existing native vegetation)."

[92] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Special Landscape Area (SLA) means an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface."

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption.

The Project's mitigated water use is the Estimated Total Water Use (ETWU) described in the Model Water Efficient Landscape Ordinance:

$$\text{ETWU} = \text{ET0} \times 0.62 \times \left(\frac{\text{PF} \times \text{HA}}{\text{IE}} + \text{SLA} \right)$$

Where:

ETWU	=	Estimated total water use (gallons per year)
ET_0	=	Annual Reference Evapotranspiration from Appendix A of the Model Water Efficient Landscape Ordinance (inches per year)
PF	=	Plant Factor from WUCOLS[93] see Table WUW-3.1 for examples and WUCOLS for a complete list of values
HA	=	Hydrozone Area[94] (square feet)
SLA	=	Special Landscape Area (square feet)
0.62	=	Conversion factor (to gallons per square foot)
IE	=	Irrigation Efficiency[95] (minimum 0.71)

Then the percent reduction in GHG emissions is calculated as follows:

$$\text{GHG emission reduction} = \frac{\text{MAWA} - \text{ETWU}}{\text{MAWA}}$$

[93] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Plant Factor (PF)" is a factor, when multiplied by ET_0, estimates the amount of water needed by plants." The Model Water Efficient Landscape Ordinance indicates that PF is 0-0.3 for low water use plants, 0.4-0.6 for moderate water use plants, and 0.7-1.0 for high water use plants. PF is equivalent to the "species factor" (k_s) in WUCOLS. See Table A above for examples of low, moderate, and high water use plants from WUCOLS. For a complete list of PF (k_s) values, see the species evaluation list in WUCOLS.

[94] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Hydrozone means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated."

[95] § 491 Definitions in Model Water Efficient Landscape Ordinance: "Irrigation Efficiency (IE) means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of the ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems."

As shown in this equation, the regional electricity intensity factor and utility carbon intensity factor do not play a role in determining the percentage reduction in GHG emissions. Furthermore, since ET_0 is a multiplier in both MAWA and ETWU, it cancels out and therefore ET_0 does not play a role in determining the percentage reduction in GHG emissions either.

Table WUW-3.1: Example Plant Factor (PF) Values from WUCOLS

Water Needs	PF Range	Plant Type	Species Examples
Low	0 - 0.3	tree	Quercus agrifolia (coast live oak)
			Yucca
			Pinus halepensis (Aleppo pine)
		shrub	Quercus berberidifolia (California scrub oak)
			Lonicera subspicata (chaparral honeysuckle)
			Salvia apiana (white sage)
		vine	Macfadyena unguis-cati (cat's claw)
		groundcover	Arctostaphylos spp. (manzanita)
		perennial	Monardella villosa (coyote mint)
Moderate	0.4 - 0.6	tree	Acer negundo (California box elder)
			Acer paxii (evergreen maple)
		shrub	Buxus microphylla japonica (Japanese boxwood)
		vine	Wisteria
			Aristolochia durior (Dutchman's pipe)
		groundcover	Ceratostigma plumbaginoides (dwarf plumbago)
		perennial	Monarda didyma (bee balm)
	0.6	turf grasses (warm season)	Bermudagrass
			kikuyugrass
			seashore paspalum
			St. Augustinegrass
			zoysiagrass
High	0.7 - 1.0	tree	Betula pendula (European white birch)
			Betula nigra (river/red birch)
		shrub	Cyathea cooperii (Australian tree fern)
			Cornus stolonifera (red osier dogwood)
		groundcover	Soleirolia soleirolii (baby's tears)
		perennial	Mimulus spp., herbaceous (monkey flower)
			Woodwardia radicans (European chain fern)
			Acorus gramineus (sweet flag)
	0.8	turf grasses (cool season)	annual bluegrass
			annual ryegrass
			colonial bentgrass
			creeping bentgrass
			hard fescue
			highland bentgrass
			Kentucky bluegrass
			meadow fescue
			perennial ryegrass
			red fescue
			rough-stalked bluegrass
			tall fescue

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Assuming an irrigation efficiency of 71% as specified in the Model Water Efficient Landscape Ordinance and no Special Landscape Area: • 0% reduction if 100% of vegetation is Moderate PF • 13% reduction if 40% of vegetation is Low PF, 40% is Moderate PF, and 20% is High PF • 35% reduction if 50% of vegetation is Low PF and 50% is Moderate PF • 70% reduction if 100% of vegetation is Low PF
All other pollutants	Not Quantified[96]

Discussion:

Example calculations of MAWA and ETWU are provided in the Model Water Efficient Landscape Ordinance. In this example, assume that the Project Applicant has used the equations to calculate MAWA = 100 million gallons and ETWU = 80 million gallons. Then the GHG emissions reduction is 20%:

$$\text{GHG Emission Reduced} = \frac{100-80}{100} = 0.2 \text{ or } 20\%$$

Assumptions:

Data based upon the following references:

[1] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

[2] ("WUCOLS"): California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california__wucols/wucols00.pdf

[3] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

The California Department of Water Resources Model Water Efficient Landscape Ordinance requires that the Estimated Total Water Use (ETWU) of certain landscape

[96] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

projects shall not exceed the Maximum Applied Water Allowance (MAWA) for that landscape area. The MAWA is calculated based on average irrigation efficiencies and plant factors, two major influences on the water demand of a landscape. The ETWU is calculated based on project-specific plant factors and irrigation efficiency.

Alternative Literature:

[4] ("WUCOLS"): California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california__wucols/wucols00.pdf

[5] The Las Pilitas Nursery website has a user-friendly and searchable database of native California plants: http://www.laspilitas.com/shop/plant-products. As shown in WUCOLS, many California native plants have minimal or very low water needs.

The equation on page 9 of WUCOLS [4] shows that water demand for irrigation landscape plantings (ETL, landscape evapotranspiration) is calculated by multiplying two parameters: the landscape coefficient (KL) and the reference evapotranspiration (ETo). KL values are based on a species factor, density factor, and microclimate factor. The guidance provides detailed instructions on how to assign project-specific values for these three factors. KL can then be divided by the irrigation efficiency to obtain the Total Water Applied, as shown on page 31 of the guidance [4]. Total Water Applied is analogous to ETWU in the methodology shown above. Thus, the detailed WUCOLS methodology could be used to perform a more rigorous calculation of ETWU which incorporates microclimate effects (e.g. windy areas, areas shaded by buildings, etc) and vegetation density effects.

Other Literature Reviewed:

None

4.2.4 Use Water-Efficient Landscape Irrigation Systems

Range of Effectiveness: 6.1% reduction in GHG emissions from outdoor water

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Using water-efficient landscape irrigation techniques such as “smart” irrigation technology reduces outdoor water demand, energy demand, and the associated GHG emissions.[97]

“Smart” irrigation control systems use weather, climate, and/or soil moisture data to automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. Thus, the appropriate amount of moisture for a certain vegetation type is maintained, and excessive watering is avoided. Many companies which design and install smart irrigation systems, such as Calsense, ET Water, and EPA-certified WaterSense Irrigation Partners, may be able to provide a site-specific estimate of the percent reduction in outdoor water use that can be expected from installing a smart irrigation system. Expected reductions are in the range of 1 – 30%, with the high end of the range associated with historically high water users. To take credit for the high end of the GHG emissions reductions based on these company quotes, the Project Applicant would need to provide detailed and substantial evidence supporting the proposed percent reduction in water use. Alternatively, the Project Applicant could apply the average percent reduction reported in a 2009 study conducted by Aquacraft, Inc. in cooperation with the California Department of Water Resources, the California Urban Water Conservation Council, and a consortium of California water utilities. This comprehensive study showed that smart irrigation systems of various brands achieve an average of 6.1% reduction in outdoor water use in California. This percent reduction is based on a two year study (one year pre and post installation of smart controllers) of over two thousand sites in seventeen different water utilities throughout northern and southern California. While the study also presents utility-specific percent reductions, variations in implementation and sample size between utilities renders these percent reductions insufficient for characterization in a mitigation measure at this time. The study also notes that for a sample of smart controllers where data was collected for three years after installation, the percent reduction in water use increased with time, with the greatest percent reduction achieved in year three.

[97] The installation of smart irrigation controllers will be required starting in 2011 as indicated in the 2010 Draft California Green Building Standards Code. As technology advances and newer generation smart irrigation controllers become available, the Project Applicant may choose to use this mitigation measure to quantify water use and associated GHG reductions beyond what would be achieved with the standards required by the California Green Building Standards Code.

The expected percent reduction is applied to the baseline water use, calculated according to the baseline methodology document. The energy-intensity factor associated with water conveyance and distribution is provided in the 2006 CEC report [2].

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected outdoor water demand, without installation of smart landscape irrigation controller (million gallons).
- (Optional) Project-specific percent reduction in outdoor water demand, after installation of smart landscape irrigation controller. Percent reduction must be verifiable. Otherwise, use the default value of 6.1%.

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e

$\text{Water}_{\text{baseline}}$ = Total expected outdoor water demand, without installation of smart landscape irrigation controllers (million gallons)
Provided by Applicant

Electricity = Electricity required to supply, treat, and distribute water (kWh/million gallons)
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons

Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction} \times \text{Water}_{\text{baseline}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for outdoor water use.

$\text{Water}_{\text{baseline}}$ = Total expected outdoor water demand, without installation of smart landscape irrigation controllers (million gallons)

Provided by Applicant

PercentReduction = Expected percent reduction in water use after installation of smart landscape irrigation controllers (%)

Provided by Applicant or use default 6.1%

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	6.1% unless project-specific data is provided
All other pollutants	Not Quantified[98]

Discussion:

The percent reduction in GHG emissions is equivalent to the percent reduction in outdoor water usage. Therefore, if a Project Applicant uses the default percent reduction in water usage associated with installing smart landscape irrigation control systems (6.1%), the resulting reduction in GHG emissions is also 6.1%.

Assumptions:

Data based upon the following references:

[1] "Evaluation of California Weather-Based "Smart" Irrigation Controller Programs." July 2009. Presented to the California Department of Water Resources by The Metropolitan Water District of Southern California and The East Bay Municipal Utility District. Facilitated by the California Urban Water Conservation Council. Prepared by Aquacraft Inc., National Research Center Inc., and Dr. Peter J. Bickel. Available online at: http://www.aquacraft.com/Download_Reports/Evaluation_of_California_Smart_Controller_Programs_-_Final_Report.pdf

[2] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

As described above, the 2009 study [1] conducted by Aquacraft, Inc. in cooperation with the California Department of Water Resources, the California Urban Water Conservation Council, and a consortium of California water utilities showed that smart

[98] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

irrigation systems of various brands achieve an average of 6.1% reduction in outdoor water use in California.

Alternative Literature:

When common watering systems such as in-ground sprinklers are used, much of the water applied to lawns and landscapes is not absorbed by the vegetation. Instead, it is lost through runoff or evaporation. The USEPA reports that a study by the American Water Works Association found that households with in-ground sprinkler systems used 35% more water outdoors than households without these systems, while households with drip irrigation systems used 16% more water [3]. The USEPA reports that hand-held hoses or sprinklers are often more water efficient than automatic irrigation systems.

However, "smart" automatic landscape irrigation systems do exist. Examples include systems which automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. A few references have quantified reductions from this type of irrigation strategy. The Southern Nevada Water Authority reports that smart irrigation systems can reduce outdoor water use by an average of 15 to 30 percent, depending on the system, landscape type, and location [4]. One study conducted in 40 households with historically high water use in Irvine, California showed an average reduction in outdoor water use of 16% [5,6]. Another study conducted in Santa Barbara, California households with historically high water use showed an average water savings of 26% [5,7]. A Project Applicant could also hire an EPA-certified WaterSense Irrigation Partner to design and install a new irrigation system or audit an existing system in an effort to minimize the amount of water consumed [6].

[3] USEPA. 2002. Water-Efficient Landscaping: Preventing Pollution & Using Resources Wisely. Available online at: http://www.epa.gov/npdes/pubs/waterefficiency.pdf
[4] Southern Nevada Water Authority. Smart Irrigation Controllers. Available online at: http://www.snwa.com/html/land_irrig_smartclocks.html. Accessed March 2010.
[5] Irrigation Association. Smart Controller Efficiency Testing. Available online at: http://www.irrigation.org/SWAT/Industry/case-studies.asp. Accessed March 2010.
[6] Irvine Ranch Water District, et al. 2001. Residential Weather-Based Irrigation Scheduling: Evidence from the Irvine "ET Controller" Study. Available online at: http://www.irrigation.org/swat/images/irvine.pdf
[7] Santa Barbara County Water Agency, et al. 2003. Santa Barbara County ET Controller Distribution and Installation Program Final Report. Available online at: http://www.irrigation.org/swat/images/santa_barbara.pdf
[8] USEPA. WaterSense: Landscape Irrigation. Available online at: http://www.epa.gov/WaterSense/services/landscape_irrigation.html

4.2.5 Reduce Turf in Landscapes and Lawns

Range of Effectiveness: Varies and is equal to the percent commitment to turf reduction, assuming no other outdoor water uses

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Turf grass (i.e. lawn grass) has relatively high water needs compared to most other types of vegetation. For example, trees planted in turf generally do not need additional watering besides what is required for the turf. Water agencies in Southern California have instituted turf removal programs which provide rebates for resident who reduce the turf area in their lawns. Reducing the turf size of landscapes and lawns reduces water consumption and the associated indirect GHG emissions.[99]

This measure describes how to calculate GHG savings from reducing the turf area of an existing lawn by X square feet, or designing a lawn to have X square feet less than the turf area of a standard lawn at the project location.[100]

Additional GHG emissions reductions may occur due to a reduction in fertilizer usage. Since this will vary based on individual occupant behavior, this reduction in GHG emissions from decreased fertilizer usage is not quantified.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Turf area of existing lawn or standard lawn at the project location (square feet)
- Turf area reduction commitment (square feet reduced or percent of baseline reduced)

Baseline Method:

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[99] See the SoCal WaterSmart Residential Turf Program description at http://socalwatersmart.com/index.php?option=com_content&view=article&id=77&Itemid=10. Accessed March 2010.

[100] The Project Applicant would need to provide a value for and evidence supporting this "standard-sized lawn." This value is likely to vary greatly depending on the type of building (single-family, condo, apartment complex, commercial space) as well as location (region in California, urban or suburban).

The methodology for calculating water demand presented here is based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance [1] and the CDWR 2000 report: “A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III” [2].

The Project Applicant should first calculate the amount of water required to support the existing turf or standard-sized turf ($Water_{baseline}$).[101] In the equations below, “crop” also represents “turf grass,” or lawn grasses.

$$ET_C = K_c \times ET_0$$

Where:

ET_C = Crop Evapotranspiration, the total amount of water the baseline turf loses during a specific time period due to evapotranspiration[102] (inches water/day)

K_C = Crop Coefficient, factor determined from field research, which compares the amount of water lost by the crop (e.g. turf) to the amount of water lost by a reference crop (unitless)

Species-specific; provided in Table WUW-5.1 below

ET_0 = Reference Evapotransporation, the amount of water lost by a reference crop (inches water/day)

Region-specific; provided in Appendix A of the CDWR Model Water Efficient Landscape Ordinance [1]

[101] Page 10 of the CDWR report explains that the objective of landscape management is to maintain the “health, appearance, and reasonable growth” of plants, and not necessarily to replenish all of the water lost at maximum evapotranspiration rates. Thus, the CDWR methodology presented here calculates only the amount of water required to sustain the health, appearance, and growth of the plants.

[102] Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: http://wwwcimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19

Table WUW-5.1:
Crop Coefficient for Turf Grasses

Category	Kc	Species
cool season grasses	0.8	annual bluegrass annual ryegrass colonial bentgrass creeping bentgrass hard fescue highland bentgrass Kentucky bluegrass meadow fescue perennial ryegrass red fescue rough-stalked bluegrass tall fescue
warm season grasses	0.6	Bermudagrass kikuyugrass seashore paspalum St. Augustinegrass zoysiagrass

Reference: p. 6 and p. 137 of CDWS report

Then: $$Water_{baseline} = ETC \times Area_{baseline} \text{ X } 0.62 \times 365$$

Where:

$Water_{baseline}$ = Volume of water required to support the baseline turf (gallons/year)
$Area_{baseline}$ = Area of existing or standard turf (square feet)
Provided by the Applicant
0.62 = conversion factor (gallons/squarefoot·inches water)
365 = conversion factor (days/year)
ETC = Crop evapotranspiration
Calculated using the equation on page 280

Then the baseline GHG emissions are calculated as follows:

$$\text{GHG emissions} = Water_{baseline} \times \text{Electricity} \times \text{Utility}$$

Where:

GHG emissions = MT CO_2e
Electricity = Electricity required to supply, treat, and distribute water (kWh/million gallons)

Northern California Average (outdoor uses): 3,500 kWh/million gallons
Southern California Average (outdoor uses): 11,111 kWh/million gallons
Utility = Carbon intensity of Local Utility (CO_2e/kWh)

Mitigation Method:

The equations above show that the GHG emissions are directly proportional to the water demand, which is in turn directly proportional to the area of the turf. Therefore, only the area of the existing or standard turf and the commitment to turf area reduction (square feet reduced or percent of baseline reduced) are needed to calculate the percent reduction in GHG emissions:

$$\text{GHG emission reduction} = \frac{Area_{reduction}}{Area_{baseline}} = AreaPercentReduction$$

Where:

$Area_{reduction}$ = Area of turf to be reduced (square feet)
Provided by the Applicant
$Area_{baseline}$ = Area of existing or standard turf (square feet)
Provided by the Applicant
AreaPercentReduction = Percent reduction in turf area (%)
Provided by the Applicant

As shown in this equation, the regional electricity intensity factor for water and the utility carbon intensity factor do not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Up to 100%, assuming 100% reduction in turf grass area. This would be the case for rock-lawns, for example.
All other pollutants	Not Quantified[103]

Discussion:

In this example, assume that the Project Applicant has provided detailed evidence to show that the turf area of a standard lawn at the project location is 8,000 square feet. If the Project Applicant then commits to reducing the turf area of lawns by 3,000 square feet, then the GHG emissions reduction is 37.5%.

[103] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

$$\text{GHG Emission Reduced} = \frac{3{,}000}{8{,}000} = 0.375 \text{ or } 37.5\%$$

Assumptions:

Data based upon the following references:

[1] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

[2] California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california__wucols/wucols00.pdf

[3] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

Preferred Literature:

See above

Alternative Literature:

None

Other Literature Reviewed:

None

4.2.6 Plant Native or Drought-Resistant Trees and Vegetation

Range of Effectiveness: Best Management Practice; may be quantified if substantial evidence is available.

Measure Description:

California native plants within their natural climate zone and ecotype need minimal watering beyond normal rainfall, so less water is needed for irrigating native plants than non-native species. Drought-resistant vegetation needs even less watering. Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Thus, planting native and drought-resistant vegetation reduces water use and the associated GHGs. Designing landscapes with native plants can provide many other benefits, including reducing the need for fertilization and pesticide use, and providing a more natural habitat for native wildlife. Although there is much anecdotal evidence for the benefits of planting native vegetation, few scientific studies have quantified the actual water savings. Therefore, this mitigation measure would most likely be employed as a Best Management Practice. Future studies may quantify the water-saving benefits of planting native or drought-resistant vegetation. In order to take quantitative credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting a percent reduction in water use. The percent reduction would be applied to the baseline water use, calculated according to the baseline methodology described in WUW-3 (Design water efficient landscapes) and the baseline methodology document.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Percent reduction in water use, calculated using detailed and substantial evidence
- $Water_{baseline}$, to be calculated by the Project Applicant using the baseline methodology described in WUW-3 (Design water efficient landscapes) and the baseline methodology document

Baseline Method

See WUW-3 (Design water efficient landscapes)

Mitigation Method

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction} \times \text{Water}_{baseline}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for outdoor water use.

$\text{Water}_{baseline}$ = Baseline water demand, without planting native or drought-resistant vegetation
Provided by Applicant, calculated using baseline methodology of Mitigation Measure WUW-3

PercentReduction = Expected percent reduction in water use resulting from planting native or drought-resistant vegetation
Provided by Applicant

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant
All other pollutants	Not Quantified[104]

Discussion:

Currently there is not sufficient substantial evidence supporting a generalized reduction in emissions due to planting native or drought tolerant species. However, if the project applicant is able to provide sufficient substantial evidence supporting a reduction in water usage associated with native or drought tolerant species, the percent reduction in GHG emissions is equivalent to the percent reduction in outdoor water usage. Therefore, if a Project Applicant can support a 10% reduction in water use by native and drought tolerant species, the GHG emissions associated with water use are reduced by 10%.

Assumptions:

None

[104] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Alternative Literature:

The EPA reports that while there is anecdotal evidence for the water-saving benefits of planting native and drought-resistant vegetation, there are very few scientific studies available which quantify the benefits. There are several good resources available which describe the qualitative benefits. The California Native Plant Society provides many resources for designing a native plant garden, including how to identify native plants and where to buy them. The Las Pilitas Nursery provides similar resources and also lists species of drought-resistant plants that are best for specific California regions. The EPA also provides tips for designing landscapes with native plants.

USEPA. "Exploring the Environmental, Social and Economic Benefits Conference," December 6-7, 2004. USEPA. Greenacres: Landscaping with Native Plants Research Needs. Available online at: http://www.epa.gov/greenacres/conf12_04/conf_A.html. Accessed March 2010.
California Native Plant Society. Homepage. Available online at: http://www.cnps.org/. Accessed March 2010.
Las Pilitas Nursery. Drought Tolerant or Resistant Native Plants. Available online at: http://www.laspilitas.com/garden/Drought_resistant_plants_for_a_California_garden.html. Accessed March 2010.
USEPA. Greenacres: Native Plants Brochure. Available online at: http://www.epa.gov/greenacres/navland.html#Introduction. Accessed March 2010.

Alternative Literature:

None.

Other Literature Reviewed:

None

5.0 Landscaping Equipment

5.1 Landscaping Equipment

5.1.1 Prohibit Gas Powered Landscape Equipment.

Measure Description:

Electric lawn equipment including lawn mowers, leaf blowers and vacuums, shredders, trimmers, and chain saws are available. When electric landscape equipment is used in place of a conventional gas-powered equipment, direct GHG emissions from natural gas combustion are replaced with indirect GHG emissions associated with the electricity used to power the equipment.

Measure Applicability:

[1] Landscaping equipment

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Horsepower of landscaping equipment
- Hours of operation

Baseline Method:

Look up landscape equipment emission factor based on type of fuel used:

Landscaping Equipment Horsepower	CO_2 Emission Factor from Gasoline (g/hp-hr)
< 25	429.44
25 – 50	783.30
50 – 120	774.50
120 –175	753.25
> 175	732.00

$$\text{GHG emission} = EF \times Hp \times LF \times Hr \times 10^{-6}$$

Where:

GHG emission = MT CO_2e per year

EF = CO_2 emission factor for the relevant horsepower tier show in table above (g/hp-hr). Obtained from OFFROAD2007.

Hp = Horsepower of landscaping equipment
LF = Load factor of equipment for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr = Hours of operation per year
10^{-6} = Unit conversion from grams to MT

Mitigation Method:

Landscaping equipment will run on electricity instead of gasoline. The indirect GHG emission from electricity generation is:

$$\text{GHG emission} = \text{Utility} \times \text{Hp} \times \text{LF} \times \text{Hr} \times \text{C}$$

Where:
GHG emissions = MT CO_2e
Utility = Carbon intensity of Local Utility (CO_2e/kWh). See table below.
Hp = Horsepower of landscaping equipment.
LF = Load factor of equipment for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr = Hours of operation.
C = Unit conversion factor

Power Utility	Carbon-Intensity (lb CO_2e/kWh)
LADWP	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

GHG Reduction %[105] $= 1 - \dfrac{\text{Utility} \times \text{C}}{\text{EF} \times 10^{-6}}$

EF = Emission Factor for the relevant fuel horsepower tier (g/hp-hr) Obtained from OFFROAD2007. See accompanying tables.

Emission Reduction Ranges and Variables:

Power Utility	Equipment Horsepower	Project GHG Emission Reductions
LADWP	< 25	2.5%
	25 – 50	46.5%

105 This assumes energy from engine losses are the same.

Power Utility	Equipment Horsepower	Project GHG Emission Reductions
	50 – 120	45.9%
	120 –175	44.4%
	> 175	42.8%
PG&E	< 25	64.1%
	25 – 50	80.3%
	50 – 120	80.1%
	120 –175	79.5%
	> 175	78.9%
SCE	< 25	49.5%
	25 – 50	72.3%
	50 – 120	72.0%
	120 –175	71.2%
	> 175	70.4%
SDGE	< 25	38.5%
	25 – 50	66.3%
	50 – 120	65.9%
	120 –175	64.9%
	> 175	63.9%
SMUD	< 25	56.3%
	25 – 50	76.0%
	50 – 120	75.8%
	120 –175	75.1%
	> 175	74.3%

Criteria pollutants will be reduced by reduction in combustion. They will also increase through the increase in energy use. However, the increase may not be in the same air basin.

Discussion:

The output from OFFROAD2007 shows the same emissions within each horsepower tier regardless of the year modeled. Therefore, the emission reduction is dependent on the location of the Project and horsepower of the landscaping equipment only.

Assumptions:

Data based upon the following references:

California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm

California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx

Preferred Literature:

The amount of direct GHG emissions avoided can be calculated using CARB's OFFROAD model, which provides state-wide and regional emission factors for different types of landscaping equipment that can be converted to grams per horsepower-hour [1]. Multiplying this factor by the typical horsepower and load factor of the equipment and number of hours of operation gives the direct GHG emissions. Assuming the same number of operating hours and power output as the gas-powered equipment, the same amount of energy consumption multiplied by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with using the electric landscape equipment. The GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Companion Strategy:

In order to take credit for Mitigation Measure 80, a Project Applicant must also commit to providing electrical outlets on the exterior of all buildings (Mitigation Measure 60) so that electrical lawn equipment is compatible with built facilities.

Alternative Literature:

None

Notes:

1. CARB. OFFROAD 2007 Model. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm. Accessed February 2010.

Other Literature Reviewed:

A. USEPA. Lawn Mower Exchange Program Calculator. Available online at: http://www.epa.gov/air/community/mowerexchange_calculator.html. Accessed February 2010.
B. USEPA. Improving Air Quality in Your Community: Outdoor Air – Transportation: Lawn Equipment. Available online at: http://www.epa.gov/air/community/details/yardequip.html. Accessed February 2010.
C. CARB. AB118 Lawn and Garden Equipment Replacement Project. Available online at: http://www.arb.ca.gov/msprog/aqip/lger.htm. Accessed February 2010.
D. SCAQMD. Mow Down Air Pollution Electric Lawn Mower Exchange. Available online at: http://www.aqmd.gov/tao/lawnmower2009.html. Accessed February 2010.
E. VCAPD. Lawn Mower Trade-In Program for Ventura County Residents. Available online at: http://www.vcapcd.org/LawnMower_EN.htm. Accessed February 2010.

F. SMAQMD. Mow Down Air Pollution. Available online at: http://www.airquality.org/mobile/mowdown/index.shtml. Accessed February 2010.

5.1.2 Implement Lawnmower Exchange Program

Range of Effectiveness: Best Management Practice, influences Area GHG emissions from landscape equipment

Measure Description:
When electric and rechargeable battery-powered lawnmowers are used in place of conventional gas-powered lawnmowers, direct GHG emissions from fuel combustion are displaced by indirect GHG emissions associated with the electricity used to power the equipment. The indirect GHG emissions from electricity generation are expected to be significantly less than the direct GHG emissions from gasoline or diesel fuel combustion. Since the magnitude of the GHG emissions reduction depends on the equipment model (including electric power efficiency and battery recharge time), hours of operation, fuel displaced, and number of lawnmowers replaced, the exact GHG emissions reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to allow for educated residents and commercial tenants to reduce their contribution to GHG emissions from landscaping. Many California Air Districts, including eight air districts supported by the CARB Lawn and Garden Equipment Replacement (LGER) Project, already have lawnmower exchange programs in place. This Best Management Practice could involve participating in these established lawnmower exchange programs, supplementing the established programs, or implementing a new program for the Project. The Project Applicant should check with the local air district regarding participating in established programs. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:
- GHG emissions from landscaping

Assumptions:
Data based upon the following references:

- CARB. AB118 Lawn and Garden Equipment Replacement Project. Available online at: http://www.arb.ca.gov/msprog/aqip/lger.htm. Accessed February 2010.
- SCAQMD. Mow Down Air Pollution Electric Lawn Mower Exchange. Available online at: http://www.aqmd.gov/tao/lawnmower2009.html. Accessed February 2010.
- VCAPD. Lawn Mower Trade-In Program for Ventura County Residents. Available online at: http://www.vcapcd.org/LawnMower_EN.htm. Accessed February 2010.
- SMAQMD. Mow Down Air Pollution. Available online at: http://www.airquality.org/mobile/mowdown/index.shtml. Accessed February 2010.

Emission Reduction Ranges and Variables:
This is a Best Management Practice and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:
CARB's Lawn and Garden Equipment Replacement (LGER) Project was established to encourage the use of cordless zero-emission lawn and garden equipment and to help bring more electric equipment to the market. The LGER Project provides vouchers for electric cordless residential lawn mowers valued up to $250 for each gas-powered lawnmower turned in. The LGER Project provides grants to eight air districts with existing lawnmower exchange programs, including AVAQMD, MDAQMD, SCAQMD, SDAPCD, SJVAPCD, SMAQMD, VCAPCD, and YSAQMD. Individual air districts may offer vouchers of different values.

Alternative Literature:

None

Other Literature Reviewed:

- USEPA. Lawn Mower Exchange Program Calculator. Available online at: http://www.epa.gov/air/community/mowerexchange_calculator.html. Accessed February 2010.
- USEPA. Improving Air Quality in Your Community: Outdoor Air – Transportation: Lawn Equipment. Available online at: http://www.epa.gov/air/community/details/yardequip.html. Accessed February 2010.

5.1.3 Electric Yard Equipment Compatibility

Range of Effectiveness: Best Management Practice, influences Area GHG emissions from landscape equipment. Not applicable on its own. This measure enhances effectiveness of A-1 and A-2.

Measure Description:

This measure is required to be grouped with measures A-1 “Prohibit Gas Powered Landscape Equipment” and A-2 “Implement a Lawnmower Exchange Program.” In order for measures A-1 and A-2 to be feasible, electrical outlets on the exterior of buildings must be accessible so that the electric landscaping equipment can be charged. In this mitigation measure, the Project Applicant commits to providing electrical outlets on the exterior of Project buildings as necessary for sufficient powering of electric lawnmowers and other landscaping equipment.

Measure Applicability:

- This measure is part of a grouped measure
- This measure contributes to reductions in GHG emissions from landscaping

Emission Reduction Ranges and Variables:

This measure is a Best Management Practice grouped with other measures and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of Best Management Practices.

Preferred Literature:

None

6.0 Solid Waste

6.1 Sold Waste

6.1.1 Institute or Extend Recycling and Composting Services

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
The transport and decomposition of landfill waste and the flaring of landfill gas all produce GHG emissions. Decomposition of waste produces methane, a GHG which has a global warming potential over 20 times that of CO_2. The transport of waste from the site of generation to the landfill produces GHG emissions from the combustion of the fuel used to power the vehicle. Choosing waste management practices which reduce the amount of waste sent to landfills will reduce GHG emissions. Strategies to reduce landfill waste include increasing recycling, reuse, and composting, and encouraging lifestyle choices and office practices which reduce waste generation.

Current protocols for quantifying emissions reductions from diverted landfill waste developed by the USEPA and the California Center for Integrated Waste Management Board (CIWMB) are based on life-cycle approaches, which reflect emissions and reductions in both the upstream and downstream processes around waste management. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Furthermore, while tools are available to quantify the avoided landfill GHG emissions from a specified amount of diverted or recycled waste, taking credit for this mitigation measure also requires the determination of the effects of instituting or extending recycling and composting services. Since both government and privately-sponsored recycling and composting programs vary dramatically in scope, waste materials accepted, and outreach efforts, no literature references exist which provide default values for percent of waste diverted. To take credit for this measure, the Project Applicant would need to provide detailed and substantial evidence supporting the amount of waste reduced or diverted to recycling and composting due to the institution of extended recycling and composting services.

Measure Applicability:

[2] Solid waste disposed to landfill

Inputs:
The following information needs to be provided by the Project Applicant:

- For residential buildings: number of residents
- For shopping malls and office buildings: building square footage
- For public venues: annual number of visitors
- For all other commercial buildings: number of employees
- Waste disposal method
- Amount of waste reduced or diverted to recycling and composting due to the institution of extended recycling and composting services.

Baseline Method:
The Project Applicant must first calculate the total amount of waste generated at the project.

For residential buildings and all commercial buildings except shopping malls and offices:

$$Waste_{baseline\ total} = People \times DisposalRate$$

For shopping malls and office buildings:

$$Waste_{baseline\ total} = SF \times DisposalRate$$

Where:

People = Number of residents, employees, or visitors (for public venues)
Provided by Applicant
SF = Square feet of building
Provided by Applicant
DisposalRate = Annual disposal rate of waste (tons/resident/year, tons/employee/year, or tons/visitor/year)
From Tables SW-1.1 and SW-1.2

The total waste stream is then portioned into material-specific streams (paper, glass, metal, plastic, etc.) using the percentages listed in Table SW-1.3.

USEPA's Waste Reduction Model (WARM) is used to quantify baseline emissions and emissions reductions from diverting landfill waste to composting or recycling. This web-based tool is available online at http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_Form.html. The required inputs are the tons of waste associated with one of three waste management practices: landfill (baseline scenario), recycled (mitigated scenario), combusted (not applicable in California), and composted (mitigated scenario). The amount of each type of waste in tons is entered into the "Tons Landfilled" column in the Baseline Scenario of

WARM to calculate the baseline GHG emissions in metric MT carbon equivalent (MTCE). Other input variables include landfill type (presence of landfill gas control system or not) and distance of waste transport; however, default values can be used.

Mitigation Method:
In WARM, the project applicant specifies the amount of waste associated with each of the three alternative scenarios: waste reduced (e.g. reduced waste generation), waste recycled, and waste composted. WARM then calculates the GHG savings associated with the alternative scenarios as compared with the baseline scenario.

Assumptions:
Data based upon the following reference:

- USEPA. 2009. Waste Reduction Model. Available online at: http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html
- CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf
- CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Available online at: http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry

Preferred Literature:
USEPA's WARM was developed to track GHG emission reductions from various waste management options. This tool calculates the GHG emissions associated with a baseline waste management strategy, as well as those associated with an alternative strategy that may include source reduction, recycling, composting, combusting, or landfilling. WARM then calculates the GHG savings associated with the alternative strategy as compared with the baseline strategy. WARM requires input of the estimated tons of waste per material type per disposal strategy. There are 34 different material types (e.g., aluminum cans, mixed paper, yard trimmings, carpet). Other input variables include landfill type (presence of landfill gas control system or not) and distance of waste transport; however, default values can be used. Note that WARM was developed based on a life-cycle approach, which reflects emissions and reductions in both the upstream and downstream processes around waste management. USEPA notes that emission factors developed based on this life cycle approach are not appropriate for use in GHG inventories.

Alternative Literature:
None

Other Literature Reviewed:

- HF&H Consultants. 2008. 5-Year Audit Program Assessment and Final Report. Prepared for StopWaste.Org. Available online at: http://www.stopwaste.org/docs/revised_assessment_report-final_1-08.pdf
- StopWaste.Org. 2008. Multifamily Dwelling Recycling Evaluation Report. Available online at: http://www.stopwaste.org/docs/mfd_evaluation_rpt.pdf

Table SW-1.1
Residential Waste Disposal Rates

Multi-family Homes		
All Counties	All Regions	**Annual Disposal Rate (tons/resident/year)**
		0.46

Single-family Homes		
County	**Region**	**Annual Disposal Rate (tons/resident/year)**
Alameda	Bay Area	0.42
Alpine	Mountain	0.25
Amador	Mountain	0.25
Butte	Central Valley	0.36
Calaveras	Mountain	0.25
Colusa	Central Valley	0.36
Contra Costa	Bay Area	0.42
Del Norte	Coastal	0.44
El Dorado	Mountain	0.25
Fresno	Central Valley	0.36
Glenn	Central Valley	0.36
Humbolt	Coastal	0.44
Imperial	Southern	0.41
Inyo	Mountain	0.25
Kern	Southern	0.41
Kings	Central Valley	0.36
Lake	Central Valley	0.36
Lassen	Mountain	0.25
Los Angeles	Southern	0.41
Madera	Central Valley	0.36
Marin	Bay Area	0.42
Mariposa	Mountain	0.25
Mendocino	Coastal	0.44
Merced	Central Valley	0.36
Modoc	Mountain	0.25
Mono	Mountain	0.25

Single-family Homes		
County	**Region**	**Annual Disposal Rate (tons/resident/year)**
Monterey	Coastal	0.44
Napa	Bay Area	0.42
Nevada	Mountain	0.25
Orange	Southern	0.41
Placer	Central Valley	0.36
Plumas	Mountain	0.25
Riverside	Southern	0.41
Sacramento	Central Valley	0.36
San Benito	Coastal	0.44
San Bernardino	Southern	0.41
San Diego	Southern	0.41
San Francisco	Bay Area	0.42
San Joaquin	Central Valley	0.36
San Luis Obispo	Southern	0.41
San Mateo	Bay Area	0.42
Santa Barbara	Southern	0.41
Santa Clara	Bay Area	0.42
Santa Cruz	Coastal	0.44
Shasta	Mountain	0.25
Sierra	Mountain	0.25
Siskiyou	Mountain	0.25
Solano	Bay Area	0.42
Sonoma	Coastal	0.44
Stanislaus	Central Valley	0.36
Sutter	Central Valley	0.36
Tehama	Central Valley	0.36
Trinity	Mountain	0.25
Tulare	Central Valley	0.36
Tuolumne	Mountain	0.25
Ventura	Southern	0.41
Yolo	Central Valley	0.36
Yuba	Central Valley	0.36

Source:

Single-family Homes		
County	**Region**	**Annual Disposal Rate (tons/resident/year)**

CalRecycle. Solid Waste Characterization Database: Residential Waste Disposal Rates. Available online at: http://www.calrecycle.ca.gov/wastechar/Resdisp.htm

CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf.

Table SW-1.2
Commercial Waste Disposal Rates

Commercial Industry	Annual Disposal Rate	
Fast-Food Restaurants	2.1	tons/employee/year
Full-Service Restaurants	2.2	tons/employee/year
Food Stores	2.4	tons/employee/year
Durable Wholesale Distributors	1.2	tons/employee/year
Non-Durable Wholesale Distributors	1.4	tons/employee/year
Large Hotels	2.0	tons/employee/year
Building Material & Gardening, Big-Box Stores	3.2	tons/employee/year
Building Material & Gardening, Other Stores	1.7	tons/employee/year
Retail, Big-Box Stores	1.4	tons/employee/year
Retail, Other Stores	0.9	tons/employee/year
Shopping Malls, Anchor Stores	1.1	tons/1,000 sqft/year
Shopping Malls, Other	1.0	tons/1,000 sqft/year
Public Venues and Events	0.1	tons/100 visitors/year
Large Office Buildings	0.9	tons/1,000 sqft/year

Abbreviations:
lb - pound
sqft - square feet

Source:

CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Table 2. Available online at: http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry

Table SW-1.3
Waste Streams and Percent of Disposed Waste

Building Category	Disposed Waste Streams							
	Paper [Mixed Paper, Broad Definition]	Glass [Glass]	Metal [Mixed Metals]	Plastic [Mixed Plastics]	Electronics [Personal Computers]	Organics [Mixed Organics]	Construction & Demolition [Clay Bricks, Concrete]	Household Hazardous, Special, and Mixed Residue [Mixed MSW]
Residential	27.4%	4.0%	4.6%	8.8%	n/a	45.0%	4.5%	5.5%
Fast-Food Restaurants	33.0%	0.6%	1.6%	11.6%	0.0%	52.5%	0.6%	0.0%
Full-Service Restaurants	17.3%	2.7%	2.8%	7.3%	0.1%	66.5%	1.8%	1.5%
Food Stores	18.5%	0.5%	1.4%	9.5%	0.0%	65.0%	5.0%	0.0%
Durable Wholesale Distributors	26.3%	0.7%	11.4%	9.9%	0.5%	5.4%	43.5%	2.4%
Non-Durable Wholesale Distributors	26.5%	0.5%	3.3%	16.0%	2.6%	32.7%	18.4%	0.1%
Large Hotels	32.3%	4.7%	3.8%	9.7%	0.4%	44.2%	4.8%	0.1%
Building Material & Gardening, Big-Box Stores	12.2%	1.9%	8.3%	7.1%	1.2%	8.0%	60.1%	1.2%
Building Material & Gardening, Other Stores	13.4%	5.3%	3.9%	7.1%	1.9%	18.6%	47.4%	2.3%
Retail, Big-Box Stores	21.7%	1.1%	5.3%	16.0%	0.8%	23.6%	27.1%	4.4%
Retail, Other Stores	31.8%	6.2%	8.7%	14.4%	0.7%	17.5%	15.0%	5.7%
Shopping Malls, Anchor Stores	37.9%	5.0%	3.0%	28.8%	0.1%	15.5%	9.1%	0.5%
Shopping Malls, Other	32.7%	1.8%	2.3%	19.6%	0.2%	35.9%	5.3%	2.0%
Public Venues and Events	42.0%	5.5%	1.8%	14.8%	0.0%	34.0%	0.7%	1.2%
Large Office Buildings	50.3%	1.8%	1.6%	12.5%	0.1%	24.4%	8.3%	1.1%

Abbreviations:
MSW - municipal solid waste

Notes:
The USEPA report identifies waste streams with slightly different names than the CIWMB report. The CIWMB and USEPA waste stream categories were paired; USEPA categories are shown in brackets [ ] above.

Sources:
CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf
CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Available online at: http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry
USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks. Available online at: http://www.epa.gov/climatechange/wycd/waste/SWMGHGreport.html

6.1.2 Recycle Demolished Construction Material

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
Recycling demolished construction material can contribute to GHG reductions in multiple ways. First, it displaces new construction materials, thereby reducing the need for new raw material acquisition and manufacturing of those new construction materials. Harvesting of raw materials and manufacturing new materials requires energy in the form of fuel combustion and electricity, both of which are associated with GHG emissions. If the process of recycling construction materials is less carbon-intensive than the processes required to harvest and produce new construction materials, recycling these construction materials results in a net reduction in GHG emissions. Second, using local recycled construction material reduces the emissions associated with the transportation of new construction materials, which are typically manufactured farther away from a project site. Third, recycling construction material avoids sending this material to landfills. Wood-based materials decompose in landfills and contribute to methane emissions.

Unlike measures which reduce GHG emissions during the operational lifetime of a project, such as reducing building electricity and water usage, this mitigation effort is realized prior to the actual operational lifetime of a project. Therefore, these GHG emissions reductions are best quantified in terms of a life-cycle analysis. Life cycle analyses examine all stages of the life of a product, including raw material acquisition, manufacture, transportation, installation, use, and disposal or recycling. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Measure Applicability:

- Life cycle emissions from construction materials

Preferred Literature:
The California Integrated Waste Management Board (CIWMB) cites decreases in greenhouse gas emissions as a benefit of construction waste management and recycling in its document “Construction Waste Management” which is used as part of California Sustainable Design Training. The document is available online at: www.calrecycle.ca.gov/greenbuilding/training/statemanual/waste.doc

Alternative Literature:
None

Other Literature Reviewed:
None

7.0 Vegetation

7.1 Vegetation

7.1.1 Urban Tree Planting

Range of Effectiveness: CO_2 reduction varies by the number of trees. VOC emissions may increase.

Measure Description:

Planting trees sequesters CO_2 while the trees are actively growing. The amount of CO_2 sequestered depends on the type of tree. IPCC indicates that in most cases, the active growing period of a tree is 20 years and after this time the amount of carbon in biomass slows and will be completely offset by losses from clipping, pruning, and occasional death [1]. Therefore, the emissions only occur for a 20 year period and are summed over all years to give a net one-time GHG benefit.

If large areas of trees will be planted, the lead agency may want to ensure enforceability by requiring submission of annual inventory consistent with the Urban Forest Protocol [2]. This is a comprehensive protocol that requires maintenance and replacement of trees. If the Project Applicant desires to use this approach, calculation methodologies and assumptions presented in the protocol should be used. The information required to implement this protocol is often not available at the time of the CEQA process.

The type of tree species planted will result in varying degrees of carbon sequestration. In addition, trees emit volatile organic compounds (VOCs), which are criteria pollutant precursors. Therefore the Project Applicant may want to consider these issues when selecting the type of tree to plant. See [3] for details on low-VOC trees.

Measure Applicability:

- New trees

Inputs:

The following information needs to be provided by the Project Applicant:

- Species classes of trees planted, if known
- Number of net new trees in each species class, if known
- Total number of net new trees

Baseline Method:

In the baseline case, there are no net new trees planted.

Mitigation Method:

Look up default annual CO_2 sequestration rates on a per tree basis:

Broad species class	Default annual CO_2 accumulation per tree[1] (MT CO_2/ year)
Aspen	0.0352
Soft maple	0.0433
Mixed hardwood	0.0367
Hardwood maple	0.0521
Juniper	0.0121
Cedar/larch	0.0264
Douglas fir	0.0447
True fir/Hemlock	0.0381
Pine	0.0319
Spruce	0.0337
Miscellaneous[2]	0.0354

1. IPCC's carbon (C) values converted to carbon dioxide (CO_2) using ratio of molecular weights (44/12).
2. Average of all other broad species classes. To be assumed if tree type is not known.

Therefore, the reduction in GHG emissions associated with planting new trees is:

$$\text{GHG emission reduction} = (\text{Growing Period} \times \sum_{i=1}^{n} [\text{ Sequestration } i \times \text{ Trees } i\,]\,) \div \text{Total GHG emissions}$$

Where:

GHG emission reduction	=	Percentage reduction in GHG emissions as compared to total GHG emissions.
Growing Period	=	Growing period for all trees, expressed in years (20).
n	=	Number of broad species classes. Provided by Applicant.
Sequestration *i*	=	Default annual CO_2 accumulation per tree for broad species class *i*. Lookup in table above.
Trees *i*	=	Number of net new trees of broad species class *i*.
Total GHG emissions	=	Total GHG emissions. Provided by Applicant.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Varies based on number of trees
VOC	May increase
All other pollutants	Not Quantified

Discussion:

If the applicant has baseline total project emissions of 5,000 MT CO_2e per year, and if the applicant elects to mitigate GHG emissions by committing to planting 500 net new "miscellaneous" trees, the applicant would reduce the amount of GHG emissions associated with the project by 7%.

$$\text{GHG Emission Reduced} = \frac{20 \times 0.0354 \times 500}{5{,}000} = 0.07 \text{ or } 7\%$$

Assumptions:

Data based upon the following reference:

[1] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Table 8.2. Available online at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_08_Ch8_Settlements.pdf

Preferred Literature:

The IPCC Guidelines [1] provide a method for estimating the amount of carbon sequestered by trees. IPCC default annual CO_2 sequestration rates on a per tree basis are used. Table 8.2 of the IPCC Guidelines provides species class-specific sequestration values. For species that do not appear or if the species is unknown, the average value from Table 8.2 (0.035 MT CO_2 per year per tree) can be assumed to be representative of trees planted. Urban trees are only net carbon sinks when they are actively growing. The IPCC assumes an active growing period of 20 years (see p. 8.9). Thereafter, the accumulation of carbon in biomass slows with age, and will be completely offset by losses from clipping, pruning, and occasional death. Actual active growing periods are subject to, among other things, species, climate regime, and planting density. Additional credit may be taken for planting native trees. See WUW-3 for details on the design of water-efficient landscaping.

Alternative Literature:

The Center for Urban Forest Research Tree Carbon Calculator is based on a small set of data and extrapolates annual tree girth increases for various tree species [1]. Furthermore, it extrapolates the amount of carbon associated with a given girth for each tree species. This method is based on extrapolation of a limited dataset. In addition it requires considerably more input requirements that may not be available for CEQA projects. These inputs include knowledge of specific tree species that will be planted and assumptions regarding anticipated growth rates. Considering the order of magnitude of mitigation from this option, the additional complexity of this method would not generally be warranted for most CEQA projects.

The CAR Urban Forest Sector Protocol [2] provides guidelines for estimating the amount of CO_2 sequestered by common California tree species. This methodology would require Project Applicants to know the tree species to be planted at the time the CEQA analysis is prepared. Furthermore, this methodology would require Project Applicants to estimate the expected diameter of trees, which is dependent on climate and tree sub-species, among other things.

Alternative Literature References:

[2] CAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at: http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/

[3] The Center for Urban Forest Research Tree Carbon Calculator. Available online at: http://www.fs.fed.us/ccrc/topics/urban-forests/

Other Literature Reviewed:

None

7.1.2 Create New Vegetated Open Space

Range of Effectiveness: varies based on amount and type of land vegetated

Measure Description:

A development which re-vegetates or creates vegetated land from previously settled land sequesters CO_2 from the atmosphere which would not have been captured had there been no land-type change. There is no reduction in GHG emissions associated with preservation of a land.

Measure Applicability:

- Open space

Inputs:

The following information needs to be provided by the Project Applicant:

- Types of land uses created
- Acres of each land use created

Baseline Method:

In the baseline case, there is no preserved or created open space.

Mitigation Method:

Lookup carbon dioxide sequestered per acre for each land use that will be preserved or created:

Land Use	Sub-Category	Default annual CO_2 accumulation per acre[1] (MT CO_2/ acre)
Forest Land	Scrub	14.3
	Trees	111
Cropland	--	6.9
Grassland	--	4.31
Wetlands	--	0

1. Calculated by multiplying total biomass (MT dry matter/acre) from IPCC data by the carbon fraction in plant material (0.47), then using the ratio of molecular weights (44/12) to convert from MT of carbon (C) to MT of carbon dioxide (CO_2).

Land uses are defined by IPCC as follows:

(i) Forest Land

This category includes all land with woody vegetation consistent with thresholds used to define Forest Land in the national greenhouse gas inventory. It also includes systems with a vegetation structure that currently fall below, but *in situ* could potentially reach the threshold values used by a country to define the Forest Land category.

(ii) Cropland

This category includes cropped land, including rice fields, and agro-forestry systems where the vegetation structure falls below the thresholds used for the Forest Land category.

(iii) Grassland

This category includes rangelands and pasture land that are not considered Cropland. It also includes systems with woody vegetation and other non-grass vegetation such as herbs and brushes that fall below the threshold values used in the Forest Land category. The category also includes all grassland from wild lands to recreational areas as well as agricultural and silvi-pastural systems, consistent with national definitions.

(iv) Wetlands

This category includes areas of peat extraction and land that is covered or saturated by water for all or part of the year (e.g., peatlands) and that does not fall into the Forest Land, Cropland, Grassland or Settlements categories. It includes reservoirs as a managed sub-division and natural rivers and lakes as unmanaged sub-divisions.

$$\text{GHG emission reduction} = \left(\sum_{i=1}^{n} [\text{ Sequestration } i \text{ x Acres } i\ ] \right) \div \text{Total GHG emissions}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions as compared to total GHG emissions.

n = Number of land uses. Provided by Applicant.

Sequestration *i* = Default annual CO_2 accumulation per acre for land use *i.* Look up in table above.

Acres *i* = Number of acres of land use *i.*

Total GHG emissions = Total one-time GHG emissions. Provided by Applicant.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	Varies
All other pollutants	Not Quantified

Discussion:

If the applicant has baseline one-time emissions of 5,000 MT CO_2e per year, and if the applicant elects to mitigate GHG emissions by committing to creating 50 acres of forest land (scrub) and 20 acres of grassland, the applicant would reduce the amount of one-time GHG emissions by 16%.

$$\text{GHG Emission Reduced} = \frac{14.3 \times 50 + 4.31 \times 20}{5{,}000} = 0.16 \text{ or } 16\%$$

Assumptions:

Data based upon the following references:

[1] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4. Available online at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html

Preferred Literature:

The IPCC Guidelines provide a method for calculating changes in CO_2 sequestration due to land-type conversions. While other methods exist, notably the CCAR Forest Protocol [2], the IPCC Guidelines [1] have more general default values available that will be applicable to all areas of California without requiring detailed site-specific information. A general knowledge of the proposed change in land type is sufficient to quantify reductions in greenhouse gas emissions. IPCC designates four general vegetation types: forest land, cropland, grassland, and wetland. The amount of sequestered CO_2 is calculated based on the amount of carbon stock in each type of biomass (MT carbon / hectare vegetation). IPCC defaults for the carbon stock in each vegetation type are summarized in Table 8.4. (Note that this table represents the amount of carbon removed due to land conversion to settlements; it can also be used to calculate the amount of carbon sequestered due to conversion from settlement to vegetated land. Note also that a conversion to wetlands is not relevant for California). In addition to general default values, the IPCC Guidelines have climate and species-specific data available which can be used if details of the proposed development are known. To calculate the final mass of CO_2, the mass of carbon is then multiplied by 3.67, which is the ratio of molecular mass of CO_2 to the molecular mass of carbon. This method assumes that all of the carbon is converted into CO_2, which is appropriate for most CEQA projects.

Alternative Literature:

The CAR Forest Sector Protocol provides guidelines for estimating the amount of CO_2 sequestered by vegetated land [1]. The Protocol is specific to forest land only, and is not appropriate for estimating land-type conversions to or from cropland or grassland. Additionally, the methodology is limited to conversions from vegetated land to settlement or settlement to vegetated land, but is not appropriate for changes from one vegetated land type to another vegetated land type. The Protocol recommends accounting for changes in the organic carbon content of soil, which requires soil sampling and testing. While testing of existing soil is feasible, the protocol does not provide adequate methods for predicting the future soil organic carbon content after a land-type conversion has taken places. Furthermore, soil testing may be a burdensome task for a Project Applicant. Methodologies which provide default values, such as the IPCC Guidelines, are preferable.

Alternative Literature References:

[2] CAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at: http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/

Other Literature Reviewed:

None

8.0 Construction

8.1 Construction

8.1.1 Use Alternative Fuels for Construction Equipment

Range of Effectiveness: 0 – 22% reduction in GHG emissions

Measure Description:

When construction equipment is powered by alternative fuels such as compressed natural gas rather than conventional petroleum diesel or gasoline, GHG emissions from fuel combustion may be reduced.

Measure Applicability:

[3] Construction vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Fuel type and Horsepower of Construction Equipment
- Hours of operation

Baseline Method:

For all pollutants besides ROG emissions from gasoline-fueled equipment, total emission is equivalent to exhaust emission and is calculated as follows:

$$\text{Exhaust Emission} = \frac{\text{Exhaust}}{\text{Activity} \times \text{AvgHP}} \times \text{Hp} \times \text{Hr} \times \text{C}$$

Where:

Exhaust Emission= MT or tons of pollutant per year

Exhaust = Statewide daily emission from equipment for the relevant horsepower tier of diesel or gasoline fuel (tons/day). Obtained from OFFROAD2007.

Activity = Statewide daily average operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.

AvgHP = Average horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.

Hp = Horsepower of equipment.

Hr = Hours of operation.

C = Unit conversion factor

Note that this method assumes the load factor of the equipment is same as the default in OFFROAD2007.

Total GHG emission is calculated as follows:

$$\text{GHG Emission} = CO_2\ \text{Emission} + CH_4\ \text{Emission} \times 21 + N_2O\ \text{Emission} \times 310$$

Where:

GHG Emission = MT CO_2e
CO_2 Emission = CO_2 emission calculated as described above with data from OFFROAD2007.
CH_4 Emission = CH_4 emission calculated as described above with data from OFFROAD2007.
N_2O Emission = N_2O emission calculated as described above with data from OFFROAD2007.
21 = Global warming potential of CH_4 following CCAR GPR 2009.
310 = Global warming potential of N_2O following CCAR GPR 2009.

Total ROG emission from gasoline-fueled equipment is calculated as follows:

$$\text{Total ROG Emission} = \text{Exhaust ROG Emission} + \frac{\text{Resting} + \text{Diurnal} + \text{Hot Soak} + \text{Evaporative}}{\text{Activity} \times \text{AvgHP}} \times \text{Hp} \times \text{Hr} \times \text{C}$$

Where:

Total ROG Emission = Tons of ROG emission per year
Exhaust ROG Emission = ROG emission from exhaust calculated as described above (tons/year)
Resting = Statewide daily resting losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.
Diurnal = Statewide daily diurnal losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.
Hot Soak = Statewide daily hot soak losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.
Evaporative = Statewide daily evaporative losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.
Activity = Statewide daily average operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.
AvgHP = Average horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.
Hp = Horsepower of TRU.
Hr = Hours of operation.
C = Unit conversion factor

Mitigation Method:

Mitigated emissions for this measure are calculated using the same method as baseline method, but with emission factors from compressed natural gas in OFFROAD2007.

Emission Reduction Ranges and Variables:

GHG and criteria pollutant emission reductions from switching diesel or gasoline fuel to compressed natural gas fuel for different years are listed in accompanying tables. Only equipment with emission data for compressed natural gas and either diesel or gasoline fuel in OFFROAD2007 are included.

Discussion:

The emission changes vary over a large range for different pollutants and equipment and between diesel and gasoline. In fact, GHG emissions for several types of equipment running on gasoline and all equipment running on diesel would increase from switching to compressed natural gas, as reflected by the negative reductions in the tables. On the other hand, SO_2 emissions are 100% reduced as there is no SO_2 emissions from equipment running on compressed natural gas according to OFFROAD2007. Other trends include no significant change in PM emissions for most gasoline equipment, considerable decrease in CO emissions from gasoline equipment but significant increase in CO emissions from diesel equipment. Therefore, the Project Applicant has to weigh the costs and benefits from switching to compressed natural gas on a case-by-case basis.

Assumptions:

Data based upon the following references:

- California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm
- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html
  California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx

Preferred Literature:

GHG emissions from the combustion of conventional petroleum diesel and gasoline fuel can be calculated using CARB's OFFROAD model emission factors [1]. The model provides state-wide and regional emission factors that can be converted to grams per horsepower-hour. Multiplying this factor by the typical horsepower of the equipment and the estimated number of hours of operation gives the total GHG emissions. In this mitigation measure, compressed natural gas was chosen as the alternative fuel. Emission factors for compressed natural gas can also be obtained from OFFROAD The

GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from using petroleum diesel or gasoline versus using compressed natural gas. Other types of alternative fuels besides compressed natural gas exist. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial documentation showing expected reductions in GHG emissions as a result of running construction equipment on these alternative fuels rather than petroleum diesel or gasoline. One potential issue with quantifying this mitigation measure is the difference in fuel economy between petroleum diesel and alternative fuels.

Alternative Literature:

Many USDOE, NREL, and USEPA reports exist which present data on exhaust emissions from engines operating with alternative fuels. The majority of these reports focuses on oxides of nitrogen (NOx) and particulate matter (PM) emissions and have limited CO_2 emissions and fuel economy data. One NREL report shows CO_2 emissions and fuel economy for three ethanol/diesel blends (7.7%, 10%, and 15%) in three off-road engines (6.8, 8.1, and 12.5 L) and compares the results to engine performance using conventional diesel fuel [5]. However, this report presented engine-specific data from a small study size. Issues with other reports include the study's focus on on-road engines rather than off-road engines which would be used in construction equipment. It would be difficult to generalize the data contained in these reports for a Project Applicant's ease of use.

Notes:

[1] CARB. OFFROAD 2007 Model. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm. Accessed February 2010.

Other Literature Reviewed:

[2] USEPA. 2002. A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions. Available online at: http://www.epa.gov/otaq/models/analysis/biodsl/p02001.pdf
[3] USDOE. NREL: ReFUEL Laboratory: Data and Resources. Available online at: http://www.nrel.gov/vehiclesandfuels/refuellab/data_resources.html. Accessed March 2010.
[4] USDOE. 2006. NREL: Effects of Biodiesel Blends on Vehicle Emissions. Available online at: http://www.nrel.gov/vehiclesandfuels/npbf/pdfs/40554.pdf
[5] USDOE. 2003. NREL: The Effect of Biodiesel Composition on Engine Emissions from a DDC Series 60 Diesel Engine. Available online at: http://www.nrel.gov/vehiclesandfuels/npbf/pdfs/31461.pdf

Table C-1.1
Emission Reduction Due to Fuel Switch from Gasoline to Compressed Natural Gas

Equipment	Horsepower	2004					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	59%	-27%	36%	91%	98%	100%
	15 - 25	61%	-40%	7%	90%	97%	100%
Air Conditioner	< 175	24%	14%	19%	0%	97%	100%
Baggage Tug	< 120	46%	15%	-4%	0%	93%	100%
Belt Loader	< 120	52%	18%	3%	0%	95%	100%
Bobtail	< 120	55%	17%	19%	0%	95%	100%
Cargo Loader	< 120	41%	16%	2%	0%	93%	100%
Catering Truck	< 250	31%	12%	25%	0%	94%	100%
Forklifts	< 25	53%	-46%	23%	-85%	92%	100%
	25 - 50	94%	22%	-33%	0%	97%	100%
	50 - 120	58%	19%	18%	0%	96%	100%
	120 - 175	24%	17%	24%	0%	94%	100%
Fuel Truck	<175	3%	18%	17%	0%	99%	100%
Generator Sets	<120	52%	18%	14%	0%	96%	100%
	120 - 175	22%	14%	21%	0%	95%	100%
Lav Truck	<175	32%	18%	17%	0%	94%	100%
Lift	<120	53%	17%	14%	0%	96%	100%
Passenger Stand	<175	27%	15%	22%	0%	96%	100%
Service Truck	<250	13%	16%	26%	0%	95%	100%

Equipment	Horsepower	2010					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	95%	100%
Air Conditioner	< 175	29%	14%	19%	0%	98%	100%
Baggage Tug	< 120	13%	13%	-114%	0%	84%	100%
Belt Loader	< 120	27%	15%	-82%	0%	91%	100%
Bobtail	< 120	29%	16%	11%	0%	96%	100%
Cargo Loader	< 120	15%	14%	-70%	0%	89%	100%
Catering Truck	< 250	35%	12%	29%	0%	95%	100%
Forklifts	< 25	53%	-51%	3%	-85%	85%	100%
	25 - 50	95%	22%	18%	0%	98%	100%
	50 - 120	52%	18%	5%	0%	95%	100%
	120 - 175	27%	14%	23%	0%	94%	100%
Fuel Truck	<175	9%	16%	15%	0%	100%	100%
Generator Sets	<120	40%	17%	16%	0%	97%	100%
	120 - 175	26%	14%	23%	0%	95%	100%
Lav Truck	<175	36%	15%	-18%	0%	94%	100%
Lift	<120	44%	17%	16%	0%	96%	100%

Passenger Stand	<175	32%	15%	25%	0%	97%	100%
Service Truck	<250	19%	14%	40%	0%	95%	100%

Equipment	Horsepower	2015					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	31%	13%	23%	0%	99%	100%
Baggage Tug	< 120	8%	14%	-93%	0%	85%	100%
Belt Loader	< 120	22%	16%	-69%	0%	92%	100%
Bobtail	< 120	25%	16%	13%	0%	96%	100%
Cargo Loader	< 120	5%	14%	-91%	0%	88%	100%
Catering Truck	< 250	38%	11%	33%	0%	95%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	22%	34%	0%	98%	100%
	50 - 120	52%	18%	6%	0%	95%	100%
	120 - 175	27%	14%	25%	0%	95%	100%
Fuel Truck	<175	12%	15%	13%	0%	100%	100%
Generator Sets	<120	21%	16%	17%	0%	97%	100%
	120 - 175	29%	13%	24%	0%	96%	100%
Lav Truck	<175	36%	15%	-24%	0%	95%	100%
Lift	<120	37%	16%	16%	0%	96%	100%
Passenger Stand	<175	34%	14%	28%	0%	98%	100%
Service Truck	<250	22%	13%	46%	0%	96%	100%

Equipment	Horsepower	2020					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	32%	13%	24%	0%	99%	100%
Baggage Tug	< 120	7%	15%	-49%	0%	89%	100%
Belt Loader	< 120	21%	16%	-27%	0%	94%	100%
Bobtail	< 120	26%	16%	13%	0%	96%	100%
Cargo Loader	< 120	3%	15%	-62%	0%	91%	100%
Catering Truck	< 250	39%	11%	36%	0%	96%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	22%	36%	0%	98%	100%
	50 - 120	52%	18%	8%	0%	95%	100%
	120 - 175	27%	14%	26%	0%	95%	100%
Fuel Truck	<175	12%	14%	9%	0%	100%	100%
Generator Sets	<120	-5%	16%	17%	0%	98%	100%
	120 - 175	30%	13%	25%	0%	97%	100%
Lav Truck	<175	36%	15%	3%	0%	96%	100%

Lift	<120	30%	16%	15%	0%	97%	100%
Passenger Stand	<175	35%	14%	30%	0%	98%	100%
Service Truck	<250	23%	13%	42%	0%	96%	100%

Equipment	Horsepower	2025					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	32%	13%	27%	0%	99%	100%
Baggage Tug	< 120	8%	15%	-27%	0%	92%	100%
Belt Loader	< 120	21%	17%	-7%	0%	96%	100%
Bobtail	< 120	25%	16%	13%	0%	96%	100%
Cargo Loader	< 120	3%	16%	-40%	0%	93%	100%
Catering Truck	< 250	39%	11%	36%	0%	96%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	21%	36%	0%	98%	100%
	50 - 120	52%	18%	8%	0%	95%	100%
	120 - 175	27%	14%	26%	0%	95%	100%
Fuel Truck	<175	13%	14%	13%	0%	100%	100%
Generator Sets	<120	-15%	16%	18%	0%	98%	100%
	120 - 175	30%	13%	26%	0%	98%	100%
Lav Truck	<175	36%	15%	22%	0%	97%	100%
Lift	<120	27%	16%	15%	0%	97%	100%
Passenger Stand	<175	35%	13%	30%	0%	99%	100%
Service Truck	<250	24%	12%	34%	0%	96%	100%

Table C-1.2
Emission Reduction Due to Fuel Switch from Diesel to Compressed Natural Gas

Equipment	Horsepower	2004					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-2749%	-27%	55%	36%	73%	100%
	15 - 25	-2912%	-31%	46%	26%	74%	100%
Air Conditioner	<175	-451%	-21%	-30%	84%	87%	100%
Baggage Tug	<120	-507%	-24%	10%	94%	88%	100%
Belt Loader	<120	-469%	-23%	6%	93%	89%	100%
Bobtail	<120	-441%	-22%	23%	93%	91%	100%
Cargo Loader	<120	-625%	-25%	-4%	93%	84%	100%
Catering Truck	<250	-1152%	-22%	-44%	70%	78%	100%
Forklifts	<50	-21%	-23%	-51%	93%	95%	100%
	50 - 120	-594%	-25%	5%	93%	87%	100%
	120 - 175	-581%	-22%	-2%	88%	89%	100%
Generator Sets	<120	-397%	-12%	-2%	92%	91%	100%
	<175	-415%	-12%	-11%	85%	89%	100%
Lav Truck	<175	-457%	-22%	-11%	88%	89%	100%
Lift	<120	-465%	-23%	-5%	92%	89%	100%

Equipment	Horsepower	2010					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-3037%	-27%	31%	-29%	59%	100%
	15 - 25	-3755%	-32%	40%	-3%	60%	100%
Air Conditioner	<175	-450%	-20%	-36%	73%	85%	100%
Baggage Tug	<120	-556%	-22%	22%	92%	88%	100%
Belt Loader	<120	-513%	-22%	21%	92%	90%	100%
Bobtail	<120	-480%	-19%	64%	91%	96%	100%
Cargo Loader	<120	-678%	-24%	6%	91%	84%	100%
Catering Truck	<250	-1732%	-21%	-38%	53%	73%	100%
Forklifts	<50	-54%	-21%	26%	90%	96%	100%
	50 - 120	-647%	-22%	32%	90%	90%	100%
	120 - 175	-598%	-21%	38%	82%	90%	100%
Generator Sets	<120	-430%	-11%	11%	89%	91%	100%
	<175	-436%	-11%	0%	81%	89%	100%
Lav Truck	<175	-477%	-21%	1%	84%	90%	100%
Lift	<120	-503%	-22%	9%	90%	89%	100%

Equipment	Horsepower	2015					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-3040%	-27%	28%	-86%	57%	100%
	15 - 25	-4465%	-32%	32%	-48%	46%	100%
Air Conditioner	<175	-450%	-19%	-41%	47%	85%	100%
Baggage Tug	<120	-590%	-21%	30%	91%	89%	100%
Belt Loader	<120	-541%	-21%	31%	90%	91%	100%
Bobtail	<120	-505%	-19%	65%	89%	96%	100%
Cargo Loader	<120	-720%	-22%	4%	88%	83%	100%
Catering Truck	<250	-1899%	-20%	-54%	16%	72%	100%
Forklifts	<50	-85%	-20%	41%	83%	94%	100%
	50 - 120	-682%	-21%	23%	81%	89%	100%
	120 - 175	-596%	-20%	36%	68%	91%	100%
Generator Sets	<120	-456%	-11%	22%	84%	91%	100%
	<175	-444%	-10%	12%	71%	90%	100%
Lav Truck	<175	-483%	-20%	10%	76%	91%	100%
Lift	<120	-531%	-21%	17%	85%	89%	100%

Equipment	Horsepower	2020					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-3040%	-27%	28%	-91%	57%	100%
	15 - 25	-4722%	-32%	29%	-91%	39%	100%
Air Conditioner	<175	-449%	-19%	-104%	-81%	88%	100%
Baggage Tug	<120	-621%	-20%	31%	87%	90%	100%
Belt Loader	<120	-569%	-20%	31%	85%	91%	100%
Bobtail	<120	-526%	-19%	53%	84%	95%	100%
Cargo Loader	<120	-757%	-21%	-9%	78%	81%	100%
Catering Truck	<250	-1946%	-20%	-120%	-75%	73%	100%
Forklifts	<50	-100%	-20%	32%	60%	91%	100%
	50 - 120	-696%	-21%	-17%	55%	84%	100%
	120 - 175	-596%	-20%	-12%	31%	89%	100%
Generator Sets	<120	-476%	-10%	25%	69%	91%	100%
	<175	-446%	-10%	5%	48%	90%	100%
Lav Truck	<175	-485%	-19%	-3%	56%	91%	100%
Lift	<120	-553%	-20%	13%	72%	89%	100%

Equipment	Horsepower	2025					
		CO	CO_2e	NOx	PM	ROG	SO_2
Aerial Lifts	<15	-3040%	-27%	28%	-91%	57%	100%
	15 - 25	-4803%	-32%	27%	-109%	37%	100%
Air Conditioner	<175	-450%	-19%	-346%	-331%	88%	100%
Baggage Tug	<120	-640%	-19%	17%	79%	89%	100%
Belt Loader	<120	-587%	-20%	16%	72%	90%	100%
Bobtail	<120	-548%	-19%	32%	72%	93%	100%
Cargo Loader	<120	-763%	-20%	-40%	56%	78%	100%
Catering Truck	<250	-1936%	-20%	-330%	-294%	72%	100%
Forklifts	<50	-106%	-20%	19%	-26%	89%	100%
	50 - 120	-703%	-21%	-69%	-48%	79%	100%
	120 - 175	-597%	-20%	-172%	-110%	83%	100%
Generator Sets	<120	-483%	-10%	13%	37%	90%	100%
	<175	-446%	-10%	-37%	-3%	90%	100%
Lav Truck	<175	-486%	-19%	-57%	5%	90%	100%
Lift	<120	-560%	-20%	-8%	37%	87%	100%

8.1.2 Use Electric and Hybrid Construction Equipment

Range of Effectiveness: 2.5 – 80% of GHG emissions from equipment that is electric or hybrid if used 100% of the time

Measure Description:

When construction equipment is powered by grid electricity rather than fossil fuel, direct GHG emissions from fuel combustion are replaced with indirect GHG emissions associated with the electricity used to power the equipment. When construction equipment is powered by hybrid-electric drives, GHG emissions from fuel combustion are reduced.

Measure Applicability:

- Construction vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Fuel type and Horsepower of Construction Equipment
- Hours of operation

Baseline Method:

$$\text{Baseline Emission} = EF \times Hp \times LF \times Hr \times C$$

Where:

Emission	=	MT CO_2e or MT Criteria Pollutant
EF	=	Emission factor for the relevant fuel horsepower tier (g/hp-hr). Obtained from OFFROAD2007. See accompanying tables
Hp	=	Horsepower of equipment.
LF	=	Load factor of equipment for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr	=	Hours of operation.
C	=	Unit conversion factor

Mitigation Method:

<u>Fully Electric Vehicle</u>

Construction vehicles will run solely on electricity. The indirect GHG emission from electricity generation is:

$$\text{Mitigated GHG Emission} = Utility \times Hp \times LF \times Hr \times C$$

Where:

GHG emissions = MT CO_2e
Utility = Carbon intensity of Local Utility (CO_2e/kWh)
Hp = Horsepower of equipment.
LF = Load factor of equipment for the relevant horsepower tier (dimensionless). Obtained from OFFROAD2007.
Hr = Hours of operation.
C = Unit conversion factor

Criteria pollutant emissions will be 100% reduced for equipment running solely on electricity.

$$\text{GHG Reduction }\%^{106} = 1 - \frac{\text{Utility} \times C}{EF \times 10^{-6}}$$

Hybrid-Electric Vehicle

GHG Reduction % = Percent Reduction in Fuel Consumption

Emission Reduction Ranges and Variables:

Fully Electric Vehicle

GHG

Utility	Diesel	Compressed Natural Gas 4-strokes	Gasoline 2-strokes	Gasoline 4-strokes				
				<25 HP	25-50 HP	50-120 HP	120-175 HP	175-500 HP
LADW&P	26.3%	37.9%	2.5%	2.5%	46.5%	45.9%	44.4%	42.8%
PG&E	72.9%	77.1%	64.1%	64.1%	80.3%	80.1%	79.5%	78.9%
SCE	61.8%	67.9%	49.5%	49.5%	72.3%	72.0%	71.2%	70.4%
SDGE	53.5%	60.9%	38.5%	38.5%	66.3%	65.9%	64.9%	63.9%
SMUD	67.0%	72.2%	56.3%	56.3%	76.0%	75.8%	75.1%	74.3%

Criteria pollutant

Emissions will be 100% reduced for equipment running on electricity.

Hybrid-Electric Vehicle

GHG

The Project Applicant has to determine the fuel consumption reduced from using the hybrid-electric vehicle. The emission reductions for all pollutants are the same as the fuel reduction.

[106] This assumes energy from engine losses are the same.

Discussion:

The CO_2 emission factor show in the accompanying tables obtained from OFFROAD2007 [1] shows the same emissions within each horsepower tier regardless of the scenario year or equipment model year. The contributions of CH_4 and N_2O to overall GHG emissions is likely small (< 1% of total CO_2e) from diesel construction equipment [2] and were therefore not included. Therefore, the CO_2e emission reduction is dependent on the electricity provider for the Project, horsepower and fuel of the construction equipment only.

On the other hand, the criteria pollutant emission factors from OFFROAD2007 vary for different scenario and equipment model years. The criteria pollutant emission factors presented in the accompanying tables correspond to those of new equipment in the respective scenario years, i.e., model year is the same as scenario year. Since older equipment have higher emission factors due to deterioration and less regulation, the emission reduction calculated from this methodology is likely to be an underestimate.

Assumptions:

Data based upon the following references:

[1] California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm
[2] California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html
[3] California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: https://www.climateregistry.org/CARROT/public/reports.aspx

Preferred Literature:

Electric construction equipment is available commercially from companies such as Peterson Pacific Corporation and Komptech USA, which specialize in the mechanical processing equipment like grinders and shredders [4,5]. The amount of direct GHG emissions avoided can be calculated using CARB's OFFROAD2007 model, which provides state-wide and regional emission factors for a variety of construction equipment that can be converted to grams per horsepower-hour [6]. Multiplying this factor by the number of hours of operation gives the direct GHG emissions. Assuming the same number of operating hours as the diesel-powered equipment, the electricity required to run a piece of electric construction equipment can be calculated by multiplying the operating hours by the amperage required to run the equipment and the voltage rating (obtained from manufacturer technical specifications) to obtain total kWh required. Multiplying this value by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with using the electric equipment. The

GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Construction equipment powered by hybrid-electric drives is also commercially available from companies such as Caterpillar [7]. For example, Caterpillar reports that during an 8-hour shift, its D7E hybrid dozer burns 19.5% fewer gallons of fuel than a conventional dozer while achieving a 10.3% increase in productivity. The D7E model burns 6.2 gallons per hour compared to a conventional dozer which burns 7.7 gallons per hour. The percent reduction in fuel use is directly proportional to the percent reduction in GHG emissions. Assuming complete combustion to CO_2 and a carbon content of 87%, the CO_2 emissions reductions can be calculated. Fuel usage and savings are dependent on the make and model of the construction equipment used. The Project Applicant should calculate project-specific savings and provide manufacturer specifications indicating fuel burned per hour.

Alternative Literature:

None

Notes:

[4] Peterson Pacific Corp. Product Brochure Downloads. Available online at: http://www.petersonpacific.com/content/MediaGallery_56_v. Accessed March 2010.
[5] Komptech USA. Products. Available online at: http://www.komptech.com/usa/products.htm. Accessed March 2010.
[6] CARB. OFFROAD 2007 Model. Available online at: http://www.arb.ca.gov/msei/offroad/offroad.htm. Accessed February 2010.
[7] Caterpillar. D7E Efficiency. Accessed February 2010. Available online at: http://www.cat.com/D7E

Other Literature Reviewed:

None

Table C-2.1
Emissions Factors from Different Fuels

Fuel	HP	CO_2 Emission Factor (g/hp-hr)
		All Years
Compressed Natural Gas 4-stroke	All	674.66
Diesel	All	568.30
Gasoline 2-stroke	All	429.44
Gasoline 4-stroke	<25	429.44
	25-50	783.30
	50-120	774.50
	120-175	753.25
	175-500	732.00

Fuel	HP	ROG Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
	25-50	0.06	0.01	0.01
	50-120	0.07	0.01	0.01
	120-175	0.06	0.01	0.01
	175-250	0.06	0.01	0.01
	250-500	0.06	0.01	0.01
Diesel	<15	0.57	0.41	0.41
	15-25	0.54	0.48	0.48
	25-50	0.54	0.20	0.08
	50-120	0.38	0.16	0.08
	120-175	0.18	0.13	0.08
	175-250	0.12	0.08	0.06
	250-500	0.10	0.08	0.06
	500-750	0.12	0.08	0.06
	750-1000	0.57	0.08	0.06
	>1000	0.57	0.08	0.08
Gasoline 2-stroke	<2	6.70	5.52	5.52
	2-15	4.19	3.59	3.59
	15-25	4.07	3.79	3.79
Gasoline 4-stroke	<5	6.70	5.52	5.52
	5-15	4.19	3.59	3.59
	15-25	4.07	3.79	3.79

Fuel	HP	ROG Emission Factor (g/hp-hr)		
		2004	2010	2015+
	25-50	1.49	0.65	0.65
	50-120	0.91	0.24	0.24
	120-175	0.72	0.15	0.15
	175-250	0.72	0.15	0.15
	250-500	0.72	0.15	0.15

Fuel	HP	CO Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	300	300	300
	15-25	300	300	300
	25-50	7.02	7.02	7.02
	50-120	20	20	20
	120-175	16	16	16
	175-250	16	16	16
	250-500	16	16	16
Diesel	<15	3.47	3.47	3.47
	15-25	2.34	2.34	2.34
	25-50	3.27	2.86	2.72
	50-120	3.23	3.09	3.05
	120-175	2.70	2.70	2.70
	175-250	0.92	0.92	0.92
	250-500	0.92	0.92	0.92
	500-750	0.92	0.92	0.92
	750-1000	2.70	0.92	0.92
	>1000	2.70	0.92	0.92
Gasoline 2-stroke	<2	318	236	236
	2-15	274	225	225
	15-25	284	238	238
Gasoline 4-stroke	<5	318	236	236
	5-15	274	225	225
	15-25	284	238	238
	25-50	71	38	38
	50-120	38	8.76	8.76
	120-175	21	21	21
	175-250	21	21	21
	250-500	21	21	21

Fuel	HP	NOx Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	8.44	8.44	8.44
	15-25	8.44	8.44	8.44
	25-50	5.19	1.95	1.95
	50-120	4.57	1.58	1.58
	120-175	4.56	1.58	1.58
	175-250	4.56	1.58	1.58
	250-500	4.56	1.58	1.58
Diesel	<15	6.08	4.37	4.37
	15-25	5.79	4.57	4.57
	25-50	5.10	4.88	4.80
	50-120	5.64	5.01	2.53
	120-175	4.72	4.44	2.27
	175-250	4.58	2.45	1.36
	250-500	4.29	2.45	1.36
	500-750	4.51	2.45	1.36
	750-1000	8.17	4.08	2.36
	>1000	8.17	4.08	2.36
Gasoline 2-stroke	<2	2.32	2.70	2.70
	2-15	2.84	2.90	2.90
	15-25	2.32	2.68	2.68
Gasoline 4-stroke	<5	2.32	2.70	2.70
	5-15	2.84	2.90	2.90
	15-25	2.32	2.68	2.68
	25-50	4.52	1.33	1.33
	50-120	5.06	1.78	1.78
	120-175	4.98	1.94	1.94
	175-250	4.98	1.94	1.94
	250-500	4.98	1.94	1.94

Fuel	HP	PM Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	0.90	0.90	0.90
	15-25	0.90	0.90	0.90
	25-50	0.06	0.06	0.06
	50-120	0.06	0.06	0.06
	120-175	0.06	0.06	0.06
	175-250	0.06	0.06	0.06
	250-500	0.06	0.06	0.06
Diesel	<15	0.47	0.38	0.38
	15-25	0.38	0.38	0.38
	25-50	0.43	0.35	0.16
	50-120	0.39	0.24	0.01
	120-175	0.19	0.16	0.01
	175-250	0.11	0.11	0.01
	250-500	0.11	0.11	0.01
	500-750	0.11	0.11	0.01
	750-1000	0.38	0.11	0.06
	>1000	0.38	0.11	0.06
Gasoline 2-stroke	<2	0.74	0.74	0.74
	2-15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
Gasoline 4-stroke	<5	0.74	0.74	0.74
	5-15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
	25-50	0.06	0.06	0.06
	50-120	0.06	0.06	0.06
	120-175	0.06	0.06	0.06
	175-250	0.06	0.06	0.06
	250-500	0.06	0.06	0.06

8.1.3 Limit Construction Equipment Idling beyond Regulation Requirements

Range of Effectiveness: Varies with the amount of Project Idling occurring and the amount reduced.

Measure Description:

Heavy duty vehicles will idle during loading/unloading and during layovers or rest periods with the engine still on. Idling requires fuel use and results in emissions. The California Air Resources Board (CARB) Heavy-Duty Vehicle Idling Emission Reduction Program limits diesel-fueled commercial motor vehicles idling time to 5 minutes. There are some exceptions to the regulation such as positioning or providing a power source for equipment or operations such as lift, crane, pump, drill, hoist or other auxiliary equipment. Reduction in idling time beyond required under the regulation would further reduce fuel consumption and thus emissions. The project applicant should develop an enforceable mechanism that monitors the idling time to ensure compliance with this mitigation measure.

Measure Applicability:

- Heavy Duty Commercial Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Idling time of vehicle

Baseline Method:

For all pollutants, the idling emission from each idling period is calculated as follows:

$$\text{Emission} = EF \times t \times C$$

Where:

Emission = grams of pollutant per idling period
EF = Idling emission factor for diesel-fueled heavy duty vehicles obtained from EMFAC (g/idling-hour).
t = Baseline idling period (minute). This is 5 minutes for all vehicles which do not have auxiliary equipment powered by the primary engine exempted from the regulation. For exempted vehicles, the Project applicant shall determine the baseline idling period.
C = Time conversion factor = 1/60

Mitigation Method:

Mitigated emissions for this measure are calculated using the same method as baseline method, but with mitigated idling period.

Emission Reduction Ranges and Variables:

Emission reduction is calculated as follows:

$$\text{Reduction} = 1 - \frac{t_M}{t_B}$$

Where:

t_M = mitigated idling period
t_B = baseline idling period

Discussion:

If a heavy duty truck is regulated under the CARB Idling Emission Reduction Program, and the Project Applicant has committed to enforce a reduced idling period to 3 minutes, then the emissions for all pollutants from idling emissions would be reduced by:

$$1 - \frac{3}{5} = 0.4 = 40\%$$

If the Project Applicant determines that the average idling period for a heavy duty vehicle with a hoist powered by the primary engine is 20 minutes, and has committed to enforce a reduced idling time to 15 minutes, then the emissions for all pollutants would be reduced by:

$$1 - \frac{15}{20} = 0.25 = 25\%$$

Assumptions:

Data based upon the following references:

- California Air Resources Board (CARB) 2009. Heavy-Duty Vehicle Idling Emission Reduction Program. Available at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm
- CARB 2010. EMFAC2007 Model. Available at: http://www.arb.ca.gov/msei/onroad/latest_version.htm

Preferred Literature:

Idling of heavy duty commercial vehicles requires fuel use and results in emissions. Project Applicant can obtain the average idling emission factor for diesel-fueled heavy duty trucks in the county where the Project would be located from EMFAC. The total idling emissions can be determined by multiplying this emission factor by the total idling period. The California Air Resources Board (CARB) Heavy-Duty Vehicle Idling Emission Reduction Program limits diesel-fueled commercial motor vehicles idling time to 5 minutes, with exceptions for some vehicles with auxiliary equipment powered by the primary engine [1]. The Project Applicant has to determine the appropriate baseline idling periods for such exempted vehicles. A plan should also be developed to ensure enforcement of the reduced idling period that the Project Applicant has committed to.

Alternative Literature:

None

Notes:

[1] California Air Resources Board (CARB) 2009. Heavy-Duty Vehicle Idling Emission Reduction Program. Available at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm

Other Literature Reviewed:

None

8.1.4 Institute a Heavy-Duty Off-Road Vehicle Plan

Range of Effectiveness:

Not applicable on its own. This measure ensures compliances with other mitigation measures.

Measure Description:

The Project Applicant should provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring hour meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment.

Measure Applicability:

- This measure ensures compliances with other mitigation measures.
- Construction vehicles.

Preferred Literature:

None

Alternative Literature:

None

Literature References:

None

8.1.5 Implement a Construction Vehicle Inventory Tracking System

Range of Effectiveness:

Not applicable on its own. This measure ensures compliances with other mitigation measures.

Measure Description:

The Project Applicant should provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring engine run time meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment.

Measure Applicability:

- This measure ensures compliance with other mitigation measures.
- Construction vehicles.

Preferred Literature:

None

Alternative Literature:

None

Literature References:

None

9.0 Miscellaneous

9.1 Miscellaneous

9.1.1 Establish a Carbon Sequestration Project

Range of Effectiveness: Varies depending on Project Applicant and projects selected. The GHG emissions reduction is subtracted from the overall baseline project emissions inventory.

Measure Description:
The Project Applicant would establish a carbon sequestration project. This might include (a) geologic sequestration or carbon capture and storage techniques in which CO_2 from point sources such as power plants and fuel processing plants is captured and injected underground, (b) terrestrial sequestration in which ecosystems such as wetlands and forestlands are established or preserved to serve as CO_2 sinks, (c) novel techniques involving advanced chemical or biological pathways, or (d) technologies yet to be discovered. The Project Applicant would commit to a desired amount of carbon sequestration in MT per year. This amount would be subtracted from the overall baseline project emissions inventory. In order to take credit for this measure, the Project Applicant should be required to establish a reporting and verification mechanism to quantify the amount of carbon sequestered. Furthermore, the Project Applicant should be required to prove additionality.[107]

Measure Applicability:
- Overall baseline project GHG emissions inventory

Inputs:
- Amount of CO_2e sequestered (MT/year)

Baseline Method:
The Project Applicant should calculate the baseline project emissions inventory ($CO_2e_{baseline}$, the total baseline CO_2e emissions in MT per year) using the methods described in the baseline methodology document.

Mitigation Method:
The amount of CO_2e sequestered is subtracted from the overall project emissions inventory. Therefore, the percent GHG reduction is

[107] Additionality is the reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the Project. In other words, the Project should not subsidize or take credit for emissions reductions which would have occurred regardless of the Project.

GHG emission reduction $= \dfrac{CO_2e_{sequestered}}{CO_2e_{baseline}}$

Where:

GHG emission reduction	=	Percentage reduction in overall GHG emissions from carbon sequestration project
$CO_2e_{sequestered}$	=	Amount of CO_2e sequestered (MT/year) Provided by Applicant
$CO_2e_{baseline}$	=	Total baseline CO_2e emissions (MT/year)

Assumptions:
Data based upon the following references:

- USDOE. Fossil Energy: Carbon Sequestration. Available online at: http://www.fossil.energy.gov/programs/sequestration/

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant
All other pollutants	None

Preferred Literature:
The DOE Fossil Energy – Carbon Sequestration website describes the four core carbon sequestration technologies: geologic, carbon capture and storage, terrestrial, and novel biological and chemical pathways. The DOE website discusses current challenges and research projects associated with each of the carbon sequestration technologies, as well as the trade-offs between local environmental impacts and global environmental benefits.

Alternative Literature:
None

Other Literature Reviewed:
None

9.1.2 Establish Off-Site Mitigation

Range of Effectiveness: Varies depending on Project Applicant and projects selected. The GHG emissions reduction is subtracted from the overall baseline project emissions inventory.

Measure Description:
The Project Applicant may decide to establish GHG reduction measures similar to any of the measures discussed in this report. These reductions would take place outside of the Project Site. In order to take credit for this measure, the Project Applicant should be required to establish a method for registering and verifying the GHG emissions reduction. Furthermore, the Project Applicant should be required to prove additionality.[108]

Measure Applicability:
- Overall baseline project GHG emissions inventory

Inputs:
- Amount of CO_2e reduced off-site (MT/year)

Baseline Method:
The Project Applicant should calculate the baseline project emissions inventory ($CO_2e_{baseline}$, the total baseline CO_2e emissions in MT per year) using the methods described in the baseline methodology document.

Mitigation Method:
The amount of CO_2e reduced off-site is subtracted from the overall project emissions inventory. Therefore, the percent GHG reduction is:

$$\text{GHG emission reduction} = \frac{CO_2e_{\text{reduced off-site}}}{CO_2e_{\text{baseline}}}$$

Where:

GHG emission reduction	=	Percentage reduction in overall GHG emissions from off-site mitigation
$CO_2e_{\text{reduced off-site}}$	=	Amount of CO_2e reduced off-site (MT/year) Provided by Applicant
CO_2e_{baseline}	=	Total baseline CO_2e emissions (MT/year)

[108] Additionality is the reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the Project. In other words, the Project should not subsidize or take credit for emissions reductions which would have occurred regardless of the Project.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant
All other pollutants	To be determined by Applicant. Reductions in criteria pollutant emissions may be achieved if the off-site mitigation involves removing or retrofitting combustion sources or reducing electricity use.[109]

Preferred Literature:

None

[109] Note that the reduction in criteria pollutant emissions may not occur in the same air basin as the project.

9.1.3 Use Local and Sustainable Building Materials

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
Using building materials which are sourced and processed locally (i.e. close to the project site, as opposed to in another state or country) reduces transportation distances and therefore reduces GHG emissions from fuel combustion. Using sustainable building materials, such as recycled concrete or sustainably harvested wood, also contributes to GHG emissions reductions due to the less carbon-intensive nature of the production and harvesting of these materials. Unlike measures which reduce GHG emissions during the operational lifetime of a project, such as reducing building electricity and water usage, these mitigation efforts are realized prior to the actual operational lifetime of a project. Therefore, these GHG emissions are best quantified in terms of a life-cycle analysis. Life cycle analyses examine all stages of the life of a product, including raw material acquisition, manufacture, transportation, installation, use, and disposal or recycling. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Measure Applicability:
- Life cycle emissions from building materials

Inputs:
The following information needs to be provided by the Project Applicant:
- Project location
- Material transport distance
- Material type
- Building assembly type and square footage

Preferred Literature:
Several software packages and web-based tools are available which can be used to quantify the life cycle emissions from building materials.

The Building for Environmental and Economic Sustainability (BEES) software developed by the National Institute of Standards and Technology (NIST) can calculate global warming potential (in terms of CO_2 emissions in grams per product) for a variety of building products, including a multitude of cement varieties, fabrics, tiles, glass, wood, and shelving materials. Required inputs are the type of building material (e.g. generic 100% Portland cement, generic 20% limestone cement), and transportation distance. The user can compare between different types of materials and associated transportation distances.

The BEES software and user manual is available for public download here: http://www.bfrl.nist.gov/oae/software/bees/bees.html

The Athena EcoCalculator for Assemblies software developed by the Athena Institute analyzes the environmental impacts of whole buildings in terms of global warming potential (in terms of CO_2e) from raw material extraction, final material manufacturing, transportation, on-site construction, maintenance, and demolition and disposal. Required inputs include the project location, assembly type (columns and beams, floor, exterior wall, interior wall, window, or roof), type of material, and square footage of material. The Athena EcoCalculator compares CO_2e emissions from the project-specific assembly to default assemblies of similar material and size. The Athena EcoCalculator is based on the more rigorous Athena Impact Estimator software, which requires detailed information about the building design including the number of columns and beams, supported span, wall height, and type of material used for all aspects. In contrast, the Athena EcoCalculator assumes default values for many of the architectural details.

A free public version of the Athena EcoCalculator is available for download here: http://www.athenasmi.org/tools/ecoCalculator/index.html

Alternative Literature:
None

Other Literature Reviewed:
None

9.1.4 Require Best Management Practices in Agriculture and Animal Operations

9.1.5 Require Environmentally Responsible Purchasing

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
Requiring environmentally responsible purchasing has the potential to have a net effect of reducing GHG emissions by reducing the life cycle emissions, operating emissions, and/or transportation emissions associated with a product. Examples of environmentally responsible purchases which reduce life cycle emissions include but are not limited to: purchasing products with sustainable packaging; purchasing post-consumer recycled copier paper, paper towels, and stationary; purchasing and stocking communal kitchens with reusable dishes and utensils; choosing sustainable cleaning supplies; and leasing equipment from manufacturers who will recycle the components at their "end of life." Examples of environmentally responsible purchases which reduce a Project's operating emissions include choosing ENERGY STAR appliances and Water Sense-certified water fixtures; choosing electronic appliances with built in sleep-mode timers; and purchasing "green power" (e.g. electricity generated from renewables or hydropower) from the utility. Choosing locally-made and distributed products reduces the transportation distances required to move the product from the distribution or manufacturing center to the Project, and therefore reduce GHG emissions associated with the transportation vehicles.

Since the magnitude of the energy and GHG reduction depends on the purchasing strategies implemented, the expected GHG reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to encourage homeowners, commercial space tenants, and builders to make sustainable purchases and therefore reduce their contribution to GHG emissions. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:
- Purchase of consumer and business goods and appliances

Assumptions:
Data based upon the following references:

- City of Chicago and ICLEI. Chicago Green Office Challenge: Waste. Available online at: http://www.chicagogreenofficechallenge.org/pages/waste/50.php
- Cool California.org. Small Business Money Saving Actions: Recycle and Cut Waste. Available online at: http://www.coolcalifornia.org/article/recycle-and-cut-waste

- Flex Your Power.org. Commercial Overview Energy Saving Tips: Office Equipment Tips. Available online at: http://www.fypower.org/com/tools/energy_tips_results.html?tips=office
- ENERGY STAR. 2007. Putting Energy into Profits: ENERGY STAR Guide for Small Businesses. Available online at: http://www.energystar.gov/ia/business/small_business/sb_guidebook/smallbizguide.pdf

Emission Reduction Ranges and Variables:
This is a Best Management Practice and therefore at this time there is no quantifiable reduction. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:
The Chicago Green Office Challenge, Cool California.org, and Flex Your Power.org website resources provide many examples of office and small business purchasing strategies which reduce waste and energy use. The ENERGY STAR Guide provides more details about energy-efficient appliance choices and the option to purchase renewable or clean energy from the utility for a higher cost.

Alternative Literature:
None

Other Literature Reviewed:
None

9.1.6 Implement an Innovative Strategy for GHG Mitigation

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. The GHG emissions reduction may be quantifiable. If not quantifiable, this mitigation measure should be implemented as a Best Management Practice.

Measure Description:
The Project Applicant may develop a novel strategy to reduce GHG emissions at the project site or off-site. This strategy may incorporate technologies which have yet to be developed at the time of the publication of this report. In order to take quantifiable credit for this measure, the Project Applicant must provide detailed and substantial evidence showing the quantification and verification of the GHG emissions reduction. If the GHG emissions reduction is not quantifiable, it should be implemented as a Best Management Practice.

Measure Applicability:
- To be determined by Project Applicant

Inputs:
- Amount of CO_2e reduced due to Innovative Strategy
- Baseline CO_2e for applicable inventory sector

Baseline Method:
The Project Applicant should calculate the baseline CO_2e emissions associated with the applicable GHG emissions inventory sector ($CO_2e_{baseline\text{-}sector}$, the baseline CO_2e emissions in MT per year for the applicable sector) using the methods described in the baseline methodology document. For example, if the Innovative Strategy achieves GHG reductions by reducing building energy use, $CO_2e_{baseline\text{-}sector}$ is the total CO_2e emissions associated with baseline building energy use.

Mitigation Method:
The amount of CO_2e reduced due to the Innovative Strategy is subtracted from applicable emissions inventory sector. Therefore, the percent GHG reduction is:

$$\text{GHG emission reduction} = \frac{CO_2e_{reduced\text{-}sector}}{CO_2e_{baseline\text{-}sector}}$$

Where:

GHG emission reduction	=	Percentage reduction in sector GHG emissions due to Innovative Strategy
$CO_2e_{reduced\text{-}sector}$	=	Amount of CO_2e reduced due to Innovative Strategy (MT/year) Provided by Applicant
$CO_2e_{baseline\text{-}sector}$	=	Baseline sector CO_2e emissions (MT/year)

If the GHG emissions reduction cannot be quantified and/or verified, check with local agencies for guidance on any allowed reductions associated with implementation of Best Management Practices.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	To be determined by Applicant
All other pollutants	None

Preferred Literature:
None

10.0 General Plans

In addition to fact sheets and BMPs, this document includes measures that are more applicable for General Plans. The following measures have substantial evidence of reductions when implemented at a General Plan level rather than a project level.

10.1 General Plans

10.1.1 Fund Incentives for Energy Efficiency

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:
By funding incentives for energy-efficient choices in equipment, fixtures in buildings, or energy sources, a Project Applicant can promote reductions in GHG emissions associated with fuel combustion and electricity use. The Project Applicant may choose to contribute to an existing municipal energy fund or establish a new energy fund for the Project. The Project Applicant should check with the local air district regarding participating in established programs. These energy funds may provide financial incentives or grants for any number of energy efficiency measures including but not limited to: retrofitting or designing new buildings, parking lots, streets, and public areas with energy-efficient lighting; retrofitting or designing new buildings with low-flow water fixtures and high-efficiency appliances; retrofitting or purchasing new low-emissions equipment; purchasing electric or hybrid vehicles; and investing in renewable energy systems such as photovoltaics or wind turbines. Recipients of energy fund grants could include neighborhood developers, home and commercial space builders, homeowners, and utilities. Energy funds allow recipients flexibility in choosing efficiency strategies while still achieving the desired effects of reduced energy use and associated GHG emissions.

Since the magnitude of the energy and GHG reduction depends on the strategies selected by the energy fund recipients, the expected GHG reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to encourage utilities, builders, residents, and commercial tenants to reduce their energy use and/or choose cleaner energy, and therefore reduce their contribution to GHG emissions. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:
- GHG emissions from energy use (fuel combustion and electricity use)

Assumptions:
Data based upon the following references:

- City of Ann Arbor. Energy Office: Energy Fund. Available online at: http://www.a2gov.org/government/publicservices/systems_planning/energy/Pages/EnergyFund.aspx
- Go Solar California. California Solar Initiative. Available online at: http://www.gosolarcalifornia.org/csi/index.html
- USDOE. Database of State Initiatives for Renewables and Efficiency: California. Available online at: http://www.dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=CA
- California Clean Energy Fund. About Us. Available online at: http://www.calcef.org/about.htm

Emission Reduction Ranges and Variables:
This is a Best Management Practice and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:
The City of Ann Arbor's Energy Fund provides a good example of a municipal general energy fund which provides grants for a wide variety of energy efficiency and renewable energy investments. The California Solar Initiative and the Energy Efficient Appliance Rebate Program (found on the DOE Database of State Initiatives for Renewables and Efficiency) are examples of California state energy funds which incentivize specific types of purchases. The DOE database provides a listing of many more California municipal and local programs.

Alternative Literature:

None

Other Literature Reviewed:

- The Energy Foundation. Programs: Power. Available online at: http://www.ef.org/programs.cfm

10.1.2 Establish a Local Farmer's Market

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Establishing a local farmer's market has the potential to reduce greenhouse gas emissions by providing project residents with a more local source of food, potentially resulting in a reduction in the number of trips and vehicle miles traveled by both the food and the consumers to grocery stores and supermarkets. If the food sold at the local farmer's market is produced organically, it can also contribute to greenhouse gas reductions by displacing carbon-intensive food production practices. As discussed in more detail below, these emissions reductions cannot be reasonably quantified at this time because they are based on several undefined parameters: the relative locations of the farmer's market, supermarket, and supermarket produce suppliers; the carbon intensity of food production practices; and the role of the farmer's market in a development, such as whether it supplements trips to the grocery store or completely displaces them.

Measure Applicability:

- Number of trips to supermarket and vehicle miles traveled
- Life cycle emissions of food production

Discussion:

Potential greenhouse gas emissions from establishing a local farmer's market can be divided into two types: emissions reductions from transportation and emissions reductions from food production practices. The transportation of food from a field to a store and the transportation of consumers from their homes to a store both contribute to greenhouse gas emissions. In many cases, especially in urban areas, a local farmer's market will reduce emissions associated with the distribution of food from the field to the consumer, since the farms represented at the local farmer's market are theoretically closer to the consumer than the farms which produce most of the food found at supermarkets and grocery stores. However, California has a large number of farms and orchards and in some cases the farms represented at a local farmer's market may not be different than those represented at the neighborhood grocery store. If a consumer obtains produce from a local farmer's market when they would otherwise drive a farther distance to purchase produce from a grocery store, the trip to the grocery stores is displaced, VMT is reduced, and GHG emissions reductions are achieved. However, if a consumer drives to the farmer's market and then to the grocery store (for example, to purchase food which the farmer's market cannot provide), the trip to the farmer's market is made in addition to the trip to the grocery store. Thus, an additional trip is made, VMT is added, and greenhouse gas emissions are actually increased. It is unclear how local farmer’s markets affect the food purchasing behavior of consumers, and therefore the effect of a farmer’s market on transportation greenhouse gas emissions is not quantifiable at this time. The carbon intensity of food production practices also contributes to greenhouse gas emissions; however, these emissions are accounted for in the life cycle analysis of the food and cannot be directly compared to a development’s operational greenhouse gas emissions inventory (such as the transportation emissions detailed above). If food at a local farmer’s market is produced organically, it is likely that less carbon-intensive practices were used than at the large-scale farms and orchards which produce most food found at grocery stores and supermarkets. Examples of carbon-intensive gardening practices include heated greenhouses and the heavy use of fertilizers and pesticides derived from fossil fuels. Local farms which do not practice organic or sustainable farming may employ these more carbon-intensive practices. Thus, the magnitude of the life-cycle greenhouse gas emissions is difficult to quantify and compare to operational inventories.

Preferred Literature:

None

10.1.3 Establish Community Gardens

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Establishing a community garden has the potential to reduce greenhouse gas emissions by providing project residents with a local source of food, potentially resulting in a reduction in the number of trips and vehicle miles traveled by both the food and the consumers to grocery stores and supermarkets. Community gardens can also contribute to greenhouse gas reductions by displacing carbon-intensive food production practices. As discussed in more detail below, these emissions reductions cannot be reasonably quantified at this time because they are based on several undefined parameters: the relative locations of the community garden, supermarket, and supermarket produce suppliers; the carbon intensity of gardening and farming practices; and the role of a community garden in a development, such as whether it supplements trips to the grocery store or completely displaces them.

Measure Applicability:

- Number of trips to supermarket and vehicle miles traveled
- Life cycle emissions of food production

Discussion:

Potential greenhouse gas emissions from establishing a community garden can be divided into two types: emissions reductions from transportation and emissions reductions from food production practices. The transportation of food from a field to a store and the transportation of consumers from their homes to a store both contribute to greenhouse gas emissions. In most cases a community garden will reduce emissions associated with the distribution of food from the field to the consumer, since with community gardens the food goes directly from the field to the consumer, while in grocery stores and supermarkets the path is more likely field to regional distribution center to store to consumer. If a consumer obtains produce from a community garden when they would otherwise drive a farther distance to purchase produce from a grocery store, the trip to the grocery stores is displaced, VMT is reduced, and GHG emissions reductions are achieved. However, if a consumer drives to the community garden and then to the grocery store (for example, to purchase food which the community garden cannot provide), the trip to the community garden is made in addition to the trip to the grocery store. Thus, an additional trip is made, VMT is added, and greenhouse gas emissions are actually increased. Furthermore, if community gardens displace backyard gardens, they increase transportation emissions. It is unclear how community gardens affect the food purchasing behavior of consumers, and therefore the effect of a community garden on transportation greenhouse gas emissions is not quantifiable at this time. The carbon intensity of food production practices also contributes to greenhouse gas emissions; however, these emissions are accounted for in the life cycle analysis of the food and cannot be directly compared to a development's operational greenhouse gas emissions inventory (such as the transportation emissions detailed above). Community gardens are likely to produce food using less carbon-intensive practices than the large-scale farms and orchards which produce most food found at grocery stores and supermarkets. Examples of carbon-intensive gardening practices include heated greenhouses and the heavy use of fertilizers and pesticides derived from fossil fuels; these practices are not likely to be used at community gardens. Although these qualitative conclusions can be drawn, the magnitude of the life-cycle greenhouse gas emissions is difficult to quantify and compare to operational inventories.

Preferred Literature:

None

10.1.4 Plant Urban Shade Trees

Range of Effectiveness: The reduction in GHG emissions is not quantifiable at this time, therefore this mitigation measure should be implemented as a Best Management Practice. If the study data were updated to account for Title 24 standards, the GHG emissions reductions could be quantified but would vary based on location, building type, and building size.

Measure Description:

Planting shade trees around buildings has been shown to effectively lower the electricity cooling demand of buildings by blocking incident sunlight and reducing heat gain through windows, walls, and roofs. Deciduous trees with large canopies are a desirable choice of shade tree because they provide shade in the warm months and shed their leaves in the winter months to allow sunlight to pass through and warm the building. By reducing cooling demand, shade trees help reduce electricity demand from the local utility and therefore reduce GHG emissions which would otherwise be emitted during the production of that electricity.

A study entitled “Calculating energy-saving potentials of heat-island reduction strategies” conducted by the Lawrence Berkeley National Laboratory (LBNL) Heat Island Group provides a method to quantify reductions in electricity use from planting shade trees around residences, offices, and retail stores. The electricity reductions are based on the LBNL model which assumes 4 shade trees are planted around residences, 8 trees are planted around offices, and 10 trees are planted around retail stores. The LBNL model is also based on electricity use data for two building stocks: Pre-1980 buildings (buildings constructed prior to 1980) and 1980+ buildings (buildings constructed on or after 1980). Other assumptions, including the geometry of the modeled trees and sunlight transmittance, are detailed in Section 2.5 of the study. This mitigation measure describes how to estimate greenhouse gas emissions reductions from planting shade trees based on the LBNL data. Since the model is based on electricity data for Pre-1980 and 1980+ buildings[110] it does not incorporate electricity use improvements due to the California 2001, 2005, or 2008 Title 24 measures. Given that buildings constructed in 2001 or later incorporate Title 24 electricity efficiency improvements, the electricity savings reported in the LBNL study are overestimates of the savings that would actually be achieved for these newer buildings.[111]

[110] This data for these buildings is based on U.S. Department of Energy and California Energy Commission studies conducted in 1987 through 2001.
[111] The CEC 2003 Impact Analysis Report estimates a state-average 14.9%-26% savings in electricity use for cooling in residential buildings and 6.7% savings in electricity use for cooling in non-residential

While the electricity savings in the study overestimates savings for newer buildings, the data does show that electricity savings (and associated greenhouse gas emissions savings) from planting shade trees are real. A follow-up study which uses similar methodologies with models updated with the Title 24 standards would provide data which could be used to more accurately quantify electricity savings for new buildings.

Measure Applicability:

- Electricity use
- Limitation: It takes several years for trees to grow to the height necessary to provide shade to a building. Furthermore, without deed restrictions, the presence of shade trees around a building may not be permanent, as a new owner may decide to remove the trees or not replace them if they die.

Inputs:

The following information needs to be provided by the Project Applicant:

- Type of building (residential, office, or retail store)
- Square footage of roof
- Heating Degree Days (HDD) or Cooling Degree Days (CDD) of Project location

Baseline Method:

The CEC Residential Appliance Saturation Survey (RASS) and California Commercial Energy Use Survey (CEUS) datasets can be used to calculate the baseline electricity for building cooling. The data is available for different climate zones in California and electricity use from cooling alone can be extracted. The methodology for using RASS and CEUS to calculate $GHG_{baseline}$ is described in the baseline document.

Mitigation Method:

The electricity savings from reduced cooling demand are based on the location of the building. Table 4 of the LBNL study provides a list of cities and their HDD and CDD values. If a project's location is not listed, the Project Applicant should choose a representative city with climate similar to that of the project. Alternatively, the Project Applicant could determine the HDD and CDD of the project location from local meteorological data.

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buildings due to the 2005 update to the 2001 Title 24 standards. The CEC 2007 Impact Analysis Report estimates a state-average 19.7%-22.7% savings in overall electricity use for residential buildings and a 8.3% savings in electricity use for cooling in non-residential buildings due to the 2008 update to the 2005 Title 24 standards.

Tables 6 through 16 of the LBNL study show the expected electricity savings (in kWh per 1000 sqft of roof) based on the following parameters:

- Building type (residential, office, or retail store)
- Climate method (HDD or CDD – either can be used)
- Heating method (Gas heated-buildings or electric-heated buildings)

The Project Applicant should select data based on the appropriate parameters above. The entry corresponding to the “Shade tree savings” row and “1980+” column will provide the electricity savings in kWh per 1000 sqft of roof for the specified building type, climate method, and heating method. Note that value is an overestimate of savings for buildings which were manufactured under Title 24 standards.

Then the reduction in GHG emissions is calculated as follows:

$$GHG_{reduction} = SF \times ElecSavings \times Utility$$

Where

$GHG_{reduction}$ = Reduction in GHG emissions from planting shade trees (MT)

SF = Sqft of roof
Provided by Applicant

ElecSavings = Electricity savings (kWh / sqft roof)
From Tables 6 through 16 of LBNL study

Utility = Carbon intensity of local utility (MT CO_2e / kWh)
From Table below

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\text{Percent reduction in GHG emissions} = GHG_{reduction} / GHG_{baseline}$$

Since the Utility term is a factor of both $GHG_{reduction}$ and $GHG_{baseline}$, the percent reduction in GHG emissions does not depend on the value of Utility.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	The following emissions reductions reflect the implementation of three heat island reduction strategies (installing reflective roofs, planting shade trees, and using high-albedo pavements) for the 1980+ stock buildings. The reduction from planting shade trees around new buildings is expected to be smaller than the estimate below. Additionally, savings are expected to be smaller for new buildings due to the Title 24 standards. • 20% for residential buildings • 5-12% for office buildings • 10-17% for retail buildings
All other pollutants	Same as above[112]

Assumptions:

Data based upon the following reference:

- H. Akbari, S. Konopacki. Lawrence Berkeley National Laboratory. 2005. Calculating Energy-Saving-Potentials of Heat-Island Reduction Strategies. Journal of Energy Policy. Volume 33, p. 721-756.

Preferred Literature:

The LBNL study conducted by Akbari and Konopacki of the Heat Island Group modeled energy savings from shade trees for residential, office, and retail building types. The model accounted for differences in climate by modeling in a range of heating-degree-days and cooling-degree days, and compared a basecase (building with no external shading) to a mitigated case (building with 4, 8, and 10 shade trees, depending on the building type). However, the study is based on pre-2001 data and does not account for updates to California's Title 24 standards. Furthermore, the model assumes a specific number of shade trees planted at specific orientations.

Alternative Literature:

- CCAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at: http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/

Section D.3 of the protocol describes a method to quantify the reductions in cooling and heating demand due to the planting of shade trees. Computer simulations incorporating

[112] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

building, climate, and shading effects were used to calculate the change in unit energy consumption (UEC) on a per tree basis. Total change in energy use is calculated by multiplying the change in UEC per try by the total number of trees. Buildings were modeled in three stocks with similar building characteristics: buildings constructed prior to 1950, buildings constructed between 1950 and 1980, and buildings constructed after 1980. As with the primary reference above, the data does not account for electricity efficiency improvements due to California's Title 24 standards.

Other Literature Reviewed:

- E. G. McPherson, J. R. Simpson. USDA Forest Service. 2003. Potential Energy Savings in Buildings by an Urban Tree Planting Programme in California. Journal of Urban Forestry & Urban Greening. Volume 2, p. 73-86.
- H. Akbari. Lawrence Berkeley National Laboratory. 2002. Shade Trees Reduce Building Energy Use and CO_2 Emissions from Power Plants. Journal of Environmental Pollution. Volume 116, p. 119-126.
- J. R. Simpson. Department of Environmental Horticulture at the University of California. 2002. Improved Estimates of Tree-Shade Effects on Residential Energy Use. Journal of Energy and Buildings. Volume 34, p. 1067-1076.

10.1.5 Implement Strategies to Reduce Urban Heat-Island Effect

Range of Effectiveness: The reduction in GHG emissions is not quantifiable at this time, therefore this mitigation measure should be implemented as a Best Management Practice. If the study data were updated to account for Title 24 standards, the GHG emissions reductions could be quantified but would vary based on location, building type, and building size.

Measure Description:

The urban heat island effect is the phenomenon in which a metropolitan area is warmer than its surrounding rural areas due to increased land surface which retains heat, such as concrete, asphalt, metal, and other materials found in buildings and pavements. This warming effect causes warmer locations, such as many cities in California, to require more energy for air conditioning and refrigeration than the surrounding rural areas. Higher energy requirements in turn result in higher CO_2 emissions from the generation of this energy.

Three strategies have been shown to have a positive impact on reducing localized temperatures and reducing the electricity demand for building cooling. These strategies are planting urban shade trees, installing reflective roofs, and using light-colored or high-albedo[113] pavements and surfaces. Planting shade trees around buildings and installing reflective roofs have both been found to result in direct electricity savings for buildings. The per building direct electricity savings from planting shade trees is discussed in a separate mitigation measure. Reflective roofs are covered under Title 24 Part 6 and the electricity savings is therefore incorporated in savings due to Title 24. The combination of the three strategies, however, has been shown to have a city-wide effect: a reduction in ambient air temperature. This reduction in air temperature results in buildings requiring less electricity for cooling, and is quantified as indirect savings in electricity use. The savings can be quantified on a per-building basis or on a city-wide basis.

A study entitled “Calculating energy-saving potentials of heat-island reduction strategies” conducted by the Lawrence Berkeley National Laboratory (LBNL) Heat Island Group provides a method to quantify per-building reductions in electricity use from implementing these three strategies on a city-wide scale. In addition, the study reports modeled city-wide electricity savings. The electricity reductions are based on a LBNL model with certain assumptions about the number and orientation of shade trees

[113] The albedo ratio of a surface represents how strongly the surface reflects sunlight. Pavements with higher albedo ratios reflect more sunlight and therefore retain less heat.

and the albedo values of roofs and pavements. Per-building electricity savings are also based on for two building stocks: Pre-1980 buildings (buildings constructed prior to 1980) and 1980+ buildings (buildings constructed on or after 1980).

This mitigation measure describes how to estimate greenhouse gas emissions reductions from implementing heat-island effect reduction strategies as reported in the LBNL study. Since the LBNL model is based on electricity data for Pre-1980 and 1980+ buildings[114] it does not incorporate electricity use improvements due to the California 2001, 2005, or 2008 Title 24 measures. Given that buildings constructed in 2001 or later incorporate Title 24 electricity efficiency improvements, the electricity savings reported in the LBNL study are overestimates of the savings that would actually be achieved for these newer buildings.[115]

While the electricity savings in the study overestimates savings for newer buildings, the data does show that electricity savings (and associated greenhouse gas emissions savings) from planting shade trees are real. A follow-up study which uses similar methodologies with models updated with the Title 24 standards would provide data which could be used to more accurately quantify electricity savings for new buildings.

Measure Applicability:

- Electricity use
- Limitation: It takes several years for trees to grow to the height necessary to provide shade to a building. Furthermore, without deed restrictions, the presence of shade trees around a building may not be permanent, as a new owner may decide to remove the trees or not replace them if they die.
- Limitation: it is assumed that the heat-island effect reduction strategies are implemented on a city-wide scale.

Inputs:

The following information needs to be provided by the Project Applicant:

- Type of building (residential, office, or retail store)
- Square footage of roof

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[114] This data for these buildings is based on U.S. Department of Energy and California Energy Commission studies conducted in 1987 through 2001.

[115] The CEC 2003 Impact Analysis Report estimates a state-average 14.9%-26% savings in electricity use for cooling in residential buildings and 6.7% savings in electricity use for cooling in non-residential buildings due to the 2005 update to the 2001 Title 24 standards. The CEC 2007 Impact Analysis Report estimates a state-average 19.7%-22.7% savings in overall electricity use for residential buildings and a 8.3% savings in electricity use for cooling in non-residential buildings due to the 2008 update to the 2005 Title 24 standards.

- Heating Degree Days (HDD) or Cooling Degree Days (CDD) of Project location

Baseline Method:

The CEC Residential Appliance Saturation Survey (RASS) and California Commercial Energy Use Survey (CEUS) datasets can be used to calculate the baseline electricity for building cooling. The data is available for different climate zones in California and electricity use from cooling alone can be extracted. The methodology for using RASS and CEUS to calculate $GHG_{baseline}$ is described in the baseline document.

Mitigation Method:

The electricity savings from reduced cooling demand are based on the location of the building. Table 4 of the LBNL study provides a list of cities and their HDD and CDD values. If a project's location is not listed, the Project Applicant should choose a representative city with climate similar to that of the project. Alternatively, the Project Applicant could determine the HDD and CDD of the project location from local meteorological data.

Tables 6 through 16 of the LBNL study show the expected electricity savings (in kWh per 1000 sqft of roof) based on the following parameters:

- Building type (residential, office, or retail store)
- Climate method (HDD or CDD – either can be used)
- Heating method (Gas heated-buildings or electric-heated buildings)

The Project Applicant should select data based on the appropriate parameters above. The entry corresponding to the "Indirect Savings" row and "1980+" column will provide the electricity savings in kWh per 1000 sqft of roof for the specified building type, climate method, and heating method. Note that value is an overestimate of savings for buildings which were manufactured under Title 24 standards.

Then the reduction in GHG emissions is calculated as follows:

$$GHG_{reduction} = SF \times ElecSavings \times Utility$$

Where

$GHG_{reduction}$	=	Reduction in GHG emissions from implementing heat island effect reduction strategies on a city-wide scale (MT)
SF	=	Sqft of roof Provided by Applicant
ElecSavings	=	Electricity savings (kWh / sqft roof) From Tables 6 through 16 of LBNL study
Utility	=	Carbon intensity of local utility (MT CO_2e / kWh)

CEQA# **MM E-8 & E-12**
MP# **LU-6.1**

GP-5

From Table below

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\text{Percent reduction in GHG emissions} = GHG_{reduction} / GHG_{baseline}$$

Since the Utility term is a factor of both $GHG_{reduction}$ and $GHG_{baseline}$, the percent reduction in GHG emissions does not depend on the value of Utility.

City-Wide GHG reductions
The LBNL study estimates that city-wide reductions in electricity use (and associated GHG emissions) range from about 10-20%. This range is based on the percent indirect savings modeled for five pilot cities: Houston, Baton Rouge, Chicago, Sacramento, and Salt Lake City, as reported in Figure 2 of the LBNL study.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO_2e	The following per-building emissions reductions reflect the implementation of three heat island reduction strategies (installing reflective roofs, planting shade trees, and using high-albedo pavements) for the 1980+ stock buildings. Actual savings are expected to be lower for new buildings due to the Title 24 standards. • 20% for residential buildings • 5-12% for office buildings • 10-17% for retail buildings
All other pollutants	Same as above[116]

[116] Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Assumptions:

Data based upon the following reference:

- H. Akbari, S. Konopacki. Lawrence Berkeley National Laboratory. 2005. Calculating Energy-Saving-Potentials of Heat-Island Reduction Strategies. Journal of Energy Policy. Volume 33, p. 721-756.
- S. Konopacki, H. Akbari. Lawrence Berkeley National Laboratory. 2000. Energy Savings Calculations for Heat Island Reduction Strategies in Baton Rouge, Sacramento, and Salt Lake City. LBNL 42890.

Preferred Literature:

The LBNL study conducted by Akbari and Konopacki of the Heat Island Group modeled energy savings from shade trees for residential, office, and retail building types. The model accounted for differences in climate by modeling in a range of heating-degree-days and cooling-degree days, and compared a basecase (building with no external shading) to a mitigated case (building with 4, 8, and 10 shade trees, depending on the building type). However, the study is based on pre-2001 data and does not account for updates to California's Title 24 standards. Furthermore, the model assumes a specific number of shade trees planted at specific orientations.

Alternative Literature:

None

Other Literature Reviewed:

Lawrence Berkeley National Laboratory. Heat Island Group: Benefits of Cooler Pavements. Available online at: http://eetd.lbl.gov/HeatIsland/Pavements/Overview/Pavements99-01.html. Accessed March 2010.

Lawrence Berkeley National Laboratory. Heat Island Group: The Cost of Hot Pavements. Available online at: http://heatisland.lbl.gov/Pavements/Cost.html. Accessed March 2010.

USEPA. Draft. Reducing Urban Heat Islands: Compendium of Strategies, Cool Pavements. Available online at: http://epa.gov/heatisland/resources/pdf/CoolPavesCompendium.pdf

Appendix A

List of Acronyms and Glossary of Terms

List of Acronyms

ACM	alternative calculation method
AF	acre feet
B20	biodiesel (20%)
BOD	biochemical oxygen demand
BMP	best management practice
C	carbon
CAFE	corporate average fuel economy
CAPCOA	California Air Pollution Control Officers Association
CAR	Climate Action Registry
CARB	California Air Resources Board
CCAR	California Climate Action Registry
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEUS	California Commercial End-Use Survey
CGBSC	California Green Building Standards Code
CH_4	methane
CHP	combined heat and power
CIWMB	California Integrated Waste Management Board
CNG	compressed natural gas
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DE	destruction efficiency
DEIR	Draft Environmental Impact Report
DU	dwelling unit
EF	emission factor
EIA	United States Energy Information Administration
EIR	Environmental Impact Report
EMFAC	on-road vehicle emission factors model
ET_0	reference evapotranspiration
ETWU	estimated total water use
FCZ	forecasting climate zone
GHG	greenhouse gas
GP	General Plan
GRP	General Reporting Protocol
GWP	global warming potential
HA	hydrozone area
HHV	higher heating value
hp	horsepower
HVAC	heating, ventilating, and air conditioning
IE	irrigation efficiency
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
ITS	intelligent transportation systems
kBTU	thousand British thermal units
kW	kilowatt
kWh	kilowatt-hour
kWh/yr	kilowatt-hours/year
lbs	pounds

LA	landscape area
LADWP	Los Angeles Department of Water and Power
LCA	life cycle assessment
LDA	light-duty auto
LDT	light-duty truck
LED	light-emitting diode
LFM	landfill methane
LNG	liquefied natural gas
LPG	liquefied petroleum gas
MAWA	maximum applied water allowance
MMBTU	million British thermal units
MSW	mixed solid waste
MTCE	metric tonnes carbon equivalent
N_2O	nitrous oxide
NOx	nitrogen oxides
NRDC	Natural Resources Defense Council
NREL	National Renewable Energy Laboratory
OLED	organic light-emitting diode
OFFROAD	off-road vehicle emission factors model
PF	plant factor
PG&E	Pacific Gas and Electric
PM	particulate matter
PUP	Power/Utility Protocol
RASS	Residential Appliance Saturation Survey
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SDGE	San Diego Gas and Electric
SLA	special landscape area
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
scf	standard cubic feet
SHP	separate heat and power
SO_2	sulfur dioxide
sqft	square feet
TDM	transportation demand management
TDV	time dependent valuation
TOD	transit-oriented development
tonnes	metric tonnes; 1,000 kilograms
TRU	truck refrigeration unit
URBEMIS	Urban Emissions Model
US	United States
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
VCAPCD	Ventura County Air Pollution Control District
VTPI	Victoria Transport Policy Institute
VMT	vehicle miles traveled
VTR	vehicle trip reduction
WARM	Waste Reduction Model
WMO	World Meteorological Organization
yr	year

Glossary of Terms

Alternative Calculation Method
Software used to demonstrate compliance with the California Building Energy Efficiency Standards (Title 24). The software must comply with the requirements listed in the Alternative Calculation Method Approval Manual.

Additionality[a]
The reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the project. The project should not subsidize or take credit for emissions reductions which would have occurred regardless of the project.

Albedo[a]
The fraction of solar radiation reflected by a surface or object, often expressed as a ratio or fraction. Snow covered surfaces have a high albedo; the albedo of soils ranges from high to low; vegetation covered surfaces and oceans have a low albedo. The Earth"s albedo varies mainly through varying cloudiness, snow, ice, leaf area, and land cover changes. Paved surfaces with high albedos reflect solar radiation and can help reduce the urban heat island effect.

Below Market Rate Housing
Housing rented at rates lower than the market rate. Below market rate housing is designed to assist lower-income families. When below market rate housing is provided near job centers or transit, it provides lower income families with desirable job/housing match or greater opportunities for commuting to work through public transit.

Biochemical Oxygen Demand
Represents the amount of oxygen that would be required to completely consume the organic matter contained in wastewater through aerobic decomposition processes. Under the same conditions, wastewater with higher biochemical oxygen demand (BOD) concentrations will generally yield more methane than wastewater with lower BOD concentrations. BOD_5 is a measure of BOD after five days of decomposition.

Biogenic Emissions[b]
Carbon dioxide emissions produced from combusting a variety of biofuels, such as biodiesel, ethanol, wood, wood waste and landfill gas.

Carbon Dioxide Equivalent
A measure for comparing carbon dioxide with other greenhouse gases. Tonnes carbon dioxide equivalent is calculated by multiplying the tonnes of a greenhouse gas by its associated global warming potential.

California Environmental Quality Act
A statute passed in 1970 that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

Carbon Neutral Power
A power generation system which has net zero carbon emissions. Examples of existing carbon neutral power systems are photovoltaics, wind turbines, and hydropower systems.

Carbon Sink
Any process or mechanism that removes carbon dioxide from the atmosphere. A forest is an example of a carbon sink, because it sequesters carbon dioxide from the atmosphere.

"Carrot"
The purpose of a carrot is to provide an incentive which encourages a particular action. Parking cash-out would be considered a "carrot" since the employee receives a monetary incentive for not driving to work, but is not punished for maintaining status quo.

Combined Heat and Power
Also known as cogeneration. Combined heat and power is the generation of both heat and electricity from the same process, such as combustion of fuel, with the purpose of utilizing or selling both simultaneously. In combined heat and power systems, the thermal energy byproducts of a process are captured and used, where they would be wasted in a separate heat and power system. Examples of combined heat and power systems include gas turbines, reciprocating engines, and fuel cells.

Compact Infill
A Project which is located within or contiguous with the central city. Examples may include redevelopment areas, abandoned sites, or underutilized older buildings/sites.

Climate Zone
Geographic area of similar climatic characteristics, including temperature, weather, and other factors which affect building energy use. The California Energy Commission identified 16 Forecasting Climate Zones (FCZs) for use in the CEUS and RASS analyses. The designation of these FCZs was based in part on the utility service area.

Cordon Pricing
Tolls charged for entering a particular area (a "cordon"), such as a downtown.

Density
The amount of persons, jobs, or dwellings per unit of land area. This is an important metric for determining traffic-related parameters.

Destination Accessibility
A measure of the number of jobs or other attractions reachable within a given travel time. Destination accessibility tends to be highest at central locations and lowest at peripheral ones.

Efficacy
The capacity to produce a desired effect.

ENERGY STAR
A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy which sets national standards for energy efficient consumer products. ENERGY STAR certified products are guaranteed to meet the efficiency standards specified by the program.

Elasticity
The percentage change of one variable in response to a percentage change in another variable. Elasticity = percent change in variable A / percent change in variable B (where the

change in B leads to the change in A). For example, if the elasticity of VMT with respect to density is -0.12, this means a 100% increase in density leads to a 12% decrease in VMT.

Evapotranspiration[c]
The loss of water from the soil both by evaporation and by transpiration from the plants growing in the soil.

General Plan
A set of long-term goals and policies that guide local land use decisions. The 2003 *General Plan Guidelines* developed by the California Office of Planning and Research provides advice on how to write a general plan that expresses a community's long-term vision, fulfills statutory requirements, and contributes to creating a great community.

Global Warming Potential[b]
The ratio of radiative forcing that would result from the emission of one kilogram of a greenhouse gas to that from the emission of one kilogram of carbon dioxide over a fixed period of time.

Graywater
Non-drinkable water that can be collected and reused onsite for irrigation, flushing toilets, and other purposes. This water has not been processed through a waste water treatment plant.

Greenhouse Gas
For the purposes of this report, greenhouse gases are the six gases identified in the Kyoto Protocol: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Headway
The amount of time (in minutes) that elapses between two public transit vehicles servicing a given route and given line. Headways for buses and rail are generally shorter during peak periods and longer during off-peak periods. Headway is the inverse of frequency (headway = 1/frequency), where frequency is the number of arrivals over a given time period (i.e. buses per hour).

Intelligent Transportation System
A broad range of communications-based information and electronics technologies integrated into transportation system infrastructure and vehicles to relieve congestion and improve travel safety.

Job Center
An area with a high degree and density of employment.

Kilowatt Hour
A unit of energy. In the U.S., the kilowatt hour is the unit of measure used by utilities to bill consumers for energy use.

Land Use Index
Measures the degree of land use mix of a development. An index of 0 indicates a single land use while 1 indicates a full mix of uses.

Lumen
A unit of luminous flux. A measure of the brilliance of a source of visible light, or the power of light perceived by the human eye.

Master Planned Community
Large communities developed specifically incorporating housing, office parks, recreational area, and commercial centers within the community. Master planned communities tend to encompass a large land area with the intent of being self-sustaining. Many master planned communities may have lakes, golf courses, and large parks.

Mixed Use
A development that incorporates more than one type of land use. For example, a small mixed use development may have buildings with ground-floor retail and housing on the floors above. A larger mixed use development will locate a variety of land uses within a short proximity of each other. This may include integrating office space, shopping, parks, and schools with residential development. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial/institutional locations (and vice versa).

Ordinance
A local law usually found in municipal code.

Parking Spillover
A term used to describe the effects of implementing a parking management strategy in a sub-area that has unintended consequences of impacting the surrounding areas. For example, assume parking meters are installed on all streets in a commercial/retail block with no other parking strategies implemented. Customers will no longer park in the metered spots and will instead "spillover" to the surrounding residential neighborhoods where parking is still unrestricted.

Photovoltaic[c]
A system that converts sunlight directly into electricity using cells made of silicon or other conductive materials (solar cells). When sunlight hits the cells, a chemical reaction occurs, resulting in the release of electricity.

Recycled Water
Non-drinkable water that can be reused for irrigation, flushing toilets, and other purposes. It has been processed through a wastewater treatment plant and often needs to be redistributed.

Ride Sharing
Any form of carpooling or vanpooling where additional passengers are carried on the trip. Ride-sharing can be casual and formed independently or be part of an employer program where assistance is provided to employees to match up commuters who live in close proximity of one another.

Renewable Energy[a]
Energy sources that are, within a short time frame relative to the Earth‟s natural cycles, sustainable, and include non-carbon technologies such as solar energy, hydropower, and wind, as well as carbon-neutral technologies such as biomass.

Self Selection
When an individual selects himself into a group.

Separate Heat and Power
The typical system for acquiring heat and power. Thermal energy and electricity are generated and used separately. For example, heat is generated from a boiler while electricity is acquired from the local utility. Separate heat and power systems are used as the baseline of comparison for combined heat and power systems.

Sequestration[a]
The process of increasing the carbon content of a carbon reservoir other than the atmosphere. Biological approaches to sequestration include direct removal of carbon dioxide from the atmosphere through afforestation, reforestation, and practices that enhance soil carbon in agriculture. Physical approaches include separation and disposal of carbon dioxide from flue gases or from processing fossil fuels to produce hydrogen- and carbon dioxide-rich fractions and longterm storage in underground in depleted oil and gas reservoirs, coal seams, and saline aquifers.

"Stick"
The purpose of a stick is to establish a penalty for a status quo action. Workplace parking pricing would be considered a "stick" since the employee is now monetarily penalized for driving to work.

Suburban
An area characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city (a suburb).

Suburban Center
The suburban center serves the population of the suburb with office, retail and housing which is denser than the surrounding suburb.

Title 24
Title 24 Part 6 is also known as the California Building Energy Efficiency Standard, which regulates building energy efficiency standards. Regulated energy uses include space heating and cooling, ventilation, domestic hot water heating, and some hard-wired lighting. Title 24 determines compliance by comparing the modeled energy use of a „proposed home‟ to that of a minimally Title 24 compliant „standard home‟ of equal dimensions. Title 24 focuses on building energy efficiency per square foot; it places no limits upon the size of the house or the actual energy used per dwelling unit. The current Title 24 standards were published in 2008.

Transit-Oriented Development
A development located near and specifically designed around a rail or bus station. Proximity alone does not characterize a development as transit-oriented. The development and surrounding neighborhood should be designed for walking and bicycling and parking management strategies should be implemented. The development should be located within a short walking distance to a high-quality, high frequency, and reliable bus or rail service.

Transportation Demand Management
Any transportation strategy which has an intent to increase the transportation system efficiency and reduce demand on the system by discouraging single-occupancy vehicle travel and encouraging more efficient travel patterns, alternative modes of transportation such as walking, bicycling, public transit, and ridesharing. TDM measures should also shift travel patterns from peak to off-peak hours and shift travel from further to closer destinations.

Transit Ridership
The number of passengers who ride in a public transportation system, such as buses and subways.

Tree and Grid Network
Describes the layout of streets within and surrounding a project. Streets that are characterized as a tree network actually look like a tree and its branches. Streets are not laid out in any uniform pattern, intersection density is low, and the streets are less connected. In a grid network, streets are laid out in a perpendicular and parallel grid pattern. Streets tend to intersect more frequently, intersection density is higher, and the streets are more connected.

Urban
An area which is located within the central city with higher density of land uses than you would find in the suburbs. It may be characterized by multi-family housing and located near office and retail.

Urban Heat Island Effect
The phenomenon in which a metropolitan area is warmer than its surrounding rural areas due to increased land surface which retains heat, such as concrete, asphalt, metal, and other materials found in buildings and pavements.

Vehicle Miles Traveled
The number of miles driven by vehicles. This is an important traffic parameter and the basis for most traffic-related greenhouse gas emissions calculations.

Vehicle Occupancy
The number of persons in a vehicle during a trip, including the driver and passengers.

Notes:

[a] Definition adapted from: IPCC. 2001. Third Assessment Report: Climate Change 2001 (TAR). Annex B: Glossary of Terms. Available online at: http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf

[b] Definition adapted from: CCAR. 2009. General Reporting Protocol, Version 3.1. Available online at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

[c] Definition adapted from: USEPA. 2010. Greening EPA Glossary. Available online at: http://www.epa.gov/oaintrnt/glossary.htm

Appendix B

Greenhouse Gas Mitigation Measures Task 0:
Standard Approach to Calculate Unmitigated Emissions

Greenhouse Gas Mitigation Measures Task 0: Standard Approach to Calculate Unmitigated Emissions

Prepared for:
California Pollution Control Officers Association (CAPCOA)

Prepared by:
ENVIRON International Corporation
San Francisco, California

And

Fehr & Peers
San Francisco & Walnut Creek, California

Date:
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Contents

1 Introduction

ENVIRON International Corporation (ENVIRON) and Fehr & Peers worked with the California Air Pollution Control Officers Association (CAPCOA) to quantify reductions associated with greenhouse gas (GHG) mitigation measures that can be applied to California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) analyses. The first part of this overall task defines a standard approach to calculate the baseline emissions before mitigation. This report contains the recommendations for methodologies and approaches to assess the baseline GHG emissions.

This report and its methodologies form the basis for the subsequent tasks associated with quantification of GHG mitigation measures. To the extent possible, default values are included with this report and in the mitigation measure Fact Sheets.

This report presents methods to be used to calculate short-term and one-time emissions sources as well as emissions that will occur annually after construction (operational emissions). The one-time emission sources include changes in carbon sequestration due to vegetation changes and emissions associated with construction. The annual operational emissions include the emissions associated with building energy use including natural gas and electricity, emissions associated with mobile sources, emissions associated with water use and wastewater treatment, emissions associated with area sources such as natural gas fired hearths , landscape maintenance equipment, swimming pools, and golf courses.

2 GHG Equivalent Emissions

The term "GHGs" includes gases that contribute to the greenhouse effect, such as carbon dioxide (CO_2,) methane (CH_4), and nitrous oxide (N_2O), as well as gases that are only man-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfurhexafluoride (SF_6). These last three families of gases, while not naturally present in the atmosphere, have properties that also cause them to trap infrared radiation when they are present in the atmosphere, thus making them GHGs. These six gases comprise the major GHGs that are recognized by the Kyoto Accords (water is not included).[1] There are other GHGs that are not recognized by the Kyoto Accords, due either to the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Accords because there is not an obvious correlation between water concentrations and specific human activities. Water appears to act in a positive feedback manner; higher temperatures lead to higher water vapor concentrations in the atmosphere, which in turn can cause more global warming.[2] California has recently recognized nitrogen trifluoride as another regulated greenhouse gas.

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[1] This Kyoto Protocol sets legally binding targets and timetables for cutting the greenhouse gas emissions of industrialized countries. The US has not approved the Kyoto treaty.

[2] From the IPCC Third Assessment Report: http://www.grida.no/climate/ipcc_tar/wg1/143.htm and http://www.grida.no/climate/ipcc_tar/wg1/268.htm

Residents and the employees and patrons of commercial and municipal buildings and services use electricity, heating, water, and are transported by motor vehicles. These activities directly or indirectly emit GHGs. The most significant GHG emissions resulting from such residential and commercial developments are emissions of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). GHG emissions are typically measured in terms of MT of CO_2 equivalents (CO_2e), calculated as the product of the mass emitted of a given GHG and its specific global warming potential (GWP).

The effect that each of these gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a MT for MT basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of 21 and 310, respectively according to the IPCC's Second Assessment Report (SAR).[3] In emissions inventories, GHG emissions are typically reported in terms of pounds (lbs) or MT[4] of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e, both from developments and human activity in general. Since most regulatory agencies and protocols use the SAR GWP values as a basis, this assessment will also use SAR GWP values even though more recent values exist. However, SAR did not consider nitrogen trifluoride, however there are no sources of nitrogen trifluoride that would typically need to be quantified.

3 Units of measurement: MT of CO_2 and CO_2e

In many sections of this report, including the final summary sections, emissions are presented in units of CO_2e either because the GWPs of CH_4 and N_2O were accounted for explicitly, or the CH_4 and N_2O are assumed to contribute a negligible amount of GWP when compared to the CO_2 emissions from that particular emissions category.

Emissions and reductions are calculated in terms of metric tons. As such, "MT" will be used to refer to metric tons (1,000 kilograms). "Tons" will be used to refer to short tons (2,000 pounds [lbs]).

4 Indirect GHG Emissions from Electricity Use

As noted above, indirect GHG emissions are created as a result of electricity use. When electricity is used in a building, the electricity generation typically takes place offsite at the power plant; electricity use in a building generally causes emissions in an indirect manner. The project should use information specific for each local utility provider for different parts of

[3] GWP values from IPCC's Second Assessment Report (SAR, 1996) are still used by international convention and are used in this protocol, even though more recent (and slightly different) GWP values were developed in the IPCC's Fourth Assessment Report (FAR, 2007)

[4] In this report, "MT" will be used to refer to metric MT (1,000 kilograms). "Tons" will be used to refer to short tons (2,000 pounds).

California. Accordingly, indirect GHG emissions from electricity usage are calculated using the utility specific carbon-intensity factor based Power/Utility Protocol (PUP) report from California Climate Action Registry (CCAR)[5] for the 2006 baseline year. ENVIRON does not recommend using the 2004 PUP reports since this year was one of the first year's utilities reported emissions, as such, the data is likely less accurate than subsequent years since utilities had a chance to refine data collection methods for the later years. Furthermore, a large coal burning power plant in Mojave was going offline in 2005 which was factored into the Scoping Plan analysis. Therefore, ENVIRON suggests using the 2006 PUP reports since it likely represents a more accurate dataset year. This emission factor takes into account the baseline year's mix of energy sources used to generate electricity for a specific utility and the relative carbon intensities of these sources. The emission factor will be determined as a CO_2e incorporating the CO_2, CH_4, and N_2O emissions.

Power Utility	Carbon-Intensity (lbs CO_2e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

5 Short-Term Emissions

Short-term or one-time emissions from the development of a Project are associated with vegetation removal and re-vegetation on the Project site and construction-related activities.

5.1 Construction Activities

Construction activities occur during the early stage of a project. Construction activities include any demolition, site grading, building construction, and paving. These construction activities have several main sources of GHG emissions. Off-road construction equipment such as dozers, pavers, and backhoes are used on-site during construction. These pieces of equipment typically are diesel fueled although other fuels are occasionally used. Besides the off-road construction, there are on-road vehicles. These vehicles are used for worker commuting, delivering of material to the site, and hauling material away from the site. The methodology to calculate these sources of emissions is described in the next sections.

5.1.1 Estimating GHG Emissions from Off-Road Construction Equipment

This section describes how emissions from off-road equipment used during demolition, site grading, building construction and paving are calculated. This section can be used for any fuel

[5] California Climate Action Registry (CCAR) Database. PUP Report.

burning equipment such as diesel, gasoline, or compressed natural gas (CNG). For electric equipment please see the method in the next section.

First, the number and type of equipment that will be used in the construction, as well as the duration of the entire construction project, is needed. Absent other data, ENVIRON recommends that each piece of equipment will operate for 8 hours a day, five days a week throughout the construction duration. An equipment hour is defined as one hour of a piece of equipment being used. Specifications for each type of construction equipment (horsepower, load factor, and GHG emission factor) are provided by OFFROAD2007[6]. CO_2 and CH_4 emissions for each type of construction equipment are calculated as follows:

$$\text{Equipment Emissions [grams]} = \text{Total equipment hours} \times \text{emission factor [grams per brake horsepower-hour]} \times \text{equipment horsepower} \times \text{load factor}^{7}$$

The grams of CO_2 and CH_4 are multiplied by their respective GWP and then the two emissions are summed to derive the final CO_2e emissions from the piece of off-road equipment. Since OFFROAD2007 does not provide an emission factor for N_2O which is a minor subset of nitrogen oxides (NO_x) emissions and the contribution to the overall GHG emissions is likely small, it is therefore not included in calculations that used OFFROAD2007. These were accounted for with alternative fuels since they have a larger proportion of N_2O and CH_4.

5.1.2 Estimating GHG emissions from Electric Off-Road Construction Equipment

In order to estimate the indirect GHG emissions associated with electricity consumption of electrical powered equipment, the following inputs are required. First, the total operating hours of the electrical piece of equipment is needed. Secondly, the amount of kilowatts the equipment uses per time is needed. These two pieces are used along with the carbon intensity factor for the local utility provider as follows:

$$\text{Equipment Emissions} = \text{Total equipment hours} \times \text{average power draw (kW/hr)} \times \text{Utility EF (g } CO_2e \text{ per kWhr)}$$

5.1.3 GHG Emissions from On-Road Vehicles Associated with Construction

Emissions from on-road vehicles associated with construction include workers commuting to the site, vendors delivering materials, and hauling away of materials. GHGs are emitted from these vehicles in two ways: running emissions, produced by driving the vehicle, and startup emissions, produced by turning the vehicle on. Idling emissions will not be considered since

[6] OFFROAD2007 is a model developed by the Air Resources Board which contains emission factors for off-road equipment. It is available at : http://www.arb.ca.gov/msei/offroad/offroad.htm

[7] Load factor is the percentage of the maximum horsepower rating at which the equipment normally operates.

regulations exist which limit idling[8] and they would represent a small contribution to the GHG emissions. The majority of these on-road vehicle emissions are running emissions.

Running emissions are calculated using the same method for all trip types. The total Vehicle Miles Traveled (VMT) for the trip type category is estimated, and then multiplied by the representative GHG emission factors for the vehicles expected to be driven. The total VMT for a given trip type is calculated as follows:

$$VMT \quad = \quad Number\ of\ round\ trips \quad x \quad average\ round\ trip\ length\ (miles)$$

The number of trips should be based on project specific information. Default values associated with each land use type can be obtained construction cost estimators or default values in emission estimator programs. Average round trip length should be based on project specific information or county specific default values. After total VMT is calculated, GHG emissions for on-road vehicles associated with construction can be calculated from the following equation:

$$CO_2\ emissions \quad = \quad VMT \quad x \quad EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = running emission factor for vehicle fleet for trip type

The CO_2 calculation involves the following assumptions:

a. Vehicle Fleet Defaults:

    a. Workers commute half with light duty trucks (LDTs) and half commute in light duty autos (LDAs). Half of the LDTs are type 1 and the other half type 2.

    b. Vendors are all heavy-heavy duty vehicles.

    c. Hauling is all heavy-heavy duty vehicles.

b. The emission factor depends upon the speed of the vehicle. A default value of 35 miles per hour will be used.

c. EMFAC emission factors from the construction year will be used for $EF_{running}$.

[8] The Air Resources Board adopted in 2004 and modified in 2005 an Air Toxic Control Measure that limits idling in diesel vehicles to 5-minutes. http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm

The emissions associated with CH_4 and N_2O are calculated in a similar manner or assumed to represent 5% of the total CO_2e emissions. They are then converted to CO_2e by multiplying by their respective global warming potential.

Startup emissions are CO_2 emitted from starting a vehicle. For the various trips during all phases, the startup emissions are calculated using the following assumptions:

a. The same vehicle fleet assumptions as used in running emissions.

b. Two engine startups per day with a 12 hour wait before each startup.[9]

The USEPA recommends assuming that CH_4, N_2O, and HFCs account for 5% of GHG emissions from on-road vehicles, taking into account their GWPs.[10] To incorporate these additional GHGs into the calculations, the total GHG footprint is calculated by dividing the CO_2 emissions by 0.95.

5.2 Vegetation Change

ENVIRON suggests following the IPCC protocol for vegetation since it has default values that work well with the information typically available for development projects. This method is similar to the CCAR Forest Protocol[11] and the Center for Urban Forest Research Tree Carbon Calculator[12], but it has more general default values available that will generally applicable to all areas of California without requiring detailed site-specific information[13].

5.2.1 Quantifying the One-Time Release by Changes in Carbon Sequestration Capacity

The one-time release of GHGs due to permanent changes in carbon sequestration capacity is calculated using the following four steps:[14]

1. *Identify and quantify the change in area of various land types due to the development (i.e. alluvial scrub, non-native grassland, agricultural, etc.).* These area changes include not only the area of land that will be converted to buildings, but also areas disrupted by the construction of utility corridors, water tank sites, and associated borrow and grading areas.

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[9] The emission factor grows with the length of time the engine is off before each ignition.

[10] USEPA. 2005. *Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle.* Office of Transportation and Air Quality. February.

[11] CCAR. 2007. Forest Sector Protocol Version 2.1. September. Available at: http://www.climateregistry.org/resources/docs/protocols/industry/forest/forest_sector_protocol_version_2.1_sept2007.pdf

[12] Available at: http://www.fs.fed.us/ccrc/topics/urban-forests/ctcc/

[13] The CCAR Forest Protocol and Urban Forest Research Tree Carbon Calculator are not used since their main focus is annual emissions for carbon offset considerations. As such they are designed to work with very specific details of the vegetation that is not available at a CEQA level of analysis.

[14] This section follows the IPCC guidelines, but has been adapted for ease of use for these types of Projects.

Areas temporarily disturbed that will eventually recover to become vegetated will not be counted as vegetation removed as there is no net change in vegetation or land use.[15]

2. *Estimate the biomass associated with each land type.* For the purposes of this report, ENVIRON suggests using the available general vegetation types found in the IPCC publication Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines).[16]

   California vegetation is heavily dominated by scrub and chaparral vegetation which may not be accurately characterized by default forest land properties. Consequently, ecological zones and biomass based subdivisions identified in the IPCC Guidelines were used to sub-categorize the vegetation as scrub dominated. These subcategories should be used to determine the CO_2 emissions resulting from land use impacts.

3. *Calculate CO_2 emissions from the net change of vegetation.* When vegetation is removed, it may undergo biodegradation,[17] or it may be combusted. Either pathway results in the carbon (C) present in the plants being combined with oxygen (O_2) to form CO_2. To estimate the mass of carbon present in the biomass, biomass weight is multiplied by the mass carbon fraction, 0.5.[18] The mass of carbon is multiplied by 3.67[19] to calculate the final mass of CO_2, assuming all of this carbon is converted into CO_2.

4. Calculate the overall change in sequestered CO_2. – For all types of land that change from one type of land to another,[20] initial and final values of sequestered CO_2 are calculated using the equation below.

   Overall Change in Sequestered CO_2 [MT CO_2]

$$= \sum_i (SeqCO_2)_i \times (area)_i - \sum_j (SeqCO_2)_j \times (area)_j$$

   Where:

$SeqCO_2$	=	mass of sequestered CO_2 per unit area [MT CO_2/acre]
area	=	area of land for specific land use type [acre]
i	=	index for final land use type
j	=	index for initial land use type

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15 This assumption facilitates the calculation as a yearly growth rate and CO_2 removal rate does not have to be calculated. As long as the disturbed land will indeed return to its original state, this assumption is valid for time periods over 20 years.

16 Available online at http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm

17 Cleared vegetation may also be deposited in a landfill or compost area, where some anaerobic degradation which will generate CH_4 may take place. However, for the purposes of this section, we are assuming that only aerobic biodegradation will take place which will result in CO_2 emissions only.

18 The fraction of the biomass weight that is carbon. Here, a carbon fraction of 0.5 is used for all vegetation types from CCAR Forest Sector Protocol.

19 The ratio of the molecular mass of CO_2 to the molecular mass of carbon is 44/12 or 3.67.

20 For example from forestland to grassland, or from cropland to permanently developed.

5.2.2 Calculating CO_2 Sequestration by Trees

Planting individual trees will sequester CO_2. Changing vegetation as described above results in a one-time carbon-stock change. Planting trees is also considered to result in a one-time carbon-stock change. Default annual CO_2 sequestration rates on a per tree basis, based on values provided by the IPCC are used[21]. An average of 0.035 MT CO_2 per year per tree can be used for trees planted, if the tree type is not known.

Urban trees are only net carbon sinks when they are actively growing. The IPCC assumes an active growing period of 20 years. Thereafter, the accumulation of carbon in biomass slows with age, and will be completely offset by losses from clipping, pruning, and occasional death. Actual active growing periods are subject to, among other things, species, climate regime, and planting density. In this report, the IPCC default value of 20 years is recommended. For large tree sequestration projects, the Project may consider using the Forest or Urban tree planting protocols developed by Climate Action Registry (CAR). These protocols have slightly different assumptions regarding steady state, tree growth, and replacement of trees..

5.3 Built Environment

The amount of energy used, and the associated GHG emissions emitted per square foot of available space vary with the type of building. For example, food stores are far more energy intensive than warehouses, which have little climate-conditioned space. Therefore, this analysis is specific to the type of building.

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; when this occurs within a building (such as by natural gas consumption) this is a direct emission source[22] associated with that building. GHGs are also emitted during the generation of electricity from fossil fuels. When electricity is used in a building, the electricity generation typically takes place offsite at the power plant; electricity use in a building generally causes emissions in an indirect manner.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as plug-in appliances. In California, Title 24 part 6 governs energy consumed by the built environment, mechanical systems, and some fixed lighting. This includes the space heating, space cooling, water heating, and ventilation systems. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.). The following two steps are performed to quantify the energy use due to buildings:

[21] The Center for Urban Forest Research Tree Carbon Calculator is not suggested since it requires knowledge on specific tree species to estimate carbon sequestered. This information is typically not available during the preparation of CEQA documents.

[22] California Climate Action Registry (CCAR) General Reporting Protocol (GRP), Version 3.1 (January). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf, Chapter 8

1. Calculate energy use from systems covered by Title 24[23] (HVAC system, water heating system, and the lighting system).
2. Calculate energy use from office equipment, plug-in lighting, and other sources not covered by Title 24.

The resulting energy use quantities are then converted to GHG emissions by multiplying by the appropriate emission factors obtained by incorporating information on local electricity providers for electricity, and by natural gas emission factors for natural gas combustion.

ENVIRON recommends using default values for Title 24 and non-Title 24 energy use for various building types. These will take into account the building size and climate zone. There are several sources of information that can be used to obtain building energy intensity. Each is described briefly below.

The *California Commercial Energy Use Survey* (CEUS) data is provided by the California Energy Commission (CEC). It is based on a survey conducted in 2002 for existing commercial buildings in various climate zones. Electricity and natural gas use per square foot for each end use in each building type and climate zone is extracted from the CEUS data. Since the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 regulated energy intensity for each building type.

Commercial Buildings Energy Consumption Survey (CBECS) is a survey of non-residential buildings that was conducted in 2003 by the Energy Information Administration (EIA). Electricity and natural gas use per square foot can be extracted from this data. The energy use estimates are assumed to represent 2001 Title 24 compliant buildings. Using CBECS, the percent of electricity and natural gas used for each end use can be calculated. It is then straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type. Similar surveys exist for manufacturing and residential energy use.

The *Residential Appliance Saturation Survey* (RASS) refers to the California Energy Commission Consultant Report entitled "California Statewide Residential Appliance Saturday Study". Data from RASS is used to calculate the total electricity and natural gas use for residential buildings on a per dwelling unit. The RASS study estimates the unit energy consumption (UEC) values for individual households surveyed and also provides the saturation number for each type of end use. The saturation number indicates the proportion of households that have a demand for each type of end-use category. As the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type.

Alternative Calculation Method (ACM) software is available that makes estimates of the energy consumption by a model Title 24 compliant building. These programs provide

[23] Title 24, Part 6, of the California Code of Regulations: California's Energy Efficiency Standards for Residential and Nonresidential Buildings. http://www.energy.ca.gov/title24/

annual energy use for the heating, ventilation, and air conditioning (HVAC) system in each building; therefore, estimates from ACM software represent Title 24-regulated energy use. These do not calculate the non-Title 24 energy use for the buildings.

The Department of Energy produced the *Building America Research Benchmark Definition* (BARBD) technical manual, which presents empirical equations for electricity and natural gas usage. As the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type.

Literature surveys may also be used for building and land use types not well represented by the above sources.

ENVIRON suggests using the CEUS and RASS datasets for these calculations since the data is available for several land use categories in different climate zones in California.

The Title 24 standards have been updated twice (in 2005 and 2008) since some of these data were compiled. CEC has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end use can be used to account for reductions in electricity use due to updates to Title 24. Since energy use for each different system type (ie, heating, cooling, water heating, and ventilation) as well as appliances is defined, this method will easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Based on the electricity intensity, CO_2e intensity values (CO_2e emissions per square foot or dwelling unit, as applicable, per year) for each building type can be calculated. Electricity intensity data is multiplied by an electricity emission factor to generate CO_2e intensity values. The total CO_2e emissions from each building type are calculated by multiplying the CO_2e intensity values by the appropriate metric (building square footage for non-residential buildings or number of dwelling units for residential buildings). Summing the CO_2e emissions from all building types gives the total CO_2e emissions from electricity use in Title 24 and non-Title 24 sources in buildings.

Based on the natural gas intensity, CO_2e intensity values (CO_2e emissions per square foot or dwelling unit, as applicable, per year) for each building type can be calculated. Natural gas intensity data is multiplied by a natural gas emission factor to generate CO_2e intensity values. The total CO_2e emissions from each building type are calculated by multiplying the CO_2 intensity values by the appropriate metric (building square footage for non-residential buildings or number of dwelling units for residential buildings). Summing the CO_2e emissions from all building types gives the total CO_2e emissions from natural gas use in Title 24 and non-Title 24 sources in buildings.

5.3.1 Natural Gas Boilers

GHG emissions from the combustion of natural gas are calculated as the product of natural gas consumption, natural gas heat content, and carbon-intensity factor. The Project Applicant has to determine the natural gas consumption, while the heat content and carbon-intensity factor can obtained from the CCAR General Reporting Protocol.

5.4 Area Sources

Area sources are local combustion of fuel. The area sources covered in this section include natural gas fireplaces/stoves and landscape maintenance equipment. Natural gas usage from the primary building heating is not included in this category since it is already included with building energy use. Each of these area sources is discussed further.

5.4.1 Natural Gas Fireplaces/Stoves

GHG emissions associated with natural gas fired fireplaces are calculated using emission factors from CCAR. The average BTU per hour for fireplaces in homes needs to be specified. Default values for annual fireplace usage varies for each County. Natural gas is assumed to have 1,020 BTU per standard cubic foot[24].

5.4.2 Landscape Maintenance

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, roto tillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps.

Similar to construction off-road equipment, emission factors are based on the OFFROAD2007 model. These are combined with the hours of operation for each equipment piece as well as the horsepower and load factors. The GHG emissions will be calculated based on the emission factors for the equipment and fuel reported from OFFROAD2007 and the appropriate GWP. Default usages (hours of operation) should be determined for the landscape equipment based on the Project needs.

5.5 Water

Delivering and treating water for use at the project site requires energy. This embodied energy associated with the distribution of water to the end user is associated with the electricity to pump and treat the water. GHG emissions due to water use are related to the energy used to convey, treat and distribute water. Thus, these emissions are indirect emissions from the production of electricity to power these systems.

The amount of electricity required to treat and supply water depends on the volume of water involved. Three processes are necessary to supply water to users: (1) supply and conveyance of the water from the source; (2) treatment of the water to potable standards; and (3) distribution of the water to individual users.

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[24] USEPA. 1998. AP-42 Emission Factors. Chapter 1.4 Natural Gas Combustion.

Therefore, to quantify the GHG emissions associated with the distribution of water to an end user, the carbon intensity of electricity is used along with the amount of electricity used in pumping and treating the water. Since consumption of water varies greatly for each land use type, default values need to be determined with several listed in the mitigation measure fact sheets. Since buildings may have different percentages of water associated with indoor and outdoor water usage, the water usage is quantified separately. In addition since mitigation measures associated with water use may be directed separately toward indoor and outdoor water usage, this will be beneficial for this task.

5.5.1 Indoor

Indirect emissions resulting from electricity use are determined by multiplying electricity use by the CO_2e emission factor provided by the local electricity supplier. Energy use per unit of water for different aspects of water treatment (e.g. source water pumping and conveyance, water treatment, distribution to users) is determined using the stated volumes of water and energy intensities values (i.e., energy use per unit volume of water) provided by reports from the California Energy Commission (CEC) on energy use for California's water systems.[25] The CEC report estimates the electricity required to extract and convey one million gallons of water. Using this energy intensity factor, the expected indoor water demand, and the utility-specific carbon-intensity factor, GHG emissions from indoor water supply and conveyance may be calculated.

The amount of electricity required to treat and distribute one million gallon of potable water is estimated in the CEC report. Based on the estimated indoor water demand, these energy intensity factors, and the utility-specific carbon intensity factor, GHG emissions from indoor water treatment and distribution may be calculated.

The sum of emissions due to supplying, conveying, treating, and distributing indoor water gives the total emissions due to indoor water use.

5.5.2 Outdoor

Indirect emissions resulting from electricity use are determined by multiplying electricity use by the CO_2 emission factor provided by the local electricity supplier. Energy use per unit of water for different aspects of water treatment (e.g. source water pumping and conveyance, water treatment, distribution to users) is determined using the stated volumes of water and energy intensities values (i.e., energy use per unit volume of water) provided by reports from the California Energy Commission (CEC) on energy use for California's water systems.[26] The

[25] CEC 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF,

CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

[26] CEC 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF,

CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

energy needed to supply and convey the water will be used to pump this water from the sources and distribute it throughout the development. The CEC report estimates the electricity required to extract and convey one million gallons of water. Using this energy intensity factor, the expected outdoor water demand, and the utility-specific carbon-intensity factor, GHG emissions from outdoor water supply and conveyance may be calculated.

The amount of electricity required to treat and distribute one million gallon of potable water (see recycled water for non-potable water) is estimated in the CEC report. Based on the estimated outdoor water demand, these energy intensity factors, and the utility-specific carbon intensity factor, GHG emissions from outdoor water treatment and distribution may be calculated.

The sum of emissions due to supplying, conveying, treating, and distributing outdoor water gives the total emissions due to outdoor water use.

5.5.2.1 Landscape Watering – Turf Grass

The amount of outdoor water used in the landscape watering of turf grass is calculated based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance[27] and the CDWR 2000 report "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III."[28] Using this methodology, the amount of water required to support the baseline turf water demand ($Water_{baseline}$) is calculated as follows:

$$ETC = Kc \times ET_0$$

Where:

ETC	=	Crop Evapotranspiration, the total amount of water the baseline turf loses during a specific time period due to evapotranspiration[29] (inches water/day)
KC	=	Crop Coefficient, factor determined from field research, which compares the amount of water lost by the crop (e.g. turf) to the amount of water lost by a reference crop (unitless). Species-specific; provided in CDWR 2000
ET_0	=	Reference Evapotransporation, the amount of water lost by a reference crop (inches water/day) Region-specific; provided in Appendix A of CDWR 2009

27 California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

28 California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california__wucols/wucols00.pdf

29 Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: http://wwwcimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19

Then:

$$Water_{baseline} = ETC \times Areabaseline \times 0.62 \times 365$$

Where:

$Water_{baseline}$	=	Volume of water required to support the baseline turf (gallons/year)
$Area_{baseline}$	=	Area of existing or standard turf (square feet)
0.62	=	conversion factor (gallons/squarefoot.inches water)
365	=	conversion factor (days/year)

Based on the estimated outdoor water demand for watering turf grass, the outdoor water energy intensity factors described above, and the utility-specific carbon intensity factor, GHG emissions from watering turf grass in lawns may be calculated.

5.5.2.2 Landscape Watering – General

The amount of outdoor water used in the landscape watering of landscapes and lawns is calculated based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance.[30] Using this methodology, the amount of water required to support the baseline lawn water demand ($Water_{baseline}$) is defined as the Maximum Applied Water Allowance (MAWA) and is calculated as follows:

$$Water_{baseline} = MAWA = ET_0 \times 0.62 \times [(0.7 \times LA) + (0.3 \times SLA)]$$

Where:

$Water_{baseline}$	=	Volume of water required to support the baseline lawn (gallons/year)
MAWA	=	Maximum Applied Water Allowance (gallons/year)
ET_0	=	Annual Reference Evapotranspiration[31] from Appendix A of CDWR 2009 (inches per year)
0.7	=	ET Adjustment Factor (ETAF)
LA	=	Landscape Area[32] includes Special Landscape Area[33] (square feet)

[30] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf

[31] Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: http://wwwcimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19

[32] § 491 Definitions in CDWR 2009: "Landscape Area (LA) means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designed fro non-development (e.g., open spaces and existing native vegetation)."

[33] § 491 Definitions in CDWR 2009: "Special Landscape Area (SLA) means an area of the landscape dedicated

0.62	=	Conversion factor (to gallons per square foot)
SLA	=	Portion of the landscape area identified as Special Landscape Area (square feet)
0.3	=	the additional ETAF for Special Landscape Area

Based on the estimated outdoor water demand for watering lawns, the outdoor water energy intensity factors described above, and the utility-specific carbon intensity factor, GHG emissions from watering lawns may be calculated.

5.5.3 Recycled Water

After use, wastewater is treated and reused as reclaimed water. Any reclaimed water produced is generally redistributed to users via pumping. An estimate of the non-potable water demand to be met through the distribution of recycled water is needed. Estimates of the amount of energy needed to redistribute and, if necessary, treat reclaimed water is 400 kW-hr per acre foot.[34] Based on the estimated demand for reclaimed water, the estimated electricity demand and the utility-specific carbon-intensity factor, non-potable reclaimed water redistribution emissions are calculated.

5.5.4 Process

Industrial land uses can use a large amount of water for their processes. The water used for this will not be quantified since there is not sufficient water use data for this type of land use for the development of a default value. Water use is highly dependent on the specific industry..

5.6 Wastewater

Emissions associated with wastewater treatment include indirect emissions necessary to power the treatment process and direct emissions from degradation of organic material in the wastewater.

5.6.1 Direct Emissions

Direct emissions from wastewater treatment include emissions of CH_4 and biogenic CO_2. The method described by the Local Government Operations Protocol developed by the California Air Resources Board is suggested with default values assigned since detailed plant specific data will typically not be available.[35] The assumed daily 5-day carbonaceous biological oxygen

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solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface."

[34] CEC 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF.

[35] California Air Resources Board. 2008. *Local Government Operations Protocol - for the quantification and reporting of greenhouse gas emissions inventories*. Version 1.0. September 2008. Developed in partnership by California Air Resources Board, California Climate Action Registry, ICLEI - Local Governments for Sustainability, The Climate Registry

demand (BOD_5) of 200 mg/L-wastewater is multiplied by the protocol defaults for maximum CH_4-producing capacity (0.6 kg-CH_4/kg-BOD_5) and other default values to obtain the direct CH_4 emission. The amount of digester gas produced per volume of wastewater, and amount of N_2O per volume of wastewater needs to be determined. These values are then multiplied by the Global Warming Potential factor[36] of 21 for CH_4 or 310 for the GWP of N_2O that would be generated otherwise to obtain the annual CO_2 equivalent emissions.

5.6.2 Indirect Emissions

Indirect GHG emissions result from the electricity necessary to power the wastewater treatment process. The electricity required to operate a wastewater treatment plant is estimated to be 1,911 kW-hr per million gallons.[37] Based on the expected amount of wastewater requiring treatment, which will be assumed to be equal to the indoor potable water demand absent other data, the energy intensity factor and the utility-specific carbon-intensity factor, indirect emissions due to wastewater treatment are calculated.

5.7 Public Lighting

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Lighting sources considered in this source category include streetlights, traffic lights, and parking lot lights. The annual electricity use may be estimated using the number of heads, the power requirements of each head, and the assumption that they operate for 12 hours a day on average for 365 days per year or 24 hours for traffic lights. The emission factor for public lighting is the utility-specific carbon-intensity factor. Multiplying the electricity usage by the emission factor gives an estimate of annual CO_2e emissions from public lighting.

5.8 Municipal Vehicles

GHG emissions from municipal vehicles are due to direct emissions from the burning of fossil fuels. Municipal vehicles considered in this source category include vehicles such as police cars, fire trucks, and garbage trucks. Data from reports by Medford, MA; Duluth, MN; Northampton, MA; and Santa Rosa, California[38] show that the CO_2 emissions from municipal

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[36] Intergovernmental Panel on Climate Change. IPCC Second Assessment - Climate Change 1995.

[37] CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

[38] City of Medford. 2001. Climate Action Plan. October. http://www.massclimateaction.org/pdf/MedfordPlan2001.pdf

City of Northampton. 2006. Greenhouse Gas Emissions Inventory. Cities for Climate Protection Campaign. June. http://www.northamptonma.gov/uploads/listWidget/3208/NorthamptonInventoryClimateProtection.pdf

City of Santa Rosa. Cities for Climate Protection: Santa Rosa. http://ci.santa-rosa.ca.us/City_Hall/City_Manager/CCPFinalReport.pdf

Skoog., C. 2001. Greenhouse Gas Inventory and Forecast Report. City of Duluth Facilities Management and The International Council for Local Environmental Initiatives. October.http://www.ci.duluth.mn.us/city/information/ccp/GHGEmissions.pdf vehicles would be approximately[39] 0.05 MT per capita per year. Using these studies and the expected population, emissions from municipal vehicles may be calculated.

5.9 On-Road Mobile Sources

This section estimates GHG emissions from on-road mobile sources. The on-road mobile source emissions considered a project will be from the typical daily operation of motor vehicles by project residents and non-residents. The GHG emissions based upon all vehicle miles traveled associated with residential and non-residential trips regardless of internal or external destinations or purpose of trip are estimated. Traffic patterns, trip rates, and trip lengths are based upon the methods discussed below.

The CCAR GRP[40] recommends estimating GHG emissions from mobile sources at an individual vehicle level, assuming knowledge of the fuel consumption rate for each vehicle as well as the miles traveled per car. Since these parameters are not known for a future development, the CCAR guidance can not be used as recommended.

Estimating Trip Rates

The majority of transportation impact analysis conducted for CEQA documents in California apply trip generation rates provided by the Institute of Transportation Engineers (ITE) in their regularly updated report *Trip Generation*. The report is based on traffic counts data collected over four decades at built developments throughout the United States. This data is typically based on single-use developments, in suburban locations with ample free parking and with minimal transit service and demand management strategies in place. As a result, the ITE trip generation rates represent upper bound trip generation rates for an individual land use type. This represents a good basis against which to measure the trip-reducing effects of any one or more of the mitigation strategies that will be quantified in subsequent tasks. Therefore, we recommend ITE trip rates as the baseline condition against which the effectiveness of CAPCOA's mitigation measures is applied.

There are some CEQA traffic studies that use data other than ITE trip generation rates. Below we briefly discuss the possible use of these alternative datasets. These traffic studies typically use trip generation data from one of the following sources:

SANDAG Traffic Generators. In the San Diego region, most studies use data from the SANDAG *Traffic Generators* report. This report is similar to the ITE *Trip Generation* in that it uses primarily suburban, single use developments, except that this dataset is based on traffic counts conducted in the San Diego region rather than throughout the United States. In studies where the SANDAG data is used, CAPCOA reviewers should apply the trip reduction estimates presented in subsequent tasks directly to the SANDAG trip generation rates.

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[39] In an effort to be conservative, the largest per capita number from these four reports was used.

[40] California Climate Action Registry (CCAR). 2009. *General Reporting Protocol*. Version 3.1. January.

Travel Forecast Models. For some large development projects or general plans, the local or regional travel model is used to estimate the number of trips generated as well as trip lengths and vehicle speeds at which the individual trips occur. These models account for whether the trip segment occurs on a freeway or local streets as well as the degree of congestion. The values for trip generation rates and trip lengths using ITE and average trip lengths can be to assess the model estimates of vehicle trip generation and VMT. These comparisons should recognize that the travel models explicitly account for various factors that reduce trip-making and VMT, including the demographic characteristics of the site occupants, location and accessibility of the development site relative to other destinations in the region, the mix of land uses within the site and its surrounding area, and possibly the availability of effective transit service. When performing a comparison using the ITE trip rates and average trip lengths, the reviewer should take into consideration that these factors have already been accounted for in the modeling. Therefore, we recommend applying ITE trip rates and lengths along with the adjustments recommended elsewhere in this document (accounting for site location, design and demographics) as a means of reality-checking transportation model results.

Traffic counts at comparable developments. Some traffic assessments elect to conduct traffic counts at existing developments that are similar to the proposed development. When reviewing impact assessments produced using such information, the reviewer should take into account the extent to which the surveyed development(s) already contain trip generation and trip length reducing measures. Care needs to be used to avoid double-counting reductions.

Estimating VMT from Mobile Sources

Data on average trip lengths are used to translate trip generation rates into vehicle miles of travel (VMT). These trip lengths should be obtained from published sources of average trip lengths for different types of trip types (i.e., commute trips, shopping trips, and others) for each region within the state. Vehicle miles traveled (VMT) are calculated by multiplying ITE trip rates by the typical trip lengths.

Some mechanisms that reduce trip generation rates and trip lengths below these standard ITE-trip rates and current average trip lengths might be considered to be intrinsic parts of the development proposal rather than mitigation measures, such as project location (e.g., infill or transit oriented development [TOD]), density, mix of uses, and urban design. These are not considered part of the baseline condition, but are recognized and quantified as project design features (PDFs). This approach has the following advantages: 1) it creates a consistent basis of analysis for all development projects regardless of location and self-mitigating features already included in the project proposal, and 2) it highlights all elements of a project that reduce trip generation rates and vehicle miles traveled.

Other Factors Influencing Mobile Source GHG Emissions

Beyond trip generation, trip length and VMT, other factors that affect GHG emissions include traffic flow, vehicle fuel consumption rates, and fuel type.

Traffic speed and efficiency profiles are largely influenced by: a) the project location and degree of prevailing congestion in its vicinity, b) the degree to which the project implements traffic level-of-service mitigation measures often triggered by CEQA review, and c) actions taken by local, regional governments and Caltrans to reduce corridor or area-wide congestion.

The simplified mitigation assessment methods developed for this study use several categories of emissions factors per VMT that account for a) the generalized project location (core infill, inner ring suburbs, outer suburbs, rural), and b) and region-specific fleet and emissions rate if available.

While it is beyond the scope of this document to provide CAPCOA the ability to perform traffic speed and efficiency analysis, the study report advises CAPCOA on the type of analysis to expect to see in CEQA documents on development projects. CEQA impact and mitigation assessment methods should continue to perform air quality analysis using tools such as EMFAC that reference prevailing traffic speed profiles, especially for infill development and congested corridors, while applying appropriate credit for congestion reducing measures included in the project mitigation requirements, funded capital improvements plans, and fiscally constrained Regional Transportation Plans (RTPs.)

5.9.1 Estimating GHG Emissions from Mobile Sources

The CO_2 emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors for running and starting emissions from EMFAC2007 as follows:

$$CO_2\ emissions \quad = \quad VMT \quad x \quad EF_{running}$$

Where:

VMT = vehicle miles traveled
$EF_{running}$ = emission factor for running emissions

The CO_2e calculation involves the following assumptions:

- The emission factor depends upon the speed of the vehicle.
- EMFAC emission factors from the baseline year will be used for $EF_{running}$ based on County specific fleet mix for different trip types and adjusted to account for applicable regulations that are not currently incorporated yet into EMFAC.

Startup emissions are CO_2 emitted from starting a vehicle. Startup emissions are calculated using the following assumptions:

- The number of starts is equal to the number of trips made annually.
- The breakdown in vehicles is EMFAC fleet mix for County specific fleet mix.
- The emission factor for startup is calculated based on a weighted average of time between starts for each trip type (commute trips versus all other types).

Fleet distribution types will be based on EMFAC2007 or the most recent EMFAC version available. For mobile sources, the USEPA recommends assuming that CH_4, N_2O, and HFCs account for 5% of GHG emissions from on-road vehicles, taking into account their GWPs.[41] To incorporate these additional GHGs into the calculations, the total GHG footprint is calculated by dividing the CO_2 emissions by 0.95.

Emission factors for alternative fuel can be obtained from the CCAR General Reporting Protocol. For comparison with alternative fuel, N_2O and CH_4 emissions should be calculated separately as their emissions from alternative fuel are generally higher than from gasoline or diesel.

Low-emission-vehicle programs, such as neighborhood electric vehicles (NEV) or car sharing programs, will only be considered in accounting for GHG reductions if included in project-specific design or mitigation measures.

5.10 GHG Emissions from Specialized Land Uses

Below are methods to quantify GHG emissions from some additional land use categories that may be commonly found in development projects. These include golf courses and swimming pools. The methods proposed to determine GHG emissions associated with these sources is discussed in the following sections. The GHG emissions will typically fall into other categories such as landscape maintenance, water usage, and buildings, but since the data sources are different, they are explicitly described.

5.10.1 Golf Courses

Emission flux resulting from the construction of the golf course is not discussed, nor is the sequestration of CO_2 into the turf, trees, or lakes of the golf course. Operational CO_2 emissions were calculated for three areas: irrigation, maintenance (mowing), and on-site buildings' energy use. All three components are discussed in this section.

5.10.2 Calculating CO_2 Emissions from Irrigation of the Golf Course

The release of GHGs due to irrigation practices was calculated in two steps:

1. Identify the quantity of water needed.
2. Calculate the emissions associated with pumping the water.

1. *Identify the quantity of water needed.* Standard water use for an 18-hole golf course ranges from 250 to 450 acre-ft yearly. A survey of golf course superintendents conducted in the summer of 2003 by the Northern and Southern California Golf Associations revealed an annual average California usage of 345 acre-ft.[42] Numerous factors will affect the actual water usage

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[41] USEPA. 2005. *Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle.* Office of Transportation and Air Quality. February.

[42] Northern California Golf Association. Improving California Golf Course Water Efficiency, pg 14. http://www.owue.water.ca.gov/docs/2004Apps/2004-079.pdf

of a specific golf course, and it is likely to vary by year. ENVIRON recommends using the average usage of 345 acre-ft per year annually.

2. Calculate the associated emissions. Using the information identified above, ENVIRON calculates total emissions from irrigation of an 18-hole golf course as follows:

Estimate total dynamic head: This is the combination of lift (300 feet) and desired pressure. Standard athletic field sprinklers require a base pressure of approximately 65 psi.[43]

$$
\begin{array}{lcl}
\textit{60 psi x 2.31 ft/psi}^{44} & = & \textit{139 ft} \\
\underline{\textit{+ lift}} & = & \underline{\textit{300 ft}} \\
\textit{Total dynamic head} & = & \textit{439 ft}
\end{array}
$$

Identify fuel unit and multiply by head: Possible pumping fuels include electricity, natural gas, diesel, and propane. In these calculations, ENVIRON assumes that all pumps will use electricity. Based on the literature, ENVIRON recommends using a pumping energy use of 1.551 kW-hr/acre-ft/ft.[45]

$$\textit{1.551 kW-hr/acre-ft/ft} \quad x \quad \textit{439 ft} \quad = \quad \textit{681 kW-hr/acre-foot}$$

Multiply energy demand by emission factor and convert to MT: The energy demand per acre-ft calculated above is multiplied by the emission factor for the electricity generation source and converted to MT.

$$\frac{\textit{681kW-hr/acre-ft x 0.666 lbs } CO_2\textit{/kW-hr}}{\textit{2204.62 lbs/ton}} = \textit{0.21 MT } CO_2\textit{/acre-ft}$$

The anticipated annual water demand will be multiplied by these values and then combined this with the calculated emission factor yields total annual emissions from irrigation of the golf course. Other outdoor land uses that require irrigation can follow a similar procedure.

5.10.3 Calculating CO_2 Emissions from Maintenance of the Golf Course

Maintenance emissions include the emissions resulting from the mowing of turf grass. The release of GHGs due to mowing was calculated in three steps:

1. Identify the area of turf and frequency of mowing.
2. Identify the efficiency of a typical mower.

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[43] Full Coverage Irrigation. Partial List of Customers Using FCI Nozzles. http://www.fcinozzles.com/clients.asp.

[44] Conversion factor: 1 psi = 2.31 feet of head. Kele & Associates Technical Reference: Liquid Level Measurement. http://www.kele.com/tech/monitor/Pressure/LiqLevMs.pdf

[45] Kansas State University Irrigation Management Series. Comparing Irrigation Energy Costs. Table 4. http://www.oznet.ksu.edu/library/ageng2/mf2360.pdf

3. Calculate the emissions associated with mowing.

1. *Identify the area of turf and frequency of mowing*: An Arizona State economic analysis of golf courses reports that on average 2/3 of the land within a golf course is maintained.[46] ENVIRON suggests assuming that the course will be mowed twice weekly, although high maintenance areas such as greens will be mowed more frequently.[47] ENVIRON recommends a growing season of 52 weeks/year.[48]

2. *Identify the efficiency of a typical mower*. Typical mower calculations are based on the specifications for a lightweight fairway mower (model 3235C) reported by John Deere's Golf & Turf division.[49] A typical mower will use one tank (18 gallons) of diesel per day (assumed to be 8 hours). Given the size specifications of the mower and assuming an average speed of 5.5 mph, such a mower can cover 44 acres on 18 gallons of diesel.

3. *Calculate the emissions associated with mowing*. Using the information collected above and a CO_2 emission factor for diesel combustion[50], ENVIRON calculates the emission factor for mowing the golf course:

$$\frac{2 \text{ mowings/}}{\text{week}} \times \frac{52 \text{ weeks/}}{\text{year}} \times \frac{18 \text{ gallons diesel/}}{44 \text{ acre-mowing}} \times \frac{22.4 \text{ lbs } CO_2\text{/ gallon diesel}}{2204 \text{ lbs/ton}} = 0.43 \text{ MT } CO_2\text{/ acre-year}$$

5.10.4 Calculating CO_2 Emissions from Building Energy Use at the Golf Course

Any of the non-residential building energy use data sources described in the Buildings section may be used to estimate energy intensity at the golf course.

5.11 Pools

Recreation centers may include various pools, spas, and restroom buildings; ENVIRON assumes that pools are the main consumers of energy in recreation centers. This section describes the methods used to estimate the GHGs associated with pools in recreation centers.

The energy used to heat and maintain a swimming pool depends on several factors, including (but not limited to): whether the pool is indoors or outdoors, size of the pool (surface area and depth), water temperature, and energy efficiency of pool pump and water heater, and whether

46 Total acreage divided by total acreage maintained. Arizona State University, Dr. Troy Schmitz. Economic Impacts and Environmental Aspects of the Arizona Golf Course Industry. http://agb.poly.asu.edu/workingpapers/0501.pdf.

47 Based on Best Practices video. http://buckeyeturf.osu.edu/podcast/?p=51

48 Based on 95% of Southern California Survey respondents report an irrigation season greater than 9-10 months. http://www.owue.water.ca.gov/docs/2004Apps/2004-079.pdf

49 John Deere Product Specifications. 3235C Lightweight Fairway Mower. http://www.deere.com/en_US/ProductCatalog/GT/series/gt_lwfm_c_series.html

50 EIA. Fuel and Energy Source Codes and Emission Coefficients. http://www.eia.doe.gov/oiaf/1605/factors.html

solar heating is used. By making assumptions for these parameters and using known or predicted values for energy use, ENVIRON estimates the electricity and natural gas use of an outdoor pool.

5.11.1 Recreation Center Characterization

In the calculations described below, ENVIRON assumes that the proposed pools will be outdoor pools with dimensions 50 meters by 22.9 meters (a typical, competition-size pool). ENVIRON bases electricity calculations on a pool that ran its standard water filter for 24 hours per day, 365 days per year. As there is little data publicly available on the energy use of commercial swimming pools, ENVIRON extrapolates energy consumption from information obtained from two sources: 1) Data on electricity used by pool pumps from Pacific Gas and Electric (PG&E),[51] and 2) Data on the annual cost to heat a commercial pool located in Carlsbad, CA.[52]

5.11.2 Electricity Use of Pools

A PG&E study on energy efficiency of a pool pump at the Lyons Pool in Oakland, CA, found an annual electricity use of 110,400 kilowatt hours per year (kWh per yr).[53] The study pool is smaller than the assumed size of the proposed pool (actual size of the Lyons Pool is 35 yards by 16 yards). Accordingly, ENVIRON scales the electricity use to reflect the larger size of the proposed pool.

5.11.3 Natural Gas Use of Pools

The estimated annual cost of heating a standard competition-size pool is $184,400 (or 72% of the total cost of pool operations).[54] ENVIRON used the average PG&E commercial rate for natural gas of $0.95 per therm to convert this cost into annual natural gas use (hundred cubic feet per year [ccf/year]).[55] The commercial rate averages the variable cost due to energy usage and time of year. This corresponds to approximately 184,400 ccf per year.[56]

This value is comparable to that obtained from the pool industry.[57] The estimated cost of heating a residential pool using a natural gas heater is about one dollar per square foot of water

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[51] PG&E. 2006. Energy Efficient Commercial Pool Program, Preliminary Facility Report. Lyons Pool, "City of Oakland/Oakland Unified School District." October.

[52] Mendioroz, R. 2006. Fueling Change: A Number of Design Schemes and Alternative-Energy Strategies Can Help Operators Beat the Price of Natural Gas. Athletic Business. March.

[53] PG&E. 2006. Energy Efficient Commercial Pool Program, Preliminary Facility Report. Lyons Pool, "City of Oakland/Oakland Unified School District." October.

[54] Mendioroz, R. 2006. Fueling Change: A Number of Design Schemes and Alternative-Energy Strategies Can Help Operators Beat the Price of Natural Gas. Athletic Business. March.

[55] Pacific Gas and Electric (PG&E). 2007. Gas Rate Finder. Vol 36-G, No. 9. September. http://www.pge.com/tariffs/GRF0907.pdf

[56] At the commercial rate given 1 ccf costs $1.

[57] SolarCraft Services Inc. 2007. Phone conversation with Chris Bumas on September 18, 2007. Novato, CA http://www.solarcraft.com/

surface area per month (\$/sqft-month) in residential therms.[58] Applying this value to a competition-size pool yields an annual natural gas use of 147,600 ccf/year.

5.11.4 Conversion of Electricity and Natural Gas Use to Greenhouse Gas Emissions

ENVIRON used utility-specific electricity and natural gas emission factors to calculate the total CO_2 emissions for each pool. A summary of the calculations is shown below:

$$Emissions\ from\ Electricity\left(\frac{Tonnes\ CO_2\ /\ yr}{1{,}000\ sqft}\right) =$$
$$\frac{Energy\ Use\ (ccf\ /\ yr) \times Emission\ Factor\ (lbs\ CO_2e\ /\ ccf) \times Conversion\ Factor\ (tonne\ /\ 2205\ lbs)}{Surface\ Area\ of\ Pool\ (1{,}000\ sqft)}$$

$$Emissions\ from\ Natural\ Gas\left(\frac{Tonnes\ CO_2\ /\ yr}{1{,}000\ sqft}\right) =$$
$$\frac{Energy\ Use\ (ccf\ /\ yr) \times Emission\ Factor\ (lbs\ CO_2e\ /\ ccf) \times Conversion\ Factor\ (tonne\ /\ 2205\ lbs)}{Surface\ Area\ of\ Pool\ (1{,}000\ sqft)}$$

[58] The residential price for one therm of natural gas.

Appendix C

Transportation Appendices

Appendix C.1

Transportation Calculations

Appendix C.1 – Transportation Calculations

Table C-1 provides further detail into the calculations of percent reduction in vehicle miles traveled (VMT) for each of the fact sheets (that have references to the appendix). Many of the strategies in the table below do not provide the full equations for percent reduction in vehicle miles traveled. Only the equations or variables which require further detail are outlined here. The table also provides detail on any assumptions which are made to perform the calculations and the basis of such assumptions. An additional section below Table C-1 provides a detailed discussion of the calculations made for the transit accessibility strategy.

Table C-1
Transportation Calculations

Strategy	T#	Equation	Variable	Value	Source/Notes
Increase Density (Land Use/Location)	A2	A = Percentage increase in housing units per acre = (number of housing units per acre – number of housing units per acre for typical ITE development) / (number of housing units per acre for typical ITE development)	number of housing units per acre for typical ITE development	7.6 = blended average density of residential development in the US in 2003	A.C. Nelson. "Leadership in a New Era." *Journal of the American Planning Association,* Vol. 72, Issue 4, 2006, pp. 393-407 – as cited in *Growing Cooler*
		A = Percentage increase in jobs per job acre = (number of jobs per job acre – number of jobs per job acre for typical ITE development) / (number of jobs per job acre for typical ITE development)	number of jobs per job acre for typical ITE development	20 = average jobs per job acre	Year 2005 Land Use, Sacramento County Travel Demand Model, 2008
Improve Design of Development (Land Use/Location)	A3	A = Percentage increase in intersections versus a typical ITE suburban development = (intersections per square mile of project – intersections per square mile of typical ITE suburban development) / (intersections per square mile of typical ITE suburban development)	intersections per square mile of typical ITE suburban development	36 = ITE site average intersection density	Based on Fehr & Peers methodology for analysis in the report: *Proposed Trip Generation, Distribution, and Transit Mode Split Forecasts for the Bayview Waterfront Project Transportation Study*, Fehr & Peers, 2009

Table C-1
Transportation Calculations

Strategy	T#	Equation	Variable	Value	Source/Notes
Increase Diversity (Mixed Use) (Land Use/Location)	A5	A = Percentage increase in land use index versus single use development = (project land use index – single land use index) / single land use index	single land use index	0.15 = - [1*(ln 1) + 0.01*(ln 0.01)+…+0.01*(ln 0.01)]/ ln(6)	--
Increase Destination Accessibility (Land Use/Location)	A6	A = Percentage decrease in distance to downtown or major job center = (distance to downtown/job center for typical ITE development – distance to downtown/job center for project) / (distance to downtown/job center for typical ITE development)	distance to downtown/job center for typical ITE development	12 miles (average work trip length from NHTS)	2000-2001 California Statewide Travel Survey, 2001 NHTS Summary of Travel Trends, p.15 (Table 5)
Increase Transit Accessibility (Land Use/Location)	A7	A = Increase in transit mode share = % transit mode share for project - % transit mode share for typical ITE development	% transit mode share for typical ITE development	1.3%	NHTS, 2001 http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf, p.150 (Suburban – SCAG, SANDAG, Fresno County.)
		B = Adjustment from transit mode share to VMT = 1 / average vehicle occupancy * conversion from VT to VMT = 0.67	Divide by average vehicle occupancy to translate to VT	1 / average vehicle occupancy = 1 / 1.5 = 0.67	NHTS, http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/2000_Household_Survey.pdf, p.iii
			conversion from VT to VMT	1	Assume all trip lengths are equal (vehicle trips to VMT) [1]

[1] To convert to vehicle miles traveled, we assume that all vehicle trips will average out to typical trip length ("assume all trip lengths are equal"). Thus, we can assume that a percentage reduction in vehicle trips will equal the same percentage reduction in vehicle miles traveled.

Table C-1 Transportation Calculations					
Strategy	**T#**	**Equation**	**Variable**	**Value**	**Source/Notes**
Unbundle Parking Cost from Property Cost (Parking Pricing/Policy)	C3	A = Adjustment from Vehicle Ownership to VMT = average trips per 2 vehicles * 1 vehicle per average trips =(9.8 trips/ 2 vehicles) * (1 vehicle / 5.7 trips) = 0.85	Average trips per X vehicles	Households with 2 vehicles take 9.8 trips while households with 1 vehicle take 5.7 trips per day	i.e. A reduction of 1 vehicle leads to an 0.85 reduction in vehicle trips http://www.dot.ca.gov/hq /tsip/tab/documents/travel surveys/2000_Household _Survey.pdf, table 8.7
Expand Transit Network (Transit System Improvements)	D2	D = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility
Enhance Transit Service Frequency/Speed (Transit System Improvements)	D3	E = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility
Implement Bus Rapid Transit (Transit System Improvements)	D4	D = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility
Implement Required Trip Reduction Programs (Trip Reduction Programs)	E2	C = Adjustment from vehicle mode share to commute VMT	--	1	Assume all trip lengths are equal (vehicle mode share to vehicle trips to VMT) [i]
Provide a Transit Fare Subsidy (Trip Reduction Programs)	E3	C = Adjustment from commute VT to commute VMT	--	1	Assume all trip lengths are equal (vehicle trips to VMT) [i]
Implement Commute Trip Reduction Marketing (Trip Reduction Programs)	E7	C = Adjustment from commute VT to commute VMT	--	1	Assume all trip lengths are equal (vehicle trips to VMT) [i]

Table C-1 Transportation Calculations					
Strategy	**T#**	**Equation**	**Variable**	**Value**	**Source/Notes**
Provide Employer-Sponsored Vanpool/Shuttle (Trip Reduction Programs)	E8	C = Adjustment from vanpool mode share to commute VMT	--	0.67	see Increase Transit Accessibility
Implement Bike-Sharing Programs (Trip Reduction Programs)	E10	% VMT Reduction = A * B * C = 2% * 7% * 20% = 0.03%	--	--	--
		A = 2% = Net new bicycle mode share = (existing mode share * % increase in bicycle mode share) – existing mode share	Existing mode share	Estimate at 1%	Pucher et al., 2010
			% increase in bicycle mode share	135 – 300%	Pucher et al., 2010, Table 4 (see fact sheet for calculations)
		B = % of new bicycle trips shifting from vehicles (from literature)	--	6-7%	Pucher et al., 2010 and Bike-Share in NYC, 2009, Table 4, p.45
		C = adjustments to convert from vehicle mode share to VMT * adjustment for shorter than average trip lengths = 1*20%	adjustments to convert from vehicle mode share to VMT	1	Assume all trip lengths are equal (vehicle mode share to vehicle trips to VMT) [i]
			adjustment for shorter than average trip lengths	1.94/9.9 = 20%	Adjustment to reflect ratio of bike trip length to average trip length (this strategy will only replace the shorter vehicle trips that can be reasonably replaced by a bicycle). [1.94 miles (average bike trip length from Moving Cooler Appendices B-28 referencing NHTS) / 9.9 miles (average household trip length from NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx)]

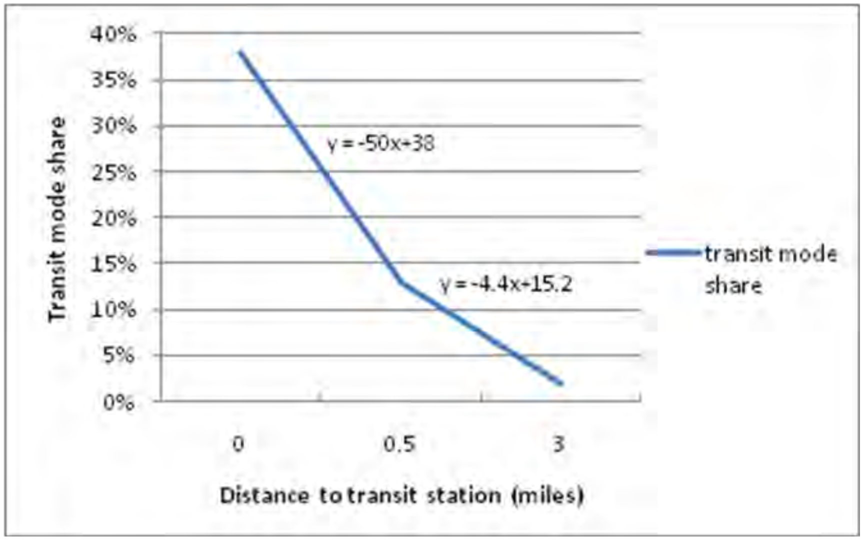
Table C-1 Transportation Calculations					
Strategy	**T#**	**Equation**	**Variable**	**Value**	**Source/Notes**
Provide End of Trip Facilities (Trip Reduction Programs)	E11	*utilizing the same equation in bike sharing program section, set A = 1.3% = (7.1% - 5.8%) % VMT Reduction = A * B * C = 1.3% * 7% * 20% = 0.02%	--	--	--
Establish Schoolpool (Trip Reduction Programs)	E13	B = Adjustments to convert from participation to daily VMT to annual school VMT = [(avg # of families per carpool - 1) / avg # of families per carpool] *% of school days	avg # of families per carpool	2.5	TDM Case Studies, DRCOG, p.13
			% of school days	75% = 39 school weeks/ 52 weeks	TDM Case Studies, DRCOG, p.13
Provide School Buses (Trip Reduction Programs)	E14	B = Adjustments to convert from participation to daily VMT to annual school VMT = % of school days	% of school days	75% = 39 school weeks/ 52 weeks	TDM Case Studies, DRCOG, p.13
Cordon Pricing (Road Pricing Management)	F2	A = % increase in pricing for passenger vehicles to cross cordon	--	100 – 500%	*Moving Cooler* uses peak hour price per mile instead of crossing price. The percentage change can still be calculated to provide a general estimate for a high range % change. Assuming a baseline of $0.10, calculated percentage increase to $0.49 - $0.65 (*Moving Cooler*) and adjusted with rounding
		C = % of VMT Impacted by Cordon Pricing and Mode Shift Adjustments = %VMT impacted by congestion pricing * Mode shift adjustment = 8.8% (peak period) and 21% (all day)	--	--	--

Table C-1 Transportation Calculations					
Strategy	T#	Equation	Variable	Value	Source/Notes
		Peak period = 25% * 35% = 8%	%VMT impacted by congestion pricing	25%	20% of trips are work trips (NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx) and round up assuming other trips travel during peak periods
			Mode shift adjustment	35% = 20% + 30%/2	Of the estimated trips affected to the increase in price, assume 50% is either a time of day shift/route shift/no change, 30% convert to HOV trips (with average 2 ppl per HOV), and 20% are trip reductions/shift to transit, walk or bike
		Static all day price (London) = 60% * 35% = 21%	% VMT impacted by congestion pricing	60%	Conservatively assume 60% of trips fall in the peak periods and mid-day
			Mode shift adjustment	35%= 20% + 30%/2	Of the estimated reduced trips due to the increase in price, assume 50% is either a time of day shift/route shift/no change, 30% convert to HOV trips (with average 2 people per HOV), and 20% are trip reductions/shift to transit, walk or bike

Increase Transit Accessibility (Land Use/Location)

Distance to transit	Transit mode share calculation equation (where x = distance of project to transit)
0 – 0.5 miles	-50*x + 38

0.5 to 3 miles	-4.4*x + 15.2
> 3 miles	no impact
Source: Lund et al, 2004; Fehr & Peers 2010	



Data was taken from Table 5-25 of Lund et al, 2004. The table provided transit commute mode shares for those living with ½ mile of a rail station for 5 sites surveyed within California. Removing the extreme low and high percentages, this provided a range of transit commute mode share of 13% to 38%. A simple linear extrapolation was conducted to provide a relationship for distance to transit (between 0 and ½ mile) to transit mode share, via the equation: transit mode share = -50 * distance to transit + 38. The table also provided transit mode shares for those living from ½ to 3 miles from a station, a range from 2% to 13%. Using the same methodology, a relationship for distance to transit (between ½ mile and 3 miles) to transit mode share is provided via the equation: transit mode share = -4.4x + 15.2.

Appendix C.2

Trip Adjustment Factors

Appendix C.2 – Trip Adjustment Factors

The trip adjustment factors are not explicitly used for calculations of reduction in vehicle miles traveled (VMT) but serve as an added resource point for users of this document. For example, we report all commute trip reduction (CTR) program strategies as a percentage reduction in commute VMT. If the user would like to translate this to project level VMT (assuming the project is NOT an office park), and the user does not have statistics about the project area readily available, then the trip adjustment factors table can be utilized.

Example: Assume the user is providing a 15% reduction in commute VMT for a implementation of a ride share program. To calculate an estimated reduction in project level VMT, the user can multiple 15% by 20% (NHTS average % of work trips) and again multiply by 12.0 / 9.9 (average work trip length/average trip length) to adjust for both the portion of trips which are work related and that work trips tend to be longer than average trips.

TABLE C-2. TRIP ADJUSTMENT FACTORS

	NHTS[1]	Sacramento Region[2]	San Diego Region [3]	Rural (Kings County, CA) [4]
Average Work Trip Length (vehicle)	12.0	10.4	8.4	-
Average Trip Length (vehicle)	9.9	6.8	6.9	8.7
Average % of Work Trips	20%	20%	-	12%
Average % of School Trips	9.8%	-	-	-
Average Length of School Trips (Vehicle)	6.0	-	4.2	-
Average Vehicle Occupancy (All Trips)	1.5	1.4	1.5	-

Source:
1. 2000-2001 California Statewide Travel Survey, 2001 NHTS Summary of Travel Trends
2. SACMET model, Fehr & Peers, 2010.
3. SANDAG Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002)
4. NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx

Appendix C.3

Induced Travel Memo

FEHR & PEERS
TRANSPORTATION CONSULTANTS

MEMORANDUM

Date: February 3, 2010

To: CAPCOA Team

From: Tien-Tien Chan, Jerry Walters, and Meghan Mitman

Subject: Induced Travel Material

SF10-0475

Induced travel is a term used to describe how travel demand responds to roadway capacity expansion and roadway improvements. Consistent with the theory of supply and demand, the general topic of research concerning induced travel is that reducing the cost of travel (i.e., reduced travel time due to a new road improvement) will increase the amount of travel. In other words, road improvements alone can prompt traffic increases. To what degree and under what circumstances these increases occur is a matter of debate and the key subject of most induced travel research. We have attached the following documents which represent research on induced travel effects:

- *Comparative Evaluations on the Elasticity of Travel Demand* – study conducted for the Utah DOT which included national literature review of induced travel studies

- *Are Induced-Travel Studies Inducing Bad Investments?* – article by Cervero in Access Magazine: Transportation Research at the University of California

- *Road Expansion, Urban Growth, Growth, and Induced Travel: A Path Analysis* – APA Journal paper by Cervero, also discusses the impacts of induced growth and induced investments

The reader should be aware that conditions may vary considerably and the extent of induced travel depends on a variety of factors, including: the degree of prior congestion in the corridor, its duration over hours of the day, its extent over lane miles of the corridor, the degree to which un-served traffic diverts to local streets and the degree of congestion on those routes, the availability of alternate modes within the corridor, whether corridor is radial and oriented toward downtown with high parking cost and limited availability or circumferential, planned level of growth in the corridor, whether the corridor is interstate or interregional, whether it is a truck route, and other factors.

GHG reduction strategies such as transportation system management (e.g. signal coordination, adaptive signal control) may also have the potential for inducing travel. For such strategies, if the estimated improvement exceeds 10% benefit in travel time reduction, we recommend conducting project specific analysis on induced travel prior to establishing GHG reduction benefits.

Appendix D

Building Mitigation Measure Quantification Methods

This Appendix summarizes the steps and assumptions used in two of the mitigation strategies – exceed Title 24 energy efficiency standards (BE-1) and installing energy efficient appliances (BE-4).

Background

GHGs are emitted as a result of activities in residential and commercial buildings when electricity and natural gas are used as energy sources. New California buildings must be designed to meet the building energy efficiency standards of Title 24, also known as the California Building Standards Code. Title 24 Part 6 regulates energy uses including space heating and cooling, hot water heating, ventilation, and hard-wired lighting. By committing to a percent improvement over Title 24, a development reduces its energy use and resulting GHG emissions.

The Title 24 standards have been updated twice (in 2005 and 2008)[1] since some of these data used to estimate energy use were compiled. California Energy Commission (CEC) has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end use can be used to account for reductions in electricity and natural gas use due to the two most recent updates to Title 24. Since energy use for each different system type (ie, heating, cooling, water heating, and ventilation) as well as appliances is defined in this survey, the use of survey data with updates for Title 24 will easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Another mitigation measure to reduce a building's energy consumption as well as the associated GHG emissions from natural gas combustion and electricity production is to use energy-efficient appliances. For residential dwellings, typical builder-supplied appliances include refrigerators and dishwashers. Clothes washers and ceiling fans would be applicable if the builder supplied them. For commercial land uses, only energy-efficient refrigerators have been evaluated for grocery stores.

1 California Energy Commission. 2003. Impact Analysis: 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at: http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11_400-03-014.PDF
California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: http://www.energy.ca.gov/ceus/

Methodology

Datasets

The Residential Appliance Saturation Survey (RASS)[2] and California Commercial Energy Use Survey (CEUS)[3] datasets were used to estimate the energy intensities of residential and non-residential buildings, respectively, since the data is available for several land use categories in different climate zones in California. The RASS dataset further differentiates the energy use intensities between single-family, multi-family and townhome residences.

The Energy Star and Other Climate Protection Partnerships 2008 Annual Report[4] and subsequent Annual Reports were reviewed for typical reductions for energy-efficient appliances. ENERGY STAR residential refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively. ENERGY STAR commercial refrigerators use 35% less electricity than standard appliances.

Calculations

Exceeding Title 24 Energy Efficiency Standards (BE-1)

RASS and CEUS datasets were used to obtain the energy intensities of different end use categories for different building types in different climate zones. Energy intensities from CEUS are given per square foot per year and used as presented. RASS presents Unit Energy Consumption (UEC) per dwelling unit per year and saturation values; the energy intensities used in this analysis are products of the UEC and saturation values.

Data for some climate zones is not presented in the CEUS and RASS studies. However, data from adjacent climate zones is assumed to be representative and substituted as follows:

For non-residential building types:
Climate Zone 11 used Climate Zone 9 data.
Climate Zone 12 used Climate Zone 9 data.
Climate Zone 14 used Climate Zone 1 data.
Climate Zone 15 used Climate Zone 10 data.

For residential building types:
Climate Zone 6 used Climate Zone 2 data.
Climate Zone 14 used Climate Zone 1 data.
Climate Zone 15 used Climate Zone 10 data.

RASS and CEUS data are based on 2002 consumption data. Because older buildings tend to be less energy efficient, and the majority of the buildings in the survey were likely constructed

2 California Statewide Residential Appliance Saturation Study Reporting Center. Available at: http://websafe.kemainc.com/RASSWEB/DesktopDefault.aspx

3 California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: http://www.energy.ca.gov/ceus/

4 United States Environmental Protection Agency 2009. ENERGY STAR and Other Climate Protection Partnerships: 2008 Annual Report. Available at: http://www.epa.gov/cpd/pdf/2008AnnualReportFinal.pdf

before 2001, the RASS and CEUS data likely overestimate energy use for a 2001 Title 24-compliant building.

To account for updates since the 2001 Title 24 standards, percentage reductions for each end use category taken directly from the CEC's "Impact Analysis for 2005 Energy Efficiency Standards" and "Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings" reports were applied to the CEUS and RASS datasets for improvements from 2001 to 2005, and 2005 to 2008, respectively (see Tables D-1 and D-2). For the CEUS data, exterior lighting was assumed to be covered by Title 24 lighting and therefore has the full percentage reductions taken. Interior lighting was assumed to be 50% Title 24 and 50% non-Title 24 uses. Therefore only half of the reduction for lighting was applied. The resulting 2008 numbers were then used as baseline energy intensities for this mitigation strategy. The total baseline energy intensities are calculated as follows:

$$\text{Baseline} = \sum\left[T24_{2001} \times \left(1 - R_{2001\text{-}2005}\right) \times \left(1 - R_{2005\text{-}2008}\right)\right] + \sum NT24$$

Where:

Baseline	=	Total baseline energy intensities of building category
$T24_{2001}$	=	Energy intensities of Title 24 regulated end use from RASS or CEUS
$R_{2001\text{-}2005}$	=	Reduction from 2001 to 2005
$R_{2005\text{-}2008}$	=	Reduction from 2005 to 2008
NT24	=	Non-Title 24 regulated end use energy intensities

Table D-1
Reduction in Title 24 Regulated End Use for Non-Residential Buildings

Energy Source	End Use	Reduction from 2001 to 2005	Reduction from 2005 to 2008
Electricity	Heating	4.9%	37.2%
	Ventilation	5.0%	1.5%
	Refrigeration	0.0%	0.0%
	Process	0.0%	0.0%
	Office Equipment	0.0%	0.0%
	Motors	0.0%	0.0%
	Miscellaneous	0.0%	0.0%
	Interior Lighting	4.9%	5.9%
	Water Heating	0.0%	0.0%
	Cooking	0.0%	0.0%
	Air Compressors	0.0%	0.0%
	Cooling	6.7%	8.3%
	Exterior Lighting	9.8%	11.7%
Natural Gas	Cooking	0.0%	0.0%
	Cooling	10.4%	9.3%
	Heating	3.1%	15.9%
	Water Heating	0.0%	0.0%
	Process	0.0%	0.0%
	Miscellaneous	0.0%	0.0%

Table D-2
Reduction in Title 24 Regulated End Use for Residential Buildings

Energy Source	End Use (As presented in RASS Dataset)	Reduction from 2001 to 2005			Reduction from 2005 to 2008		
		Multi-family	Single family	Town home	Multi-family	Single family	Town home
Electricity	Conv. Electric heat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	HP Eheat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Aux Eheat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Furnace Fan	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Central A/C	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Room A/C	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Evap Cooling	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Water Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Solar Water Heater	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Dryer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Clothes Washer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Dish Washer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	First Refrigerator	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Second Refrigerator	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Freezer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Pool Pump	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Outdoor Lighting	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Range/Oven	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	TV	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa Electric Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Microwave	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Home Office	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	PC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Water Bed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Well Pump	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Miscellaneous	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Natural Gas	Primary Heat	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Auxiliary Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Conv. Gas Water Heat	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Solar Water Heat w/Gas Backup	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Dryer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Range/Oven	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Pool Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Miscellaneous	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

The same approach was used to quantify GHGs emission reduction from exceeding Title 24 energy efficiency standards by 1%. The 1% reduction was applied to only energy use intensities for Title 24 regulated end use categories. For the CEUS data, the reduction was not applied to any portion of interior lighting. The reduced energy use intensities were added to the unadjusted energy use intensities for non-Title 24 regulated end use categories to obtain the total energy use intensities for exceeding Title 24 energy efficiency standards by 1% for each building category. These were then compared to the baseline line energy intensities for the overall percentage reduction as follows:

$$\text{Percentage Reduction} = 1 - \frac{\sum\left[T24_{2001} \times \left(1 - R_{2001\text{-}2005}\right) \times \left(1 - R_{2005\text{-}2008}\right) \times 99\%\right] + \sum NT24}{\text{Baseline}}$$

Where:

Baseline	=	Total baseline energy intensities of building category
$T24_{2001}$	=	Energy intensities of Title 24 regulated end use from RASS or CEUS
$R_{2001\text{-}2005}$	=	Reduction from 2001 to 2005
$R_{2005\text{-}2008}$	=	Reduction from 2005 to 2008
NT24	=	Non-Title 24 regulated end use energy intensities

Installing Energy Efficient Appliances

The same baseline line energy use intensities from the Exceeding Title 24 Energy Efficiency Standards mitigation were used for this mitigation strategy. For all appliances except ceiling fan, the reductions as presented in the ENERGY STAR 2008 annual report were applied to the energy use intensities of the corresponding energy end use categories. All other end use categories were kept unadjusted. The percentage reductions were calculated as follows:

$$\text{Percentage Reduction} = 1 - \frac{\text{Appliance Intensity} \times \left(1 - \text{ESR}\right) + \sum \text{Other End Use}}{\text{Baseline}}$$

Where:

Baseline	=	Total baseline energy intensities of building category
Appliance Intensity	=	2008 baseline energy intensity of appliance in consideration
ESR	=	Reduction from ENERGY STAR appliance
Other End Use	=	2008 baseline energy intensity of all other end uses

RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the "Miscellaneous" category which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not specified, a value from the National Renewable Energy Laboratory (NREL) Building American Research Benchmark Definition (BARBD)[5] was used. BARBD reported that the average energy use per ceiling fan is 84.1 kWh per year. In this mitigation measure, it was assumed that each multi-family, single-family, and townhome residence has one ceiling fan. Therefore, the 50% reduction from ENERGY STAR for ceiling fan was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category. In other words, 42.05 kWh was subtracted from the electricity end use intensities of the "Miscellaneous RASS" category in evaluating the GHGs emission reduction from installing energy efficient ceiling fans.

The total energy use intensities with reduction from each appliance in consideration were then compared to the baseline line energy intensities for the overall percentage reduction as follows:

$$\text{Percentage Reduction} = 1 - \frac{(\text{Misc} - 42.05) + \sum \text{Other End Use}}{\text{Baseline}}$$

Where:

Baseline = Total baseline energy intensities of building category
Misc = 2008 energy intensity in Miscellaneous category for electricity
Other End Use = 2008 baseline energy intensity of all other end uses

5 NREL. 2010. Building America Research Benchmark Definition. Available online at: http://www.nrel.gov/docs/fy10osti/47246.pdf

Appendix E

Carbon, Water and CO_2 Sequestration Intensity Factors

Table E-1: Carbon Intensity

Utility	CO_2 intensity (lb/MWh)[1]								
	2000	2001	2002	2003	2004	2005	2006	2007	Suggested Value[2]
Anaheim Public Utilities						1,399.80	1,416.74	1,543.28	1,416.74
Austin Energy						1,127.37	1,077.97	1,117.37	1,077.97
City and County of San Francisco						76.28			76.28
City of Palo Alto Public Utilities						320.94	39.02	426.82	39.02
Glendale Water & Power						1,065.00			1,065.00
Los Angeles Department of Water & Power	1,407.44	1,403.39	1,348.48	1,360.07	1,360.60	1,303.58	1,238.52	1,227.89	1,238.52
Pacific Gas & Electric Company					566.2	489.16	455.81	635.67	455.81
PacifiCorp					1,811.00	1,812.22	1,747.30	1,775.28	1,747.30
Pasadena Water & Power						1,409.65	1664.14		1,664.14
Platte River Power Authority						1,970.93	1,955.66	1,847.88	1,955.66
Riverside Public Utilities						1,333.45	1,346.15	1,325.65	1,346.15
Roseville Electric							565.52	793.8	565.52
Sacramento Municipal Utility District					769	616.07	555.26	714.31	555.26
Salt River Project							1,546.28	1,469.90	1,546.28
San Diego Gas & Electric					613.75	546.46	780.79	806.27	780.79
Seattle City Light								17.77	17.77
Sierra Pacific Resources								1,442.78	1,442.78
Southern California Edison					678.88	665.72	641.26	630.89	641.26
Turlock Irrigation District							682.48	807	682.48

Notes:
1. Based on Table G6 of Local Government Operation Protocol version 1.1
2. The suggested values are based on 2006. If no 2006 value was available, 2005 was used followed by 2007.

Table E-2: Water Intensity

	Indoor Water Uses		Outdoor Water Uses	
	Northern California	Southern California	Northern California	Southern California
	kWh/MG			
Water Supply and Conveyance	2,117	9,727	2,117	9,727
Water Treatment	111	111	111	111
Water Distribution	1,272	1,272	1,272	1,272
Wastewater Treatment	1,911	1,911	0	0
Regional Total	5,411	13,022	3,500	11,111

Note: Based on Table ES-1 from CEC. 2006. Refining Estimates of Water-Related Energy Use in California, CEC-500-2006-118.

Table E-3: Default CO_2 Sequestration Accumulation

Land Use	Sub-Category	Default annual CO_2 accumulation per acre[1] (tonnes CO_2/year)
Forest Land	Scrub	14.3
	Trees	
Cropland		111
Grassland	--	6.2
Wetlands	--	4.31

Note: Based on Tables 4.3, 4.7 and 6.4 from IPCC. 2006. Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines). Available online at http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm

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APPENDIX D –BIOLOGICAL RESOURCES REPORT

Salinas Annexation Project
Salinas, California

Existing Biological Resources Report

Congdon's Tarplant (*Centromadia parryi ssp. congdonii*)

Revised, January 31, 2005

Biotic Resources Group

Biotic Assessments ◆ Resource Management ◆ Permitting

Biotic Resources Group

Biotic Assessments • Resource Management • Permitting

Salinas Annexation Project
Salinas, California

Existing Biological Resources Report

Report Prepared for:

Cotton/Bridges/Associates
A Division of P&D Consultants
Attn: John Bridges, Senior Vice President

Report Prepared by:

Kathleen Lyons, Plant Ecologist
Biotic Resources Group

With

Bryan Mori, Wildlife Biologist
Bryan Mori Biological Consulting Services

Revised, January 31, 2005

2551 South Rodeo Gulch Road, #12 ◆ Soquel, California 95073 ◆ (831) 476-4803 ◆ Fax (831) 476-8038

1.0 INTRODUCTION

The Salinas Annexation Project Area (Project) area is located east of the City of Salinas in Monterey County, California. The Project area is located north of Williams Road, between Boronda Road, Old Stage Road and San Juan Grade Road (Figure 1). The Project area encompasses approximately 2,400 acres, the majority of which is currently in row crop agriculture. Some areas support greenhouses and one area, along Old Stage Road, is undeveloped grassland that is grazed by cattle and horses. The Project area is under consideration for annexation by the City of Salinas and subsequent residential and commercial development. Three specific plans, addressing the west, central and east areas, are currently being developed for the 2,400-acre Project area.

An assessment of the biological resources within the Project area was conducted between March and November 2004 by Kathleen Lyons (plant ecologist) and Bryan Mori (wildlife biologist). The focus of the assessment was to identify the existing biological resources, including sensitive species and/or habitat, within the Project area. This information will be used at a future date to evaluate the proposed Project as per CEQA requirements.

Specific tasks conducted for the Existing Biological Resources Report include:

- Characterizing the major plant communities within Project area;
- Identifying potential sensitive biotic resources, including plant and wildlife species of concern, within the proposed Project area pursuant to existing City of Salinas General Plan policies and other applicable policies/regulations of State and Federal agencies.

2.0 METHODOLOGY

The biotic resources of the 2,400-acre Project area were assessed through field observations between March and November 2004. The assessment covered all areas within the 2,400-acre Project area, except for parcels where access was not obtained; these include the Christiansen, Gabilan Knights, Calleros and Carlos parcels. To assess the potential occurrence of special status biotic resources, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2004) and California Department of Fish and Game's (CDFG) Rarefind 3 database (CDFG, 2004a) for the U.S.G.S. Natividad quadrangle and adjacent quadrangles: Salinas, Hollister, Prunedale, Marina, Seaside, Spreckels, Chualar, San Juan Bautista and Salinas. Previous biological reports for portions of the proposed annexation area were also reviewed. This report summarizes the findings of the biotic assessment and special status plant and animal surveys.

2.1 Botanical Resource Assessment

The major plant communities within the Project area, based on the classification system maintained by California Department of Fish and Game (CDFG, 2003a) (and amended to reflect site conditions) were identified during field visits and a review of aerial photographs. The distribution of the major plant community types within the Project area, depicted onto a topographic base map, is presented in Figures 2 and 3. Figure 2 depicts the location of special status plant species. Kathleen Lyons, plant ecologist with Biotic Resources Group, and a field assistant conducted floristic surveys of the Project area over seven days in 2004: 26 and 31 March, 14 and 30 April, 17

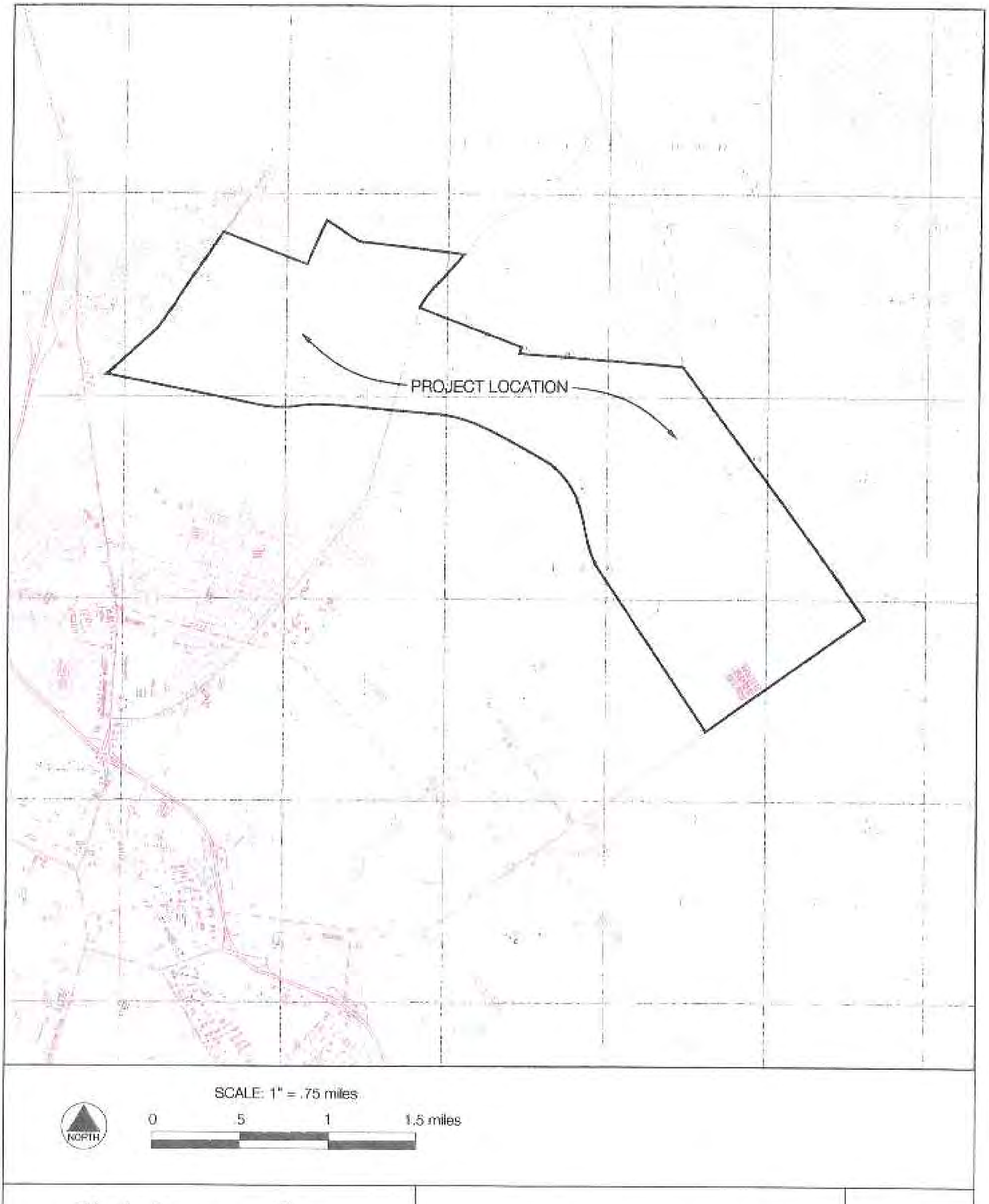
May, 17 June, and 26 July, which covers the blooming period of the special status plant species with potential to occur in the area. The field surveys consisted of walking the non-row crop portions of the Project area, recording plant species and identifying plant community types. Plant species observed during the survey are listed in Appendix A. Plant nomenclature is according to *Jepson Manual* (Hickman, 1993) and *An Illustrated Field Key to the Flowering Plants of Monterey County* (Matthews, 1997).

2.2 Wildlife Resource Assessment

The wildlife habitat assessment was performed for nearly all areas of the 2,400-acre study site, except for parcels where access was not obtained (i.e., Christiansen, Gabilan Knights, Calleros and Carlos parcels). Where possible, habitat conditions on these parcels were assessed through observations made from adjacent areas. The wildlife assessment included protocol-level surveys for California tiger salamander (*Ambystoma californiense*) and burrowing owl (*Athene cunicularia*) (see below), based on habitat conditions observed during a preliminary site visit of the study area, and prior knowledge of the project region (Bryan Mori Biological Consulting Services and Biotic Resources Group, 2003). In the course of conducting the focused surveys, a habitat assessment for other special-status species also was performed. Habitats and all wildlife species observed were recorded in a field notebook. A list of wildlife species observed is presented in Appendix B. In addition to the field studies, a review of relevant literature and CNDDB records for the Natividad, Prunedale and Salinas Quads (CDFG 2004a) was performed, along with consultations with other biologists, to obtain information on wildlife occurrences in the project area. Wildlife resources are depicted on Figures 4 and 5.

2.2.1 California Tiger Salamander (CTS) Assessment and Survey. The CTS assessment was performed, following the protocol - *Interim Guidance on Site Assessment for Determining the Presence or a Negative Finding of the California Tiger Salamander, October 2003* (USFWS and CDFG, 2003). The protocol includes a habitat assessment, spring surveys for two consecutive years, and an intervening winter drift fence study *if* the initial spring surveys result in negative findings. For the purposes of this study, surveys for CTS were limited to spring larval sampling in 2004, due to the uncertainty of the federal listing status of CTS during the course of this study.

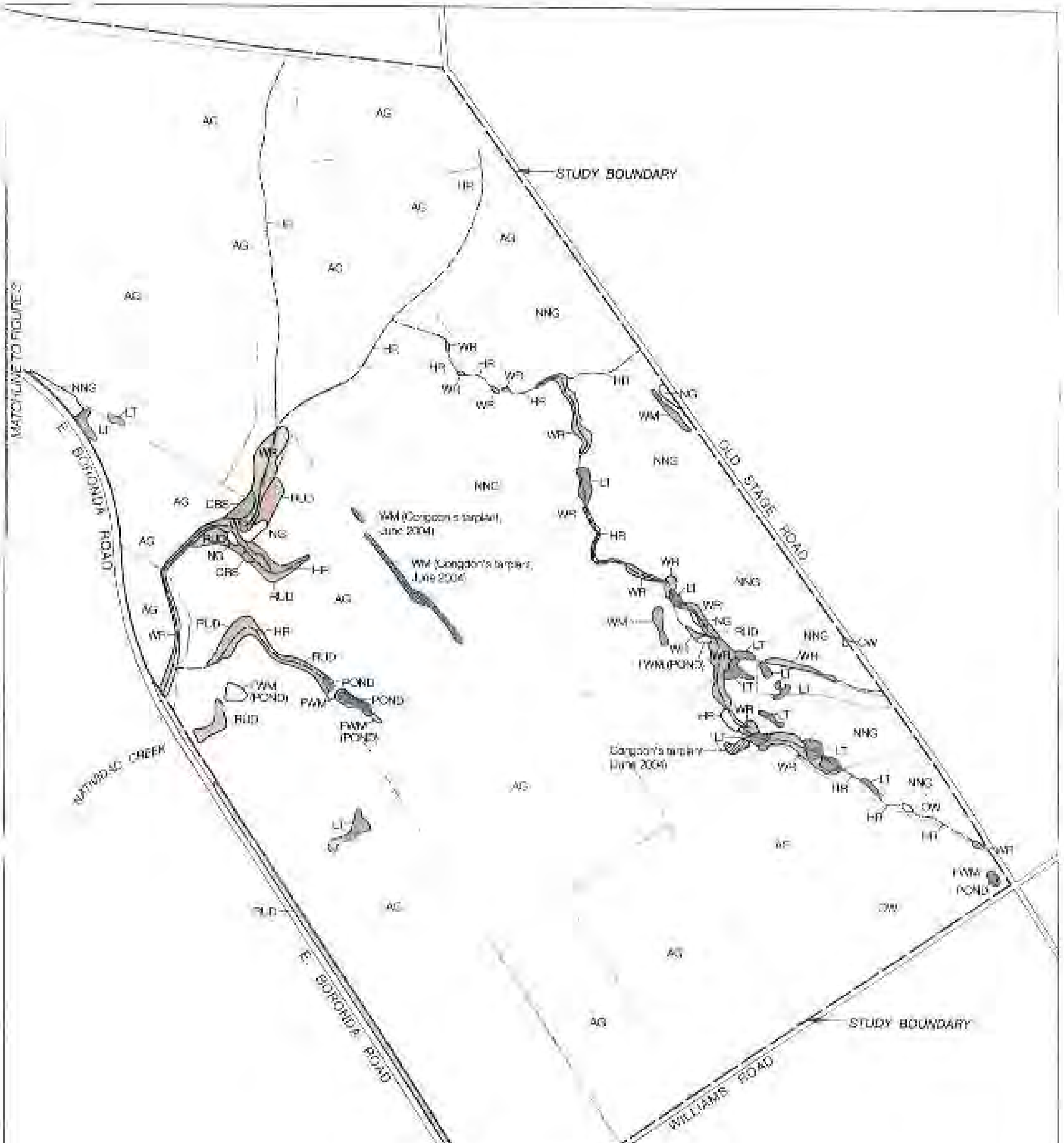
2.2.1.1 Habitat Assessment. The existing habitat conditions of the Project area and within 1.24 miles of the site were initially evaluated during a preliminary reconnaissance of the 2,400-acre Project area on 10 February 2004. The 2,400–acre area was cursorily evaluated by driving the perimeter of the site, as well as through interpretation of the USGS Natividad quadrangle and a 1"= 500' scale aerial map. Additional information also was derived from observations during focused surveys performed in 2002-03 for Creekbridge Homes on a 600-acre site located within the current study area (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). The CNDDB was accessed for information on CTS locations within 3.1 miles of the project site. Other sources for CTS records included relevant biological assessments and consultation with other biologists. A preliminary habitat assessment incorporating the above information was provided to the USFWS and CDFG as part of a notification letter-report to conduct spring aquatic sampling on the project site for this study, per protocol requirements (Bryan Mori Biological Consulting Services, letter dated 30 March 2004).



Biotic Resources Group
2551 S. Rodeo Gulch # 12 • Soquel, California 95073
(831) 476-4803 • Fax (831) 476-8038

Salinas Annexation Project EIR
Location Map

Figure 1
1/05
315-02



PLANT COMMUNITY TYPES

AG	Agricultural Fields	FWM	Freshwater Marsh
NNG	Non-native Grassland	HR	Herbaceous Riparian
NG	Native Grassland	OW	Oak Woodland
CBS	Coyote Brush Scrub	LT	Landscape Trees (eucalyptus and others)
WR	Willow Riparian Woodland	WM	Wet Meadow
RUD	Ruderal Grassland		Pond with Open Water

Parcel Lines within Study Area

Drainage Centerline

SPECIAL STATUS PLANT SPECIES

Congdon's tarplant, observed June 2004

SCALE: 1" = 1,000'

0 1,000' 2,000

Biotic Resources Group
2551 S. Rodeo Gulch # 12 • Soquel, California 95073
(831) 476-4803 • Fax (831) 476-8038

Salinas Annexation Project EIR
Existing Plant Community Types and
Special Status Plant Species

Figure 2
1/05
315-02

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2551 S. Rodeo Gulch # 12 • Soquel, California 95073
(831) 476-4803 • Fax (831) 476-8038

Salinas Annexation Project EIR
Existing Plant Community Types and
Special Status Plant Species

Figure 3
1/05
315-02

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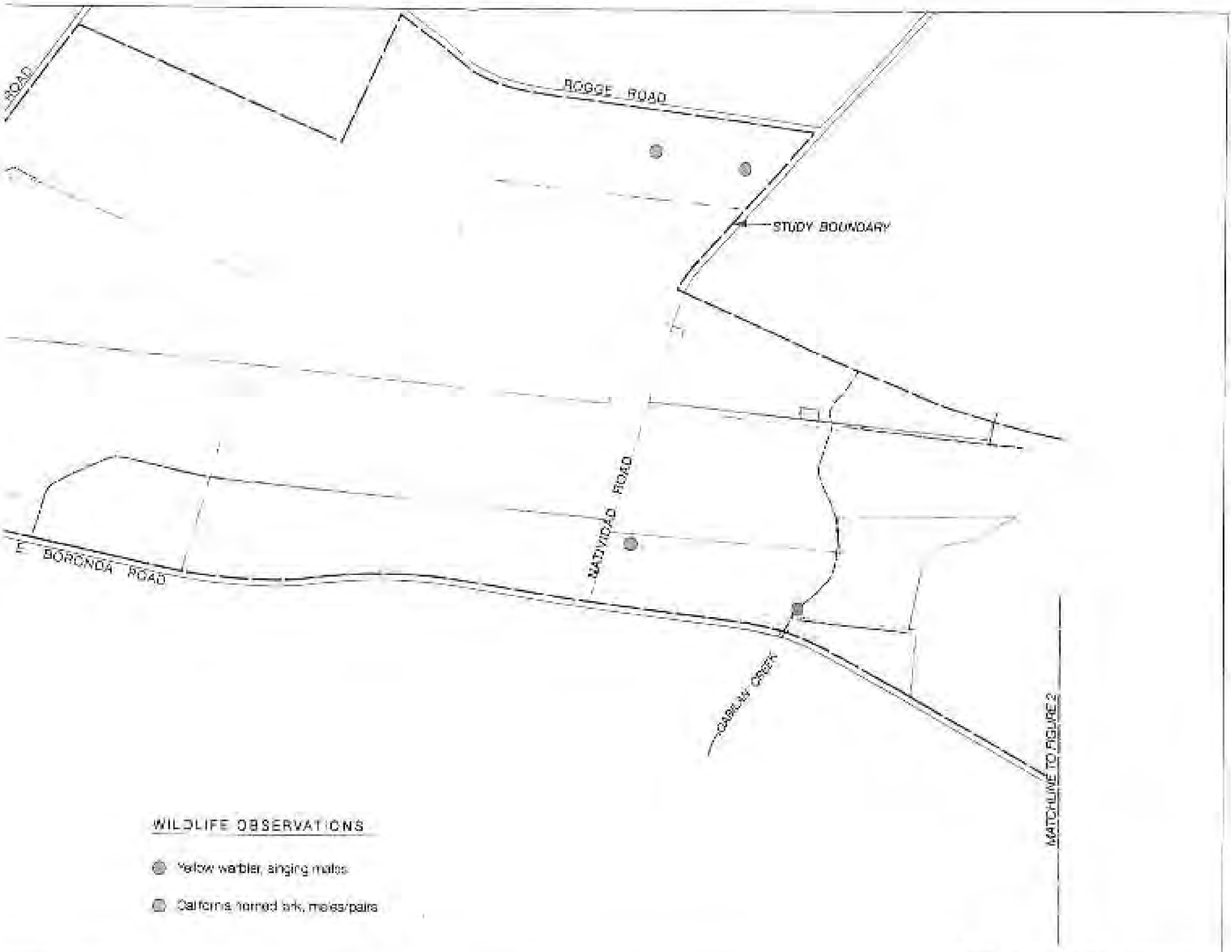
Salinas Annexation Project EIR
Special-Status Wildlife Observations and Areas of
Ground Squirrel Burrow Concentrations

Figure 4
LOS
3-16-02



Source: Bryan Mori Biological Consulting Services

Salinas Annexation Project EIR
Special-Status Wildlife Observations and Areas of
Ground Squirrel Burrow Concentrations

Figure 5
1/05
31c-02

2.2.1.2 Spring Aquatic Surveys. Initially, CTS aquatic surveys were performed on a limited portion of the study site in spring of 2002 and 2003, as part of a separate biological constraints analysis performed on the 600-acre Creekbridge Homes site, referenced above. The 2002-03 CTS study was conducted following the protocol in affect at that time - *Inland Fisheries Informational Leaflet No. 44, Survey Protocol for California Tiger Salamander (Ambystoma californiense)* (CDFG 1997). Two agricultural ponds and portions of Natividad Creek and an unnamed drainage were sampled, using a combination of dipnets, seine and minnow traps, but no larvae were observed over the two spring seasons. However, an adult, road-kill tiger salamander was observed adjacent to the site on Old Stage Road during the intervening winter upland survey (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). The aquatic sites sampled in 2002-03 were not sampled during the course of this study, due to the negative results obtained and because the two ponds were removed by the property owner shortly after the 2002 spring sampling.

For this study, two agricultural ponds (Ponds 1 and 2) and portions of an unnamed tributary drainage to Natividad Creek were surveyed for CTS larvae (Figure 4). Under the current protocol, three spring larval surveys are required at each aquatic site, with one survey performed each month from March through May, however, surveys should cease when the presence of larvae is confirmed. Ponds 1 and 2 were sampled on 7 April and 19 May 2004, while the drainage was sampled on 8 and 26 April, and 12 May 2004. A March survey of the aquatic sites was not performed due to the late start of the study. Consequently, two surveys were scheduled in April to increase sampling effort. Ponds 1 and 2 were sampled twice due to the early confirmation of tiger salamander larvae; the presence of tiger salamander larvae was established at these ponds on 7 April, and an additional survey was performed on 19 May in association with Ben Fitzpatrick (UC Davis) to collect tissue samples for DNA analysis, in order to determine the taxonomic status of the tiger salamanders present. A combination of dipnets and seines were used for sampling at all aquatic sites. At each sampling site, the habitat was photographed, and general habitat characteristics observed and species collected were recorded in a field notebook. The details of the CTS surveys are presented as a separate document that was submitted to the USFWS, per protocol (Bryan Mori Biological Consulting Services 2005).

2.2.2 Burrowing Owl Assessment. The burrowing owl assessment was performed following the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (California Burrowing Owl Consortium 1993). The assessment involved reconnaissance surveys to identify potential habitat and focused nesting season surveys of potential habitat. The habitat assessment was conducted over six days from 7 April to 12 May 2004. The entire site was driven and/or traversed on foot to locate areas of ground squirrel burrow concentrations and optimal foraging habitat; burrow concentration areas are depicted on Figure 4. Surveys for nesting burrowing owls were focused on areas supporting burrow concentrations, which were mostly located in remnant grassland patches on the Andrus and First Baptist Church parcels (Figure 4). The nesting surveys were conducted on 22, 26, 28, and 29 April and 19, 20, 24 and 27 May 2004 from approximately 45 minutes before sunrise until two hours after sunrise. All bird species observed during the surveys were recorded in a field notebook.

3.0 EXISTING BIOTIC RESOURCES

The study site encompasses 2,400 acres and is located immediately adjacent to the northeastern limits of the City of Salinas, California (Figure 1). The project site is dominated by row-crop agriculture, but other habitats are present within the agricultural matrix and include remnant patches of annual grassland and oak woodlands, ruderal (weedy) fields, eucalyptus groves, riparian vegetation along Gabilan Creek, Natividad Creek and unnamed tributaries, and aquatic habitat in irrigation ponds. In addition to agriculture, other land uses within the project site include cattle grazing, horse pastures, rural residential development, a school and a church.

Eleven plant community types were documented within the 2,400-acre Project area. The distribution of vegetation by general habitat type is depicted on Figures 2 and 3, Existing Plant Community Types. These vegetation types can be further distinguished into plant associations. The plant associations, as recognized by CDFG, that most closely resemble site conditions within the Project Area are listed below in Table 1, Vegetation Types within Salinas Annexation Project Area.

Table 1. Vegetation Types within Salinas Annexation Project Area

CNDDB Code	General Plant Community Type (As mapped on Figure 2)	Plant Association
Developed/Cultivated Areas		
-	Agricultural Fields	None
Grassland		
41.150.00*	Native Grassland*	Purple Needlegrass *(Nassella pulchra)*
42.026.00	Non-native Grassland	Ripgut Brome – Soft Chess *(Bromus diandrus – Bromus hordeaceus)*
45.300.00	Wet Meadow	Meadow Barley – Rabbitsfoot Grass – Spikerush *(Hordeum branchyantherum- Polypogon monspeliensis – Eleocharis macrostacyha)*
-	Ruderal	Poison Hemlock – Wild Radish *(Conium maculatum – Raphanus sativa)*
Scrub		
32.060.09	Coyote Brush Scrub	Coyote Brush/Annual Grasses *(Baccharis pilularis – Bromus* spp.)
Riparian and Ponds		
61.201.00*	Willow Riparian*	Arroyo Willow – Shining Willow *(Salix lasiolepis – Salix lucida)*
61.000.00	Herbaceous Riparian	Watercress- curly dock -nutgrass *(Rorrippa nasturtium-aquaticum - Rumex crispus- Cyperus eragrostis)*,
52.101.00*	Freshwater Marsh*	California Bulrush - Water Smartweed *(Scirpus californicus - Polygonum persicaria)*
Woodland		
71.060.09	Oak Woodland	Coast Live Oak/Grass *(Quercus agrifolia/ Bromus spp.)*
-	Landscape Tree Groves	Eucalyptus – Monterey Pine *(Eucalyptus* sp. – *Pinus radiata)*

* Plant associations considered rare and worthy of consideration by CNDDB, May 2002

The study area is expected to support a wide variety of wildlife, including various special-status species, due to the combination of the following factors: 1) the large size of the study area (2,400 acres); 2) the presence of remnant patches of habitat with high wildlife value on the study site; 3) the general lack of permanent development; and 4) the continuity/close proximity of the study site to relatively undeveloped landscapes east of Old Stage Road. The following text provides a general discussion of the principal habitats in the study area, their botanical resources and their value to native wildlife.

3.1 Agricultural Fields

The majority of the 2,400-acre Project area is in intensive row-crop production. During the course of the study, agricultural activities were occurring, with periodic changes in crops and tilled land area. Figures 2 and 3 depict the areas in active agriculture (i.e., row-crops, tilled fields or greenhouses) as of July 2004. Typical crops include strawberries and lettuce.

3.1.1 Wildlife Resources of Agricultural Fields

Wildlife use of agricultural fields is largely limited to opportunistic foraging by blackbirds, ground squirrels and hares, due to frequent disturbances from farming activities. However, the habitat values will vary depending on the frequency of disturbances and crop type. For example, fallow fields may temporarily support a level of use similar to that of grasslands, when allowed to produce ruderal vegetation, and perennial crops, such as strawberry fields, may even support nesting by killdeer (*Charadrius vociferus*) and horned larks, which prefer the bare areas between the rows.

3.2 Grasslands

Four grassland types were observed within the 2,400-acre Project area: native grassland, non-native grassland, wet meadow and ruderal grassland. As depicted on Figure 2, non-native grassland, a grassland type dominated by annual, non-native plant species, is the dominant grassland type, with the largest area occurring southwest of a portion of Old Stage Road. Patches of native grassland, a grassland type dominated by native plant species, was found in scattered locations in this area, as depicted on Figure 2. The Project area also supports depressions that are considered wet meadow. Ruderal (weedy) grassland areas were found in previously disturbed areas, primarily alongside the various drainage channels within the Project area.

3.2.1 Non-native Grassland. This grassland type is characterized by the dominance of annual, non-native grasses. Within the Project area, this grassland type is most prevalent southwest of Old Stage Road on the Wayland and Andruss properties (Figure 2). The grassland is dominated by ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), rattail fescue (*Vulpia myuros*), and foxtail barley (*Hordeum leporinum*). Other grasses include Italian ryegrass (*Lolium multiflorum*), wild oat (*Avena* sp.), and quaking grass (*Briza minor*). Non-native forbs are prevalent in the grassland, including windmill pink (*Silene gallica*), bindweed (*Convolvulus arvensis*), bur clover (*Medicago polymorpha*), white-stemmed filaree (*Erodium moshatum*), sheep sorrel (*Rumex acetosella*), rough cat's ear (*Hypochoeris radicata*), hop clover (*Trifolium campestre*), rose clover (*Trifolium hirtum*), red-stemmed filaree (*Erodium cicutarium*), long-beaked filaree (*Erodium botrys*), shepard's purse (*Capsella bursa-pastoris*), scarlet pimpernel (*Anagallis arvensis*), bristly ox-tongue (*Picris echioides*), and smooth cat's ear (*Hypochoeris glabra*). Native forbs observed within the grassland include California poppy (*Eshscholzia californica*), red maids (*Calandrinia ciliata*), Lindley's annual lupine (*Lupinus bicolor*), pink owl's clover (*Castilleja exserta*), green fiddleneck (*Amsinkia vernicosa*), hill morning glory (*Calystegia subcaulis*), coast tarweed

(*Hemizonia corymbosa*), slender tarweed (*Madia gracilis*), western rush (*Juncus occidentalis*), and common fiddleneck (*Amsinkia menziesii var. intermedia*). The character of the annual grassland is depicted on Figure 6.

Figure 6. Annual Grassland within Project Area, April 2004.

Individuals of Congdon's tarplant (*Centromadia parryi ssp. congdonii*), a rare plant species, were observed within the grasslands of the Project area. As depicted on Figure 2, three patches of the tarplant were documented from the project site. One of the patches is located in a previously disturbed upland area. At this location, the tarplant was observed growing amid wild mustard (*Brassica* sp.), and non-native grasses. Approximately 500 individuals of Congdon's tarplant were observed in this area (see Section 4.2 for more information on this species).

3.2.2 Native Grassland. This plant community type is characterized by the dominance by native grasses and forbs. Within the project area, areas of this vegetation type are limited to two small remnant patches on sloping, non-agricultural lands. One patch is located adjacent to Old Stage Road; the second patch is on a hillside south of Natividad Creek (Figure 2). The native grassland areas are noticeable by the growth purple needlegrass (*Nassella pulchra*), blue wild rye (*Elymus glaucus*), narrow-leaved mule ears (*Wyethia angustifolia*), golden brodiaea (*Triteleia ixioides*), annual lupine (*Lupinus nanus*), blue-eyed grass (*Sisyrinchium bellum*), soap plant (*Chlorogalum pomeridianum*), California brome (*Bromus carinatus*), and sun cups (*Camissonia ovata*). The grassland near Natividad Creek also supports a dense patch of California oatgrass (*Danthonia californica*). The character of the two native grassland areas is depicted in Figures 7 and 8.

Figure 7. View of native grassland west of Old Stage Road, April 2004, showing growth of purple needlegrass.

Figure 8. Native grassland area on slope south of Natividad Creek, April 2004, with mule's ears, California oatgrass, purple needlegrass and blue wild rye.

3.2.3 Wet Meadow. The Project area supports scattered wet meadow areas. The wet meadows inhabit depressions and small swales within the grassland where winter rainfall and surface runoff collects. The wet meadow areas were observed to support plants tolerant of seasonally high soil moisture, including rabbitsfoot grass, meadow barley *(Hordeum branchyantherum)*, heliotrope *(Heliotropium curassavicum)*, curly dock, Italian ryegrass, bitter dock *(Rumex obtusifolius)* and western rush. Spikerush *(Eleocharis macrostatya)* was observed in a wetland swale west of Old Stage Road. The character of wet meadow grassland is depicted in Figure 9.

Individuals of Congdon's tarplant, a rare plant species, were observed within slight depressions within the grasslands of the Project area. As depicted on Figure 2, three patches of the tarplant were documented from the Project area. Two of the patches were observed in slight depressions in otherwise non-native grassland. The depression topography, coupled by observations of previously saturated soils, suggest these areas meet the definition of wet meadow areas. In addition to individuals of Congdon's tarplant, the areas were dominated by Italian ryegrass, curly dock, and western rush. Other plant species include foxtail barley and quaking grass. Approximately 1,500 individuals of Congdon's tarplant were observed in these two areas. (See Section 4.2 for more information on this species).

Figure 9. View of wet meadow grassland within swale west of Old Stage Road, April 2004.

3.2.4 Ruderal Grassland. The Project area supports many areas that are periodically disturbed by adjacent agricultural activities, such as clearing, mowing or placement of farm equipment. Herbaceous and semi-woody plants typical of disturbed conditions dominate these areas, such as strips of land between agricultural roads and riparian woodland along Gabilan and Natividad Creeks. These "ruderal" areas are comprised of non-native plant species such as poison hemlock (*Conium maculatum*), sow thistle (*Sonchus asper*), fennel (*Foeniculum vulgare*), wild radish (*Raphanus sativa*), wild mustard (*Brassica* sp.), bull mallow (*Malva neglecta*), knotweed (*Polygonum aviculare*), English plantain (*Plantago lanceolata*), Italian thistle (*Carduus pycnocephala*), peppergrass (*Lepidium densiflorum*), yellow sweet clover (*Melilotus indica*), and bur clover (*Medicago polymorpha*). The character of ruderal grassland is depicted in Figure 10.

3.2.5 Wildlife Resources of Grasslands. Noteworthy patches of grassland habitat are largely confined to the Andrus and Wayland parcels along the eastern edge of the study area. In general, since the 1800s, grasslands in North America have been profoundly altered due to agricultural activities and urban development, with the conversion of grasslands for urban and agricultural uses proportionately exceeding that of any other habitat type (Vickery *et al* 1999; CDFG 2003). As a result, many grassland ecosystems are now considered at risk; for example, only 10% of the Central Valley's grasslands remain from the pre-European settlement period (CDFG 2003). Because of the alarming rate of conversion, many grassland–dependent wildlife species have experienced population declines (CDFG 2003). In fact, grasslands birds have declined more steeply than any other wildlife habitat guild (Vickery *et al* 1999; CDFG 2003).

Grasslands are used by a wide variety of wildlife species; the grasses and herbs provide habitat for rodents, rabbits and hares, and ground foraging and nesting birds. In turn, these species form the prey base for large predators. However, the grassland habitat values in the study area are likely moderated due to the fragmented nature of the remaining habitat patches and management activities, such as disking. Representative species include ornate shrew (*Sorex ornatus*), pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalottis*), California meadow vole (*Peromyscus maniculatus*), California ground squirrel (*Spermophilus beechyii*), black-tailed hare (*Lepus californicus*), American badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), red fox (*Vulpes fulva*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), horned lark (*Eremophila actia alpestris*), western meadowlark (*Sturnella neglecta*), savanna sparrow (*Passerculus sandwichensis*), grasshopper sparrow (*Ammodramus savannarum*) and gopher snake (*Pituophis catenifer*).

Figure 10. View of ruderal grassland plant community between agricultural road and Gabilan Creek, April 2004. This area is dominated by wild radish and poison hemlock.

3.3 Coyote Brush Scrub

The Project area supports two patches of coyote brush scrub. This scrub type occurs on slopes north and south of Natividad Creek, as depicted on Figure 2. The dominant shrub species is coyote brush (*Baccharis pilularis*). Herbaceous plant species are common between the shrubs, many of which are similar to that observed in the adjacent non-native and ruderal grasslands. Common herbaceous species in the scrub include mugwort (*Artemisia douglasiana*), ripgut brome, poison hemlock, wild mustard, poison oak (*Toxicodendron diversilobum*), and bristly ox-tongue.

3.3.1 Wildlife Resources of Coyote Brush Scrub. Due to the limited distribution of coyote brush scrub in the Project area, this plant community functions to enhance wildlife use of the larger grassland matrix by providing supplemental cover, nest and perch sites for grassland species, rather than support species typically associated with dense, broad stands of scrub. Many of the wildlife species discussed in the Grassland section, above, especially birds, are expected to utilize this resource.

3.4 Riparian Areas and Irrigation Ponds

The Project area supports reaches of Gabilan and Natividad Creeks, two perennial waterways. In addition, the project area contains several unnamed perennial and intermittent tributaries to these two creeks. The main stem and one tributary of Natividad Creek support riparian woodland. The other tributaries support herbaceous riparian vegetation, as depicted on Figure 2. Figure 3 depicts the distribution of riparian woodland along the mainstem of Gabilan Creek, which supports a willow-dominated riparian woodland. The Project area also supports several agricultural ponds. Most are off-channel irrigation ponds, however there are three in-channel ponds along the two tributaries to Natividad Creek.

3.4.1 Riparian Woodland. The mainstem of Natividad and Gabilan Creeks, as well as the easternmost tributary to Natividad Creek, are dominated by willow riparian vegetation. Typical vegetation includes arroyo willow (*Salix lasiolepis.*), shining willow (*Salix lucida)*, and blue elderberry (*Sambucus mexicana)*. There are scattered occurrences of western sycamore (*Platanus racemosa)* and coast live oak (*Quercus agrifolia)* along these drainages as well. The understory vegetation is dense with California blackberry (*Rubus ursinus)*, poison oak, and stinging nettle (*Urtica dioica)*. Adjacent to the low-flow channel of the creek are areas dominated by freshwater marsh vegetation, as discussed in Section 3.4.3.

3.4.2 Herbaceous Riparian. The Project area supports several drainage channels, many of which traverse through agricultural fields. As depicted in Figure 11, these drainages have been modified by agricultural activities (i.e., periodic clearing and/or herbicide application). Some of the drainage channels, as depicted in Figure 12 support vegetation, however, it is limited to herbaceous species within the bottom and lower edges of the channel. Tributaries to Natividad Creek were observed to support patches of willow (*Salix* sp.), however, most channels were limited to herbaceous species of watercress (*Rorrippa nasturtium-aquaticum)*, nutgrass (*Cyperus eragrostis)*, curly dock (*Rumex crispus)*, spikerush (*Eleocharis* sp.), cocklebur (*Xanthium strumarium)*, Italian ryegrass (*Lolium multiflorum)*, Bermuda grass (*Cynodon dactylon)*, rabbitsfoot grass (*Polypogon monspeliensis)* and scattered patches of California bulrush (*Scirpus californicus)* and cattail (*Typha sp.)*.

Figure 11. View of westernmost tributary to Natividad Creek, showing minimal vegetation, April 2004.

Figure 12. View of herbaceous riparian along easternmost tributary to Natividad Creek, June 2004.

3.4.2 Freshwater Marsh. Areas of freshwater marsh occur within both Gabilan and Natividad Creeks. Plant species typical of wet conditions were observed growing on sediment deposits within the creeks. Typical plant species include water smartweed (*Polygonum persicaria)*, rabbitsfoot grass, willow herb (*Epilobium ciliatum)*, watercress, curly dock, small-flowered buttercup (*Ranunculus parviflorus)*, willow dock (*Rumex salicifolius)*, swamp knotweed (*Polygonum amphibium var. emersum)*, water parsley (*Oenanthe sarmentosa)*, red-rooted cyperus (*Cyperus erthrorhizos)*, nutgrass, and small patches of cattail. The in-stream habitat type is depicted in Figure 13. Freshwater marsh vegetation also occurs along the margins of some irrigation ponds within the Project area. California bulrush was observed along the edge of several ponds. Associated species included lady's thumb (*Polygonum persicaria)*, lamb's quarter (*Chenopodium album)*, great water speedwell (*Veronica anagallis-aquatica)*, nutgrass, curly dock, willow herb, and peppergrass.

Figure 13. View of freshwater marsh within the Gabilan Creek, April 2004.

3.4.3 Wildlife Resources of Riparian Habitat. In general, wildlife values of riparian habitats are considered among the highest of all plant communities in the west, supporting a greater abundance and diversity of wildlife than any other plant community (Thomas *et al* 1979). In California, over 225 species of amphibians, reptiles, birds and mammals occur in riparian habitats (California Partners in Flight 2000). For birds, riparian habitats may also be the most important type in California, especially for nesting Neotropical migrants and as stopover sites for migrants to replenish fat reserves (Moore and Simons 1989; California Partners in Flight 2000). Healthy riparian systems provide surface water and a variety of niches for wildlife, due to the abundance of vegetation and complex habitat structure. Additionally, deciduous riparian woodlands harbor an abundance of insect prey for avian consumption, since the leaves lack compounds to protect against herbivorous insects (Kreuper 1992). The importance of riparian habitat is underscored by its limited statewide distribution, making up less than 0.5% of the total land area (California Partners in Flight 2000). For these reasons, riparian habitats are protected resources of the State.

Riparian habitat values in the study are considered low to moderate due to agriculture-related disturbances. Areas of low habitat value include the upper-half of Natividad Creek and the east tributary to Natividad Creek, where the channels have been modified into v-shaped agricultural drainages ditches and vegetation on the banks is regularly managed. Areas of moderate habitat value are typified by willow woodlands largely confined to the immediate banks along Gabilan Creek, lower Natividad Creek (below the confluence), and an unnamed tributary to Natividad Creek. Along Gabilan Creek, the riparian corridor is continuous, dense and relatively broad with mature willows. Natividad Creek supports riparian habitat only along the lower reach, just below the confluence with an unnamed tributary, where the willow riparian is discontinuous and narrow, except for a small, but broad patch at the confluence. In both cases, row crop agriculture borders the creeks. Willow riparian is also present along an unnamed drainage paralleling Old Stage Road, where it occurs in patchy, discontinuous stands with occasional eucalyptus groves in the overstory. Land uses bordering this drainage include a mix of cattle grazing, rural residential development and row crop agriculture.

Representative species of riparian habitats in the study area include Pacific treefrog (*Hyla regilla*), California red-legged frog (*Rana aurora draytonii*), bullfrog (*Rana catesbeiana*), western toad (*Bufo boreas*), southern Pacific pond turtle (*Actinemys marmorata pallida*), Allen's hummingbird (*Selasphorus sasin*), Pacific-slope flycatcher (*Empidonax difficilis*), Swainson's thrush (*Catharus ustulatus*), Wilson's warbler (*Wilsonia pusilla*), black-headed grosbeak (*Pheucticus melanocephalus*), song sparrow (*Melospiza melodia*) and muskrat (*Procyon lotor*).

3.4.5 Wildlife Resources of Irrigation Ponds. The aerial base map shows eleven agricultural irrigation ponds widely-distributed throughout the study site. However, of these, only two (Ponds 1 and 2) supported aquatic habitat during this study (Figure 4). Of the remaining ponds, two were dry and seven were no longer present (i.e. removed).

Pond 1 is located at the corner of Old Stage Road and Williams Road and is approximately 140' long and 75' wide. The pond is bermed above grade and water levels appear to be maintained through ground water pumping. Pond 2 is located near East Boronda Road, approximately 6,000' northwest of Pond 1. Pond 2 is located within an intermittent drainage and is approximately 375' long and 80' wide at full capacity. The pond is created by an artificial berm and water levels are maintained by agricultural runoff and pumping during the dry season.

Irrigation ponds can be significant sources of surface water for wildlife, supplementing naturally occurring water sources and distributing surface water over a broader area, perhaps even to those areas which would not support standing water otherwise. Irrigation ponds can be focal points of wildlife use as many species require water for drinking, bathing, reproduction and cover. Ponds are especially important for aquatic species that use them for breeding. Typical species inhabiting ponds include bullfrog, Pacific treefrog, western toad, southern Pacific pond turtle , Santa Cruz garter snake (*Thamnophis atratus*), great egret (*Ardea alba*) and mallard (*Anas platyrhynchos*). Habitat values will vary between ponds, depending on their hydrologic regime, extent of vegetation and presence of non-native predatory fishes.

3.5 Woodlands and Tree Groves

3.5.1 Oak Woodland. The Project area supports an oak grove near the intersection of Williams and Old Sage Road. The grove is comprised of large-sized, mature coast live oak trees. The understory is comprised of plant species typical of ruderal (weedy) grassland. Plant species observed within the understory include foxtail barley, ripgut brome, bur clover, common fiddleneck, bull mallow, wild oat, wild mustard, horehound (*Marrubium vulgare)*, wild radish, willow herb, poison hemlock, milk thistle (*Silybum marianum)*, prickly sow thistle, and shepard's purse. The woodland also supports scattered blue elderberry shrubs.

3.5.2 Landscape Tree Groves. There are several groves of planted landscape/residential trees located within the Project area. The majority of the trees are eucalyptus (*Eucalyptus sp.)*, Monterey pine (*Pinus radiata)*, Monterey cypress (*Cupressus macrocarpa)* and walnut (*Juglans hindsii)*.

3.5.3 Wildlife Resources of Oak Woodlands. In general, oak woodlands are considered critical habitats for the conservation of many bird and mammal species (U.S. Forest Service 1999; Block *et al* 1990). Over 300 vertebrate species are known to use oak trees. Noteworthy features of oak habitats include acorns, snags and cavity-bearing trees. As a seasonal food, acorns play an important role in the survival of many species of wildlife in fall, and since a mature oak can produce thousands of acorns during a favorable year (Tietje 1990; Giusti and Tinnin 1993). Mature oak trees frequently bear snag limbs and natural cavities as a result of limb scars. Snags are important resources for such uses as nesting, roosting, foraging, caching and wintering (Davis 1983), but especially critical to primary cavity-nesters such as woodpeckers, which prefer dead trees and limbs for excavation of roost and nest sites (Thomas *et al* 1979). Snags and branches bearing natural cavities also are critical for secondary cavity-nesting birds (e.g., chickadees, titmice, nuthatches, etc.), and as den or roost sites for small mammals. Due to the inherent high wildlife value of oaks, oak habitats are protected resources of the State.

Oak woodland habitat is largely limited to an approximately 11-acre patch located near the junction of Old Stage Road and Williams Road. This stand mostly consists of large, mature live oaks, with multiple cavities and snag limbs. However, the habitat values of the oak woodland are diminished due to the fragmented and isolated nature of the stand, understory management (i.e., disking), and ground squirrel control (e.g., bait stations).

Representative cavity-nesting wildlife of the oak woodland on the site include Nuttall's woodpecker (*Picoides nuttallii*), ash-throated flycatcher (*Myiarchus cinerascens*), oak titmouse (*Baeopholus inornatus*), chestnut-backed chickadee (*Poecile rufescens*), violet-green swallow (*Tachycineta thalassina*) house wren (*Troglodytes aedon*) and western bluebird (*Sialia mexicana*). Acorns likely constitute a significant portion of the diet of California quail (*Callipepla californica*), western scrub-jay (*Aphelocoma californica*) and black-tailed deer (*Odocoileus hemionus columbarius*). Additionally, snags and cavity-bearing oaks may provide cover, roost and/or nest sites for species such as raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), dusky-footed woodrat (*Neotoma fuscipes*) and pallid bat (*Antrozous pallidus*).

3.5.4 Wildlife Resources Of Landscape Tree Groves. Where eucalyptus trees are present, they supplement existing habitats with roosting and nesting sites for a variety of birds. This resource is especially noteworthy in areas lacking trees, such as within the study area. Eucalyptus groves are scattered within the unnamed drainage paralleling Old Stage Road and occur elsewhere in the vicinity of ranch dwellings. Due to their tall heights and dense crown cover, eucalyptus trees offer excellent nesting, roosting and perching sites for raptors such as turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*). A variety of woodland songbirds, including pacific-slope flycatcher (*Empidonax difficilis*), Cassin's kingbird (*Tyrannus vociferans*), western kingbird (*T. verticalis*), chestnut-backed chickadee (*Poecile rufescens*), Bullock's oriole (*Icterus bullockii*), Brewer's blackbird (*Euphagus cyanocephalus*), purple finch (*Carpodacus purpureus*), house finch (*C. mexicana*) and Lawrence's goldfinch(*Carduelis lawrencei*) nest in eucalyptus groves. Flowering trees also provide important nectar sources for Anna's hummingbird (*Calypte anna*) and Allen's hummingbird (*Selasphorus sasin*). Bird species abundance and diversity is probably highest during fall and in winter, when migrants and wintering birds, such as cedar waxwings (*Bombycilla cedrorum*), yellow-rumped warbler (*Dendroica coronata*), Townsend's warbler (*D. townsendii*) and orange-crowned warbler (*Vermivora celata*) supplement the resident population.

4.0 SENSITIVE BIOTIC RESOURCES

4.1 Sensitive Habitats

Sensitive habitats are defined by local, state, or federal agencies as those habitats that support special status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. Within the Project area, the riparian, wet meadow, freshwater marsh and native grassland habitats are considered rare by CNDDB (CNDDB, May 2002). Although a formal delineation of wetlands was not conducted as part of this study, the herbaceous riparian, freshwater marsh and wet meadow areas may meet the definition of wetlands under U.S. Army Corps of Engineers criteria. This is due to the observed dominance of wetland plant species and the corresponding topography that suggests sufficient seasonal ponding and/or surface soil saturation during the growing season to provide hydric conditions.

4.2 Special-Status Plant Species

Plant species of concern include those listed by either the federal or state resource agencies as well as those identified as rare by CNPS. A list of such plant species with the potential to occur in the Project area is presented on Table 2, List of Special-Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area. Of the 26 plant species evaluated for presence within the Project area, only one species, Congdon's tarplant, was observed. The Project area does, however, provide suitable habitat for three other species, yet none of these species were observed during surveys in spring or summer 2004, as listed on Table 2.

4.2.1 Congdon's Tarplant (*Centromadia parryi ssp. congdonii*). This species is recognized as rare by the California Native Plant Society (List 1B). The species is also considered rare by the California Department of Fish and Game (CDFG), however the species is not currently listed as endangered or threatened under the California Endangered Species Act. The species is considered a Species of Concern by the U.S. Fish and Wildlife Service, however it is not currently listed as endangered or threatened under the Endangered Species Act.

This species is known from the greater Monterey Bay region, with several occurrences recorded from the Salinas area. The occurrence of this species in the Project area has been previously recorded in the CNDDB as occurrence #7. In 1998, the species was reported to inhabit 586 acres of annual grassland east of Old Stage Road, supporting approximately 214,000 plants (CNDDB, 2004). Occurrences in the close vicinity of the Project area include a colony west of the Project area along Natividad Creek (occurrence #58, 88 plants in 2002), occurrence #36, located along Old Stage Road north of Natividad Road, and occurrence #37 along Old Stage Road, southeast of Zabala Road. Congdon's tarplant grows in annual grasslands, typically in areas with high seasonal moisture. The blooming period is typically from June to October.

In 2004, the Salinas Annexation Project area supported approximately 2.1 acres of occupied Congdon's tarplant in three patches; this distribution is depicted on Figure 2. This area of occupied habitat was based on the presence of aboveground plants. Approximately 2,000 individuals were observed in these three patches, based on field observations in June 2004. In 1998, the species was reported from 586 acres, supporting approximately 214,000 plants (CNDDB, 2004). As Congdon's tarplant is an annual species its population can vary from year to year, depending upon weather conditions (e.g., rainfall, temperature) as well as human and natural disturbances within the species habitat. In 2004, the population supported significantly fewer plants than observed in 1998. Seeds are expected to persist in the soil seedbank and may germinate under more favorable conditions. The species and its habitat, as observed in 2004, is depicted in Figure 14. The distribution of the species, based upon the observation of aboveground plants, is depicted on Figure 2.

Table 2. List of Special Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area

Species	CNPS	State Status	Federal Status	Habitat Type	Occurrence in Vicinity by CNDDB? Likely Occurrence on Site?
Hickman's Onion (*Allium hickmanii*)	List 1B	None	None	Closed cone coniferous forests, chaparral, coastal bluff scrub	Recorded from south of Marina (Ft. Ord) Project area does not provide suitable habitat, species was not observed in spring 2004.
Monterey manzanita (*Arctostaphylos montereyensis*)	List 1B	None	None	Chaparral, coastal scrub	Recorded from Ft. Ord Project area does not provide suitable habitat, species was not observed in spring 2004.
Hooker's manzanita (*Arctostaphylos hookeri ssp. hookeri*)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub	Recorded from Ft. Ord Project area does not provide suitable habitat, species was not observed in spring 2004.
Dune manzanita (*Arctostaphylos montereyensis*)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal dunes	Recorded from Ft. Ord, near Marina, Toro Regional Park Project area does not provide suitable habitat, species was not observed in spring 2004.
Pajaro manzanita (*Arctostaphylos pajaroensis*)	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal dunes	Recorded from Prunedale Area Project area does not provide suitable habitat, species was not observed in spring 2004.
Alkali milk-vetch (*Astragalus tener var. tener*)	List 1B	None	None	Alkali wetlands	Historic occurrence 1 mile northeast of Salinas; other occurrences from Hollister (San Benito County); herbarium collections from 1889 Suitable habitat potentially present; however species not observed in spring 2004.
San Joaquin saltbush (*Atriplex joaquiniana*)	List 1B	None	None	Coastal scrub; riparian scrub	Recorded from Hollister area Project area does not provide suitable habitat, species was not observed in spring 2004
Congdon's tarplant (*Centromadia parryi ssp. congdonii*)	List 1B	None	None	Seasonal wetlands in annual grasslands	Recorded from Project area, east of Old Stage Road and other areas in greater project vicinity. Observed within Project area in early summer 2004; approximately 2,000 individuals.
Monterey spineflower (*Chorizanthe pungens var. pungens*)	List 1B	None	Threatened	Coastal dunes, chaparral, coastal scrub (in loose sandy soils)	Recorded from Ft. Ord, Marina and Seaside Areas Project area does not provide suitable habitat, species was not observed in spring 2004.
Robust spineflower (*Chorizanthe robusta var. robusta*)	List 1B	None	Endangered	Cismontane woodland, coastal dunes, coastal scrub	Recorded from Salinas Valley, west of Spreckels, Marina and Ft. Ord Project area does not provide suitable habitat, species was not observed in spring 2004

Table 2. List of Special Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area

Species	CNPS	State Status	Federal Status	Habitat Type	Occurrence in Vicinity by CNDDB? Likely Occurrence on Site?
					spring 2004.
Jolon clarkia *(Clarkia jolonensis)*	List 1B	None	None	Cismontane woodland, coastal dunes, coastal scrub	Historic records (1912 and 1928) from Del Monte, Seaside area Project area does not provide suitable habitat, species was not observed in spring 2004.
Seaside bird's beak *(Cordylanthus rigidus littoralis)*	List 1B	Endangered	None	Closed cone coniferous forest, chaparral, cismontane woodland, coastal scrub/dunes	Recorded from sand hills of Seaside at Ft. Ord Project area does not provide suitable habitat, species was not observed in spring 2004.
Hutchinson's larkspur *(Delphinium hutchinsoniae)*	List 1B	None	None	Cismontane woodland, coastal scrub	Recorded from Spreckels area Project area does not provide suitable habitat, species was not observed in spring 2004.
Eastwoods ericameria *(Ericameria fasciculate)*	List 1B	None	None	Closed-cone coniferous forest, maritime chaparral, coastal scrub, coastal dunes	Recorded from Seaside, Ft. Ord, Marina and Carmel Valley areas Project area does not provide suitable habitat, species was not observed in spring 2004.
Coast wallflower *(Erysimum ammophilum)*	List 1B	None	Species of Concern	Maritime chaparral, coastal dunes, coastal scrub	Recorded from south of Ft. Ord, south of Marina along Highway 1 and E of Reservation Road, Marina State Beach Project area does not provide suitable habitat. species was not observed in spring 2004.
Yadon's wallflower *(Erysimum menziesii ssp. yadonii)*	List 1B	Endangered	Endangered	Coastal dunes	Recorded from dunes west of Marina, S of Salinas River, W of Lapis Siding Project area does not provide suitable habitat; species was not observed in spring 2004.
Fragrant fritillary *(Fritillaria liliacea)*	List 1B	None	None	Grasslands	Recorded from south of Aromas Suitable habitat potentially present; however species not observed in spring 2004.
Sand gilia *(Gilia tenuiflora ssp. arenaria)*	List 1B	Threatened	Endangered	Coastal dunes, coastal scrub, maritime chaparral	Recorded from Marina State Beach. Ft. Ord. E of Del Monte and Reservation Rd., NW of Hwy 1and Reservation Rd., Project area does not provide suitable habitat, species was not observed in spring 2004.
Santa Cruz tarplant *(Holocarpha macradenia)*	List 1B	Endangered	Threatened	Grassland	Known form northern Monterey County, off Elkhorn Road Suitable habitat within Project area; however species not observed in spring or summer 2004.
Kellogg's horkelia *(Horkelia cuneata ssp.*	List 1B	None	Species of Concern	Closed cone coniferous forests, chaparral, coastal scrub, old	Recorded from 1 mi. N of Marina (1940) and Ft. Ord S of Marina

Table 2. List of Special Status Plant Species Evaluated as to their Potential to Occur in the Vicinity of the Project Area

Species	CNPS	State Status	Federal Status	Habitat Type	Occurrence in Vicinity by CNDDB? Likely Occurrence on Site?
sericea)			Concern	dunes	Suitable habitat within Project area; however species not observed in spring or summer 2004.
Contra Costa goldfields (*Lasthenia conjugens*)	List 1B	None	Endangered	Mesic grassland	Known form Ft. Ord, southwest of Salinas Suitable habitat within Project area; however species not observed in spring or summer 2004.
Marsh microseris (*Microseris paludosa*)	List 1B	None	None	Mesic grassland	Historic occurrences from Seaside area Suitable habitat within Project area; however species not observed in spring or summer 2004.
Yadon's rein orchid (*Piperia yadonii*)	List 1B	None	Endangered	Closed cone coniferous forests, chaparral, coastal bluff scrub	Recorded from south of Marina (Ft. Ord), Marina, Prunedale Project area does not provide suitable habitat, species was not observed in spring 2004.
Santa Cruz clover (*Trifolium buckwestiorum*)	List 1B	None	None	Mesic grassland	Recorded from Laguna Seca, Tarpy Flats and Ft. Ord Suitable habitat within Project area; however species not observed in spring or summer 2004.
Saline clover (*Trifolium depauperatum var. hydrophylum*)	List 1B	None	None	Alkali wetlands	Historic occurrence near Moss Landing; other occurrences from Soda Lake (Santa Cruz County) and Hwy 25 (San Benito County) Suitable habitat within Project area; however species not observed in spring 2004.
Pacific Grove clover (*Trifolium polyodon*)	List 1B	Rare	None	Mesic grassland	Recorded from Carmel Valley area Suitable habitat within Project area; however species not observed in spring 2004.

CNPS Status:

List 1B: These plants (predominately endemic) are rare through their range and are currently vulnerable or have a high potential for vulnerability due to limited or threatened habitat, few individuals per population, or a limited number of populations. List 1B plants meet the definitions of Section 1901, Chapter 10 of the CDFG Code. **List 4:** Plants of limited distribution; a watch list.

Figure 14. Congdon's tarplant (*Centromadia parryii ssp. congdonii*) growing within slight depression in Project area, June 17, 2004.

4.3 Special-Status Wildlife Species

In the context of this study, special-status species include animals with State or Federal endangered or threatened status, Federal and State proposed or candidate species for listing, State "fully protected" species and California species of special concern. Thirteen special-status species have been recorded or may occur within the boundaries of the study area; these include California tiger salamander, California red-legged frog, southern Pacific pond turtle, white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), Cooper's hawk (*Accipiter cooperii*), burrowing owl (*Athene cunicularia*), California horned lark (*Eremophila alpestris actia*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Dendroica petechia*), tricolored blackbird (*Agelaius tricolor*), pallid bat and Monterey dusky-footed woodrat (*Neotoma fuscipes luciana*) (see Table 3). For these species, the study area provides known or potential breeding habitat or significant wintering habitat. A description of the status, natural history and pattern of occurrence for these species is presented below.

Several other special-status species were also considered, but are not discussed in further detail for one or more of the following reasons: 1) the species is believed to be extirpated from the area; 2) the species is expected to occur on the study site only as a transient; 3) wintering individuals may be present, however, only the breeding population of the species is protected and the study site does not provide nesting habitat; 4) lack of suitable habitat in study area; and 5) the study area is outside of the species' known distributional range. These species include western spadefoot toad (*Spea hammondii*), California legless lizard (*Anniella pulchra*), California horned lizard (*Phrynosoma coronatum frontale*), San Joaquin coachwhip (*Masticophis flagellum ruddockii*), two-striped garter snake (*Thamnophis hammondii*), golden eagle, ferruginous hawk (*Buteo regalis*), prairie falcon (*Falco mexicana*), merlin (*F. columbarius*), short-eared owl (*Asio flammeus*), willow flycatcher (*Empidonax traillii*), least Bell's vireo (*Vireo belli pusillus*), yellow-breasted chat (*Icteria virens*) and San Joaquin pocket mouse (*Perognathus inornatus psammophilus*).

Table 3. Special Status Wildlife Species, Salinas Annexation Project Area.

Species	Status	Occurrence on Site
California Tiger Salamander	FT, CSC	Population on-site is hybrid. Breeding habitat in irrigation ponds Nos. 1 and 2. Potential upland habitat on remnant grasslands and oak woodlands. May also use burrows along dirt access roads in vicinity of breeding ponds. One tiger salamander recorded on Old Stage Road during winter 2002 (separate study).
California Red-legged Frog	FT, CSC	Adults and tadpoles observed along unnamed drainage paralleling Old Stage Road, and 1 adult observed in culvert pool at upper-end of east tributary. Red-legged frogs also observed on Old Stage Road during studies in 2002-03. Potential habitat along Gabilan Creek. All drainages could provide CRF habitat at some level.
Southern Pacific Pond Turtle	CSC	One pond turtle observed in the unnamed drainage and in Natividad Creek. One road-kill observed on E. Boronda Road, adjacent to study area. Also, in 2002-03, dozens observed in two ponds on Culina property, prior to the removal of the ponds. Depending on the hydrologic regime, irrigation ponds and all drainages on-site provide potential habitat. May nest in grasslands and agricultural fields.
White-tailed Kite	FP	Kites observed foraging over fields during this study as well as in 2002-03. Potential nesting habitat in riparian woodlands and eucalyptus groves.
Northern Harrier	CSC	Harriers observed in 2002. Grasslands and ruderal uplands provide potential foraging and nesting habitat. Nesting habitat may be marginal, due to agricultural practices and fragmentation.
Cooper's Hawk	CSC	Female observed displaying nest defense behavior in riparian corridor on Wayland parcel. Nesting pair observed just west of the study site in Natividad Creek.
Burrowing Owl	CSC	Grasslands and ruderal uplands with ground squirrel burrows provide potential denning habitat. No nesting owls observed on-site during 2004 surveys. One burrow with owl pellet observed on Andrus parcel; perhaps from a wintering or migrant owl.
California Horned Lark	CSC	Singing males and pairs observed throughout the study site; likely nests on bare disced areas, fallow fields, between row crops and in grazed grasslands. Family groups observed in 2002- 03.
Loggerhead Shrike	CSC	No nesting shrikes observed on-site, during this study or during 2002-03. However, this species is known to nest in the project region and may nest on-site in future years. One shrike was observed on 2 Nov. Potential nesting habitat in grasslands with scattered trees and shrubs.
Yellow Warbler	CSC	Potential nesting habitat in willow riparian along Gabilan Creek, Natividad Creek and the unnamed drainage; singing males observed during the breeding season during 2002-03 and in 2004.
Tricolored Blackbird	CSC	Grasslands provide foraging habitat. Nesting colony observed at an irrigation pond just south of the study area. Potential nesting habitat on-site in the dense tule stand on the Wayland parcel.
Monterey Dusky-footed Woodrat	CSC	The remnant oak woodland and riparian corridors may provide potential habitat. Habitats may be marginal due to fragmentation and ground squirrel control in adjacent agricultural areas.
Pallid Bat	CSC	Farm structures and large, mature oaks may provide roosting habitat.

Status Codes: FT = Federally Threatened; CSC = California Species of Special Concern; FP = State Fully Protected.

4.3.1 California Tiger Salamander. The California tiger salamander is a Federal threatened species and State species of special concern (USFWS 2004; CDFG 2004b). The population consists of three Distinct Population Segments (DPS) – the Santa Rosa DPS, Santa Barbara DPS and Central California DPS, all of which are Federally listed as threatened or endangered (USFWS 2004; USFWS 2003). The California tiger salamander (CTS) has disappeared from 55% of its historic range (Jennings and Hayes 1994). Presently, this species is distributed in the Central Valley from Yolo County south to Tulare County, and in the Coast Range valleys and lower foothills from Sonoma County south to Santa Barbara County (Shaffer 1991). California tiger salamanders primarily inhabit valley floor and foothill grasslands, open oak woodlands and scrub habitats encompassing vernal pools and seasonal ponds (Trenham 2001a; USFWS 2000). Post-metamorphic individuals (i.e., adults and juveniles) live in rodent burrows in uplands for most of their lives (Trenham 2001; Trenham *et al* 2000; Loredo *et al* 1996). During the rainy season, typically November through March, adults migrate at night to aquatic breeding sites (Loredo and Van Vuren 1996; Stebbins 1985), which include quiet waters of seasonal ponds, reservoirs, lakes and occasionally stream pools (Stebbins 1985). Tiger salamanders have osmoregulatory adaptations that allow for existence in highly alkaline aquatic environments (Kirschner et al. 1971; Romspert and McClanahan 1981). Based on a recent study, migration distances of adults between upland habitat and breeding pools generally are within 450 m (Trenham and Shaffer *in prep.*), but distances up to 2 km (1.2 miles) have been recorded (USFWS 2000). In habitats encompassing several ponds, experienced adults may breed at more than one pond during their lifetime (Trenham *et al* 2001). The adults remain at the breeding pond from one day to several weeks, then return to upland refugia (Loredo and Van Vuren 1996). Males migrate to breeding sites before females and tend to stay at breeding sites longer (e.g., 6 – 8 weeks for males and 1 – 2 weeks for females)(Trenham *et al* 2000; Loredo and Van Vuren 1996; Shaffer 1993). Eggs are laid singly, or in small groups of up to four, on stalks of submerged vegetation or other objects (e.g., rocks woody material, etc.), typically along the shoreline. The eggs hatch in 10 days to approximately three weeks (USFWS 2000; Jennings and Hayes 1994; Storer 1925). The number of eggs deposited per female per breeding season ranges from around 400 – 1,300 (USFWS 2000). The diet of larvae consists of aquatic insects and other invertebrates, and mostly tadpoles as the larvae grow larger (USFWS 2000; Petranka 1998; Anderson 1968). Larvae typically metamorphose in two to three months, from late spring to summer, when ponds begin to dry (USFWS 2000). Metamorphs emerge from ponds and seek shelter mostly in the immediate vicinity in burrows, cracks in the ground or under debris, but sometimes as far as 200m away, even in the absence of rain (Trenham 2001b; Trenham and Shaffer *in prep.*; Loredo *et al* 1996). During the rainy-season, the juveniles continue to disperse farther to seek refuge in upland areas within 640 m of the breeding pond, but distances up to 1.6 km away from the breeding pond have been recorded (Jennings and Hayes 1994). Adults live up to at least 10 years, but take up to 4 – 5 years to reach sexual maturity (Trenham *et al* 2000). Females may not breed every year and only may breed once or twice during their lifetime (Trenham *et al* 2000). Sub-adults and adults appear to be "sit-and-wait" predators, preying on earthworms, insects and snails (CDFG 1990; Lindquist and Bachmann 1980). Threats and reasons for the decline of this species include loss of breeding and upland habitat and habitat fragmentation due to agricultural and urban development; the introduction of bullfrogs (*Rana catesbeiana*)and predatory non-native fishes; use of larval forms as fishing bait; and hybridization with introduced non-native tiger salamanders (USFWS 2000; Stebbins 2003; Stebbins 1985).

4.3.1.1 Local Occurrence. The CNDDB lists several records of *Ambystoma tigrinum* spp. in the relevant project region, including contemporary records of specimens found north of Salinas near Harrison Road, Herbert Road and San Juan Grade, and an historic record (1952) for the City of Salinas (CNDDB 2004). In addition to the CNDDB records, additional observations were identified through consultations with other biologists. These include one hybrid/non-native population east of Natividad (B. Fitzpatrick, pers. comm.); one hybrid/non-native population east of the project site (B. Fitzpatrick, pers. comm.); one hybrid/non-native population near Spence Road (B. Fitzpatrick, pers. comm.); and one possible hybrid/non-native population near Harrison Rd. (M. Allaback, pers. comm.). Table 4 summarizes the location of *Ambystoma* observations discussed, above.

Table 4. Tiger Salamander Observations in the Project Site Vicinity.

Taxon	Location	Distance from Project Site	Source
Ambystoma sp.	Old Stage Rd	~ 50 ft.	CNDDB 2004
Hybrid/Non-native	Pond east of project site	~ 1,563 ft.	B. Fitzpatrick, pers. comm.
Hybrid/Non-native	Pond east of Natividad	~ 1.1 mi.	B. Fitzpatrick, pers. comm.
Ambystoma sp.	Pond near Harrison Rd	~ 2.0 mi.	M. Allaback, pers. comm.
Ambystoma sp.	Pond near Harrison Rd	~ 2.0 mi.	CNDDB 2004
Ambystoma sp.	Pond at end of Herbert Rd	~ 3.4 mi.	CNDDB 2004
Hybrid/Non-native	Pond at Spence Rd	~ 4.9 mi.	B. Fitzpatrick, pers. comm.
Ambystoma californiense	Pond near San Juan Grade	~ 5.3 mi.	CNDDB 2004
Ambystoma *sp.*	West of Salinas	?	CNDDB 1952 record

4.3.1.2 Site Assessment. Non-native and CTS hybrids were discovered in the study area at Ponds No. 1 and 2 (Figure 4), during spring larval surveys, based on DNA analysis of tissue samples collected from the site performed by Ben Fitzpatrick, Center of Conservation Biology, UC Davis (letter dated 9/2/04) Furthermore, DNA analysis suggests that there is a very low likelihood that native CTS are still present in the hybrid populations (B. Fitzpatrick, pers. comm.). No *Ambystoma* larvae were observed in the unnamed drainage paralleling Old Stage Road. Their absence in the drainage is consistent with negative results from spring surveys performed in 2002-03 along Natividad Creek and its tributaries for a separate study (Bryan Mori Biological Consulting Services Biotic Resources Group 2003). During that study, an adult road-kill tiger salamander also was observed on Old Stage Road, during the fall of 2002.

Although breeding habitat for hybrid/non-native tiger salamanders has been confirmed at Ponds 1 and 2 during this study, upland habitat use has not been documented. Considering the long-distance dispersal capabilities of this species, the remnant stands of grassland, ruderal and oak woodland within 2,000 feet of Ponds 1 and 2 likely provide upland habitat for adults and sub-adults (Trenham and Shaffer *in prep.*). Another factor to consider is the movement of tiger salamanders onto the project site from the foothills east of Old Stage Road. The presence of hybrid/non-native tiger salamander breeding ponds on the project site together with the observation of a road-kill on Old Stage Road in 2002 and the presence of a hybrid/non-native breeding pond to the east suggest that salamanders likely move between the foothills to the east of Old Stage Road and the study site, especially since potential breeding habitat in the foothills to the east (i.e., three reservoirs/ponds) are within dispersal distance to the study site.

Hybrids and non-native tiger salamanders are considered serious threats to the integrity of native CTS populations, since "hybridization can lead to the loss of the native taxon through genetic assimilation" (USFWS 2004). Hybridization is widespread in the Central Coast region, extending from southern Santa Clara County to Fort Hunter Liggett in Monterey County, and eastward through all of San Benito County (USFWS 2004). Native populations within 2.1km (1.3mi) of hybrid populations are vulnerable to genetic assimilation (USFWS 2004). Presently, hybrid CTS populations are evaluated on a case-by-case basis, regarding protection under the Endangered Species Act (B. McIver and J. Niceswanger, pers. comm.).

For this specific project site, the USFWS does not recommend the protection of the on-site population of tiger salamanders, due to the low likelihood of native CTS present on the project site, the lack of known native CTS population sources in the relevant project vicinity, and the widespread distribution of hybrids/non-natives in the project region (J. Niceswanger, USFWS, pers. comm.).

4.3.2 California Red-legged Frog. The California red-legged frog is a Federal threatened species and a State species of special concern (USFWS 2002; CDFG 2004b). Historically, the range of this species extended southward from Marin County, coastally, and Shasta County, inland, south to Baja California (Jennings and Hayes 1994). The red-legged frog has been extirpated from 70% of its former range (USFWS 1996). Presently, red-legged frogs are found primarily in central coastal California in natural and artificial ponds, quiet pools along streams and in coastal marshes (USFWS 1996). Red-legged frogs mostly inhabit pools greater than 2 feet deep for breeding, although shallow, perennial marsh habitat may also be productive if it is free of non-native aquatic predators (Hayes and Jennings 1988; B. Mori, pers. obs.). Optimal aquatic habitat is characterized by dense emergent or shoreline vegetation for cover. However, seasonal ponds with little emergent/shoreline cover located in grasslands may also be used for breeding, where water levels permit the metamorphosis of larvae (USFWS 2002; B. Mori, pers. obs.). Breeding typically occurs between December and April, depending on annual environmental conditions and locality. Egg masses containing 2,000 – 5,000 eggs are usually deposited near the water surface on emergent vegetation but occasionally on the pond bottom where braces are absent (M. Allaback, pers. comm.). Eggs require 6 to14 days to hatch and metamorphosis generally occurs within 3.5 to 7 months after hatching, although larvae have the ability to over-winter at some sites (Fellers *et al* 2001). Following metamorphosis, generally between July and September, juveniles are 25-35 mm in size and probably do not travel far from aquatic habitats if appropriate cover is present nearby. Dispersal of juveniles generally begins with the first rains of the weather-year, although all size classes will move in response to receding water (M. Allaback, pers. obs.). Radio-telemetry data indicates that adults engage in straight-line movements irrespective of riparian corridors or topography, and they may move up to two miles between non-breeding and breeding sites (Bulger 2003). They may take refuge in small mammal burrows, leaf litter or other moist areas during periods of inactivity or whenever it is necessary to avoid desiccation (Rathbun, *et al.* 1993; Jennings and Hayes 1994; pers. obs.). Red-legged frogs emerge to forage soon after dark, and often move up to 300 feet into surrounding uplands, especially following rains, when individuals may spend days or weeks in upland habitats (Bulger 2003). Much of this species' habitat has undergone significant alteration by agricultural, urban development and water projects, leading to the extirpation of many populations (USFWS 1996). Other factors contributing to the decline of red-legged frogs include its historical exploitation as food; competition and predation by bullfrogs (*Rana catesbeiana*) and introduced predatory fishes (Jennings and Hayes 1985; Hayes and Jennings 1988; Lawler *et al* 1999); and salinization of coastal breeding habitat (Jennings and Hayes 1990).

4.3.2.1 Local Occurrence. As part of a separate study in 2002-03, red-legged frogs were documented on the study site and on Old Stage Road, immediately adjacent to the study site (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). One sub-adult was observed on Old Stage Road on 9 December 2002; one road-kill adult was observed in the same vicinity on 12 February 2003; and one adult was observed on-site in a pool, at the uppermost end of the east tributary of Natividad Creek, below the culverts at Old Stage Road

(Figure 4). In addition, the CNDDB indicates that adults were seen on the study site in October 2003 (CDFG 2004a). Other records within 5 miles of the study site include two breeding sites north of Salinas, one near Blackie Road and the other off of Pesante Canyon Road (CDFG 2004a), and an observation of adults in Gabilan Creek, near San Juan Road, north of Salinas (D. Pereksta, pers. comm.).

4.3.2.2 Site Assessment. During this study, CRF were observed on the study site on 12 and 27 May 2004, during general reconnaissance surveys and focused surveys for CTS larvae. The 12 May observation was of an adult and tadpoles at separate locations in the unnamed drainage paralleling Old Stage Road (Figure 4), whereas the 27 May observation was of a single adult at a culvert pool, at the uppermost end of the east tributary to Natividad Creek (Figure 4). The observation of tadpoles is significant, as the location represents a CRF breeding site; confirmed breeding sites are lacking in the immediate vicinity of Salinas.

Based on the results of the 2002-03 study together with this study, CRF breeding habitat is present in the unnamed drainage paralleling Old Stage Road, but appears to be absent from Natividad Creek and the east tributary, due to the degraded habitat conditions along the drainages resulting from vegetation removal and adjacent agricultural operations. In contrast, the breeding site is located within a densely vegetated drainage corridor with adjacent annual grassland habitat. The habitat quality of Gabilan Creek could not be assessed, due to restricted access. However, *all* drainages within the study site likely support CRF during one or more life stages (e.g., breeding, over-summering, dispersal), depending on the hydrologic characteristics, presence of predators, extent of vegetation and adjacent upland uses. Although no CRF were observed at Ponds No. 1 and 2, focused surveys for this species were not performed. As is the case for the drainages within the study site, the irrigation ponds also may support CRF during dispersal or over-summering, and perhaps breeding during optimal conditions. Another factor to consider is movement on- and off-site. The observations of CRF on Old Stage Road during the winter of 2002-03 suggest that they may move to and from the site, perhaps dispersing from breeding habitat located in the foothills to the east of the study site.

4.3.3 Southern Pacific Pond Turtle. The southern Pacific pond turtle is a State species of special concern (CDFG 2004b). The western pond turtle has been separated into two subspecies. *Actinemys m. marmorata* is the northern subspecies and *Actinemys m. pallida* is the southern subspecies. Current research suggests, however, that the taxon may be represented by three distinct populations in California and may therefore require a taxonomic revision (Jennings and Hayes 1994). In California, the pond turtle is distributed mostly along the Pacific slope drainages from Oregon to Mexico (Jennings and Hayes 1994). Pond turtles primarily occur in permanent freshwater ponds, lakes, marshes and quiet waters of streams (Bury and Holland 1993). Pond turtles favor sites with the largest and deepest pools and with an abundance of basking sites, such as partially submerged logs or rocks, matted emergent vegetation, or exposed shorelines (Bury and Holland 1993); pond turtles displace one another from basking sites, where such resources are limited (Bury and Wolfheim 1973). Pond turtles are highly sensitive and will seek cover when approached within 100 meters (Bury and Holland 1993). Undercut banks, root masses and boulder piles provide underwater escape cover (Bury and Holland 1993). Although highly aquatic, pond turtles leave the water to reproduce, aestivate and overwinter (Jennings and Hayes 1994). Females dig nests and deposit eggs, during May and June, along the shoreline or in a variety of open upland habitats, usually within 200 meters of water, but as much as 500 meters, and mostly on south-facing slopes with well-drained clay soils (Rathbun *et al* 1992; Jennings and Hayes 1994). Nests must remain dry for proper incubation, and the young hatch and may overwinter in the nest (Jennings and Hayes 1994). Hatchlings require shallow water habitat with dense emergent vegetation and abundant zooplankton (Jennings and Hayes 1994). Pond turtles reach sexual maturity between seven and fourteen years of age (Bury and Holland 1993) and live to be over 42 years (Jennings and Hayes 1994). During dispersal, pond turtles can move up to two kilometers in search of suitable habitat and can tolerate a minimum of seven days without water (Jennings and Hayes 1994). Studies on central coast drainages show that turtles use upland habitat within 50 meters of the creek in times of drought or to avoid winter floods (Rathbun *et al* 2002). Pond turtles are threatened by habitat alteration and loss due to water development, agricultural practices and non-native predators (Jennings and Hayes 1994).

4.3.3.1 Local Occurrence. Except for one record which references the 2002 observation cited below, no other pond turtle records were listed in the regional CNDDB Quads.

4.3.3.2 Site Assessment. During a separate study, western pond turtles were observed on the study site in 2002 at two irrigation ponds on the Cufina property, adjacent to Natividad Creek (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). Twelve turtles between 4-8" carapace length were observed at the ponds, the differing size classes suggesting the turtle population consisted of breeding individuals. These ponds no longer exist as the landowner removed them sometime in late 2002 (V. DiMaggio, Creekbridge Homes, pers. comm.).

During this study, three pond turtles were observed, two of which were on-site and one immediately adjacent to the study site. The on-site observations were one ≈6" carapace-length turtle in the unnamed drainage on 19 April and one ≈5" carapace length turtle in Natividad Creek on 27 May. The off-site observation was a road-kill turtle (≈8" carapace length)on E. Boronda Road on 19 May (Figure 4). However, it is not certain to what extent the site is being utilized, as focused surveys for this species were not performed. Although no pond turtles were observed at Ponds 1 and 2, they are considered potential habitat, along with all other drainages on the study site. The location of the road-kill on E. Boronda Road suggests that the turtle may have originated from Pond 2. Ponds and drainages in the study area may serve as dispersal, over-summering or permanent habitat, depending on hydrological characteristics. Bare areas and ruderal and agricultural fields adjacent to aquatic habitat likely provide nesting habitat.

4.3.4 White-tailed Kite. The white-tailed kite is designated a State "fully protected" species (CDFG 2004b). Once considered extirpated throughout much of California in the early 1900s (Faanes and Howard 1987) due to habitat loss and indiscriminate shootings (Palmer 1988), kite populations have increased significantly since the 1960s (Faanes and Howard 1987; Palmer 1988). Presently, kites are distributed throughout the coastal foothills and valleys along the entire length of the state, throughout the Central Valley, and into the foothills of the Sierra Nevada (Dunk 1995). White-tailed kites inhabit grassland, oak savannah, agricultural and wetlands habitats, as well as riparian corridors adjacent to open fields (CDFG 1990; Dunk 1995). Kites nest in isolated trees or trees located in dense stands near foraging habitat (Palmer 1988; Dunk 1995). Small mammals, especially voles, constitute a major portion of their diet (CDFG 1990; Dunk 1995). In fact, the increase in California vole (*Microtus californicus*) populations resulting from agricultural development has contributed to this species' comeback in California (Faanes and Howard 1987; Palmer 1988). They generally hunt at the beginning and end of each day during the breeding season, with increased effort throughout the day in winter (Dunk 1995). Kites hunt almost exclusively by hovering (Dunk 1995). Kites are considered moderately social, as territory sizes are typically small; but territory size is dependent on food availability and competition, and territory defense is exhibited year-round (Dunk 1995). Kites are monogamous with pair bonds maintained throughout the year (Dunk 1995). Nests are built in the upper third of trees with tree heights ranging from three to five meters (Dunk 1995). Nests are generally not reused (Dunk 1995). The nesting season is protracted and generally spans February to August, with up to two broods produced in a season, even if the first nesting is successful (Palmer 1988; Dunk 1995). Incubation lasts 30 - 32 days with fledging occurring four to five weeks after hatching (Dunk 1995). During winter, kites usually spend the night at communal roosts that may support >100 kites (Dunk 1995). Although the California population of kites dramatically increased from the 1930s to the 1970s, recent Breeding Bird Surveys from the 1980s to 1990s suggest a declining trend. The decline may be due to a combination of factors such as habitat conversion of grasslands and agricultural fields to urban development, and long-term drought (Dunk 1995).

4.3.4.1 Local Occurrence. In Monterey County, white-tailed kites are uncommon permanent residents in open habitats bordered by riparian woodlands (Roberson 2002). Probable nesting evidence by kites has been recorded in the project area (Roberson and Tenney 1993). No records for this species in the project vicinity were found in the regional CNDDB quads. The local breeding season spans March through July.

4.3.4.2 Site Assessment. During the course of this study, white-tailed kites were observed on-site on 20 April and 24 May 2004, foraging over agricultural fields and grassland patches in the vicinity of Natividad Creek. No evidence of nesting was observed, however focused surveys for this species were not performed and their nesting status on-site remains uncertain. The eucalyptus groves and riparian woodlands on the study site provide potential nesting habitat. The grasslands and fallow fields offer foraging habitat for kites.

4.4.5 Northern Harrier. The northern harrier is a State species of special concern (breeding population) (CDFG 2004b). Harriers are permanent residents in the Central Valley and bordering foothills, the northeastern plateau, and in coastal valleys and foothills along the length of the state (CDFG 1990). In winter, harriers are distributed widely throughout the state in suitable habitat (CDFG 1990). During the breeding period, harriers inhabit open wetlands, grasslands, open scrub and croplands (Macwhirter and Bildstein 1996). Northern harriers forage by flying low, back and forth over the ground, with males preferring to forage in more open habitats than females (Macwhirter and Bildstein 1996). Owl-like facial structures facilitate auditory prey detection in the absence of visual cues (Ryser 1985; Macwhirter and Bildstein 1996). Hunting activities generally are distributed throughout the day, but may be concentrated in the morning and evening hours to avoid extreme daytime temperatures (Macwhirter and Bildstein 1996). Primary prey includes voles and other small- and medium-sized mammals, birds, reptiles and frogs (Macwhirter and Bildstein 1996). In the summer, harriers are not strongly territorial, except around nest sites, where both sexes defend against conspecifics (Macwhirter and Bildstein 1996). In winter, females defend territories and exclude males from prime foraging areas. Harriers are generally monogamous, but males sometimes exhibit polygyny and may maintain a harem of two to five females; nests can be situated closely in polygamous situations (Ryser 1985; Macwhirter and Bildstein 1996). The local breeding season likely spans April - August. Nests are constructed on the ground usually within a patch of dense, tall vegetation. Incubation lasts 30 - 32 days with fledging occurring 34 - 45 days after hatching; only one brood is produced (Macwhirter and Bildstein 1996). Nest site fidelity appears to be weak (Macwhirter and Bildstein 1996). This species is threatened by destruction of marsh habitats, the spread of urban and agricultural development of grasslands, and overgrazing by livestock (Remsen 1978; Macwhirter and Bildstein 1996).

4.5.5.1 Local Occurrence: In Monterey County, the northern harrier is a rare summer resident and uncommon in migration and in winter (Roberson 2002). The local breeding season for harriers spans March to July. Possible breeding evidence for northern harriers has been observed in the project vicinity (Roberson and Tenney 1993). No records for this species were found in the CNDDB regional quads.

4.5.5.2 Site Assessment. During the course of this study, no northern harriers were observed on-site. However, focused surveys for this species were not performed and their nesting status remains uncertain. During a separate study in 2002-03, male and female harriers were observed foraging on-site on the Matsui parcel during the breeding season (Bryan Mori Biological Consulting Services and Biotic Resources Group 2003). The project site provides foraging habitat for this species along open, disturbed drainages, in grasslands, and ruderal and bare tilled areas. The remnant grasslands and fallow ruderal fields may provide nesting habitat for this species.

4.5.6 Cooper's Hawk. The Cooper's hawk is a State species of special concern (nesting populations) (CDFG 2004b). Cooper's hawks are permanent residents throughout the state, but less common in the coastal northwest and scarce in the southeastern deserts; the resident population is supplemented by winter migrants (Small 1994). During migration and in winter a variety of wooded habitats are used including urban landscaping. During the breeding season, it prefers deciduous, mixed-evergreen forests and deciduous riparian woodlands, favoring mature forests with dense canopy cover around nests (Palmer 1988; Rosenfield and Bielefeldt 1993). Nesting sites are within wooded stands of at least four to eight hectares (Rosenfield and Bielefeldt 1993). Cooper's hawks are monogamous and mating pairs are present on nesting territories as early as March (Rosenfield and Bielefeldt 1993). In California, nests are usually built in oaks with nests constructed on a main crotch or on a horizontal limb of a live tree. Nests are sometimes placed on top of pre-existing bases such as squirrel nests, other hawk nests and mistletoe (Palmer 1988; Rosenfield and Bielefeldt 1993). Cooper's hawks typically build new nests in the same area of previous successful nest sites and only occasionally reuse nests in successive or intermittent years (Rosenfield and Bielefeldt 1993). One brood is produced per year, but the species will re-nest when the first clutch is lost early in incubation. The clutch usually consists of three to five eggs. Incubation is mostly performed by the female and lasts 30 - 36 days. Nestlings fledge in 27 - 30 days after hatching, but return to the nest for roosting and to accept prey deliveries for about 10 days. Fledglings will remain around the nest site for five to six weeks and adults will continue to feed young for up to seven weeks (Rosenfield and Bielefeldt 1993). Home ranges during the breeding season have been estimated at 400 to 1,800 hectares (Reynolds 1983; Rosenfield and Bielefeldt 1993). Prey items typically consist of sub-adult, medium-sized birds (e.g., robins) and medium-sized mammals (e.g., chipmunks) (Rosenfield and Bielefeldt 1993). Cooper's hawks are capable of breeding at one year of age, but most breed at two years or greater. The oldest individual recorded is 12 years. Habitat loss and pesticide contamination are considered threats to this species (Remsen 1978; Rosenfield and Bielefeldt 1993).

4.5.6.1 Local Occurrence. In Monterey County, the Cooper's hawk is a rare summer resident, but fairly common in migration and uncommon in winter (Roberson 2002). The local breeding season for this species spans late March to July. Possible breeding evidence for northern harriers has been observed in the project vicinity (Roberson and Tenney 1993). No records for this species were found in the CNDDB regional quads.

4.5.6.2 Site Assessment. During the course of this study, an adult was observed foraging over the site on 12 April and a female in sub-adult plumage was seen mobbing a red fox on the Wayland parcel on 24 May (Figure 4). Also, on 24 May an active nest site was observed just off-site to the west in Natividad Creek . Focused surveys for this species were not performed and their nesting status on-site remains uncertain, but the observation of a female mobbing a red fox suggests defense of a nesting territory. The riparian woodlands along the unnamed drainage, Gabilan Creek and lower Natividad Creek may provide nesting habitat on-site for Cooper's hawks.

4.5.7 Burrowing Owl. The burrowing owl is a State species of special concern (CDFG 2004b). The California population is distributed throughout the lowlands of the state and consists of both permanent residents and winter migrants (CDFG 1990). Burrowing owls typically inhabit arid, treeless, valley and foothill grasslands, desert floors, agricultural areas and open terrain in urban settings (e.g., airports, golf courses, vacant lots, etc.) supporting populations of burrowing mammals and insects (Haug, *et al* 1993). Where ground vegetation is present, sparse, short cover is necessary. In California, nesting habitat is typically characterized by flat or gently rolling terrain (Grinnell and Miller 1944). In winter, a variety of open habitats, over a wider range of elevations, are used (B. Mori, pers. obs.). In Central California, this species depends on burrows of small mammals, most notably ground squirrels, for nesting and escape cover (Haug *et al* 1993). Artificial structures may also be utilized (Collins 1977; California Burrowing Owl Consortium 1997). Raised areas near burrows or elevated burrows serve as vantage points (Haug *et al* 1993). In non-migratory populations, the same burrows are maintained and used year-round. Burrowing owls are crepuscular in habit and found perched outside of active burrows during the day, but are also active at night (CDFG 1990; Haug *et al* 1993). Burrowing owls are opportunistic feeders, preying primarily on arthropods, small mammals and small birds (Haug *et al* 1993). In California, results of relocation efforts indicate strong site fidelity to nesting sites (Haug *et al* 1993; Delevoryas 1997; Feeney 1997). Breeding pairs are mostly monogamous, but polygyny has been reported. In western populations, pair bonds are maintained throughout the year but may not be permanent, since mate switching can take place between years. In migratory populations, males arrive at burrow sites first, then prepare the burrow and begin courtship and territorial behavior. Only one brood is produced, unless the first clutch is lost early in the nesting period. The clutch can consist of up to 11 eggs that are incubated by the female for 21 – 23 days. The male provides food to the female during incubation and initially provides food for the nestlings. As the young become less dependent, the female begins to hunt and provide food. Fledging takes place at about 44 days after hatching, but young owls will remain near nest burrows and forage with adults until dispersal in late July to August. Sexual maturity is attained in one year. Oldest age recorded is eight years. This species has experienced a serious decline throughout the state as a result of habitat loss from agriculture and urbanization, and probably from the secondary effects of ground squirrel poisoning programs (Remsen 1978). DeSante *et al* (1997) indicated that the central California burrowing owl breeding population may be as low as 925 pairs, and that the breeding population of burrowing owls in central California has declined by 65% over the decade spanning 1981-91.

4.5.7.1 Local Occurrence. The burrowing owl is a rare local resident in Monterey County, with the current populations centered around Salinas and east of King City (Roberson 2002). The local breeding season spans March through July. The resident population is likely augmented by migrants, which are expected to arrive from September and remain through March. A nesting population is present at the Salinas Airport and between State Route 101 and HWY 183(CDFG 2004a). Burrowing owls formerly bred near the County Maintenance Facility at East Laurel Drive (G. Kittleson, pers. comm.).

4.5.7.2 Site Assessment. No burrowing owls were observed during the 2004 focused nesting surveys, despite the presence of potential habitat on the Andrus parcel, where ground squirrel burrows were abundant and the vegetation height appeared optimal due to grazing. One owl pellet was observed at a den entrance on the Andrus parcel during the initial ground search for dens and evidence of occupancy (Figure 4). Most of the remainder of the study site was unsuitable as denning habitat due to row crop agriculture. Even on fields that were not farmed, discing and/or tall vegetation height created unsuitable microhabitat conditions. Although not observed to nest on-site in 2004, the owl pellet indicated that the site was used during migration or winter. Also, the remnant grasslands in the study area may support nesting owls in the future.

4.5.8 Loggerhead Shrike. The loggerhead shrike is a State species of special concern (breeding population) (CDFG 2004b). The shrike is found throughout California except for most of the northwest and along the Cascade-Sierran ranges (CDFG 1990). Loggerhead shrikes inhabit valley and foothill grasslands, wetlands and agricultural areas supporting scattered trees and shrubs (Ehrlich *et al* 1988; CDFG 1990; Yosef 1996). Shrikes feed on insects, reptiles, small mammals, birds and carrion (CDFG 1990; Yosef 1996). Areas of bare ground and short cover are preferred for hunting (Yosef 1996). Shrikes are sit-and-wait predators and, where available, favor perching on fence lines, utility lines and poles in search of prey (Yosef 1996). When stalking prey on the ground, shrikes raise their wings half-opened in a stereotyped manner, perhaps to startle prey (Yosef 1996). Due to the absence of talons, large prey are impaled on thorns or barbed wire to facilitate consumption or to establish a cache for future use (Ehrlich *et al* 1988; Yosef 1996). Shrikes are highly territorial and maintain relatively large areas compared to other birds of similar size. Territories are defended mostly through song rather than fighting (Yosef 1996). In California, pairs disband in winter with each sex holding separate adjacent territories, presumable because of the scarcity of prey. Resident birds are monogamous. The breeding season spans March - August (CDFG 1990). This species exhibits high site fidelity and nests are often reused (Yosef 1996). Nests are usually built in densely foliaged trees and shrubs, preferably with thorns (CDFG 1990; Yosef 1996); however, structures such as telephone poles, abandoned buildings and machinery, and brush piles are also used (Yosef 1996; B. Mori, pers. obs.). Up to five eggs are laid and incubation lasts 16 days, with fledging occurring about 20 days after hatching (Yosef 1996). Two to three broods are produced each year. The loggerhead shrike has been experiencing a significant decline throughout its range in the U.S. and Canada (Tate 1986; Ehrlich *et al* 1992; Peterjohn and Sauer 1995). Habitat loss and pesticide contamination has been identified as factors contributing to this species' decline (Ehrlich *et al* 1988; Peterjohn and Sauer 1995; Yosef 1996).

4.5.8.1 Local Occurrence. The loggerhead shrike is an uncommon resident in Monterey County, with numbers supplemented by winter migrants (Roberson 2002). Shrikes have been documented to nest in the project vicinity (Roberson and Tenney 1993). No records for this species were found in the local CNDDB Quads. The local nesting season likely spans from March through July.

4.5.8.2 Site Assessment. No nesting shrikes were observed on-site during the course of this study, however focused surveys for this species were not performed and their nesting status on-site remains uncertain. The remnant grasslands on the study site provide potential nesting habitat, particularly where scattered trees and shrubs are present, such as along the northern fence line of the Andrus parcel. One shrike was observed on-site on 2 November 2004. Shrikes may nest on-site in the future, since nesting has been documented nearby.

4.5.9 California Horned Lark. The California horned lark is a State species of special concern (breeding population) (CDFG 2004a). The subspecies *E. a. actia* is distributed along the coast from Sonoma County south to San Diego County and inland throughout the San Joaquin

Valley (Grinnell and Miller 1944). Horned larks show a preference for habitat characterized by bare ground and low, sparse ground vegetation. These microhabitats include grasslands of level to moderate relief, mountain meadows, open coastal plains, alkali flats, active and fallow hayfields and bare croplands (Grinnell and Miller 1944; CDFG 1990; Beason 1995). Horned larks forage mostly on seeds in winter but supplement their diet with grasshoppers, beetles and lepidopteran larvae during spring and fall (Beason 1995). Territories are regularly spaced during the nesting period but small mono-specific flocks of young birds form soon after fledging and, by late summer, adults join the flocks, which can increase in size to several hundred by winter (Beason 1995). Winter flocks are nomadic and wander over large areas in search of food (Beason 1995). Resident birds begin defending nesting areas by January and February (Beason 1995). Horned larks are apparently monogamous for at least one season, but polygyny occurs when a male holding territory dies and is replaced by a neighboring male (Beason 1995). Nests are built by females on bare ground in natural depressions or depressions created by the female, usually behind a tuft of grass or other object to provide shelter from wind (Ehrlich *et al* 1988; Beason 1995). Incubation is between 11- 13 days, with fledging occurring 8 - 10 days after hatching; fledglings are not capable of flight until a few days later (Beason 1995). Horned larks produce two broods. Nest site fidelity appears to be strong in horned larks (Beason 1995). Agricultural operations are believed to destroy many nests (Ehrlich *et al* 1988).

4.5.9.1 Local Occurrence. Horned larks are common, localized residents in Monterey County, with numbers supplemented in the winter by migrants (Roberson 2002). Local nesting locations include the lower Salinas Valley up to Fremont Peak (Roberson and Tenney 1993). No records for this species were found in the local CNDDB Quads. The local nesting season spans from March through June.

4.5.9.2 Site Assessment. During the course of this study, horned larks were observed in scattered localities throughout the study area (Figure 4). Observations of nesting behavior included singing males, pairs and territory defense during the breeding season in grazed grasslands, as well as agricultural fields. During a separate study, confirmed evidence of nesting was observed on fallow and bare fields on the Matsui parcel in 2002, immediately north of the Andrus parcel. Despite the expansion of row crop agriculture on the Matsui parcel in 2003, horned larks returned and appeared to make opportunistic use of remnant bare and ruderal patches, as well as rows between crops (Bryan Mori Biological Consulting Services 2003). This observation suggests that this species exhibits strong site fidelity, and will return to natal nesting habitat, so long as nesting is successful. Although nesting has been confirmed, the distribution of nesting birds on-site remains uncertain, since focused surveys for this species were not performed. Grazed grasslands and bare fields throughout the study site should be considered potential nesting habitat.

4.5.10 Yellow Warbler. The yellow warbler is a State species of special concern (breeding population) (CDFG 2004b). Yellow warblers are primarily summer residents and, in the breeding season, are distributed throughout the state, but absent or rare along the Sierra crest, in the Central Valley and southeastern deserts (CDFG 1990; Small 1994). They winter locally in small numbers in Southern California (CDFG 1990; Small 1994). Breeding populations are closely associated with perennial streams supporting riparian vegetation composed of dense willow thickets and taller trees such as cottonwoods, sycamores and alders (Grinnell and Miller 1944). Outside the breeding season, this species may occur in a variety of habitats including oak woodlands, coniferous forests, orchards and urban landscaping, but is still most numerous in riparian corridors (Grinnell and Miller 1944; Small 1994). Yellow warblers are primarily insect gleaners but occasionally will "hawk" (take insects in flight) or hover when foraging (Lowther *et al* 1999). In California, the nesting season generally spans April through August. Mating pairs are monogamous, at least through the breeding season, with some reports of polygyny (Lowther *et al* 1999). Mate fidelity in successive years has been reported, when mates from the previous season are available (Lowther *et al* 1999). Males arrive to nesting grounds first and often select tall trees from which to broadcast their courtship and territorial songs (Schroeder 1982). Nest building usually takes place within one to four days after the female's arrival (Lowther *et al* 1999). Deep cup nests of grasses, bark and other plant fibers are placed low, from three to six feet from the ground in the upright fork of a shrub, sapling or tree in dense vegetation to conceal the nest from predators and brood-parasites (Knopf and Sedgwick 1992). Yellow warblers produce one brood in late May to early June, but will re-nest if the clutch is lost or parasitised by cowbirds early in the season (Lowther *et al* 1999). The clutch typically consists of four to five eggs, and only the female performs incubation (Lowther *et al* 1999). Females will leave the nest to forage, but the male may also feed the female during incubation (Lowther *et al* 1999). The eggs hatch in about 11 - 12 days. Both parents feed the nestlings, which fledge in 8 - 12 days after hatching. The young remain with the parents for up to 21 days after leaving the nest. By mid-August, birds begin to disperse and migrate southward. Sexual maturity is reached in one year. The oldest age recorded is 8 years 11 months. Yellow warblers are threatened by loss of riparian habitat and nest parasitism by the brown-headed cowbird (*Molothrus ater*) (Remsen 1978; Lowther *et al* 1999). While yellow warblers do respond to cowbird parasitism by ejecting eggs or deserting nests, this behavior occurs only 50% of the time if cowbird eggs are laid during the first-half of the egg-laying period, after which rejection drops to zero (Robinson *et al 1995*).

4.5.10.1 Local Occurrence. Yellow warblers are fairly common summer residents of inland riparian woodlands of Monterey County (Roberson 2002). Nesting yellow warblers have been recorded in the project vicinity (Roberson and Tenney 1993). No records for this species were found in the regional CNDDB Quads. The local nesting season spans April through July.

4.5.10.2 Site Assessment. Singing male yellow warblers were observed in riparian habitat on 18 May at Gabilan and lower Natividad Creeks; 27 May along lower Natividad Creek; and 24 May in the remnant oak woodland (Figure 4). Although focused surveys for this species were not performed, the observations of singing males during the breeding season suggest that nesting may have occurred on-site in 2004. During a separate study in 2002-03, a singing male was observed on the Matsui parcel from April through June, suggesting that the riparian woodlands on-site are used by nesting birds annually. Riparian woodlands of lower Natividad Creek, Gabilan Creek and the unnamed drainage provide potential nesting habitat for this species.

4.5.11 Tricolored Blackbird. The tricolored blackbird is a State species of special concern (breeding population) (CDFG 2004b). Tricolored blackbirds are mostly endemic to California but also occur uncommonly in Oregon and Baja California (Beedy and Hamilton 1997). Their range in California includes the Sacramento and San Joaquin Valleys, the foothills of the Sierra Nevada, and the foothills and valleys of the Coast Ranges, but the main populations are located in the Central Valley (Beedy and Hamilton 1997). Tricolored blackbirds are among the most colonial of passerine birds in North America (Beedy and Hamilton 1997). A single colony can consist of up to 200,000 birds with nest sites often built within one foot of each other; although large colonies are now uncommon (Beedy *et al* 1991; Beedy and Hamilton 1997). Tricolored blackbirds are nomadic breeders adapted at exploiting seasonal habitats and resources such as seasonal water sources and cyclic food supplies (e.g., grasshopper outbreaks) (Beedy and Hamilton 1997; Hamilton 1998). During the summer their diet consists mostly of insects, whereas, in winter, plant material makes up the bulk of their diet. Tricoloreds are widespread during the non-breeding season, when large flocks gather in agricultural fields and pastures. Nesting habitats include freshwater marshes with dense tules, cattails, brambles or willows;

however, vegetation of non-marsh habitats is also used, such as thistle and mustard patches, hayfields and grasslands (Beedy and Hamilton 1997). Nesting sites must consist of nearby water, foraging areas located within a few kilometers of the nesting colony, and provide protection from predators (Beedy and Hamilton 1997). Successful nesting sites will be reused in subsequent years. Initial spring breeding begins from March to April. Nest building is highly synchronous and performed by the females, and nest construction may be initiated from the first day of arrival at a colony (Beedy and Hamilton 1997). Egg-laying usually takes place after four days of arriving at the colony, with the clutch consisting of three to four eggs. Males are highly vocal until the last egg is laid. Incubation takes from 11 - 14 days, with fledging occurring 24 days after hatching (Beedy and Hamilton 1997). Re-nesting may occur far from the initial nesting site after successful or failed attempts (Hamilton 1998), recommencing as early as 50 days later in May and June (Hamilton 1998). Juveniles are not likely to return to natal sites (DeHaven *et al.* 1975a). Females reach sexual maturity in one year, while males tend to breed after reaching two-years of age (Beedy and Hamilton 1997). Human disturbances, inclement weather and agricultural operations can lead to widespread nesting failure (Beedy and Hamilton 1997). The recent population trend indicates a decline between 1994 and 1997 (Beedy and Hamilton 1997). Loss of freshwater wetlands has significantly contributed to this species' decline in California (DeHaven *et al* 1975b; Beedy *et al* 1991).

4.5.11.1 Local Occurrence. In Monterey County, tricolored blackbirds are locally common summer residents of lowlands, becoming widespread in winter (Roberson 2002). Nesting colonies have been recorded in the project site vicinity (Roberson and Tenney 1993). One such colony is present in an irrigation pond just south of the study site, near the corner of Williams Road and Old Stage Road (B. Mori, pers. obs.). No records for this species were found in the regional CNDDB Quads. The local nesting season spans late March through June.

4.5.11.2 Site Assessment. Large flocks of tricolored blackbirds were regularly seen foraging on the remnant grasslands on the study site. No nesting colonies were observed on-site during this study. Although focused surveys for this species were not performed, this species likely did not nest on-site in 2004, since potential nesting habitat (freshwater marsh with dense emergent vegetation) was generally lacking, and where present, tricolored blackbirds were not observed. Since nesting colonies typically contain large numbers of birds (e.g., hundreds to thousands), it is unlikely that nesting was overlooked. However, since tricoloreds are known to change nesting sites between and within seasons, this species could nest on-site in the future, if optimal conditions are present. An example of a potential nest site is the dense bulrush patch in the unnamed drainage on the Wayland parcel, which supported a nesting colony of red-winged blackbirds (*Agelaius phoeniceus*) during this study.

4.5.12 Pallid Bat. The pallid bat is a State species of special concern (CDFG 2004b). Pallid bats are found throughout the state in a variety of habitats at low and mid-elevations including deserts, scrub and coniferous forests (Brown and Pierson 1996). In central California, pallid bats mostly inhabit oak woodlands, ponderosa pine and redwood forests (Brown and Pierson 1996). Pallid bats are year-round residents, moving about locally on a seasonal basis and hibernating in winter (Brown and Pierson 1996). During the day pallid bats roost in buildings, rock crevices, caves, mines and especially hollow trees (Brown and Pierson 1996). Temperature is a limiting factor for pallid bats, which are intolerant of microclimates above 40^0 C; therefore, roost sites that provide a varied temperature regime are selected (CDFG 1990; Brown and Pierson 1996). Pallid bats commonly use bridges as night roosts and show strong site fidelity to such roost sites (Pierson *et al* 1996). Segregated colonies are common, but both sexes can be found together at roost sites (Tuttle 1988). Mating begins in late October and lasts until March (Tuttle 1988).

Maternity roosts are colonial and may contain several hundred females, which give birth to one to two young per year from May to June. Young learn to fly at about six weeks of age (Tuttle 1988). The colony is maintained from spring through the fall when bats disperse after the young have learned to fly and forage on their own. Pallid bats divide into smaller groups in fall and aggregations in winter are smaller than in summer (Tuttle 1988; Pierson 1998). Pallid bats glean moths from leaves and will land on the ground to forage on large arthropods, especially Jerusalem crickets (Brown and Pierson 1996). Pallid bats are sensitive to human disturbances at roost sites (CDFG 1990; Brown and Pierson 1996). Timber harvests, suburban development of oak woodlands and mining operations have been implicated in the decline of this species in California (Brown and Pierson 1996).

4.5.12.1 Local Occurrence. The occurrence of pallid bats in the study area is uncertain, since no records are listed in the CNDDB regional Quads.

4.5.12.2 Site Assessment. During the course of this study, no pallid bats were observed. Their status on the study site is uncertain, since focused surveys were not performed. Pallid bats likely inhabit the site, possibly roosting in large hollowed oaks, such as those found in the remnant oak woodland, and perhaps ranch structures, especially those that do not receive frequent use.

4.5.13 Monterey Dusky-footed Woodrat. The Monterey dusky-footed woodrat is a State species of special concern (CDFG 2004b). This subspecies is distributed through the northern Santa Lucia Mountains from north Monterey County south through much of San Luis Obispo County (Hall 1981). The dusky-footed woodrat is most common in riparian, oak woodland and scrub habitats, but is able to persist in semi-rural areas in proximity to houses, if patches of native habitat are present (M. Allaback, pers. obs.). A study of this subspecies on Camp Roberts found that densities in oak woodland increased significantly if dense under-story was present; densities reached 46.7 animals per hectare in plots of dense vegetation (Tietje 1995). Woodrats typically build middens (nests) of sticks and other debris on the ground, in the lower branches of trees and occasionally in human-made structures. Middens are often reused by successive generations and some can become six feet or more in height. Other atypical dens, including tree cavities, rock crevices and ground holes, are well hidden and easily overlooked. Middens are used for rearing young, protection from predators, resting, food storage, thermal protection and social interaction (Carraway and Verts 1991). Individual woodrats can use and maintain more than one midden and, occasionally, more than one woodrat can occupy a den (Fargo and Laudenslayer 1999). Woodrat middens are also used by a wide variety of native amphibians, small mammals, reptiles and insects (Ingles 1965; Carraway and Verts 1991). Woodrats feed on a variety of plant material, including seeds, nuts, berries and leaves, oftentimes foraging above the forest floor (Jameson and Peeters 1988). Woodrat home ranges may cover 46.2 acres, but activity may also be limited to a single tree over an individual's lifetime (CDFG 1990). They are mostly nocturnal in habit and active throughout the year. Dusky-footed woodrats breed year-round and may produce up to five litters per year, with litters containing one to four young (CDFG 1990). Development of oak woodlands and clearing of brushy under-story are possible threats to this species.

4.5.13.1 Local Occurrence. The CNDDB does not contain information on dusky-footed woodrats in the study region. However, the known range of this species extends throughout the northern-half of the Santa Lucia Range and into the Salinas Valley (Hall 1981).

4.5.13.2 Site Assessment. During the course of this study, Monterey dusky-footed woodrat middens were not observed, however focused surveys for this species were not performed and their status on-site remains uncertain. They may inhabit the tree canopy of the remnant oak woodland and/or the understory of riparian woodlands along Gabilan Creek, Natividad Creek and the unnamed drainage, where vegetation is dense and broad. The habitat quality may be marginal due to adjacent agricultural operations, ground squirrel control and habitat fragmentation.

REFERENCES AND LITERATURE CITED

Biotic Resources Group, August 1998. Gabilan Creek, Lexington Road Crossing Project Salinas, California, Habitat Assessment for the California Red-legged Frog. Prepared for Creek Bridge Homes.

Biotic Resources Group, June 1998. Boronda Road Crossing Salinas California Biotic Assessment and Delineation of Waters of the United States. Prepared for the City of Salinas Public Works Department.

Beason, R. C. 1995. Horned Lark (*Eremophila alpestris*). *In* Birds of North America, No. 195 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Beedy, E. C. and W. J. Hamilton III. 1997. Tricolored Blackbird Status Update and Management Guidelines. Prepared for the U. S. Fish and Wildlife Service and California Department of Fish and Game, Sacramento, CA.

Beedy, E. C., S.D. Sanders, and D. A. Bloom. 1991. Breeding Status, Distribution , and Habitat Associations of the Tricolored Blackbird (*Agelaius tricolor*), 1850-1989. Jones & Stokes Associates, Inc. (JSA 88-187.) Sacramento, CA. Prepared for U.S. Fish and Wildlife Service, Sacramento, CA. Dated 21 June.

Block, W.M., M. L. Morrison, and J. Verner. 1990. Wildlife and Oak Woodland Interdependency. Fremontia, July Edition.

Brown, P. and E. Pierson. 1996. Natural History and Management of Bats in California. Supporting materials provided at the November 13 - 15, 1996 Conference in Sacramento, CA sponsored by The Western Section of the Wildlife Society.

Bryan Mori Biological Consulting Services. 2001. Creekbridge Homes Independence Road California Tiger Salamander and California Red-legged Frog Assessment. Prepared for Creekbridge Homes.

Bryan Mori Biological Consulting Services and Biotic Resources Group. 2003. Creekbridge Homes Biological Constraints Study, Monterey County, CA (Draft). Prepared for: Creekbridge Homes, Salinas, CA.

Bryan Mori Biological Consulting Services. 2005. California Tiger Salamander Site Assessment and Survey, Salinas Annexation Study Area, Monterey County, CA. Prepared for: Biotic Resources Group, Soquel, CA.

Bulger, J. B., N. J. Scott Jr., and R. B. Seymour. 2003. Terrestrial Activity and Conservation of Adult California Red-legged Frogs *Rana aurora draytonii* in Coastal Forests and Grasslands. Biological Conservation 110: 85-95.

Bury, R. B. and D.C. Holland. 1993. (*Draft*) Clemmys marmorata (Baird and Girard 1852), Western Pond Turtle. *In* Pritchard, P. C. H. and A. G. J. Rhodin (Eds.) Conservation Biology of Freshwater Turtles. IUCN Special Publication.

Bury, R. B. and J. H. Wolfheim. 1973. Aggression in Free-Living Pond Turtles (*Clemmys marmorata*). BioScience Vol. 23, No. 11.

California Burrowing Owl Consortium (CBOC). 1997. Burrowing Owl Survey Protocol and Mitigation Guidelines (Appendix B). J. Raptor Res. Report 9.

California Department of Fish and Game (CDFG). 2004a. California Natural Diversity Data Base, Rare Find 3: Natividad, Salinas, Hollister, Prunedale, Marina, Seaside, Spreckels, Chualar, San Juan Bautista and Salinas Quadrangles. California Department of Fish and Game, Sacramento, CA.

_____. 2004b. Special Animals. List of special status animals (dated January). Sacramento, California.

_____. 2004c. Special Vascular Plants, Bryophytes and Lichens List, September 2004.

_____. 2003a. Natural Diversity Data Base, List of California Terrestrial Natural Communities Recognized by the CNDDB. September 6, 2003.

_____. 2003b. Atlas of the Biodiversity of California. California Department of Fish and Game, Sacramento, CA.

_____. 1997. Inland Fisheries Informational Leaflet No. 44, Survey Protocol for California Tiger Salamander (*Ambystoma californiense*).

_____. 1990. California's Wildlife. Volume I Amphibians and Reptiles, Volume II Birds, Volume III Mammals. California Department of Fish and Game, Sacramento, CA.

California Native Plant Society. 2004. Electronic Inventory of Rare and Endangered Plant Species of California. Sacramento, CA

California Partners in Flight. 2000. The Riparian Bird Conservation Plan: A strategy for reversing the decline of riparian associated birds in California. California Partners in Flight. Version 1.0.

Carraway, L.N. and B.J Verts. 1991. *Neotoma fuscipes*. Mammalian Species 386:1-10.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. La Roe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS 79-31. Washington: United States Fish & Wildlife Service Office of Biological Services.

Davis, J.W. 1983. Snags are for Wildlife. *In* Snag Habitat Management: Proceedings of the Symposium. USDA Forest Service Rocky Mountain Forest and Range Experiment Station GTR RM-99.

DeHaven, R.W., F. T. Crase and P.P. Woronecki. 1975a. Movements of Tricolored Blackbirds Banded in the Central Valley of California, 1965-1972. Bird Banding, Vol. 46, No. 3.

DeHaven, R.W., F. T. Crase and P.P. Woronecki. 1975b. Breeding Status of the Tricolored Blackbird, 1969-1972. Calif. Fish and Game 61(4):166-180.

Delevoryas, P. 1997. Relocation of Burrowing Owls During Courtship Period. *In* The Burrowing Owl, Its Biology, and Management Including the Proceedings of the First International Burrowing Owl Symposium. Raptor research Report No. 9.

DeSante, D. F., E. D. Ruhlen, S. L. Adamany, K.M. Burton and S. Amin. 1997. A Census of Burrowing Owls in Central California in 1991. *In* The Burrowing Owl, Its Biology, and Management Including the Proceedings of the First International Burrowing Owl Symposium. Raptor research Report No. 9.

Dunk, J. R. 1995. White-tailed Kite (*Elanus leucurus*). *In* Birds of North America, No. 178 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Ehrlich, P., Dobkin, D. and D. Wheye. 1992. Birds in Jeopardy. Stanford University Press, Stanford, CA.

_____. 1988. The Birder's Handbook - A Field Guide to the Natural History of North American Birds. Simon and Schuster Inc.

Faanes, C. A. and R. J. Howard. 1987. Habitat Suitability Index Models: Black-shouldered Kite. U.S. Fish and Wildlife Service. Biological Report 82(10.130).

Fargo, R. And W. F. Laudenslayer. 1999. Are House Counts Reliable Estimators of Dusky-footed Woodrat Population Size? *In* Transactions of the Western Section of the Wildlife Society 31:53-57.

Feeney, L. R. 1997. Burrowing Owl Site Tenacity Associated with Relocation Projects. *In* The Burrowing Owl, Its Biology, and Management Including the Proceedings of the First International Burrowing Owl Symposium. Raptor research Report No. 9.

Fellers, G. M., A. E. Launer, G. Rathbun, S. Bobzien, J. Alvarez, D. Sterner, R. Seymour, and M. Westphal. 2001. Overwintering tadpoles in the California red-legged frog (*Rana aurora draytonii*). Herpetological Review 32(3), 156-157.

Giusti, G. A. and P.J. Tinnin (eds.). 1993. A Planners Guide for Oak Woodlands. Publication of the Integrated Hardwood Range Management Program, Dept. of Forestry and Resource Management, U.C. Berkeley.

Grinnell, J. and Miller, A. 1944. The Distribution of the Birds of California. Cooper Ornithological Club (Society). Reprinted by Artemisia Press.

Hall, E. R. 1981. The Mammals of North America. John Wiley and Sons, New York.

Hamilton, W. J. 1998. Tricolored Blackbird Itinerant Breeding in California. The Condor 100:218-226.

Haug, E. A., Millsap, B. A. and M. S. Martell. 1993. Burrowing Owl. In The Birds of North America Life Histories for the 21st Century (A. Poole and F. Gill Eds.). The Academy of Natural Sciences of Philadelphia. The American Ornithologists' Union.

Hayes, M. P. and M. R. Jennings. 1988. Habitat Correlates of the Distribution of the California Red-legged Frog (*Rana aurora draytonii*) and the Yellow-legged Frog (*Rana boylii*): Implications for Management. In R. Szaro, K. E. Severson and D. R. Patton (tech. coordinators), Proceedings of the Symposium of the Management of Amphibians, Reptiles and Small Mammals in North America. USDA Forest Service, General Tech. Rpt. RM-166.

Hickman, J. 1993. The Jepson Manual Higher Plants of California. Berkeley: University of California Press.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. CDFG Unpublished report, October 1986.

Jennings, M. R. and M. P. Hayes. 1994. Amphibian and Reptile Species of Concern in California. California Department of Fish and Game. Sacramento, CA.

_____. 1990. The Status of California Red-legged Frog (*Rana aurora draytoni*) in Pescadero Marsh Natural Reserve. California Department of Parks and Recreation No. 4-823-9018.

_____. 1985. Pre-1900 Over harvest of California Red-legged Frogs (*Rana aurora draytonii*): the Inducement for Bullfrog (*Rana catesbeiana*) Introduction. Herpetologica 41(1):94-103.

Kirschner, L. B., Kerstetter, T., Porter, D. and R.H. Alvarado. 1971. Adaptation of Larval *Ambystoma tigrinum* to Concentrated Environments. American Journal of Physiology Vol. 220 No. 6.

Knopf, F. L. and J. A. Sedgwick. 1992. An Experimental Study of Nest-Site Selection by Yellow Warblers. The Condor 94:734 - 742.

Kreuper, D. J. 1992. Effects of Land Use Practices in Western Riparian Ecosystems. *In* D. M. Finch and P. W. Stangel (eds.). Status and Management of Neotropical Migratory Birds. Gen. Tech. Rpt. RM-229. Ft. Collins, CO. U.S. Forest Service, Rocky Mt. Forest and Range Experiment Station.

Lawler, S. P., D. A. Dritz and M. Holyoak. 1999. Effects of introduced mosquitofish and bullfrogs on the threatened California red-legged frog. Conservation Biology 13: 613-622.

Lindquist, S. B. and M. D. Bachman. 1980. Feeding Behavior of the Tiger Salamander, *Ambystoma Tigrinum*. Herpetologica. 36(2), pp. 144-158.

Loredo, I. and D. Van Vuren. 1996. Reproductive Ecology of a Population of the California Tiger Salamander. Copeia 1996(4), pp. 895-901.

Loredo, I., Van Vuren, D. and M. L. Morrison. 1996. Habitat Use and Migration Behavior of the California Tiger Salamander. Journal of Herpetology, Vol. 30, No. 2, pp. 282-285.

Lowther, P. E., C. Celada, N.K. Klein, C.C. Rimmer and D. A. Spector. 1999. Yellow Warbler (*Dendroica petechia*). *In* Birds of North America, No. 454 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Macwhirter, R. B. And K. L. Bildstein. 1996. Northern Harrier (*Circus cyaneus*). *In* Birds of North America, No. 210 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Matthews M.A., 1997. Flowering Plants of Monterey County. California Native Plant Society and M.A. Matthews, Sacramento, CA.

Mercurio, E. (date?). Biological Survey Report for the Crossing of Natividad Creek by Boronda Road and the Northern Approx. 15% of the Proposed William Ranch Planned Community Project Area. Unpubl. Report prepared for City of Salinas.

McCaskie, G., P. De Benedictis, R. Erickson and J. Morlan. 1979. Birds of Northern California An Annotated Field List. Golden Gate Audubon Society, Berkeley, CA.

McGinnis, S.M. 1984. Freshwater Fishes of California. University of California Press.

Moore, F. R. And T. R. Simons. 1989. Habitat Suitability and Stopover Ecology of Neotropical Landbird Migrants. *In* J. M. Hagan and D. W. Johnston (eds.). Ecology and Conservation of Neotropical Migrant Landbirds. Smithsonian Institute Press, Washington, D.C.

Morrison, M. L., Block, W.M. and J. Verner. 1991. Wildlife-Habitat Relationships in California's Oak Woodlands: Where Do We Go From Here? *In* Proceedings of the Symposium on Oak Woodlands and Hardwood Rangeland Management. USDA Pacific Southwest Research Station GTR PSW-126.

Palmer, R. S. (ed.). 1988. Handbook of North American Birds, Diurnal Raptors Vols. 4 & 5. Yale University Press.

Peterjohn, B.G. and J. R. Sauer. 1995. Population Trends of the Loggerhead Shrike from the North American Breeding Bird Survey. Proceedings Western Foundation Vertebrate Zoology 6:117-121.

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

Pierson, E. D. 1998. Tall Trees, Deep Holes and Scarred Landscapes: Conservation Biology of North American Bats. *In* T. H. Kunz and P. A. Racey (eds.) Bat Biology and Conservation. Smithsonian Institution Press, Washington, D.C.

_____. 1988. The Status of Townsend's Big-eared Bat (*Plecotus townsendii*) in California. CDFG Wildlife Management Division, Non-Game Bird and Mammal Section, First Contract Progress Report July 1988.

Pierson, E. D., W. E. Rainey and R. M. Miller. 1996. Night Roost Sampling: A window on the forest-bat community in Northern California. *In* R. M. R. Barclay and R. M. Brigham (eds.) Bats and Forest Symposium October 19-21, 1995 Victoria, British Columbia, Canada. British of Columbia Ministry of Forests, Victoria, BC.

Rathbun, G. B., Scott, N. J. and T. G. Murphey. 2002. Terrestrial Habitat use by Pacific Pond Turtles in a Mediterranean Climate. Southwestern Naturalist, Vol. 47, No. 2.

Rathbun, G. B., Jennings, M. R., Murphey, T. G. and N. Seipel. 1993. Status and Ecology of Sensitive Aquatic Vertebrates in Lower San Simeon and Pico Creeks, San Luis Obispo County, California. Final Report prepared for California Parks and Recreation, San Simeon, California.

Rathbun, G. B., Seipel, N. and D. Holland. 1992. Nesting Behavior and Movements of Western Pond Turtles, *Clemmys marmorata*. Southwestern Naturalist, Vol. 37, No. 3.

Remsen, J. V. June 1978. Bird Species of Special Concern in California. California Department of Fish and Game, Sacramento, CA.

Reynolds, R.T. 1983. Management of Western Coniferous Forest Habitat for Nesting Accipiter Hawks. U.S. Dept. Of Agriculture, Forest Service, Rocky Mt. Forest and Range Experiment Station. Gen. Tech. Rpt. RM-102.

Roberson, D. 2002. Monterey Birds Second Edition. Monterey Peninsula Audubon's Society. ABA Sales, Colorado Springs, CO.

Roberson, D. and C. Tenney (eds.). 1993. Atlas of the Breeding Birds of Monterey County California. Monterey Peninsula Audubon's Society. Ryan Ranch Printers, Monterey, CA.

Robinson, S. K., Rothstein, S. I., Brittingham, M. C., Petit, L. J., and J. A. Grzybowski. 1995. Ecology and Behavior of Cowbirds and Their Impact on Host Populations. *In* Ecology and Management of Neotropical Migratory Birds (T.E. Martin and D. M. Finch Eds. 1995). Oxford University Press.

Romspert, A. P. and L. L. McClanahan. 1981. Osmoregulation of the Terrestrial Salamander, *Ambystoma tigrinum*, in Hypersaline Media. Copeia 1981(2):400-405.

Rosenfield, R.N. and J. Bielefeldt. 1993. Cooper's Hawk (*Accipiter cooperii*). *In* Birds of North America, No. 75 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Ryser, F. 1985. Birds of the Great Basin - A Natural History. University of Nevada Press.

Schroeder, R. L. 1982. Habitat Suitability Index Models: Yellow Warbler. Biological Services Program and Division of Ecological Services FWS/OBS-82/10.27. US Fish and Wildlife Service.

Scott, N. J. and G. B. Rathbun. 2001. Biology of the Aquatic Vertebrates of Coastal San Luis Obispo County, California, Final Report, Volume 2. Prepared for California Department of Transportation, San Luis Obispo, CA.

Shaffer, H. B., Fisher, R. N. and Stanley, S. 1993. Status Report: The California Tiger Salamander *Ambystoma californiense*. Zoology Department, U.C. Davis.

Shaffer, H. B., and Stanley, S. 1991. Interim Report to California Department of Fish and Game: California Tiger Salamander Surveys 1991. Zoology Department, UC Davis.

Small, A. California Birds Their Status and Distribution. Ibis Publishing Co., Vista, CA.

Stebbins, R. C. 2003. A Field Guide to Western Reptiles and Amphibians, Third Edition, Revised. Houghton Mifflin Co., Boston, MA.

Storer, T. I. 1925. A Synopsis of the Amphibia of California. University of California Publications in Zoology, Vol. 27.

Tate, J. Jr. 1986. The Blue List for 1986. American Birds Volume 40, No. 2.

Thomas, J. W., Anderson, R.G., Maser, S., and Bull, E.L. 1979. Snags. *In* Wildlife Habitats in Managed Forests (J.W. Thomas, Ed.). USDA Forest Service. Agriculture Handbook No. 553.

Tietje, W. 1995. Woodrat abundance and habitat measurements in oak woodland at Camp Roberts, California: preliminary results. *In:* Transactions of the Western Section of the Wildlife Society 31:53-57.

Tietje, W. 1990. Acorns: Planning for Oak Woodland Wildlife. Fremontia, July Edition.

Trenham, P. C. and H. B. Shaffer. *In Prep.* Upland Spatial Distribution and Habitat Use in a Declining Amphibian.

Trenham, P. C. 2001a. Terrestrial Habitat Use by Adult California Tiger Salamanders. Journal of Herpetology, Vol. 35, No. 2, pp. 343-346.

Trenham, P. C., Koenig, W. D. and H. B. Shaffer. 2001b. Spatial Autocorrelated Demography and Interpond Dispersal in the Salamander *Ambystoma Californiense*. Ecology, 82(12), pp. 3519-3530.

Trenham, P. C., Shaffer, H. B., Koenig, W. D. and M. R. Stromberg. 2000. Life History and Demographic Variation in the California Tiger Salamander (*Ambystoma californiense*. Ecology, 82(12), pp. 3519-3530.

Tuttle, M. D. 1988. America's Neighborhood Bats. University of Texas Press, Austin, Texas.

United States Fish and Wildlife Service (USFWS). 2004. Federal Register: August 4, 2004, Volume 69, Number 169.

_____. 2003. Federal Register/Vol. 68, No. 189, Tuesday, September 30, 2003/Proposed Rules.

_____. 2002. Recovery plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon.

_____. 2000. Federal Register/Vol. 65, No. 12, Wednesday, January 19, 2000/Rules and Regulations.

_____. 1998. Federal Register/Vol. 63, No. 155/Wednesday, August 12 1998/Proposed Rules.

_____. 1997. U.S. Fish and Wildlife Service Guidance on Site Assessment and Field Surveys for California Red-legged Frogs. Sacramento Field Office, Sacramento, California.

_____. 1996. Federal Register/Vol. 61, No. 101, Thursday May 23, 1996/Rules and Regulations.

United States Fish and Wildlife Service and California Department of Fish and Game. 2003. Interim Guidance on Site Assessment for Determining the Presence or a Negative Finding of the California Tiger Salamander, October 2003.

U.S. Forest Service. 1999. Dead and Dying Trees: Essential for Life in the Forest. Science Findings Issue 20/November 1999.

Vickery, P. D., Tubaro, P. L., Cardosa Da Silva, J. M., Peterjohn, B. G., Herkert, J. R. And R. B. Calvacanti. 1999. Conservation of Grassland Birds in the Western Hemisphere. *In* J. T. Rotenberry (Ed.) Studies in Avian Biology No. 19. Cooper Ornithological Society.

Williams, D.F. June, 1986. Mammalian Species of Special Concern in California. California Department of Fish and Game, Sacramento, CA.

Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*). *In* Birds of North America, No. 213 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

U. S. Fish and Wildlife Service. 1995. Proposed rule to determine five plants and a lizard from Monterey County, California, as endangered or threatened. Federal Register Vol. 60, No. 148: 39326-39337.

Personal Communications:

Mark Allaback, Biosearch Associates, Santa Cruz, CA.
Vince DiMaggio, Creekbridge Homes, Salinas, CA.
Ben Fitzpatrick, Center for Population Biology, Section of Evolution and Ecology, University of California, Davis.
Gary Kittleson, Kittleson Environmental Consulting, Santa Cruz CA.
Bill McIver, US Fish and Wildlife Service, Ventura Field Office.
Julie Niceswanger, US Fish and Wildlife Service, Ventura Field Office.
Dave Pereksta, US Fish and Wildlife Service, Ventura Field Office.

Appendix A
Vascular Plant Checklist – Salinas Annexation Project, 2004

FERNS AND FERN ALLIES
EQUISETACEAE
Equisetum arvense (common horsetail)

CONIFERS
CUPRESSACEAE
Cupressus macrocarpa (Monterey cypress)

PINACEAE
Pinus radiata (Monterey pine)

FLOWERING PLANTS-DICOTS
ANACARDIACEAE
Toxicodendron diversilobum (poison oak)

APIACEAE
*Conium maculatum** (poison hemlock)
*Foeniculum vulgare** (fennel)
Oenanthe sarmentosa (water parsley)
Sanicula bipinnatifida (purple sanicle)

ARALIACEAE
*Hedera helix** (English ivy)

ASTERACEAE
Achillea millefolium (yarrow)
*Anthemis cotula**(dog fennel)
Artemisia douglasiana (mugwort)
Baccharis pilularis (coyote brush)
*Carduus pycnocephalus** (Italian thistle)
***Centromadia parryi* ssp. *congdonii* (Condgons's tarwplant)**
*Chamomilla suaveolens** (pineapple weed)
*Cirsium arvense** (Canada thistle)
Delaireia odorata * (German ivy)
*Filago gallica** (common filago)
Hemizonia corymbosa (corymbose tarweed)
Heterotheca grandiflora (telegraph weed)
*Hypochoeris glabra** (smooths cat's ear)
*Hypochoeris radicata** (rough cat's ear)
*Lactuca saligna** (willow lettuce)
*Lactuca serriola** (prickly lettuce)
Madia gracilis (slender tarweed)
*Picris echioides** ((bristly ox-tongue)
*Silybum marianum** (milk thistle)
*Sonchus asper** (prickly sow thistle
*Taraxacum officinale** (dandelion)
Wyethia angustifolia (narrow-leaved mule's ears)
Xanthium strumarium (cocklebur)

BORAGINACEAE
Amsinckia vernicosa (green fiddleneck)
Amsinckia menziesii var. *intermedia* (rancher's fiddleneck)
Amsinckia spectabilis var. *spectabilis* (seaside fiddleneck)
Cryptantha clevelandii (Cleveland's cryptantha)
Heliotropium curassavicum (heliotrope)
Plagiobothrys nothofulvus (popcorn flower)

BRASSICACEAE
*Brassica rapa** (field mustard)
*Capsella bursa-pastoris** (shepard's purse)
Lepidium nitidum (shining pepper-grass)
*Lepidium densiflorum** (common pepper-grass)
*Raphanus sativus** (radish)
Rorippa nasturtium-aquaticum (water cress)

CAPRIFOLIACEAE
Sambucus mexicana (blue elderberry)

CARYOPHYLLACEAE
*Silene gallica** (common catchfly)
*Stellaria media** (common chickweed)

CHENOPODIACEAE
*Chenopodium album** (lamb's quarters

CONVOLVULACEAE
Calystegia subacaulis (hill morning-glory)
*Convolvulus arvensis** (bindweed)

EUPHORBIACEAE
Eremocarpus setigerus (dove weed)
*Euphorbia lathyris** (gopher plant)

FABACEAE
*Lotus corniculatus** (birdfoot trefoil)
Lupinus bicolor (miniature lupine)
Lupinus nanus (annual lupine)
*Medicago polymorpha** (California bur clover)
*Melilotus indica** (sour clover)
Trifolium campestre (hop clover)
*Trifolium hirtum** (rose clover)
*Trifolium subterraneum** (subterraneaum clover)
Vicia sativa ssp. *nigra** (narrow-leaved vetch)
Vicia villosa (woolly vetch)

FAGACEAE
Quercus agrifolia (coast live oak)

GERANIACEAE
*Erodium botrys** (long-beaked filaree)
*Erodium cicutarium** (red-stemmed filaree)
*Erodium moschatum** (white-stemmed filaree)
*Geranium carolinianum** (Carolina geranium)

LAMIACEAE
Lamium purpureum (red henbit)
*Marrubium vulgare** (horehound)

MALVACEAE
*Malva neglecta** (cheeseweed)
*Malva parviflora** (cheeseweed)

MYRTACEAE
*Eucalyptus globulus** (blue gum eucalyptus)

ONAGRACEAE
Camissonia ovata (sun cup)
Epilobium ciliatum ssp. *ciliatum* (ciliate willow herb)

OXALIDACEAE
*Oxalis pes-caprae** (Bermuda buttercup)

PAPAVERACEAE
Eschscholzia californica (California poppy)

PLANTAGINACEAE
*Plantago coronopus** (cut-leaved pantain)
*Plantago lanceolata** (English plantain)

PLATANACEAE
Platanus racemosa (western sycamore)

POLYGONACEAE
Polygonum amphibium var. *emersum* (water smartweed)
*Polygonum arenastrum** (common knotweed)
Polygonum lapathifolium (willow weed)
*Polygonum persicaria** (lady's thumb)
*Rumex acetosella** (sheep sorrel)
*Rumex crispus** (curly dock)
*Rumex obtusifolius** (bitter dock)
Rumex salicifolius (willow dock)

PORTULACACEAE
Calandrinia ciliata (red maids)
Claytonia perfoliata ssp. *perfoliata* (miner's lettuce)

PRIMULACEAE
*Anagallis arvensis** (scarlet pimpernel)

RANUNCULACEAE
*Ranunculus parviflorus** (small-flowered buttercup)

ROSACEAE
*Acaena novae-zelandiae** (biddy-biddy)
Rosa californica (California rose)
*Rubus discolor** (Himalaya berry)
Rubus ursinus (California blackberry)

SALICACEAE
Populus balsamifera ssp. *trichocarpa* (black cottonwood)
Salix lasiolepis (arroyo willow)
Salix lucida ssp. *lasiandra* (shining willow)

SCROPHULARIACEAE
Castilleja exserta ssp. *exserta* (pink owls clover)
Triphysaria versicolor (San Francisco orthocarpus)
*Veronica anagallis-aquatica** (water speedwell)

URTICACEAE
Urtica dioica ssp. *gracilis* (stinging nettle)

VERBENACEAE
Verbena sp. (vervain)

VIOLACEAE
Viola pedunculata (Johnny jump-up)

FLOWERING PLANTS - MONOCOTS

CYPERACEAE
Cyperus eragrostis (eragrostid sedge)
Cyperus erythrorhizos (red-rooted sedge)
Eleocharis macrostachya (pale spikerush)
Scirpus californicus (California bulrush)

IRIDACEAE
Sisyrinchium bellum (blue-eyed grass)

JUNCACEAE
Juncus bufonius var. *bufonius* (toad rush)
Juncus patens (spreading rush)
Juncus occidentalis (western rush)

LILIACEAE
Chlorogalum pomeridianum (Indian soap plant)
Triteleia ixioides ssp. *ixioides* (golden brodiaea)

POACEAE
*Agrostis capillaris** (colonial bent)
Avena sp. * (wild oat)
*Briza minor** (quaking grass)
Bromus carinatus var. *carinatus* (California brome)
*Bromus diandrus** (ripgut brome)
*Bromus hordeaceus** (soft chess)
Bromus madritensis ssp. *rubens** (red brome)
*Cynodon dactylon** (Bermuda grass)
*Cynosurus echinatus** (dogtail grass)
Danthonia californica var. *californica* (California oatgrass)
*Danthonia pillosa** (hairy oatgrass)
Elymus glaucus (blue wild rye)
*Holcus lanatus** (velvet grass)
Hordeum branchyantherum (meadow barley)
Hordeum murinum ssp. *leporinum** (wall barley)
*Lolium multiflorum** (Italian ryegrass)
Nassella pulchra (purple needlegrass)
*Phalaris aquatica** (Harding grass)
*Phalaris angusta** (canary grass)
*Poa annua** (annual bluegrass)
*Polypogon monspeliensis** (rabbitsfoot grass)
Vulpia myuros var. *myuros** (rattail fescue)

TYPHACEAE
Typha angustifolia (narrow-leaved cattail)

NOTES:
special status plants (RTEs) appear in **bold type**
* = non-native species
nomenclature from Jepson Manual (Hickman 1993)

APPENDIX B

Wildlife Species Observed on or Adjacent to the Salinas Annexation Site
7 April - 27 May 2004.

Key: a =Observed; aerial transient
n= Observed and known or expected to nest in the project vicinity
o= Observed on or adjacent to the project site; non-breeder
s= Sign (tracks, burrow, scat, etc.)

CLASS: AMPHIBIA

FAMILY: AMBYSTOMATIDAE (Mole Salamanders and Relatives)	
California Tiger Salamander (*Ambystoma tigrinum californiense*)	o
FAMILY: BUFONIDAE (True Toads)	
Western Toad (*Bufo boreas*)	o
FAMILY: HYLIDAE (Treefrogs and Relatives)	
Pacific Treefrog (*Hyla regilla*)	n
FAMILY: RANIDAE (True Frogs)	
California Red-legged Frog (*Rana aurora draytoni*)	o
Bullfrog (*Rana catesbeiana*)	o

CLASS: REPTILIA

FAMILY: EMYDIDAE (Pond and Marsh Turtles)	
Southern Pacific Pond Turtle (*Actinemys marmorata pallida*)	o
FAMILY: IGUANIDAE (Iguanids)	
Western Fence Lizard (*Sceloporus occidentalis*)	o
FAMILY: COLUBRIDAE (Colubrids)	
Western Yellow-bellied Racer (*Coluber constrictor*)	o
Gopher Snake (*Pituophis catenifer*)	o
California Red-sided Garter Snake (*Thamnophis sirtalis infernalis*)	o

CLASS: AVES

FAMILY: CATHARTIDAE (American Vultures)	
Turkey Vulture (*Cathartes aura*)	o
FAMILY: ANATIDAE (Swans, Geese, and Ducks)	
Canada Goose (*Branta canadensis*)	n?

Mallard (Anas platyrhynchos)	n
FAMILY: ACCIPITRIDAE (Hawks, Harriers and allies)	
White-tailed Kite (*Elanus leucurus*)	n?
Northern Harrier (*Circus cyaneus*)	n?
Red-tailed Hawk (*Buteo jamaicensis*)	n
Red-shouldered Hawk (*Buteo lineatus*)	n
Golden Eagle (*Aquila chrysaetos*)	o
FAMILY: FALCONIDAE (Caracaras and Falcons)	
American Kestrel (*Falco sparverius*)	n
FAMILY: CHARADRIIDAE (Plovers and Relatives)	
Killdeer (*Charadrius vociferus*)	n
FAMILY: LARIDAE (Gulls and Terns)	
Caspian Tern (*Sterna caspia*)	a
FAMILY: SCOLOPACIDAE (Sandpipers and Relatives)	
Wilson's Snipe (*Gallinago delicata*)	o
Whimbrel (*Numenius phaeopus*)	o
Long-billed Curlew (*Numenius americanus*)	o
FAMILY: COLUMBIDAE (Pigeons and Doves)	
Rock Pigeon (*Columba livia*)	o
Band-tailed Pigeon (*Patagioenas fasciata*)	a
Mourning Dove (*Zenaida macroura*)	n
FAMILY: STRIGIDAE (Owls)	
Great Horned Owl (*Bubo viginianus*)	n
Burrowing Owl (*Athene cunicularia*)	s, n?
FAMILY: APODIDAE (Swifts)	
Vaux's Swift (*Chaetura vauxi*)	a
FAMILY: TROCHILIDAE (Hummingbirds)	
Anna's Hummingbird (*Calypte anna*)	n
Allen's Hummingbird (*Selasphorus sasin*)	n
FAMILY: PICIDAE (Woodpeckers)	
Nuttall's Woodpecker (*Picoides nuttallii*)	n
Downy Woodpecker (*Picoides pubescens*)	n
FAMILY: TYRANNIDAE (Tyrant Flycatchers)	
Pacific-slope Flycatcher (*Empidonax difficilis*)	n
Black Phoebe (*Sayornis nigricans*)	n
Ash-throated Flycatcher (*Myiarchus cinerascens*)	n?

Western Kingbird (*Tyrannus verticalis*)	n
Cassin's Kingbird (*Tyrannus vociferans*)	n
FAMILY: VIREONIDAE (Vireos)	
Warbling Vireo (*Vireo gilvus*)	n?
Hutton's Vireo (*Vireo huttonii*)	n
FAMILY: CORVIDAE (Jays, Magpies, and Crows)	
Western Scrub-Jay (*Aphelocoma californica*)	n
American Crow (*Corvus brachyrhynchos*)	n?
Common Raven (*Corvus corax*)	a
FAMILY: ALAUDIDAE	
Horned Lark (*Eremophila alpestris*)	n
FAMILY: HIRUNDINIDAE (Swallows)	
Tree Swallow (*Tachycineta bicolor*)	n?
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)	n
Cliff Swallow (*Petrochelidon pyrrhonota*)	n
Barn Swallow (*Hirundo rustica*)	n
FAMILY: PARIDAE (Chickadees and Titmice)	
Chestnut-backed Chickadee (*Poecile rufescens*)	n
Oak Titmouse (*Baeopholus inornatus*)	n
FAMILY: AEGITHALIDAE (Bushtit)	
Bushtit (*Psaltriparus minimus*)	n
FAMILY: TROGLODYTIDAE (Wrens)	
Bewick's Wren (*Thryomanes bewickii*)	n
House Wren (*Troglodytes aedon*)	n
FAMILY: TURDIDAE (Thrushes, Robins, Bluebirds and allies)	
Western Bluebird (*Sialia mexicana*)	n
Swainson's Thrush (*Catharus ustulatus*)	n
American Robin (*Turdus migratorius*)	n
FAMILY: MIMIDAE (Mockingbirds)	
Northern Mockingbird (*Mimus polyglottos*)	n
FAMILY: STURNIDAE (Starlings)	
European Starling (*Sturnus vulgaris*)	n
FAMILY: BOMBYCILLDAE (Waxwings)	
Cedar Waxwing (*Bombycilla cedrorum*)	n
FAMILY: PARULIDAE (Wood Warblers)	

Orange-crowned Warbler (*Vermivora celata*)	n?
Yellow Warbler (*Dendroica petechia*)	n
Yellow-rumped Warbler (*Dendroica coronata*)	o
Wilson's Warbler (*Wilsonia pusilla*)	n
Common Yellowthroat (*Geothlypis trichas*)	n
FAMILY: EMBERIZIDAE (Towhees, Sparrows, Longspurs and allies)	
Spotted Towhee (*Pipilo maculatus*)	n
California Towhee (*Pipilo crissalis*)	n
Savannah Sparrow (*Passerculus sandwichensis*)	n
Grasshopper Sparrow (*Ammodramus savannarum*)	n
Song Sparrow (*Melospiza melodia*)	n
Golden-crowned Sparrow (*Zonotrichia atricapilla*)	o
White-crowned Sparrow (*Zonotrichia leucophrys*)	o
FAMILY: CARDINALIDAE	
Black-headed Grosbeak (*Pheucticus melanocephalus*)	n
Lazuli Bunting (*Passerina amoena*)	n?
FAMILY: ICTERIDAE (Blackbirds, Orioles and allies)	
Red-winged Blackbird (*Agelaius phoeniceus*)	n
Tricolored Blackbird (*Agelaius tricolor*)	n
Brewer's Blackbird (*Euphagus cyanocephalus*)	n
Western Meadowlark (*Sturnella neglecta*)	n
Brown-headed Cowbird (*Molothrus ater*)	n
Hooded Oriole (*Icterus cucullatus*)	n
Bullock's Oriole (*Icterus galbula*)	n
FAMILY: FRINGILLIDAE (Finches)	
Purple Finch (*Carpodacus purpureus*)	n
House Finch (*Carpodacus mexicanus*)	n
Lesser Goldfinch (*Carduelis psaltria*)	n
Lawrence's Goldfinch (*Carduelis lawrencei*)	n
American Goldfinch (*Carduelis tristis*)	n
CLASS: MAMMALIA	
FAMILY: DIDELPHIDAE (Opossums)	
Virginia Opossum (*Didelphis virginiana*)	s
FAMILY: LEPORIDAE (Rabbits and Hares)	
Brush Rabbit (*Sylvilagus bachmani*)	o
Desert Cottontail (*Sylvilagus audubonii*)	o
Black-tailed Jackrabbit (*Lepus californicus*)	o
FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)	
California Ground Squirrel (*Spermophilus beechyii*)	o

FAMILY: GEOMYIDAE (Pocket Gophers)

Botta's Pocket Gopher (*Thomomys bottae*)	u

FAMILY: CRICETIDAE

Western Harvest Mouse (*Reithrodontomys megalotis*)	o
California Vole (*Microtus californicus*)	o
Muskrat (*Ondatra zibethicus*)	o

FAMILY: CANIDAE (Foxes, Wolves, and Relatives)

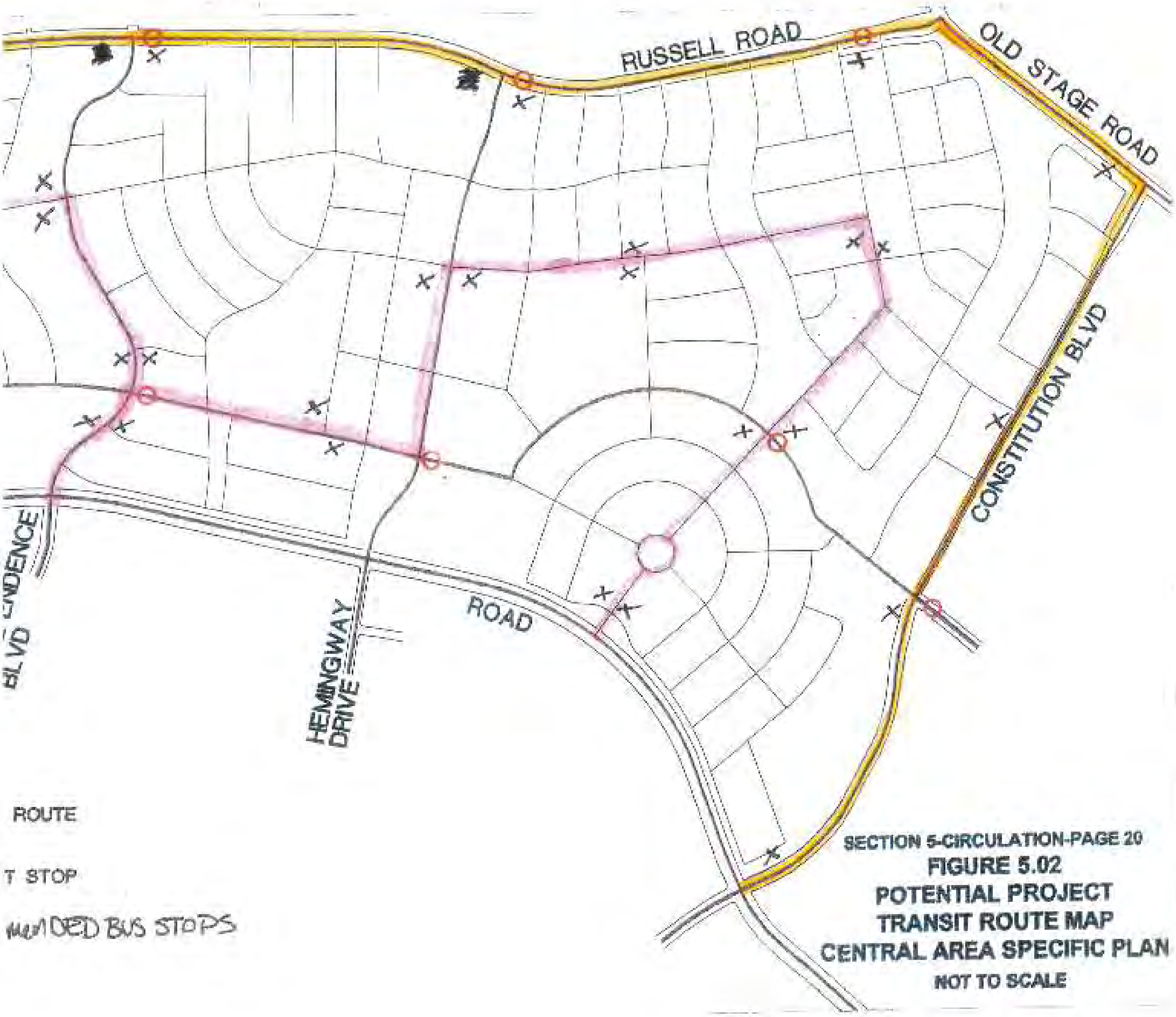
Coyote (*Canis latrans*)	s
Red Fox (*Vulpes fulva*)	o

FAMILY: MUSTELIDAE (Weasels, Badgers, and Relatives)

Long-tailed Weasel (*Mustela frenata*)	o
Striped Skunk (*Mephitis mephitis*)	o

FAMILY: CERVIDAE

Elk (*Cervus elaphus*)	o
Colombian Black-tailed Deer (*Odocoileus hemionus columbarius*)	o



SECTION 5-CIRCULATION-PAGE 20
FIGURE 5.02
POTENTIAL PROJECT TRANSIT ROUTE MAP
CENTRAL AREA SPECIFIC PLAN
NOT TO SCALE

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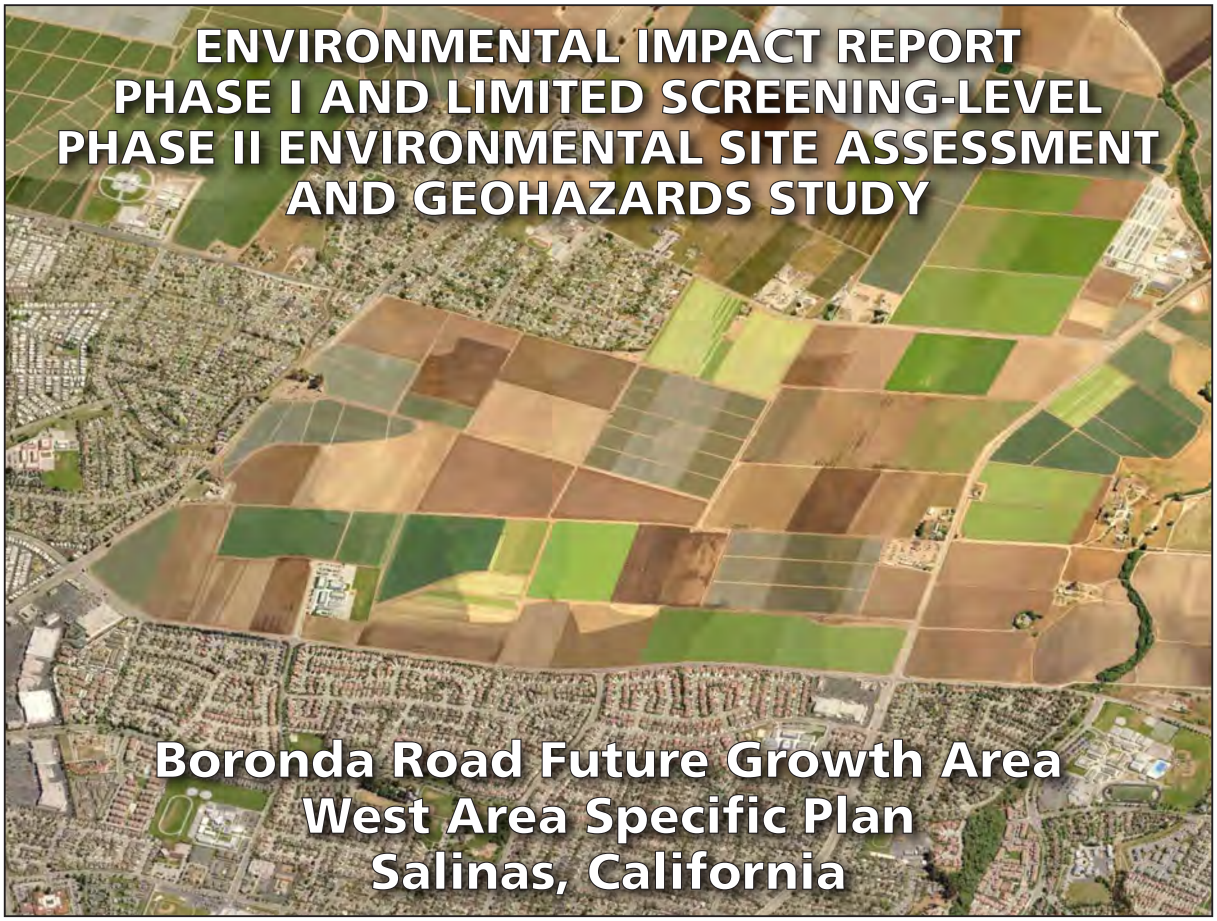
APPENDIX E – HAZARDS AND HAZARDOUS MATERIALS STUDIES/REPORTS



PREPARED FOR:

DE NOVO PLANNING GROUP
4630 BRAND WAY
SACRAMENTO, CALIFORNIA 95819

DE NOVO PLANNING GROUP

PREPARED BY:

GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DRIVE, SUITE 800
RANCHO CORDOVA, CALIFORNIA 95742

GEOCON

GEOCON PROJECT NO. S1049-03-01 **NOVEMBER 2016**

GEOCON
CONSULTANTS, INC.
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. S1049-03-01
November 10, 2016

Steve McMurtry, Principal
De Novo Planning Group
4630 Brand Way
Sacramento, California 95819

Subject: BORONDA ROAD FUTURE GROWTH AREA
WEST AREA SPECIFIC PLAN
SALINAS, CALIFORNIA
ENVIRONMENTAL IMPACT REPORT
PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT
AND GEOHAZARDS STUDY

Dear Mr. McMurtry:

At your request, we have performed a California Environmental Quality Act (CEQA)-level Phase I and limited Phase II Environmental Site Assessment (ESA) and geohazards study for inclusion in the Environmental Impact Report for the Boronda Road Future Growth Area project in Salinas, California. The report is specific to the West Area Specific Plan portion (the Site) of the Boronda Road Future Growth Area. The Site encompasses approximately 797 acres, is relatively flat-lying, and is bounded by Rogge Road to the north, Natividad Road to the east, Boronda Road to the south, and San Juan Grade Road to the west.

The Site is currently agricultural land used extensively for the cultivation of lettuce, cauliflower, broccoli, and strawberries. In the southwestern portion of the Site is McKinnon Elementary School, which is surrounded by agricultural fields. Several small clusters of buildings located on the northern, western, and eastern edges of the Site include residences, barns, warehouses, and storage yards. These structures have supported the agricultural operations and some have been used or are currently being used to temporarily store fertilizers, pesticides, herbicides and other materials normally associated with ongoing agricultural cultivation. Due to the long-term use of the land for agricultural purposes the Site has the potential for certain environmental conditions related pesticides and herbicides that could have caused hazardous residual products to accumulate in the soil.

We appreciate the opportunity to have provided our services to De Novo Planning Group. Please contact us if you have any questions concerning this report or if we may be of further service.

Sincerely,

Dan Easter, PG, CEG
Senior Geologist

Jim Brake, PG
Senior Geologist

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PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT AND GEOHAZARDS STUDIES Page

ABBREVIATIONS AND ACRONYMS	
APN	Assessor's Parcel Number
AST	Aboveground Storage Tank
CUPA	Certified Uniformed Program Agency
DTSC	Department of Toxic Substances Control
ESA	environmental site assessment
kg	kilogram
mg/kg	milligram per kilogram
NFA	No Further Action
OCP	organochlorine pesticide
PCB	polychlorinated biphenyl
PEA	Preliminary Environmental Assessment
RSL	Regional Screening Level
SSI	supplemental site investigation
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey

PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT AND GEOHAZARDS STUDIES

1.0 INTRODUCTION

This report summarizes the methodology and presents the findings of a California Environmental Quality Act (CEQA)-level Phase I and Limited Phase II Environmental Site Assessment (ESA) and geohazards study for the Western Area Specific Plan portion (the Site) of the Boronda Road Future Growth Area (BRFGA) project in Salinas, California. We performed the Phase I and Limited Phase II ESA and geohazards studies for the De Novo Planning Group (the Client) to provide information for inclusion into the CEQA document being prepared by the Client for the City of Salinas, California.

1.1 Purpose and Objectives

The purpose of the Phase I ESA was to identify evidence or indications of 'recognized environmental conditions' (RECs) as defined by the American Society for Testing and Materials (ASTM) *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* Section 1.1.1 of ASTM *Designation E 1527-13* defines an REC as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions." De minimis conditions are those that generally do not present a threat to human health or the environment and that generally would not be the subject of the enforcement action if brought to the attention of appropriate governmental agencies.

ASTM *Designation E1527-13* also defines 'Historical' and 'Controlled' RECs. An 'Historical REC' is defined as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." A 'Controlled REC' is defined as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." An HREC is not a REC if the release meets current standards for unrestricted residential use. A CREC remains a REC by definition because it does not meet the unrestricted residential use requirement unconditionally.

The Phase I ESA was also conducted in general accordance with the requirements of 40 Code of Federal Regulations (CFR) Part 312 titled *Standards and Practices for All Appropriate Inquiries,* as required under Sections 101(35)(B)(ii) and (iii) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of conducting an all appropriate inquiries investigation into the previous ownership and uses of a property is to meet the provisions necessary for the landowner, contiguous property owner, and/or bona fide prospective purchaser to qualify for certain landowner liability protections under CERCLA.

The following principles are an integral part of ASTM Designation E1527-13:

"Uncertainty Not Eliminated - No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property, and this practice recognizes reasonable limits of time and cost."

"Not Exhaustive - All Appropriate Inquiries does not mean an exhaustive assessment of a property. There is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing an environmental site assessment and the reduction of uncertainty about unknown conditions resulting from additional information."

"Level of Inquiry is Variable – Not every property will warrant the same level of assessment. Consistent with good commercial and customary practice, the appropriate level of environmental site assessment will be guided by the type of property subject to assessment, the expertise and risk tolerance of the user, and the information developed in the course of the inquiry."

1.2 Scope of Services

Our Proposal No. LS-14-238, dated December 4, 2014, describes the scope of services for the Phase I ESA. The scope of services outlined in the proposal was performed with the exception that Sanborn Maps were not reviewed. Environmental Data Resources, Inc. (EDR) stated that Sanborn Map coverage does not exist for the Site.

The main components of the Phase I ESA and their objectives, as specified by the referenced standards, include the following:

- **Physical Setting:** We reviewed physical setting references to obtain information concerning the topographic, geologic, and hydrogeologic characteristics of the Site and vicinity. Such information may be indicative of the direction and/or extent that a contaminant could migrate in the event of a spill or release.
- **Records Review:** We reviewed publicly available Federal, State, and local regulatory agency records to obtain information that could potentially help identify RECs at or potentially affecting the Site.

- **Site History:** We reviewed historical references to assess the history of previous uses of the Site and surrounding area to identify those that could have led to RECs on or near the Site. Historical sources reviewed included aerial photographs, topographic maps, city directories, and previous site assessment reports. In addition, we conducted interviews with persons who were expected to be reasonably knowledgeable about historical and/or current conditions at and uses of the Site.
- **Site Reconnaissance:** We performed a site reconnaissance to observe site conditions and activities for indications of evidence of RECs. The site reconnaissance was for the Site only. Offsite properties and features were viewed solely from the vantage of the Site and public thoroughfares.

1.3 Phase I ESA Report Limitations

The Phase I ESA report has been prepared exclusively for the Client. The information obtained is only relevant for the dates of the records reviewed or as of the date of the latest site visit. Therefore, the information contained herein is only valid as of the date of the report and will require an update to reflect recent records/site visits.

The Client should recognize that this report is not a comprehensive site characterization and should not be construed as such. The findings and conclusions presented in this report are predicated on the site reconnaissance, a review of the specified regulatory records, and a review of the historical usage of the Site, as presented in this report. The Client, should also understand that wetlands, asbestos-containing building materials, lead-containing paint, lead in drinking water, radon, mercury related to mining activities, methane, and mold surveys were not included in the scope of services for this Phase I ESA. Assessment for potential naturally occurring hazards such as asbestos also was not included.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the Phase I ESA is implied within the intent of this report or any subsequent reports, correspondence or consultation, either express or implied. We strived to conduct the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

1.4 Data Gaps

A data gap is defined by ASTM *Designation E 1527-13* as "a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information." Data gaps could include such things as insufficient historical information, the inability to interview persons with direct site knowledge (e.g., the owner(s), past owner(s), tenants, workers, etc.) or the lack of access to all parts of a site during the site reconnaissance.

Sanborn Maps were not reviewed for the Site since EDR stated that Sanborn Map coverage was not available. However, based on our review of historical information from other sources, we do not consider the lack of Sanborn map coverage a data gap.

2.0 SITE DESCRIPTION

This section provides information regarding the location and physical characteristics of the Site including its size, topography, geologic, soil, and hydrogeologic conditions.

2.1 Location and Legal Description

The Site is bounded by Rogge Road to the north, Natividad Road to the east, Boronda Road to the south, and San Juan Grade Road to the west in Salinas, Monterey County, California (Site, Figure 1). The Site is depicted on the Salinas and Natividad, California United States Geological Survey (USGS, 2015), 7.5-minute topographic maps. The Site includes the southeastern quarter of Section 9, the southwestern quarter of Section 10, the northeastern quarter of Section 16, and northwestern quarter of Section 15 of Township 14 South, Range 3 East, Mount Diablo Base and Meridian.

The Site is further identified by Monterey County Assessor's Parcel Numbers (APNs, 12 total) 211-011-002, 211-011-003, 211-011-008, 211-011-009, 211-011-010, 211-011-011, and 211-231-012, 211-231-013, 211-231-016, 211-231-059, 211-231-060, 211-231-061. Parcel maps depicting the Site are in Appendix A.

2.2 Site and Vicinity General Characteristics

The approximately 795-acre agricultural Site is surrounded by residential and other agricultural land use (Figure 2). The Site consists of 12 parcels that are predominantly agricultural land with some development including: a few farm residences and associated agricultural buildings (i.e., barns, warehouses, and storage yards) along the northern, western, and eastern sides of the Site and McKinnon Elementary School in the southwestern portion of the Site. A new high school is proposed for the northern portion of the Site. Existing domestic and agricultural wells are proposed to be abandoned, in accordance with state and local agency regulations.

Beyond the northwestern, western and southern boundaries of the Site are residential developments consisting of single family homes, condominiums, and apartments. La Joya elementary school and Bolsa Knolls middle school () are located within the residential area adjacent to the northwest of the Site. Santa Rita Elementary School is located within the residential area adjacent to the west of the Site.

2.2.1 Topography

The elevation of the Site is approximately 134 feet above mean sea level. The overall topography of the Site is nearly flat, with little change in elevation (Figure 2). The overall slope across the Site is from northeast to southwest at approximately 0.3%. There are no natural streams or water bodies on or adjacent to the Site. Some of the northwestern portion of the Site, at the junction of San Juan Grade Road and Russell Road, has been designated a 100-year floodplain area by the Federal Emergency Management Agency (FEMA).

2.2.2 Geologic Conditions

Site geologic information was obtained from the *Geologic Map of the Monterey Quadrangle* (California Geological Survey [CGS], 2002). The Site is located in the southern Salinas Valley in the Coast Ranges geomorphic province. The valley is bounded by the Gabilan Range to the east, the Sierra de Salinas Mountains to the south and west, and by Monterey Bay to the northwest. The northern Salinas Valley is filled with a thick sequence of Pleistocene to recent age sedimentary deposits both continental and marine in origin. The referenced geologic map indicates that the Site is underlain by Quaternary alluvial fan deposits (CGS, 2002).

2.2.3 Soil Conditions

We obtained information concerning soil conditions in proximity to the Site from review of the United States Department of Agriculture's (USDA) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm). Information available on Web Soil Survey indicates that surficial onsite soil is predominantly classified as Chualar loam, which is a moderately well-drained soil that formed on alluvial fans from fine-loamy alluvium derived from igneous and metamorphic rock.

2.3 Geologic Hazards

2.3.1 Surface Fault Rupture

Numerous active, potentially active, and inactive faults are present in Central California. The criteria for classification of these faults were developed by the California Geological Survey for the Alquist-Priolo Earthquake Fault Zone (APEFZ) Program (Bryant and Hart, 2007). By definition, an active fault is one that has had surface displacement within the last 11,000 years. A potentially active fault has demonstrated surface displacement during Quaternary time (approximately the last 1.6 million years), but has had no known movement within the past 11,000 years. Faults that have no demonstrated surface displacement in the last 1.6 million years are considered inactive.

Regional faults in proximity to the Site are depicted on Figure 3. The Site is not located within a currently established APEFZ. Based on published geologic maps and reports, no active or potentially active faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the Site during the design life of the proposed project is considered low. The Site, however, is located in a seismically active area and could be subjected to ground shaking in the event of an earthquake on one of the many active Central California Coast Range faults.

The following table lists regional faults within 30 miles (48 kilometers) of the Site, their distances, and maximum earthquake magnitudes for each.

REGIONAL FAULT SUMMARY

Fault Name	Approximate Distance from Site (miles)	Maximum Earthquake Magnitude
Zayante-Vergeles	6.3	6.8
Rinconada	7.0	7.3
San Andreas (1906)	9.9	7.9
San Andreas (Pajaro)	9.9	6.8
San Andreas (Creeping)	9.9	6.5
Sargent	14.4	6.8
Calaveras (South of Calaveras Reservoir)	15.0	6.2
Monterey Bay - Tularcitos	15.7	7.1
San Andreas (Santa Cruz Mtns.)	16.3	7.0
Quien Sabe	20.4	6.4
Palo Colorado - Sur	24.0	7.0
San Gregorio	28.3	7.3

2.3.2 Seismicity

The Site is located within the seismically active Monterey Bay area. Based on available reports published by CGS and the USGS, the Site has not experienced reported ground failure as a result of past earthquakes.

2.3.4 Liquefaction

Liquefaction is a phenomenon in which saturated, cohesionless soils are subject to a temporary loss of shear strength due to pore pressure buildup under the cyclic shear stresses associated with earthquakes. Primary factors that trigger liquefaction are: strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions (shallow groundwater). The Site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. However, soil and groundwater conditions may exist at the Site that may be susceptible to seismic-induced liquefaction. Consequences of liquefaction may include ground surface settlement, ground loss (sand boils), and lateral slope displacements (lateral spreading).

2.3.5 Lateral Spreading

Seismic-induced lateral spreading is not a likely hazard for the Site because the site topography is generally flat and level, and there is not an adjacent free-face or slope.

2.3.6 Unsaturated Seismic Settlement

Strong seismic shaking can induce settlement of unsaturated, loose sandy soil. Soil conditions may exist at the Site that may be susceptible to unsaturated seismic settlement.

2.3.7 Landslides and Slope Stability

The topography of the Site and vicinity is relatively flat. Based on the observed site topography, we do not consider landslides or slope instability to be a hazard for the Site.

2.3.8 Tsunamis and Seiches

The Site is located approximately 9.5 miles east of the Pacific Ocean at an average elevation of approximately 120 to 130 feet above mean sea level. The Site is not within a Tsunami Inundation Area; these areas are mapped by the California Emergency Management Agency and the CGS for coastal areas in California. In the Monterey Bay Area, the elevation of the tsunami inundation line (i.e., maximum anticipated limit of tsunami) is at an approximate elevation of 10 feet above mean sea level. Given the Site's elevation above the anticipated limit of tsunamis in the area, tsunamis (seismic sea waves) or seiches (wave oscillations in an enclosed or semi-enclosed body of water) are not anticipated hazards for the Site.

2.3.9 Flooding and Dam Failure Inundation

Based on the Flood Insurance Rate Maps ([FIRM], Map Nos. 06053C0207G, 06053C0209G, and 06053C0226G; effective date April 2, 2009) prepared by FEMA, the majority of the Site is located in "Zone X" which is defined as: "Areas determined to be outside the 0.2 percent annual chance floodplain". The northwestern portion of the Site is located in a stippled Zone X: "Areas of 0.2 percent annual chance flood", (FEMA, 2016). The project civil engineer should determine site grades accordingly.

2.3.10 Volcanic Activity

The Site is not located near any volcanically active areas. The closest volcanic activity is in Mammoth Mountain and Long Valley Caldera, areas that are thermally and seismically active, approximately 160 miles northeast of the Site. The Clear Lake Volcanic Field, a source of persistent geothermal energy and volcanic seismicity, is approximately 167 miles northwest of the Site. Due to the large distance between the Site and the areas described above, the potential for impacts to the Site due to regional volcanic activity is low.

2.3.11 Naturally Occurring Asbestos

The Site is not located within or near an area mapped as an ultramafic rock unit (California Division of Mines and Geology, 2000). Naturally occurring asbestos (NOA) minerals (chrysotile, tremolite, actinolite) are more likely to be encountered in areas with ultramafic or some metavolcanic rocks due to metamorphic processes. Based on the site geology, which consists of alluvium, the likelihood of NOA being present at the Site is considered to be low.

2.3.12 Oil Fields & Methane Zones

Based on the California Division of Oil, Gas and Geothermal Resources (DOGGR) online mapping system, the Site is not located within the boundaries of an oil or gas field. No oil or gas wells are located within 5miles of the Site (DOGGR, 2015). However, due to the voluntary nature of record reporting by the oil and gas well drilling companies, wells may be improperly located or not shown on the location map. Unmapped wells could be encountered during construction would need to be properly abandoned in accordance with the current requirements of DOGGR. However, it is unlikely that unmapped wells are located on the Site as there is not a history of oil or gas exploration in the Salinas Valley.

2.4 Hydrologic and Hydrogeologic Conditions

To assess local groundwater conditions, we reviewed reports available on the California State Water Resources Control Board GeoTracker website (http://geotracker.waterboards.ca.gov) for groundwater information at nearby facilities with a groundwater monitoring array such as leaking underground storage tank (LUST) facilities or other agency-regulated cleanup sites. The nearest such facility is the Shell Station at Harden Ranch Plaza at the intersection of Minnesota Avenue and Cambrian Place, approximately 1.0 mile southwest of the Site. According to information available on GeoTracker for this facility, depth to groundwater measured in shallow groundwater monitoring wells at and within the vicinity of this facility ranged from 48.70 to 66.69 feet in April 2015. Shallow groundwater flow beneath this facility was calculated to be toward the southeast towards the Salinas River.

2.5 Current and Planned Uses of the Site

The Site is predominately undeveloped with some structures and has been primarily used for agriculture. The City of Salinas plans to eventually develop four residential neighborhoods supported by commercial uses, schools, and an extensive park and trail system.

2.6 Descriptions of Structures, Roads, Other Improvements on the Site

The Site contains limited development. McKinnon Elementary School is located in the southwestern portion of the Site, near the intersection of E. Boronda Road and McKinnon Street. Several small clusters of buildings located on the northern, western, and eastern edges of the Site include farm residences, barns, warehouses, and storage yards. These structures have likely supported the agricultural operations that comprise most of the Site.

In addition, there is evidence of structures or development that formerly existed. Close to the curve in Natividad Road on the eastern side of the Site, is an area of bare ground that could have served as a location for activities associated with agricultural operations. Along San Juan Grade Road, on the western side of the Site, is a similar area of bare ground with some trees along its northern edge. This may have been the location of a former residence.

2.7 Current Uses of Adjoining Properties

The Bolsa Knolls residential area is adjacent to the northwest of the Site. Bolsa Knolls Middle School and La Joya Elementary School are both located within the Bolsa Knolls area. North of the Site, along Rogge Road, are rural residences and agricultural land.

South of the Site, across East Boronda Road, is primarily a residential area. Most of the residences are single-family homes with some apartment units. Extensive commercial development is located southwest of the Site, Boronda Road and U.S. 101.

West of the Site is a residential area. The residences are a mix of single-family homes, apartments, and condominiums. Santa Rita Elementary School is located within this residential development area.

East of the Site is predominantly agricultural land with a livestock operation and rural residences.

3.0 RECORDS REVIEW

This section summarizes our review of readily available agency records for the Site and properties and facilities in the surrounding vicinity.

3.1 Standard Environmental Record Sources

EDR performed a search of Federal, State, and local databases for the Site and surrounding area. The search distance for the review extended a maximum of one mile from the Site. A copy of the report titled *The EDR Radius Map Report with GeoCheck*, dated July 17, 2015, is in Appendix C. The following table lists databases that were searched and the number of listings.

Database Name	Search Radius (Miles)	Number of Listings
FEDERAL DATABASES		
RCRA-LQG (Resource Conservation and Recovery Act [RCRA] – Large Quantity Generators [LQG])	0.375	1
RCRA-SQG (Small Quantity Generators [SQG])	0.375	1
STATE, LOCAL, AND TRIBAL DATABASES		
ENVIROSTOR (DTSC Electronic Database)	1.125	9
LUST (Leaking Underground Storage Tank)	0.625	4
SLIC (Spills, Leaks, Investigation, and Cleanup)	0.625	1
UST (Underground Storage Tank)	0.375	3
AST (Aboveground Storage Tank)	0.375	3
CA FID UST (Facility Inventory Database [FID])	0.375	3
ADDITIONAL ENVIRONMENTAL RECORDS		
SWRCY (Recycler Database)	0.625	1
SCH (School Property Evaluation Program)	0.375	5
Historical (HIST) UST	0.375	4
SWEEPS UST	0.375	4
FINDS	0.125	2
HIST CORTESE	0.5	1
Certified Uniformed Program Agency (CUPA)	0.375	17
HAZNET	0.125	4
EDR US Historical Auto Stations	0.375	5
EDR US Historical Cleaners	0.375	7
* Indicates that the Site is listed in the database.		

3.1.1 Site

Four facilities within the Site were listed in various databases and are summarized below:

Proposed High School, "Mortensen Property"– According to the ENVIROSTOR and SCH databases, multiple investigations have been conducted on site parcel 211-011-008. A Preliminary Environmental Assessment (PEA) report was prepared for this site parcel, which is planned to be developed with a Salinas Union High School District (SUHSD) high school, and is available on the Department of Toxic Substances Control (DTSC), EnviroStor website. Information available on EnviroStor pertaining to this site parcel is summarized in Section 3.3.1. Soil impacted with total petroleum hydrocarbons as diesel (TPHd) and motor oil (TPHmo), organochlorine pesticides (OCPs), and polycyclic aromatic hydrocarbons (PAHs), related to former agricultural use of the site, was removed in April 2016. A Removal Action Completion Report is being reviewed by DTSC and if they have no additional comments, the removal action will be approved in December 2016. Based on the information available for this proposed school site, it is likely that the removal action will be approved and impacted soil will no longer be a concern for this portion of the Site. .

Fontes Farm, 630 East Boronda Road – According to the HIST UST Listings database, this property had two 1,000-gallon underground storage tanks (USTs) that stored contents registered as "regular" and "unleaded." The SWEEPS UST database also lists two 1,000-galoon USTs that purportedly contain leaded and unleaded motor vehicle (M.V.) fuel. The USTs were active as of July 1985. According to the CUPA Listings database, this property is actively billed for hazardous materials onsite, but the database also has two listings that are inactive. Based on the lack or reported spills or releases, this business appears unlikely to have impacted the Site.

Salinas Berry Farms, Madolora, 261 Natividad Road – According to the CUPA Listings database, this property was billed for hazardous materials stored onsite. Both databases list this facility as inactive. Based on the lack or reported spills or releases, this former business appears unlikely to have impacted the Site.

Triangle Farms, Inc., Bondesen Ranch, 239 Natividad Road – According to the Aboveground Storage Tank (AST) database, this property had a 9,200-gallon AST; the contents stored in the AST are unknown. According to the CUPA Listings database, this property was billed for hazardous materials stored onsite. Based on the lack or reported spills or releases, this business appears unlikely to have impacted the Site.

3.1.2 Offsite Properties

The following table summarizes information regarding properties less than ⅛-mile from the Site (¼-mile for LUST facilities) that are listed on one or more of the databases searched by EDR, the status of their listings, and their potential, if any, to impact (or to have impacted) the Site.

Business	Address	Approximate Distance from the Site	Database	Pertinent Information/Potential to Impact the Site
McKinnon Elementary School	E. Boronda Road/ McKinnon Street	Located within the Site boundaries but appears as "offsite" in the EDR report	SCH, ENVIROSTOR	According to the ENVIROSTOR database, this property was investigated for past pesticide use. No pesticide contamination was reported at concentrations exceeding applicable screening levels, therefore a "no further action" determination was granted and the school was constructed. This property appears unlikely to have impacted the Site.
Higashi Farms-Alexndr Rch (Rio Mesa Farms)	1151 Rogge Road	1,500 feet to the north (upgradient)	AST, CUPA Listings	According to the AST database, this property had a 1,500-gallon AST (unknown contents). According to the CUPA Listings database, this property was billed for hazardous materials stored onsite. Both databases list this facility as inactive. Based on the lack or reported spills or releases, this former facility appears unlikely to have impacted the Site.
A Oseguera Company, Inc.	1099 Rogge Road	500 feet to the northeast (upgradient)	AST, CUPA Listings	According to the AST database, this property had a 2,500-gallon AST (unknown contents). According to the CUPA Listings database, this property was billed for hazardous materials stored onsite. Based on the lack or reported spills or releases, this former facility appears unlikely to have impacted the Site.
Connie Ruiz	69 Norman Way	50 feet to the northwest (upgradient)	HAZNET	According to the HAZNET database, this property disposed of 0.4 ton of hazardous waste to a landfill. The waste category was not reported. Based on the other database listings for this property (i.e., ENVIROSTOR, Hist Cal-Sites, etc.), this former facility appears unlikely to have impacted the Site.
CVS Pharmacy #1300 (Longs Drugs #479)	662 E. Boronda Road	300 feet southeast (downgradient)	RCRA-LQG, HAZNET, FINDS, CUPA Listings	According to the RCRA-LQG database, this business generates 1,000 kilograms or more of hazardous waste during a calendar month. The waste is likely pharmaceutical and/or related to photograph processing. There are no records reporting spills or releases. Based on its downgradient position relative to the Site, this facility is unlikely to have impacted the Site.
Replanet, LLC	640 East Boronda Road	300 feet southeast (downgradient)	SWRCY, HAZNET	According to the HAZNET and SWRCY databases, this facility stores and transfers glass, plastic, aluminum and other metals offsite for disposal and/or recycling. Based on its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.

Business	Address	Approximate Distance from the Site	Database	Pertinent Information/Potential to Impact the Site
Gonzales Motorcross Racing	13450 Garfield Circle	50 feet west (cross-gradient)	EDR US Hist Auto Stat	According to the EDR US Hist Auto Stat database, this business was a auto service facility in 2005. This business is not listed on any other databases and, no other pertinent information about this business was provided under this listing. Based on its cross-gradient position relative to the Site, this business appears unlikely to have impacted the Site.
Turners Automotive	94 Russell Road	100 feet west (cross-gradient)	EDR US Hist Auto Stat	According to the EDR US Hist Auto Stat database, this was an auto repair facility in 2001.This business is not listed on any other databases and, no other pertinent information about this business was provided under this listing. Based on its cross-gradient position relative to the Site, this business appears unlikely to have impacted the Site.
Deep Steam Carpet & Upholstery Cleaning	94 Penzance Street	400 feet north (upgradient)	EDR US Hist Cleaners	According to the EDR US Hist Cleaners database, this carpet and upholstery cleaning service operated in 2006. Although it is upgradient relative to the Site, the apparent residential development at this address in 2006 suggests that this facility was not a commercial facility and therefore is unlikely to have impacted the Site.
Proposed Elementary School #5 (Harrod Property)	NE of East Boronda/ Natividad Road intersection	150 feet east (cross-gradient)	SCH, ENVIROSTOR	According to the ENVIROSTOR database, this property was investigated for past pesticide use. Pesticide contamination was found, but the health risk evaluation determined that they were not a threat to human health, therefore a "no further action" determination was granted and suitable for unrestricted land use. This property appears unlikely to have impacted the Site.
Settrini Ranch	250 Natividad Road	100 feet east (cross-gradient)	HIST UST, CUPA Listings, CA FID UST, SWEEPS UST	According to the HIST UST, SWEEPS UST, CA FID UST, and CUPA Listing databases, a 1,000-gallon UST is present on this facility that reportedly contained regular gasoline. According to the CUPA Listing database, this facility is actively billed for hazardous materials stored onsite. As a spill or release from this UST has not been reported, this former facility appears unlikely to have impacted the Site.

Business	Address	Approximate Distance from the Site	Database	Pertinent Information/Potential to Impact the Site
Ocean Steam Cleaning	18857 Lenny Street	400 feet east (cross-gradient)	EDR US Hist Cleaners	According to the EDR US Hist Cleaners database, this cleaning service operated in 2010. Based on the apparent residential development at this address in 2010, and its cross-gradient position relative to the Site, this facility appears unlikely to have impacted the Site.
The Cleaning Co.	15 Yale Circle	200 feet south (downgradient)	EDR US Hist Cleaners	According to the EDR US Hist Cleaners database, this cleaning service operated in 2008. Based on the apparent residential development at this address in 2008, and its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.
7-Eleven #32264 (Southland Store 32264)	1992 Natividad Road	50 feet south (downgradient)	UST, CUPA Listings	According to the UST and CUPA Listings databases, this facility is actively billed for hazardous materials onsite. There are no available records of past spills or releases, and due to its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.
Firestone Store #36F7	150 Northridge Mall	1,500 feet southwest (downgradient)	Hist UST, CUPA Listings	According to the Hist UST and CUPA Listings databases, this facility is actively billed for hazardous materials stored onsite. There are no available records of past spills or releases, and due to its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.
100 Harden Parkway, LP	1907 Dartmouth Way	500 feet south (downgradient)	CUPA Listings	According to the CUPA Listings databases, this facility was historically billed for hazardous materials onsite. There are no available records of past spills or releases, and due to its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.
Natividad Elementary School	Arcadia Street/ Emerald Drive	4,500 feet south (downgradient)	SCH, ENVIROSTOR	According to the ENVIROSTOR database, this property was investigated for past pesticide use. No pesticide contamination was reported at concentrations exceeding applicable screening levels, therefore a "no further action" determination was granted and the school was constructed. This property appears unlikely to have impacted the Site.
Nordic Carpet & Upholstery Cleaning	13433 Jackson Street	500 feet east (cross-gradient)	EDR US Hist Cleaners	According to the EDR US Hist Cleaners database, this carpet and upholstery cleaning service operated in 2008. Based on the apparent residential development at this address in 2008, this facility appears unlikely to have impacted the Site.

Business	Address	Approximate Distance from the Site	Database	Pertinent Information/Potential to Impact the Site
Towing Depot	218 Boronda Road, Bldg D-7	50 feet south (downgradient)	CUPA Listings	According to the CUPA Listings databases, this facility was historically billed for hazardous materials stored onsite. There are no available records of past spills or releases, and due to its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.
Autoworx Service	218 Boronda Road, Bldg C-3	50 feet south (downgradient)	CUPA Listings	According to the CUPA Listings databases, this facility was historically billed for hazardous materials stored onsite. There are no available records of past spills or releases, and due to its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.
Ralph Freilingers Auto Service	55 San Juan Grade	200 feet west (cross-gradient)	EDR US Hist Auto Stat	According to the EDR US Historical Auto Stations database, this auto service facility operated in 2008. Based on the apparent residential development at this address in 2008, and its cross-gradient position relative to the Site, this facility appears unlikely to have impacted the Site.
Rogge Road School	1301 Rogge Road	1,000 feet north (upgradient)	SCH, ENVIROSTOR	According to the ENVIROSTOR database, this property was investigated for past pesticide use. No pesticide contamination was reported at concentrations exceeding applicable screening levels, therefore a "no further action" determination was granted and the school was constructed. This property appears unlikely to have impacted the Site.
CA Water Service Company, Station 103	19610 Rogge Road	1,000 feet north (upgradient)	CUPA Listings	According to the CUPA Listings databases, this facility is actively billed for hazardous materials stored onsite. There are no available records of past spills or releases. Although it is upgradient of the Site, this facility appears unlikely to have impacted the Site.
District Office	303 San Juan Grade Road	2,500 feet northeast (upgradient)	CA FID UST, SWEEPS UST, HIST UST	According to the CA FID UST and SWEEPS UST databases, this facility is actively billed for hazardous materials onsite. There are no available records of past spills or releases, and due to its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.

Business	Address	Approximate Distance from the Site	Database	Pertinent Information/Potential to Impact the Site
Garcias Carpet Cleaners	200 Clinton Court	1,000 feet south (downgradient)	EDR US Hist Cleaners	According to the EDR US Hist Cleaners database, this carper cleaning service operated in 2004 and 2009. Based on the apparent residential development at this address in 2009, and its downgradient position relative to the Site, this facility appears unlikely to have impacted the Site.
AT&T California-NE120 (Pacific Bell-SLNSCA11, T-Mobile SF05824A)	33 San Juan Grade Road	200 feet west (cross-gradient)	CUPA Listings, SWEEPS UST, UST	According to the CUPA Listings, SWEEPS UST, and UST databases, this facility has a 4,000-gallon UST onsite that is used to store diesel. This is actively billed for hazardous materials stored onsite. There are no available records of past spills or releases, although it is cross-gradient to the Site, this facility appears unlikely to have impacted the Site.
Cecil's Chevron	307 San Juan Grade Road	2,500 feet northeast (upgradient)	UST, EDR Hist Auto Stat, CUPA Listings	According to the UST and CUPA Listings databases, this facility is actively billed for hazardous material stored onsite, likely in one or multiple USTs. There are no available records of past spills or releases. Although it is upgradient relative to the Site, this facility appears unlikely to have impacted the Site.

3.2 Orphan Summary

The Orphan Summary identifies facilities that have incomplete address information and could not be specifically plotted. The Orphan Summary lists two properties. Information provided for the listed properties, their locations, and the databases on which the properties were listed, suggests that no significant adverse impact to the Site is expected from these properties.

3.3 Other Environmental Record Sources

3.3.1 GeoTracker and EnviroStor

We reviewed the GeoTracker and the DTSC's EnviroStor website databases (http://www.envirostor.dtsc.ca.gov/public/) for information regarding environmental assessment and cleanup at the Site or at properties/facilities within 1/4-mile of the Site. No information for the Site or properties/facilities within ¼-mile of the Site is available on the GeoTracker web database. Information available and reviewed on the DTSC's EnviroStor website is summarized below by facility.

McKinnon Elementary School, 2100 McKinnon Street — According to statements on the DTSC's EnviroStor website, a PEA report was prepared prior to the construction of the McKinnon Elementary School (APN 211-231-059). According to the EDR database search, the primary contaminants of concern were OCPs. A "no further action (NFA)" determination was granted to the McKinnon Elementary School by the DTSC on November 22, 2000, based on the conclusions of the report. A NFA determination concluded that there is no risk to potential site users by chemicals present onsite and that the property is suitable for unrestricted future land use. McKinnon Elementary School was built sometime between 2001 and 2005.

Proposed High School, 1100 Rogge Road — We reviewed the following documents for a proposed SUHSD high school on APN 211-011-008 (the Mortensen Property):

- PEA report prepared by Kleinfelder, Inc. (Kleinfelder), dated March 2007 and approved by DTSC as Final on April 4, 2007.
- Supplemental Site Investigation (SSI) prepared by Kleinfelder, dated January 2014 (revised April 2014), and approved by DTSC on May 2, 2014.
- Removal Action Work Plan (RAW) prepared by Kleinfelder, dated February 18, 2015 (revised May 8, 2015), and approved by DTSC on October 16, 2015.
- DTSC Work Notice dated January 2016.DTSC email confirmation (November 10, 2016) of soil removal.

Summaries of these documents are provided below:

PEA

The PEA, performed by Kleinfelder, consisted of the collection and analysis of surface and subsurface soil samples collected in an agricultural area and a residential area (in the northern portion of the property) for NOA, polychlorinated biphenyls (PCBs), OCPs, PAHs, California Assessment Manual 17 metals (including lead), and TPH. NOA and PCBs were not detected at concentrations that exceeded their respective laboratory reporting limits in the surface and subsurface soil samples. Metal concentrations (including lead) detected in the surface and subsurface soil samples did not exceed their respective regulatory limits. Elevated concentrations of TPHd and TPHmo were detected in the upper six to twelve inches of soil around a 55-gallon oil drum near a demolished building in the residential area. One PAH, dibenz(a,h)anthracene, was detected in two surface samples near the oil drum. Elevated concentrations of chlordane and dieldrin were detected in the soil samples collected at a residence, a storage structure, and the demolished structure in the residential area. The PEA did not identify any contaminants of concern in the surface and subsurface soil samples collected in the agricultural area.

Kleinfelder recommended, prior to the demolition of the structures in the residential area, that a Supplemental Site Investigation be conducted to determine the extent of TPH and PAH in the soils near the oil drum and the extent of OCPs in the soils near the residence, storage structure, and demolished structure. Kleinfelder also recommended the excavation and removal of soils in these areas once the extent of contamination has been defined by the SSI.

Supplemental Site Investigation

The SSI consisted of additional surface and subsurface soil sampling for OCPs, PAHs, TPH, and benzene, toluene, ethyl benzene, and xylenes (BTEX) to determine the extent of contamination in the residential area. Laboratory analysis identified elevated concentrations of chlordane, dieldrin, and heptachlor epoxide in the soil samples collected within the upper three feet of soil near the residence, storage structure, and demolished structure in the residential area. Kleinfelder recommended removal of approximately 105 cubic feet of soil from the residential area and confirmation sampling following the excavation.

Removal Action Work Plan

The objective of the remedial approach described in the RAW was to mitigate potential risk to human health and the environment by excavation and disposal of approximately 110 cubic yards of contaminated soil. The soil was contaminated with OCPs, TPH, and PAHs. Approximately seven truckloads of contaminated soil were anticipated to be removed from the site. The DTSC approved the RAW on October 16, 2015.

DTSC Work Notice

The DTSC issued a Work Notice for Soil Cleanup Work with an anticipated start date of February 15 to 26, 2016. As indicated in the Work Notice, the Salinas Union High School District is anticipating construction on the new high school to begin mid-April to mid-May 2016.

DTSC Email Confirmation of Soil Removal

The DTSC indicated in an email on November 10, 2016, that the soil removal was completed in April 2016 and that a Removal Action Completion Report is being reviewed by DTSC and if they have no additional comments, the removal action will be approved in December 2016.

3.3.2 Monterey County Environmental Health Department

We requested a records search for the Site's 12 APNs from the Monterey County Environmental Health Department. They indicated that they had no documents related to the Site. However, we did receive copies of two Permits to Operate from Mr. Bill Tarp of Triangle Farms (APNs 211-231-012 and -013) who is the owner and user of the parcels. Mr. Tarp provided the copies during an interview by our representative on December 28, 2015 (Section 7.0 Interviews).

The permits are for:

- Triangle Farms, Inc., 118 San Juan Grade Road
    - Hazardous Materials Release Response Plan and Inventory
- Triangle Farms, Inc. – Bondesen Ranch
    - Aboveground Petroleum Storage
    - Hazardous Materials Release Response Plan and Inventory
    - Hazardous Waste Generator and Onsite Hazardous Waste Treatment

3.3.3 Monterey County Resource Management Agency

We requested site records from the Monterey County Resources Management Agency. Their records only included a portion of the Draft EIR for the *Rogge Road High School Site Acquisition* and a Natural Gas Pipeline Risk Analysis, dated July 26, 2006, for the *Proposed Salinas Union High School District Site, 1100 Rogge Road*.

3.3.4 Monterey Bay Unified Air Pollution Control District

We requested records from the Monterey Bay Unified Air Pollution Control District (MBUAPCD) for the Site. The MBUAPCD identified two records of violations at the Site. A violation was issued to Oesuguerra Harvest Farm, a tenant on APN 211-011-008, for open burning of unauthorized materials on July 15, 2009. A violation was issued to ProSource Farm, a tenant on APN 211-011-011, for open burning of unauthorized materials on September 13, 1996. No other violations were reported.

4.0 HISTORICAL USE

Historical use of the Site and adjacent properties was evaluated through review of historical aerial photographs, historical topographic maps, and city directories provided by EDR. This section summarizes the information obtained from these sources.

4.1 Aerial Photographs

We reviewed historical aerial photographs provided by EDR for the years 1956, 1968, 1966, 1971, 1981, 1987, 1998, 2005, 2009, 2010, and 2012 (Appendix D) for indications of past land uses that had the potential to have impacted the Site through the use, storage or disposal of hazardous substances and/or petroleum. The following table summarizes observations of the Site and adjacent properties on the aerial photographs.

Year	Observations	
	Site	**Adjacent Properties**
1956-1968 (1" = 1,000')	Agricultural fields (row crops) were present on the Site. Structures were present in the southwestern portion and two residence areas were present on the eastern edge of the Site.	Agricultural fields and a structure were adjacent to the Site to the east. Agricultural fields were adjacent to the south and southwest of the Site. A residential neighborhood was adjacent to the Site on the northwest.
1971-1981 (1" = 1,000')	Conditions were similar to those observed on the 1968 photograph.	Conditions were similar to those observed in the 1968 photograph, with the addition of a residential neighborhood northwest of the Site in 1971 and to the southwest in 1981. The resolution of the 1981 photograph is poor.
1987 (1" = 1,000')	Conditions were similar to those observed on the 1981 photograph.	Conditions were similar to those observed on the 1981 photograph.
1998 (1" = 500')	Conditions were similar to those observed on the 1987 photograph.	Conditions were similar to those observed in the 1987 photograph, with the addition of residential neighborhoods south of the Site.
2005 (1" = 500')	Conditions were similar to those observed on the 1998 photograph with the addition of the McKinnon Elementary School.	Conditions were similar to those observed on the 1998 photograph.
2009-2012 (1" = 500')	Conditions were similar to those observed on the 2005 photograph.	Conditions were similar to those observed on the 2005 photograph.

Row crops were present on the Site from sometime prior to 1956 until the present. The agricultural use of the Site dating back to at least 1956 suggests that OCPs and metals such as arsenic and lead may be present in soil at concentrations exceeding regulatory risk-based screening levels and naturally occurring background concentrations in soil on the Site. No other land uses that would suggest the presence of RECs were observed on the Site or adjacent properties in the aerial photographs.

4.2 Topographic Maps

We reviewed historical topographic maps provided by EDR for the years 1910, 1912, 1940, 1947, 1948, 1950, 1968, 1975, and 1984 (Appendix E). The following table summarizes the observations of the Site and adjacent properties on the historical topographic maps.

Year	Observations	
	Site	**Adjacent and Vicinity Properties**
1910 (1: 31,680)	No site features or land uses are depicted.	Three of the four roads that bound the Site (Rogge Road, Natividad Road, and San Juan Grade Road) are depicted to the north, east, and west of the Site.
1912 (1: 62,500)	Similar to the 1910 map.	Similar to the 1910 map.
1940 (1: 62,500)	One small structure is depicted on the northern side of the Site. Alleys with seven structures are depicted on the western edge of the Site abutting San Juan Grade Road.	Similar to the 1912 map with more development in Salinas encroaching from the west. Three structures are visible north of the Rogge Road and ten structures are visible east of Natividad Road.
1947 (1:62,500, 1:24,000)	The cluster of structures south of Rogge Road had been labeled “Sage.” Many of the structures on the western edge of the Site abutting San Juan Grade Road are no longer depicted, but some have been added in clusters. Intermittent streams are depicted draining the northwestern portion of the Site.	Similar to the 1940 map.
1948 (1:25,000)	Similar to the 1947 maps.	Similar to the 1947 maps.
1950-1975 (1:25,000)	Similar to the 1948 maps.	The residential neighborhood northwest of the Site (southeast of the intersection of San Juan Grade Road and Rogge Road) is shaded in purple indicating new development since the prior map.
1984 (1:24,000)	An intermittent pond is depicted in the northeastern corner of the Site. Additional structures (likely residential) are also depicted on the southeastern and southwestern portions of the Site.	Similar to the 1975 map.

The topographic maps do not depict any other land uses that would suggest the presence of RECs on the Site or adjacent properties.

4.3 City Directories

EDR prepared an abstract of city directories including city, cross reference and telephone directory listings (Appendix B). EDR included information from directories at approximate five-year intervals, if available, from 1960 to 2013. Directories are provided by Street name: E. Boronda Road, Natividad Road, Bogge Road, and San Juan Grade Road.

The names associated with addresses listed in the EDR report consist of various individuals and commercial businesses. None of the listed commercial businesses suggest the storage or use of hazardous substances or petroleum on the Site or adjacent properties.

5.0 SITE RECONNAISSANCE

This section summarizes observations of the Site and surrounding properties made during a site reconnaissance.

5.1 Methodology and Limiting Conditions

Cord Dennig, Senior Staff Scientist with Geocon, performed a site reconnaissance December 28, 2015. Mr. Dennig performed the site reconnaissance by walking throughout the Site, along the site perimeter, and observing site features and conditions. The offsite survey was performed by making observations of adjacent properties from the Site and public roads.

Weather on the day of the site reconnaissance was cloudy with temperatures in the 60s°F. Photos of various site features and offsite properties are located after the Tables.

5.2 Site Setting

The Site consists predominantly of agricultural land with a few farm residences and associated agricultural buildings (i.e., barns, warehouses, and storage yards) along the northern, western, and eastern sides of the Site. McKinnon Elementary School is within the southwestern portion of the Site.

Beyond the northern, western and southern boundaries of the Site are residential developments consisting of single family homes, condominiums, and apartments. La Joya Elementary School and a Bolsa Knolls Middle School are within the residential neighborhood adjacent to the northwest of the Site. Santa Rita Elementary School is located within a residential area west of the Site.

5.3 Onsite Survey

The following descriptions are based on observations of the 12 parcels that make up the approximately 795-acre Site made during a site visit on December 28, 2015.

5.3.1 APN 211-011-002, 86 San Juan Road

There are residential buildings, barns, and other outbuildings on this site parcel. At the time of the site visit, access to this property was not available. We observed three drums stored next to a shed in the eastern portion of the parcel. The contents of these drums are not known. There appears to be an existing well also located in the eastern portion of this parcel next to the drums. There is piping, valves, a centrifugal sand separator typically associated with a water supply well (Photographs 1 and 2). The condition of the well is unknown.

5.3.2 APN 211-011-003

This site parcel is developed with residential buildings, a barn, a fertilizer AST and a storage yard at the western end of the site parcel (Photograph 3). There is a CUPA permit posted next to the approximately 3,000-gallon fertilizer AST; no fuel storage was visible at the time of the Site visit. Several old ASTs are stored adjacent to the barn; they are not in use.

5.3.3 APN 211-011-008 and APN 211-011-011, 1100 Rogge Road

Site parcel 211-011-008 is entirely agricultural land and site parcel 211-011-011 has an abandoned farm residence area in the northern portion of the parcel. The residence area includes an old residential water well that is apparently no longer used. The abandoned residence area comprises a residence, empty garage and empty barn (Photograph 4).

The Salinas Union High School District has a high school proposed for these parcels. As described in Section 3.3.1, the DTSC's EnviroStor website (ID 60000165) includes information on the proposed high school. Several reports have been completed for the parcels that include: a PEA in March 2007, Supplemental Site Investigation dated April 2014, a RAW approved by DTSC in October 2015, and a DTSC Work Notice from January 2016.

5.3.4 APN 211-011-009

This site parcel is primarily agricultural but includes a residence, several agricultural buildings, including a garage and a storage building in its southeastern portion (Photograph 5). An approx. 1,000-gallon diesel AST is present north of the garage (Photograph 6). Fertilizer buckets and an unused AST were observed in a building east of the garage.

5.3.5 APN 211-011-010

This approximately 1.7-acre site parcel consists of a residence, warehouse, several out buildings, and storage yard. The parcel is located between APN 211-011-009 and APN 211-231-013 and forms a somewhat continuous 900 feet long area of agricultural operations buildings and equipment storage yards that occupy all three parcels along Natividad Road (Figure 2).

5.3.6 APN 211-231-012 and 211-231-013

These two site parcels comprise Triangle Farms. The majority of the parcels is agricultural land with support structures that include: a residence, wooden water tank and tower (no longer used), water supply well, storage buildings, equipment and vehicle storage, hydraulic oil and motor oil storage in drums, fertilizer storage (dry and bulk liquids), and diesel, gasoline, and waste oil ASTs (Photographs 7 and 8, and 9). The owner of Triangle Farms, Bill Tarp, was interviewed during our site visit (Section 7.0).

5.3.7 APN 211-231-016

This site parcel is entirely agricultural land with unpaved access roads around the perimeter.

5.3.8 APN 211-231-059

This 11.46-acre site parcel is occupied by the current McKinnon Elementary School. Section 3.3.1 summarizes the DTSC's oversight of the school site development.

5.3.9 APN 211-231-060 and 211-231-061

These two parcels are entirely agricultural land with unpaved access roads around the perimeter.

5.4 Offsite Survey

Adjacent properties consisted of the following:

North Single/multi-family residences and similar agricultural land.

East Agricultural fields.

South Single/multi-family residences.

West Single/multi-family residences.

No evidence of RECs was observed on the properties adjacent to Site.

6.0 INTERVIEWS

We interviewed Bill Tarp, the owner of Triangle Farms (APN 211-231-012 & -013), and who also farms that portion of the Site. Mr. Tarp has been farming the property since 1986. Prior to 1986, the property was farmed by Mr. Tarp's father. As far as Mr. Tarp knows, the entire property was initially developed as a farm and has not had any other industrial or commercial uses.

According to Mr. Tarp, there have never been any USTs at the Site and he does not believe that a gas station/service station has ever existed on the property. There is no known use of Transite™ or other asbestos-containing pipe at the Site; all irrigation pipe is high-pressure steel. There has been no unauthorized waste dumping at the Site, other than occasional used tires. No construction debris has been dumped at the Site.

Mr. Tarp stated that pesticide application is performed by outside companies, including The Dune Company of Salinas, NH3 Services Company, Inc., and Crop Production Services Inc. Pesticides are not mixed at the Site.

Mr. Tarp is not aware of any environmental liens, land use limitations, environmental regulatory actions or environmental cleanups at the Site or adjoining/adjacent properties.

Mr. Tarp states that there was formerly an agricultural well at the corner of San Juan Grade Road and Boronda Road; this location is outside the Site. He also indicated that there is an old residential well at the abandoned homestead in parcel 211-011-011 (site of the proposed high school, Section 4.3.1).

7.0 SUMMARY OF PHASE I ESA FINDINGS

We have performed a Phase I ESA of the Site in general conformance with the scope and limitations of ASTM *Designation E 1527-13.* Exceptions to, or deletions from, this practice are described in Section 1.3 of this report.

The majority of the Site is agricultural land used for row crops (i.e., lettuce, cauliflower, broccoli, and strawberries). Several small clusters of buildings located on the northern, western, and eastern edges of the Site include residences, barns, warehouses, ASTs, and storage yards. These structures have supported the agricultural operations and some have been used or are currently being used to temporarily store fertilizers, pesticides, herbicides, diesel fuel, gasoline, waste oil, and other materials normally associated with ongoing agricultural cultivation.

Due to the long-term use of the land for agricultural purposes, the Site has the potential for certain environmental conditions related to pesticide and herbicide application that could have caused these chemicals to be present in the soil. The Phase I ESA has identified the following RECs in connection with the Site:

- Current and historical use of the site as agricultural lands and application of pesticides and herbicides may have had impacted site soils with OCPs and arsenic.
- Soil in the area of the structures used to support the agricultural operations may be negatively impacted by metals (specifically lead from lead-based paint on older buildings); OCPs from termiticide application; PCBs from window caulking or glazing in old buildings; and TPH as gasoline, diesel, and motor oil.
- The current condition of domestic and agricultural wells on the Site are unknown and could be investigated through a search of State Water Well Drillers Reports from the Department of Water Resources. Measuring the depth of the wells and depth to water (if any) in the wells would provide site-specific hydrogeologic information. Groundwater quality associated with these wells is unknown.

8.0 LIMITED PHASE II ESA

We conducted a Limited Phase II ESA to evaluate the potential presence of OCPs and arsenic (chemicals of potential concern, COPC) in shallow onsite soils due to the historic agricultural use of the Site. The Limited Phase II ESA included analysis of surface soil samples collected from throughout the Site.

8.1 Field Investigation

On December 28, 2015, we collected surface soil samples S1 through S20 at the Site using a hand auger. Approximate soil sampling locations are depicted on Figure 2. The soil samples were transferred from the hand auger into new laboratory-provided glass jars and labeled with the sample identification number, collection time, and date. Each sample was placed into a cooler for transport under chain-of-custody protocols to Advanced Technology Laboratories (ATL) of Signal Hill, California. Hand-augers were cleaned prior to each sampling by washing with a non-phosphate solution followed by subsequent de-ionized water rinses. No soil discoloration, “chemical” odor, or other obvious indication of hazardous substance or impact was observed in the soil samples.

8.2 Laboratory Analysis and Results

ATL analyzed the soil samples for OCPs using United States Environmental Protection Agency (USEPA) Test Method 8081 and arsenic by USEPA Test Method 6010B.

The laboratory analytical results are summarized in Table 1 and below. Copies of the laboratory analytical reports are in Appendix C.

- Arsenic was detected in each of the soil samples at concentrations ranging from 1.1 to 4.1 milligrams per kilogram (mg/kg). The reported arsenic concentrations exceed the DTSC's Health and Ecological Risk Office (HERO) Note #3, DTSC-Modified Screening Levels (January 2016), of 0.067 mg/kg for this compound. However, because of arsenic’s natural occurrence in soil, it is compared to local, regional, or statewide “background” concentration data. DTSC typically uses a concentration of 12 mg/kg as an upper-end background concentration although naturally occurring background concentrations can exceed this depending on the mineralogy of the source material. The reported arsenic concentrations are within the range of naturally occurring background for arsenic in California.
- The OCP 4,4´-DDD was detected in two soil samples at concentrations of 0.0021 mg/kg in S6 and 0.0025 mg/kg in sample S7.
- 4,4´-DDE was detected in 17 of the 20 soil samples at concentrations ranging from 0.0029 to 0.13 mg/kg.
- 4,4´-DDT was detected in 17 of the 20 soil samples at concentrations ranging from 0.0036 to 0.11 mg/kg.
- Dieldrin was detected in 7 of the 20 soil samples at concentrations ranging from 0.002 to 0.15 mg/kg.

- All reported concentrations of the four OCPs were less than their respective USEPA Regional Screening Level (RSL) for residential land use.

8.3 Findings of the Limited Phase II ESA

OCPs were not detected at concentrations that exceed the residential RSLs in any of the samples. Reported arsenic concentrations in all soil samples were within the range of naturally occurring background levels. Based on the soil sample analytical data for OCPs and arsenic, no further assessment of soil in the agricultural fields for these COPCs appears to be warranted.

9.0 CONCLUSIONS AND RECOMENDATIONS

We have performed a Phase I ESA for the Site in general conformance with the scope and limitations of ASTM E 1527-13. We also performed a Limited Phase II ESA to further evaluate some of the environmental concerns identified during the Phase I ESA.

The Site consists predominantly of agricultural lands with a few farm residences and associated agricultural buildings (i.e., barns, warehouses, and storage yards) along the northern, western, and eastern sides of the Site. It is our understanding that existing domestic and agricultural wells are proposed to be abandoned, in accordance with state and local agency regulations. The Phase I ESA identified several RECs that are associated with historical use of the Site as agricultural lands:

- Application of pesticides and herbicides may have impacted site agricultural soils with OCPs and arsenic.
- Potential impacts to soils around the structures used to support the agricultural operations may include lead, OCPs, PCBs, and TPH.

The results of our Limited Phase II ESA show that residual OCP concentrations are present in the onsite shallow soils, but at concentrations less than USEPA residential RSLs. Reported arsenic concentrations are within the range of naturally occurring background levels. Additional assessment of soil in the Site's agricultural fields for OCPs and arsenic does not appear to be warranted at this time.

Depending on the anticipated future use of the Site parcels, evaluation of the soil around the agricultural operations support buildings (residences, warehouses, barns, etc.) should be considered before they are demolished or around the perimeters of the foundations if structures have already been removed. Additionally, based on the age of these structures, it is possible that asbestos-containing materials and/or lead-containing paint are present in the building materials. An asbestos-containing materials and lead-containing paint survey should be considered prior to demolition of the site structures.

10.0 LIMITATIONS AND EXCEPTIONS

This report was prepared for the De Novo Planning Group. Geocon-authorized users of this report are limited to the De Novo Planning Group, and individuals or organizations deemed appropriate by them.

Users of this report should understand that this project was not a comprehensive characterization of the Site with respect to all media or all chemicals. The Limited Phase II ESA was limited to the specified COPCs for this project and the specific Site area identified in this report. The potential exists that areas of the Site have been impacted by other COPCs or that other areas of the Site have been impacted by the same or other COPCs at concentrations that could require additional investigation to characterize or mitigate.

We do not guarantee or warranty, either express or implied, that there is no environmental, health, or financial risk associated with the specific areas identified in this report, other areas of the Site, or the Site as a whole. Users of this report must evaluate the risk of reliance upon the information herein and assume that risk (if any). Geocon is not responsible for unfavorable results due to reliance on information provided in this report.

Information herein with respect to the condition of the specific areas associated with this project is valid only as of the dates of our field activities. Changes in site conditions not brought to our attention between or subsequent to those dates (if any) could result in the need for additional characterization investigation and/or mitigation activities.

Information in this report and our conclusions and recommendations are based on our site observations, review of the specified regulatory records, and analytical test results of site soil samples for the COPCs identified herein. We do not certify or guarantee that the information obtained and reported by others is accurate or suitable for the intended purpose.

The authors of this report declare that, to the best of their knowledge, the information provided herein is truthful and accurate, notwithstanding unknown incidental errors or omissions that would not materially impact or change results of this project or our conclusions. We strived to conduct activities for this project in accordance with the standard level of care in the local geographic area at the time the activities were rendered.

11.0 REFERENCES

Regulatory Contacts

Monterey Bay Unified Air Pollution Control District
24580 Silver Cloud Court
Monterey, CA 93940
Phone: 831.647.9411
Fax: 831.647.8501
www.mbuapcd.org

County of Monterey Health Department - Environmental Health Bureau
1270 Natividad Rd
Salinas, CA 93906
Phone: 831.755.4511

County of Monterey - Resource Management Agency
168 West Alisal Street, Second Floor
Salinas, California 93901
Phone: 831.755.5305

Other Resources

American Society for Testing and Materials. 2013, *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.

Bryant, W.A., and E.W. Hart, 2007, *Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act With Index to Earthquake Fault Zone Maps,* California Geological, Special Publication 42, Interim Revision 2007, 42 pp.

California Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*, Open File Report 2000-19, August 2000.

California Geological Survey (CGS). Geologic Map of the Monterey 30'x60' quadrangle and adjacent areas, California, Regional Geologic Map No. 1, 2002.

CGS, 2008, *Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117A*, revised and re-adopted September 11, 2008.

CGS, 2013, *Note 48 – Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings*, October, 2013.

California Department of Conservation, Division of Oil, Gas & Geothermal Resources, 2016, DOGGR <http://maps.conservation.ca.gov/doggr/index.html#openModal>, accessed March 21.

California Department of Toxic Substances Control, 2016, EnviroStor <http://www.envirostor.dtsc.ca.gov/public/>, accessed March 21.

Federal Emergency Management Agency, 2016, National Flood Insurance Program, Flood Map Service Center, <https://msc.fema.gov/portal/search>, accessed March 22.

United States Geological Survey, 2015, California Volcano Observatory <http://volcanoes.usgs.gov/observatories/calvo/>, accessed December 8.

State Water Resources Control Board GeoTracker <www.geotracker.swrcb.ca.gov/>

United States Department of Agriculture, 2016, Natural Resources Conservation Service Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>, accessed March18.

United States Geological Survey, 2015, Natividad, California, 7.5-minute Topographic Map.

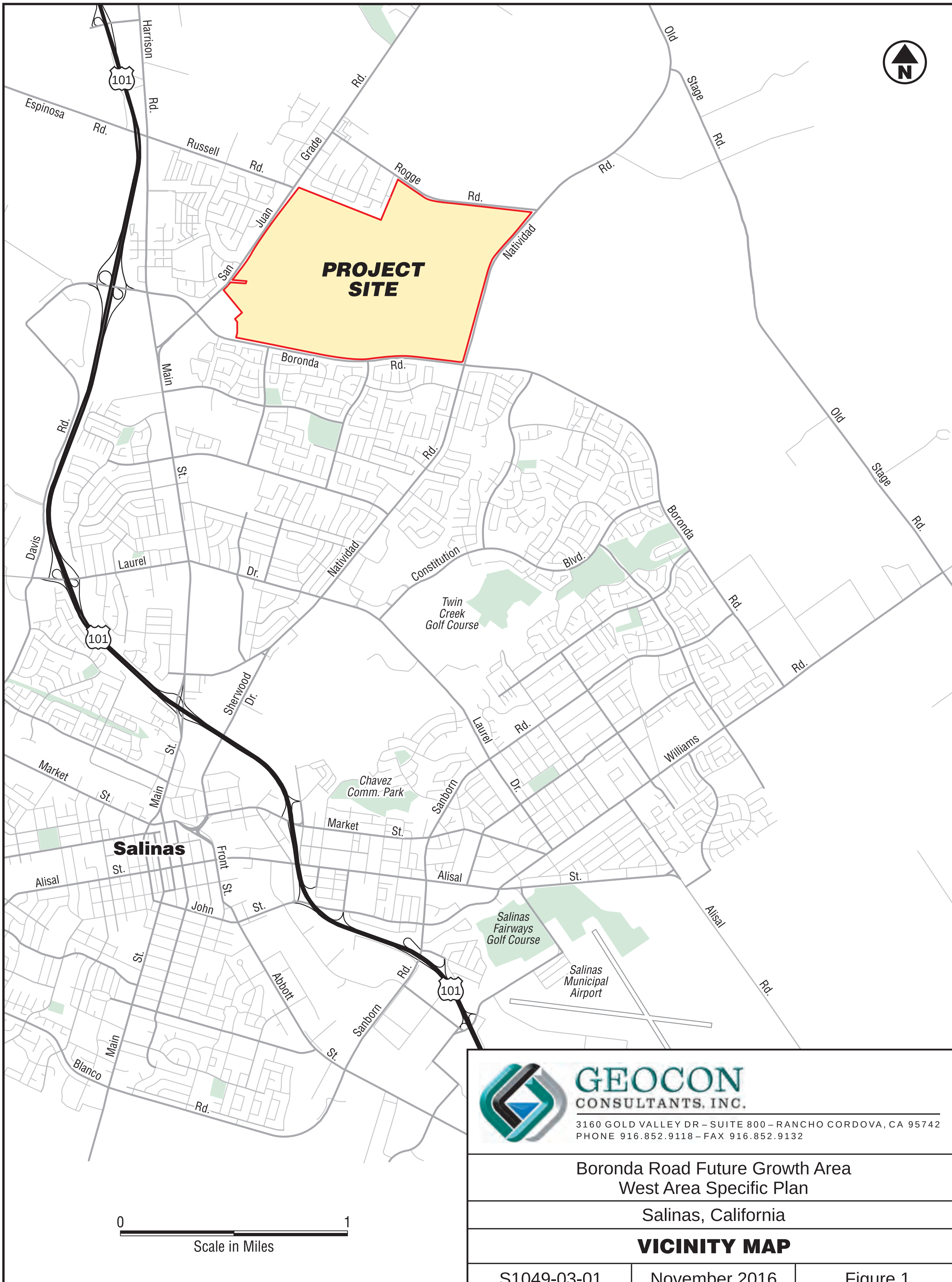
United States Geological Survey, 2015, Salinas, California, 7.5-minute Topographic Map.

12.0 QUALIFICATIONS

This Phase I ESA report was prepared by Mr. Jim Brake, PG. Mr. Brake has an MS degree in Geological Science and 29 years of experience in environmental investigation and remediation, including implementation of Remedial Investigation/Feasibility Study programs and soil and groundwater remedial actions for private industrial and government clients. He has managed a wide variety of projects for clients in the manufacturing, transportation, mining, automobile and real estate industries including Environmental Protection Agency and DTSC Superfund sites. Mr. Brake has extensive experience in the performance of Phase I and II ESAs of commercial, industrial, and agricultural properties throughout Northern California.

I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in §312.10 of 40 CFR 312 and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries investigation in conformance with the standards and practices set forth in 40 CFR Part 312.

Jim Brake, PG
Senior Geologist



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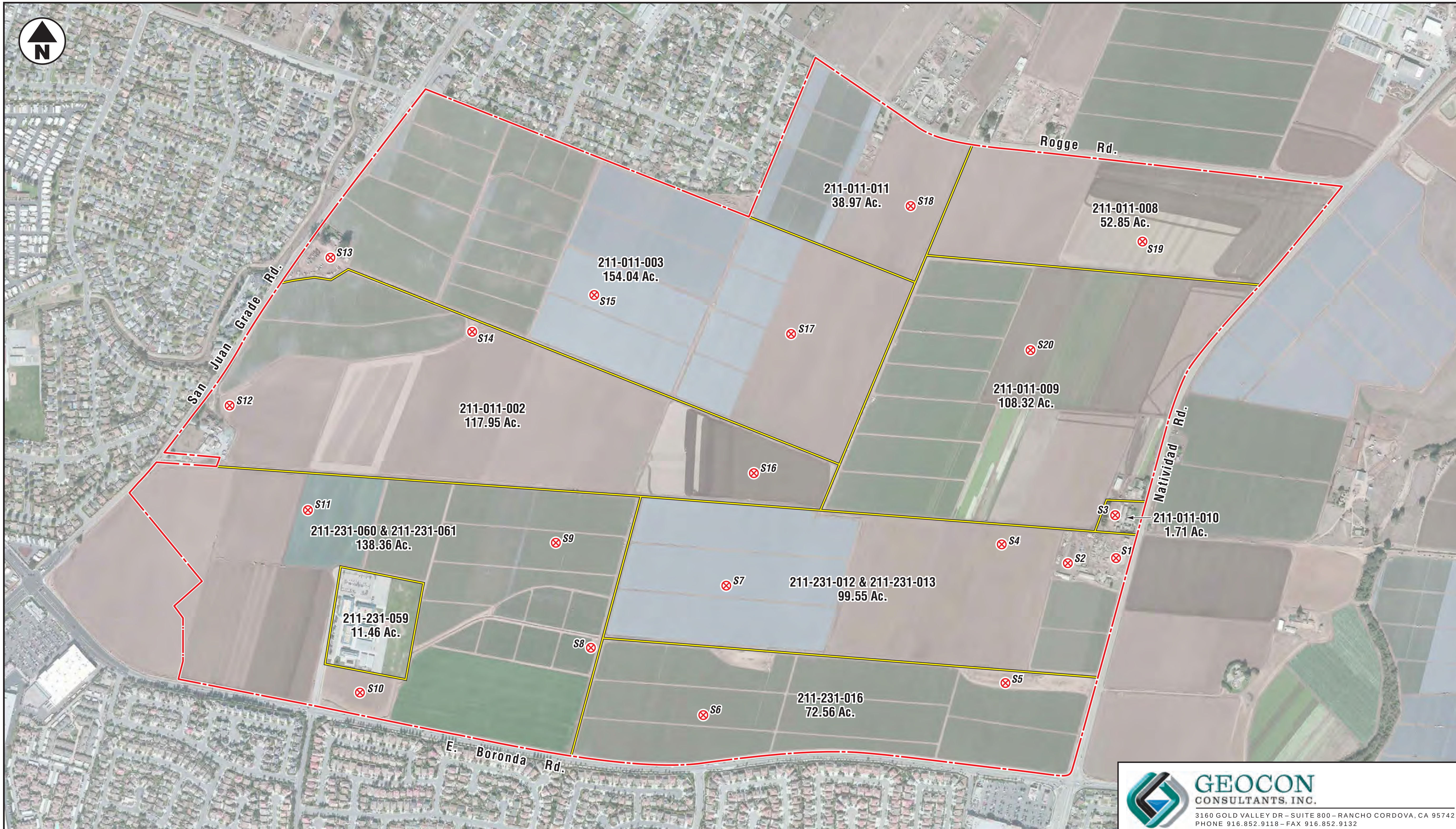
Boronda Road Future Growth Area
West Area Specific Plan

Salinas, California

VICINITY MAP

S1049-03-01	November 2016	Figure 1



LEGEND: S20 ⊗ Approximate Surface Soil Sample Location (Sample Depth 0 to 6 inches)

211-011-002 Monterey County Assessor Parcel Number

117.95 Ac. Approximate Acreage of Parcel

Parcel Boundary

West Area Specific Plan Boundary (Approximate)

0 700
Scale in Feet

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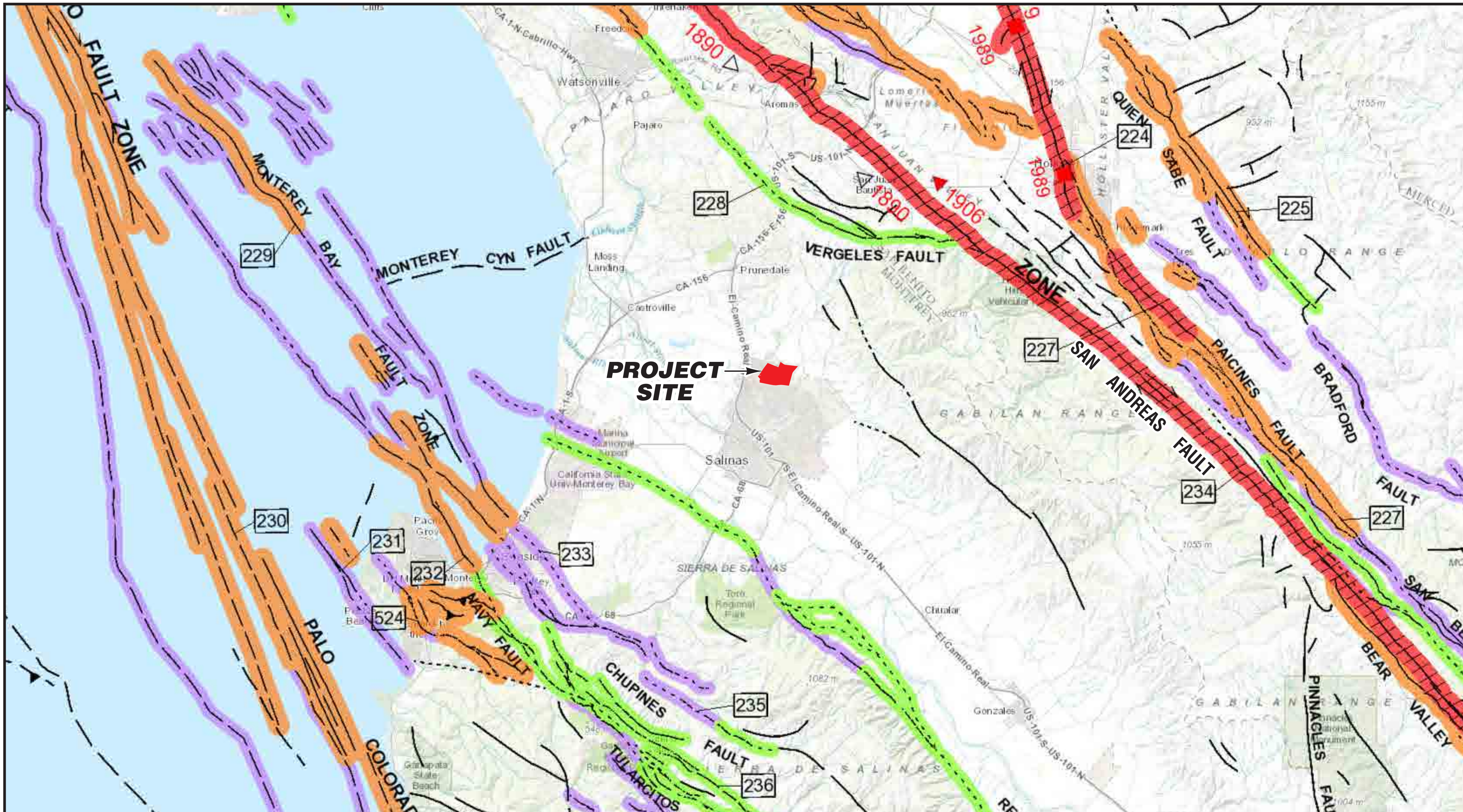
Site Plan with Soil Sample Locations

S1049-03-01	November 2016	Figure 2



Source: 2010 Fault Activity Map of California, California Geological Survey, Geologic Data Map No. 6

LEGEND:

- Fault with historic activity (within past 200 years)
- Fault with Holocene activity (within past 11,700 years)
- Fault with Late Quaternary activity (within past 700,000 years)
- Quaternary Fault (activity within past 1.6 million years)
- Pre-Quaternary Fault (no evidence of Quaternary activity)

N

0 10

Scale in Miles

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Regional Fault Map

S1049-03-01	November 2016	Figure 3

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS AND SCREENING LEVELS
ARSENIC AND ORGANOCHLORINE PESTICIDES
BORONDA ROAD FUTURE GROWTH AREA - WESTERN AREA SPECIFIC PLAN
SALINAS, CALIFORNIA

			Arsenic	4,4´-DDD	4,4´-DDE	4,4´-DDT	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	Chlordane	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	gamma-BHC (Lindane)	gamma-Chlordane	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
Screening Levels[1] (milligrams per kilogram, mg/kg)			0.067*	2.3	2.0	1.9	0.039	0.086	NE	0.3	0.43	NE	0.034	470	470	NE	19	NE	NE	0.57	NE	0.13	0.07	320	0.49
RSL		Residential	0.39	2.3	2.0	1.9	0.039	0.086	NE	0.3	1.7	NE	0.034	470	470	NE	19	NE	NE	0.57	NE	0.13	0.07	320	0.49
HERO3		Residential	0.067	NE	NE	NE	NE	NE	NE	NE	0.43	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Sample ID	Sample Date	Sample Depth (feet)	Results reported in milligrams per kilogram (mg/kg)																						
S1	12/28/2015	0-0.5	**1.1**	<0.020	0.035	0.045	<0.010	<0.010	<0.010	<0.010	<0.085	<0.010	<0.020	<0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.010	<0.010	<0.010	<0.010	<0.050	<0.500
S2	12/28/2015	0-0.5	**2.7**	<0.002	0.0055	0.0050	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S3	12/28/2015	0-0.5	**2.7**	<0.002	0.045	0.050	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.0020	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S4	12/28/2015	0-0.5	**3.8**	<0.002	0.033	0.038	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.0047	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S5	12/28/2015	0-0.5	**3.9**	<0.002	0.031	0.037	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.0043	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S6	12/28/2015	0-0.5	**3.8**	0.0025	0.130	0.110	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.015	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S7	12/28/2015	0-0.5	**4.1**	0.0021	0.120	0.091	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.010	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S8	12/28/2015	0-0.5	**3.1**	<0.002	0.012	0.0071	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S9	12/28/2015	0-0.5	**3.5**	<0.002	0.052	0.031	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.0055	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S10	12/28/2015	0-0.5	**3.4**	<0.002	0.0055	0.0039	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S11	12/28/2015	0-0.5	**3.5**	<0.002	0.0074	0.0052	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S12	12/28/2015	0-0.5	**2.7**	<0.002	0.026	0.021	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	0.0053	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S13	12/28/2015	0-0.5	**1.7**	<0.002	0.0074	0.0047	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S14	12/28/2015	0-0.5	**3.1**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S15	12/28/2015	0-0.5	**3.1**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S16	12/28/2015	0-0.5	**2.3**	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S17	12/28/2015	0-0.5	**2.0**	<0.002	0.0059	0.0087	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S18	12/28/2015	0-0.5	**2.0**	<0.002	0.020	0.0085	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S19	12/28/2015	0-0.5	**2.6**	<0.002	0.0036	0.0029	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
S20	12/28/2015	0-0.5	**3.1**	<0.002	0.012	0.0093	<0.001	<0.001	<0.001	<0.001	<0.0085	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.050
			4.1	0.0025	0.13	0.11	0	0	0	0	0	0	0.015	0	0	0	0	0	0	0	0	0	0	0	0
Notes:			1.1	Min																					

[1]U.S. Environmental Protection Agency Regional Screening Level (RSL) Summary Table, November 2015.
DTSC's Human Health Risk Assessment Note #3, DTSC-Modified Screening Levels, January 2016.
The more conservative (i.e. lower) screening level concentration is used.

*	Naturally occurring concentrations of arsenic in soil in the region can be as high as 12 mg/kg
NE	Not established
<	Less than the laboratory reporting limit
BOLD	Value exceeds screening level

Photo 1 – APN 211-011-002 Residential and agricultural buildings; from San Juan Grade Road to the northeast.

Photo 2 – APN 211-011-002 Drums next to shed; centrifugal sand separator (painted orange) and piping associated with an agricultural water supply well, view to the northwest.

Photo 3 – APN 211-011-003 Rural residence; view from San Juan Grade Road to the southeast.

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CONSULTANTS, INC.
3160 GOLD VALLEY DR – SUITE 800 – RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 – FAX 916.852.9132

PHOTOGRAPHS 1, 2, & 3		
Boronda Road Future Growth Area Salinas, California		
S1049-03-01		November 2016

Photo 4 –APN 211-011-011 Abandoned residence; view from Rogge Road to the south.

Photo 5 – APN 211-011-009 Residence and existing agricultural support operations; view from Natividad Road to the west.

Photo 6 – APN 211-011-009 Approximate 500 gallons diesel fuel AST; view to the west.

Photo 7 – APN 211-231-012 & -013 Approximately 3,000 gallon fertilizer storage tanks, view to the southeast.

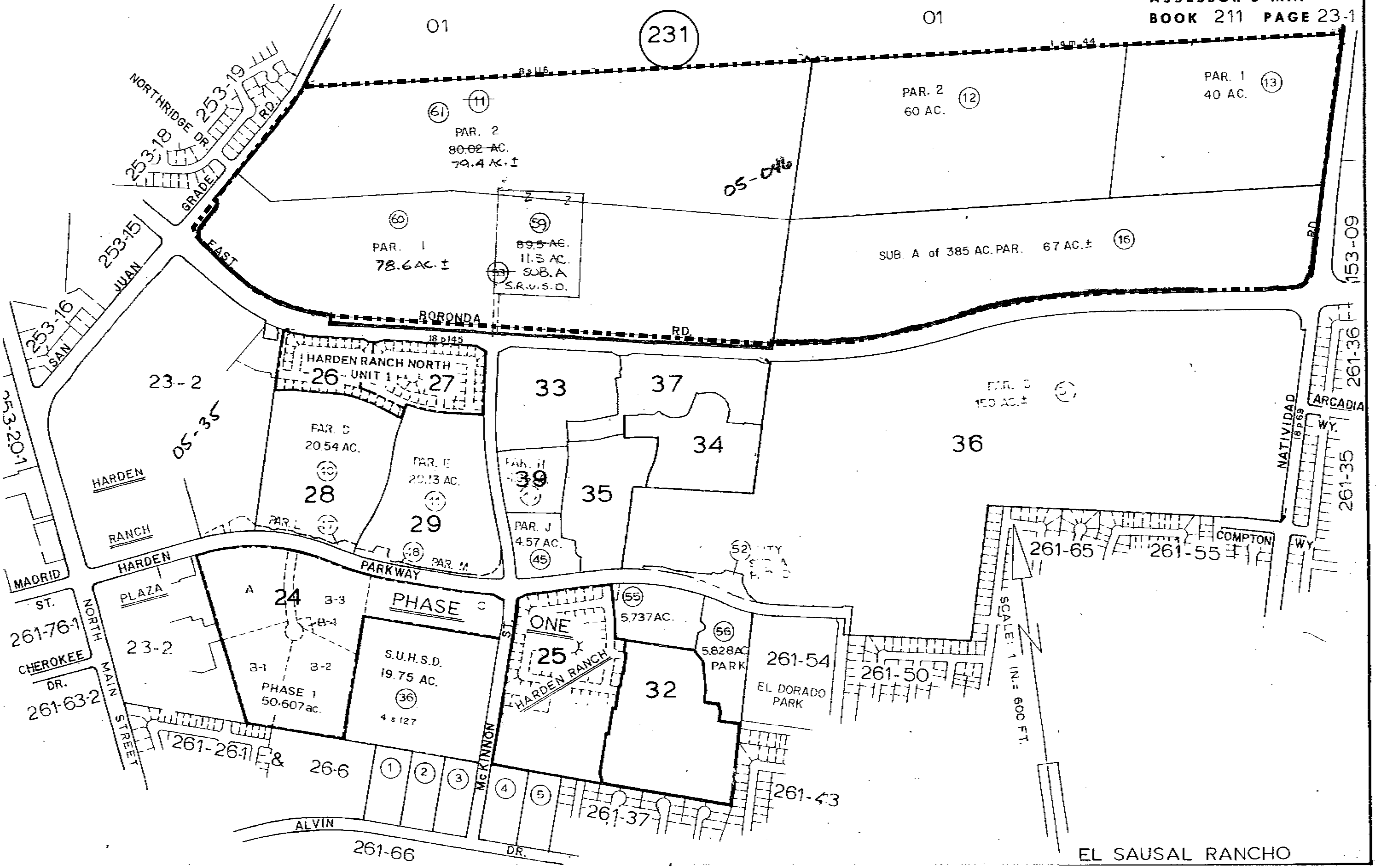
Photo 8 – APN 211-231-012 & -013 Approximately 1,000 gallon gasoline AST, view to the west.

Photo 9 – APN 211-231-012 & -013 Wooden water tank and tower with residence in background; view to the west.

APPENDIX A

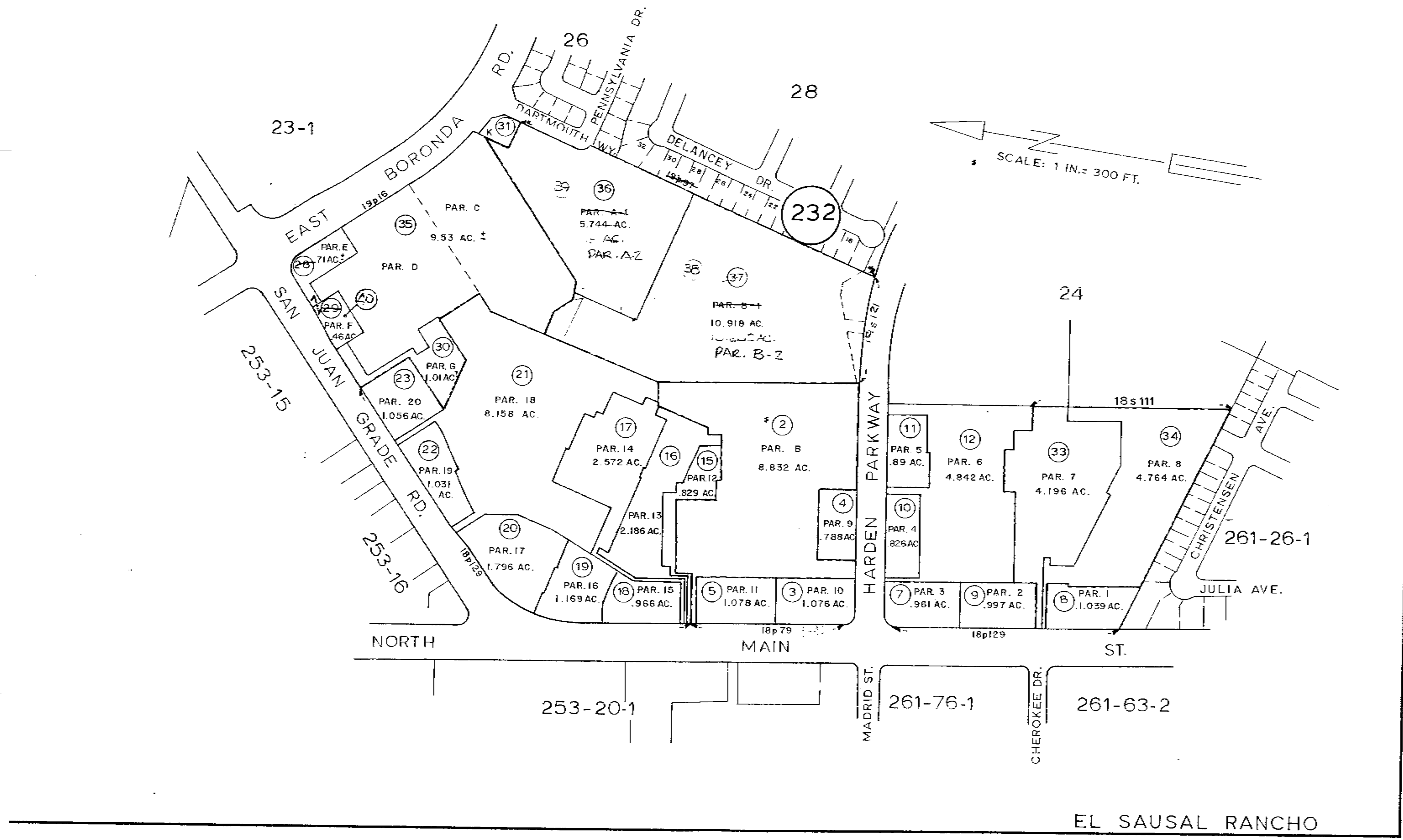
TAX RATE AREA

COUNTY OF MONTEREY
ASSESSOR'S MAP
BOOK 211 PAGE 23-1



TAX RATE AREA

COUNTY OF MONTEREY
ASSESSOR'S MAP
BOOK 211 PAGE 23-2



APPENDIX B

City of Salinas - WASP
City of Salinas - WASP
Salinas, CA 93906

Inquiry Number: 4358345.2s
July 17, 2015

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

CITY OF SALINAS - WASP
SALINAS, CA 93906

COORDINATES

Latitude (North):	36.7229000 - 36˚ 43' 22.44''
Longitude (West):	121.6343000 - 121˚ 38' 3.48''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	621960.4
UTM Y (Meters):	4064800.2
Elevation:	134 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	36121-F6 SALINAS, CA
Version Date:	1984
East Map:	36121-F5 NATIVIDAD, CA
Version Date:	1984

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120520
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
CITY OF SALINAS - WASP
SALINAS, CA 93906

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	THE PICTURE PEOPLE I	1586 NORTHRIDGE SHOP	HAZNET	Lower	1 ft.
A2	EXPRESSLY PORTRAITS	1586 NORTHRIDGE SHOP	RCRA-SQG, FINDS	Lower	1 ft.
B3	PROPOSED NEW SCHOOL	1100 ROGGE ROAD	SCH, ENVIROSTOR	Higher	273, 0.052, NE
C4		1151 ROGGE RD	AST	Higher	340, 0.064, ENE
C5	HIGASHI FARMS-ALEXND	1151 ROGGE RD	CUPA Listings	Higher	340, 0.064, ENE
B6	A OSEGUERA COMPANY,	1099 ROGGE RD	CUPA Listings	Higher	354, 0.067, NE
B7		1099 ROGGE RD	AST	Higher	354, 0.067, NE
D8	CONNIE RUIZ	69 NORMAN WAY	HAZNET	Higher	409, 0.077, NNW
9	MCKINNON ELEMENTARY	BORONDA ROAD/MCKINNO	SCH, ENVIROSTOR	Lower	421, 0.080, SW
E10	CVS PHARMACY #1300	662 E BORONDA RD	RCRA-LQG	Lower	428, 0.081, SE
E11	CVS PHARMACY NO 1300	662 E BORONDA RD	HAZNET	Lower	428, 0.081, SE
E12	LONGS DRUG STORE #47	662 E BORONDA RD	HAZNET	Lower	428, 0.081, SE
E13	CVS PHARMACY #1300	662 E BORONDA RD	FINDS	Lower	428, 0.081, SE
14	SALINAS BERRY FARMS-	261 NATIVIDAD RD	CUPA Listings	Higher	636, 0.120, ENE
F15		13450 GARFIELD CIR	EDR US Hist Auto Stat	Lower	645, 0.122, West
16		94 RUSSELL RD	EDR US Hist Auto Stat	Lower	661, 0.125, NW
D17		60 PENZANCE ST	EDR US Hist Cleaners	Higher	727, 0.138, North
D18		45 PENZANCE ST	EDR US Hist Cleaners	Higher	751, 0.142, NNW
E19	FONTES FARMS	630 BORONDA RD	HIST UST, CUPA Listings	Lower	762, 0.144, SE
E20	FONTES FARMS	630 BORONDA RD	CA FID UST, SWEEPS UST	Lower	762, 0.144, SE
G21	PROPOSED ELEMENTARY	NORTHEST OF EAST BOR	SCH, ENVIROSTOR	Lower	768, 0.145, SE
H22	SETTRINI RANCH	250 NATIVIDAD RD	HIST UST, CUPA Listings	Higher	779, 0.148, ESE
H23	SETTRINI RANCH	250 NATIVIDAD RD	CA FID UST, SWEEPS UST	Higher	779, 0.148, ESE
H24	TRIANGLE FARMS, INC-	239 NATIVIDAD RD	CUPA Listings	Higher	800, 0.152, ESE
H25		239 NATIVIDAD RD	AST	Higher	800, 0.152, ESE
26		18857 LENNY ST	EDR US Hist Cleaners	Lower	826, 0.156, WNW
G27	CVS 1300	662 E BORONDA RD	CUPA Listings	Lower	910, 0.172, SE
28		15 YALE CIR	EDR US Hist Cleaners	Lower	927, 0.176, SW
G29	SOUTHLAND STORE 3226	1992 NATIVIDAD RD.	UST	Lower	960, 0.182, SE
G30	7-ELEVEN #32264	1992 NATIVIDAD RD	CUPA Listings	Lower	960, 0.182, SE
G31	REPLANET LLC	640 E BORONDA RD	SWRCY, HAZNET	Lower	1026, 0.194, SE
F32	FIRESTONE STORE #36F	150 NORTHRIDGE MALL	HIST UST, CUPA Listings	Lower	1045, 0.198, West
33	100 HARDEN PARKWAY L	1907 DARTMOUTH WAY	CUPA Listings	Lower	1083, 0.205, WSW
34	NATIVIDAD ELEMENTARY	ARCADIA STREET/EMERA	SCH, ENVIROSTOR	Lower	1143, 0.216, SE
35		13433 JACKSON ST	EDR US Hist Cleaners	Lower	1244, 0.236, West
I36	TOWING DEPOT**CLOSED	218 BORONDA RD BLDG	CUPA Listings	Lower	1276, 0.242, WSW
I37	AUTOWORX SERVICE**CL	218 BORONDA RD BLDG	CUPA Listings	Lower	1276, 0.242, WSW
I38		55 SAN JUAN GRADE R	EDR US Hist Auto Stat	Lower	1296, 0.245, WSW
39	ROGGE ROAD SCHOOL	1301 ROGGE ROAD	SCH, ENVIROSTOR	Higher	1330, 0.252, ENE

MAPPED SITES SUMMARY

Target Property Address:
CITY OF SALINAS - WASP
SALINAS, CA 93906

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
J40	CA WATER SERVICE COM	19610 ROGGE RD	CUPA Listings	Higher	1630, 0.309, North
K41	DISTRICT OFFICE	303 SAN JUAN GRADE R	CA FID UST, SWEEPS UST	Lower	1633, 0.309, NNW
K42	DISTRICT OFFICE	303 SAN JUAN GRADE R	HIST UST	Lower	1633, 0.309, NNW
43		200 CLINTON CT	EDR US Hist Cleaners	Lower	1673, 0.317, SW
I44	AT&T CALIFORNIA -NE1	33 SAN JUAN GRADE RD	CUPA Listings, SWEEPS UST	Lower	1688, 0.320, WSW
I45	PACIFIC BELL - SLNSC	33 SAN JUAN GRADE RD	UST	Lower	1688, 0.320, WSW
I46	T-MOBILE SF05824A	33 E SAN JUAN GRADE	CUPA Listings	Lower	1688, 0.320, WSW
K47	CECIL'S CHEVRON	307 SAN JUAN GRADE R	UST	Lower	1713, 0.324, NNW
K48		307 SAN JUAN GRADE	EDR US Hist Auto Stat	Lower	1713, 0.324, NNW
K49	BOLSA KNOLLS VALERO	307 SAN JUAN GRADE R	CUPA Listings	Lower	1713, 0.324, NNW
J50	SANTA RITA SCHOOL DI	1027 ROGGE RD	CUPA Listings	Higher	1758, 0.333, North
51		18445 SWANER AVE	EDR US Hist Auto Stat	Lower	1837, 0.348, West
52		1789 HUMBOLDT DR	EDR US Hist Cleaners	Lower	1974, 0.374, SSE
53	SHELL OIL PRODUCTS U	1764 MAIN ST	FINDS, LUST	Lower	2026, 0.384, WSW
54	SANTA RITA SCHOOL DI	2014 SANTA RITA ST	HIST CORTESE, LUST	Lower	2302, 0.436, West
L55	GENTRY CLEANERS	1952 N MAIN ST	RCRA-SQG, SLIC, CUPA Listings, HAZNET	Lower	2771, 0.525, West
L56	NIELSON'S FEED STORE	1934 MAIN ST N	HIST CORTESE, LUST	Lower	2771, 0.525, West
57	JC PENNEY, FORMER TB	150 NORTHRIDGE MALL	LUST	Lower	3030, 0.574, WSW
58	HARDEN RANCH CLEANER	1540 N MAIN ST	RCRA-SQG, CUPA Listings, DRYCLEANERS, HAZNET,...	Lower	3507, 0.664, SW
59	SALINAS COMMUNITY SC	615 LESLIE DRIVE	SCH, ENVIROSTOR	Lower	4063, 0.770, South
M60	CREEKBRIDGE MIDDLE S	EAST BORONDA ROAD/HE	SCH, ENVIROSTOR	Lower	5044, 0.955, ESE
M61	ELEMENTARY SCHOOL #1	EAST BORONDA ROAD/HE	SCH, ENVIROSTOR	Lower	5044, 0.955, ESE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL - National Priority List
Proposed NPL - Proposed National Priority List Sites
NPL LIENS - Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL - National Priority List Deletions

Federal CERCLIS list

CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY - Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP - CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS - Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF - RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-CESQG - RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS - Engineering Controls Sites List
US INST CONTROL - Sites with Institutional Controls
LUCIS - Land Use Control Information System

Federal ERNS list

ERNS - Emergency Response Notification System

EXECUTIVE SUMMARY

State- and tribal - equivalent NPL

RESPONSE.................. State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..................... Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST................ Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

INDIAN UST................. Underground Storage Tanks on Indian Land
FEMA UST................... Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP................. Voluntary Cleanup Priority Listing
VCP........................ Voluntary Cleanup Program Properties

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS............. A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9............ Torres Martinez Reservation Illegal Dump Site Locations
ODI........................ Open Dump Inventory
HAULERS.................... Registered Waste Tire Haulers Listing
INDIAN ODI................. Report on the Status of Open Dumps on Indian Lands
WMUDS/SWAT................. Waste Management Unit Database

Local Lists of Hazardous waste / Contaminated Sites

US CDL..................... Clandestine Drug Labs
HIST Cal-Sites............. Historical Calsites Database
Toxic Pits................. Toxic Pits Cleanup Act Sites
CDL........................ Clandestine Drug Labs
US HIST CDL................ National Clandestine Laboratory Register

Local Land Records

LIENS 2.................... CERCLA Lien Information
LIENS...................... Environmental Liens Listing
DEED....................... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS...................... Hazardous Materials Information Reporting System

EXECUTIVE SUMMARY

CHMIRS - California Hazardous Material Incident Report System
LDS - Land Disposal Sites Listing
MCS - Military Cleanup Sites Listing
SPILLS 90 - SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR - RCRA - Non Generators / No Longer Regulated
DOT OPS - Incident and Accident Data
DOD - Department of Defense Sites
FUDS - Formerly Used Defense Sites
CONSENT - Superfund (CERCLA) Consent Decrees
ROD - Records Of Decision
UMTRA - Uranium Mill Tailings Sites
US MINES - Mines Master Index File
TRIS - Toxic Chemical Release Inventory System
TSCA - Toxic Substances Control Act
FTTS - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS - FIFRA/TSCA Tracking System Administrative Case Listing
SSTS - Section 7 Tracking Systems
ICIS - Integrated Compliance Information System
PADS - PCB Activity Database System
MLTS - Material Licensing Tracking System
RADINFO - Radiation Information Database
RAATS - RCRA Administrative Action Tracking System
RMP - Risk Management Plans
CA BOND EXP. PLAN - Bond Expenditure Plan
NPDES - NPDES Permits Listing
UIC - UIC Listing
Cortese - "Cortese" Hazardous Waste & Substances Sites List
Notify 65 - Proposition 65 Records
DRYCLEANERS - Cleaner Facilities
WIP - Well Investigation Program Case List
ENF - Enforcement Action Listing
EMI - Emissions Inventory Data
INDIAN RESERV - Indian Reservations
SCRD DRYCLEANERS - State Coalition for Remediation of Drycleaners Listing
WDS - Waste Discharge System
Financial Assurance - Financial Assurance Information Listing
PROC - Certified Processors Database
HWT - Registered Hazardous Waste Transporter Database
HWP - EnviroStor Permitted Facilities Listing
MWMP - Medical Waste Management Program Listing
LEAD SMELTERS - Lead Smelter Sites
US AIRS - Aerometric Information Retrieval System Facility Subsystem
EPA WATCH LIST - EPA WATCH LIST
US FIN ASSUR - Financial Assurance Information
COAL ASH EPA - Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER - PCB Transformer Registration Database
COAL ASH DOE - Steam-Electric Plant Operation Data
2020 COR ACTION - 2020 Corrective Action Program List
PRP - Potentially Responsible Parties

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP - EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST	Recovered Government Archive Leaking Underground Storage Tank
RGA LF	Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/10/2015 has revealed that there is 1 RCRA-LQG site within approximately 0.375 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CVS PHARMACY #1300	662 E BORONDA RD	SE 0 - 1/8 (0.081 mi.)	E10	21

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/10/2015 has revealed that there is 1 RCRA-SQG site within approximately 0.375 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
EXPRESSLY PORTRAITS	***1586 NORTHRIDGE SHOP***	***0 - 1/8 (0.000 mi.)***	***A2***	***9***

EXECUTIVE SUMMARY

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 05/04/2015 has revealed that there are 9 ENVIROSTOR sites within approximately 1.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PROPOSED NEW SCHOOL Facility Id: 60000165 Status: Active	***1100 ROGGE ROAD***	***NE 0 - 1/8 (0.052 mi.)***	***B3***	***10***
ROGGE ROAD SCHOOL Facility Id: 27010004 Status: No Further Action	***1301 ROGGE ROAD***	***ENE 1/4 - 1/2 (0.252 mi.)***	***39***	***45***

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCKINNON ELEMENTARY Facility Id: 27010005 Status: No Further Action	***BORONDA ROAD/MCKINNO***	***SW 0 - 1/8 (0.080 mi.)***	***9***	***18***
PROPOSED ELEMENTARY Facility Id: 60001179 Status: No Further Action	***NORTHEST OF EAST BOR***	***SE 1/8 - 1/4 (0.145 mi.)***	***G21***	***33***
NATIVIDAD ELEMENTARY Facility Id: 27010006 Status: No Further Action	***ARCADIA STREET/EMERA***	***SE 1/8 - 1/4 (0.216 mi.)***	***34***	***41***
HARDEN RANCH CLEANER Facility Id: 27010002 Status: Refer: Other Agency	***1540 N MAIN ST***	***SW 1/2 - 1 (0.664 mi.)***	***58***	***78***
SALINAS COMMUNITY SC Facility Id: 60001947 Status: Active	***615 LESLIE DRIVE***	***S 1/2 - 1 (0.770 mi.)***	***59***	***83***
CREEKBRIDGE MIDDLE S Facility Id: 60001058 Status: No Further Action	***EAST BORONDA ROAD/HE***	***ESE 1/2 - 1 (0.955 mi.)***	***M60***	***88***
ELEMENTARY SCHOOL #1 Facility Id: 60000914 Status: No Further Action	***EAST BORONDA ROAD/HE***	***ESE 1/2 - 1 (0.955 mi.)***	***M61***	***92***

EXECUTIVE SUMMARY

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 06/15/2015 has revealed that there are 4 LUST sites within approximately 0.625 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SHELL OIL PRODUCTS U Global Id: T0605307938 Status: Open - Verification Monitoring	***1764 MAIN ST***	***WSW 1/4 - 1/2 (0.384 mi.)***	***53***	***54***
SANTA RITA SCHOOL DI Global Id: T0605300114 Global ID: T0605300114 Status: Completed - Case Closed Status: Pollution Characterization	***2014 SANTA RITA ST***	***W 1/4 - 1/2 (0.436 mi.)***	***54***	***60***
NIELSON'S FEED STORE Global Id: T0605300282 Global ID: T0605300282 Status: Completed - Case Closed Status: Case Closed	***1934 MAIN ST N***	***W 1/2 - 1 (0.525 mi.)***	***L56***	***70***
JC PENNEY, FORMER TB Global Id: T0605300129 Global ID: T0605300129 Status: Open - Eligible for Closure Status: Post remedial action monitoring	150 NORTHRIDGE MALL	WSW 1/2 - 1 (0.574 mi.)	57	72

SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 06/15/2015 has revealed that there is 1 SLIC site within approximately 0.625 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
GENTRY CLEANERS Global Id: SL0605340272 Facility Status: Completed - Case Closed Facility Status: Case Closed	***1952 N MAIN ST***	***W 1/2 - 1 (0.525 mi.)***	***L55***	***66***

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 06/15/2015 has revealed that there are 3 UST sites within approximately 0.375 miles of the target property.

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOUTHLAND STORE 3226 Facility Id: 27-000-6519	1992 NATIVIDAD RD.	SE 1/8 - 1/4 (0.182 mi.)	G29	39
PACIFIC BELL - SLNSC Facility Id: 27-000-003524	33 SAN JUAN GRADE RD	WSW 1/4 - 1/2 (0.320 mi.)	I45	51
CECIL'S CHEVRON Facility Id: 27-000-003235	307 SAN JUAN GRADE R	NNW 1/4 - 1/2 (0.324 mi.)	K47	51

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, and dated 08/01/2009 has revealed that there are 3 AST sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1151 ROGGE RD	ENE 0 - 1/8 (0.064 mi.)	C4	16
Not reported	1099 ROGGE RD	NE 0 - 1/8 (0.067 mi.)	B7	17
Not reported	239 NATIVIDAD RD	ESE 1/8 - 1/4 (0.152 mi.)	H25	38

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: A listing of recycling facilities in California.

A review of the SWRCY list, as provided by EDR, and dated 03/16/2015 has revealed that there is 1 SWRCY site within approximately 0.625 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
REPLANET LLC Cert Id: RC222646.001	***640 E BORONDA RD***	***SE 1/8 - 1/4 (0.194 mi.)***	***G31***	***39***

Local Lists of Hazardous waste / Contaminated Sites

SCH: This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category. depending on the level of threat to public health and safety or the. environment they pose.

A review of the SCH list, as provided by EDR, and dated 05/04/2015 has revealed that there are 5 SCH sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PROPOSED NEW SCHOOL Facility Id: 60000165 Status: Active	***1100 ROGGE ROAD***	***NE 0 - 1/8 (0.052 mi.)***	***B3***	***10***
ROGGE ROAD SCHOOL Facility Id: 27010004 Status: No Further Action	***1301 ROGGE ROAD***	***ENE 1/4 - 1/2 (0.252 mi.)***	***39***	***45***

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
MCKINNON ELEMENTARY Facility Id: 27010005 Status: No Further Action	***BORONDA ROAD/MCKINNO***	***SW 0 - 1/8 (0.080 mi.)***	***9***	***18***
PROPOSED ELEMENTARY Facility Id: 60001179 Status: No Further Action	***NORTHEST OF EAST BOR***	***SE 1/8 - 1/4 (0.145 mi.)***	***G21***	***33***
NATIVIDAD ELEMENTARY Facility Id: 27010006 Status: No Further Action	***ARCADIA STREET/EMERA***	***SE 1/8 - 1/4 (0.216 mi.)***	***34***	***41***

Local Lists of Registered Storage Tanks

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 3 CA FID UST sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SETTRINI RANCH Facility Id: 27002679 Status: A	***250 NATIVIDAD RD***	***ESE 1/8 - 1/4 (0.148 mi.)***	***H23***	***37***

Lower Elevation	Address	Direction / Distance	Map ID	Page
FONTES FARMS Facility Id: 27002526 Status: A	***630 BORONDA RD***	***SE 1/8 - 1/4 (0.144 mi.)***	***E20***	***32***
DISTRICT OFFICE Facility Id: 27002474 Status: A	***303 SAN JUAN GRADE R***	***NNW 1/4 - 1/2 (0.309 mi.)***	***K41***	***48***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 4 HIST UST sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SETTRINI RANCH Facility Id: 00000065307	***250 NATIVIDAD RD***	***ESE 1/8 - 1/4 (0.148 mi.)***	***H22***	***36***

Lower Elevation	Address	Direction / Distance	Map ID	Page
FONTES FARMS Facility Id: 00000042677	***630 BORONDA RD***	***SE 1/8 - 1/4 (0.144 mi.)***	***E19***	***30***
FIRESTONE STORE #36F Facility Id: 00000037775	***150 NORTHRIDGE MALL***	***W 1/8 - 1/4 (0.198 mi.)***	***F32***	***40***
DISTRICT OFFICE Facility Id: 00000037840	303 SAN JUAN GRADE R	NNW 1/4 - 1/2 (0.309 mi.)	K42	49

EXECUTIVE SUMMARY

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 4 SWEEPS UST sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SETTRINI RANCH Comp Number: 65307 Status: A Tank Status: A	***250 NATIVIDAD RD***	***ESE 1/8 - 1/4 (0.148 mi.)***	***H23***	***37***

Lower Elevation	Address	Direction / Distance	Map ID	Page
FONTES FARMS Comp Number: 42677 Status: A Tank Status: A	***630 BORONDA RD***	***SE 1/8 - 1/4 (0.144 mi.)***	***E20***	***32***
DISTRICT OFFICE Comp Number: 37840 Status: A Tank Status: A	***303 SAN JUAN GRADE R***	***NNW 1/4 - 1/2 (0.309 mi.)***	***K41***	***48***
AT&T CALIFORNIA -NE1 Comp Number: 3524 Status: A Tank Status: A	***33 SAN JUAN GRADE RD***	***WSW 1/4 - 1/2 (0.320 mi.)***	***I44***	***50***

Other Ascertainable Records

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 01/18/2015 has revealed that there are 2 FINDS sites within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
EXPRESSLY PORTRAITS	***1586 NORTHRIDGE SHOP***	***0 - 1/8 (0.000 mi.)***	***A2***	***9***
CVS PHARMACY #1300	662 E BORONDA RD	SE 0 - 1/8 (0.081 mi.)	E13	29

EXECUTIVE SUMMARY

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SANTA RITA SCHOOL DI	***2014 SANTA RITA ST***	***W 1/4 - 1/2 (0.436 mi.)***	***54***	***60***
Reg Id: 2468				

CUPA Listings: A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

A review of the CUPA Listings list, as provided by EDR, has revealed that there are 17 CUPA Listings sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HIGASHI FARMS-ALEXND	1151 ROGGE RD	ENE 0 - 1/8 (0.064 mi.)	C5	16
A OSEGUERA COMPANY,	1099 ROGGE RD	NE 0 - 1/8 (0.067 mi.)	B6	17
SALINAS BERRY FARMS-	261 NATIVIDAD RD	ENE 0 - 1/8 (0.120 mi.)	14	29
SETTRINI RANCH	***250 NATIVIDAD RD***	***ESE 1/8 - 1/4 (0.148 mi.)***	***H22***	***36***
TRIANGLE FARMS, INC-	239 NATIVIDAD RD	ESE 1/8 - 1/4 (0.152 mi.)	H24	37
CA WATER SERVICE COM	19610 ROGGE RD	N 1/4 - 1/2 (0.309 mi.)	J40	48
SANTA RITA SCHOOL DI	1027 ROGGE RD	N 1/4 - 1/2 (0.333 mi.)	J50	53

Lower Elevation	Address	Direction / Distance	Map ID	Page
FONTES FARMS	***630 BORONDA RD***	***SE 1/8 - 1/4 (0.144 mi.)***	***E19***	***30***
CVS 1300	662 E BORONDA RD	SE 1/8 - 1/4 (0.172 mi.)	G27	38
7-ELEVEN #32264	1992 NATIVIDAD RD	SE 1/8 - 1/4 (0.182 mi.)	G30	39
FIRESTONE STORE #36F	***150 NORTHRIDGE MALL***	***W 1/8 - 1/4 (0.198 mi.)***	***F32***	***40***
100 HARDEN PARKWAY L	1907 DARTMOUTH WAY	WSW 1/8 - 1/4 (0.205 mi.)	33	41
TOWING DEPOT**CLOSED	218 BORONDA RD BLDG	WSW 1/8 - 1/4 (0.242 mi.)	I36	44
AUTOWORX SERVICE**CL	218 BORONDA RD BLDG	WSW 1/8 - 1/4 (0.242 mi.)	I37	44
AT&T CALIFORNIA -NE1	***33 SAN JUAN GRADE RD***	***WSW 1/4 - 1/2 (0.320 mi.)***	***I44***	***50***
T-MOBILE SF05824A	33 E SAN JUAN GRADE	WSW 1/4 - 1/2 (0.320 mi.)	I46	51
BOLSA KNOLLS VALERO	307 SAN JUAN GRADE R	NNW 1/4 - 1/2 (0.324 mi.)	K49	52

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency. This database begins with calendar year 1993.

A review of the HAZNET list, as provided by EDR, and dated 12/31/2013 has revealed that there are 4 HAZNET sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CONNIE RUIZ	69 NORMAN WAY	NNW 0 - 1/8 (0.077 mi.)	D8	17
GEPAID: CAC002705548				

Lower Elevation	Address	Direction / Distance	Map ID	Page
THE PICTURE PEOPLE I GEPAID: CAD983667213	1586 NORTHRIDGE SHOP	0 - 1/8 (0.000 mi.)	A1	8
CVS PHARMACY NO 1300 GEPAID: CAR000232231 GEPAID: CAL000353283	662 E BORONDA RD	SE 0 - 1/8 (0.081 mi.)	E11	26
LONGS DRUG STORE #47 GEPAID: CAL000201133	662 E BORONDA RD	SE 0 - 1/8 (0.081 mi.)	E12	28

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR US Hist Auto Stat: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Auto Stat list, as provided by EDR, has revealed that there are 5 EDR US Hist Auto Stat sites within approximately 0.375 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	13450 GARFIELD CIR	W 0 - 1/8 (0.122 mi.)	F15	29
Not reported	94 RUSSELL RD	NW 1/8 - 1/4 (0.125 mi.)	16	30
Not reported	55 SAN JUAN GRADE R	WSW 1/8 - 1/4 (0.245 mi.)	I38	45
Not reported	307 SAN JUAN GRADE	NNW 1/4 - 1/2 (0.324 mi.)	K48	52
Not reported	18445 SWANER AVE	W 1/4 - 1/2 (0.348 mi.)	51	53

EDR US Hist Cleaners: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR US Hist Cleaners list, as provided by EDR, has revealed that there are 7 EDR US Hist Cleaners sites within approximately 0.375 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	60 PENZANCE ST	N 1/8 - 1/4 (0.138 mi.)	D17	30
Not reported	45 PENZANCE ST	NNW 1/8 - 1/4 (0.142 mi.)	D18	30

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	18857 LENNY ST	WNW 1/8 - 1/4 (0.156 mi.)	26	38

EXECUTIVE SUMMARY

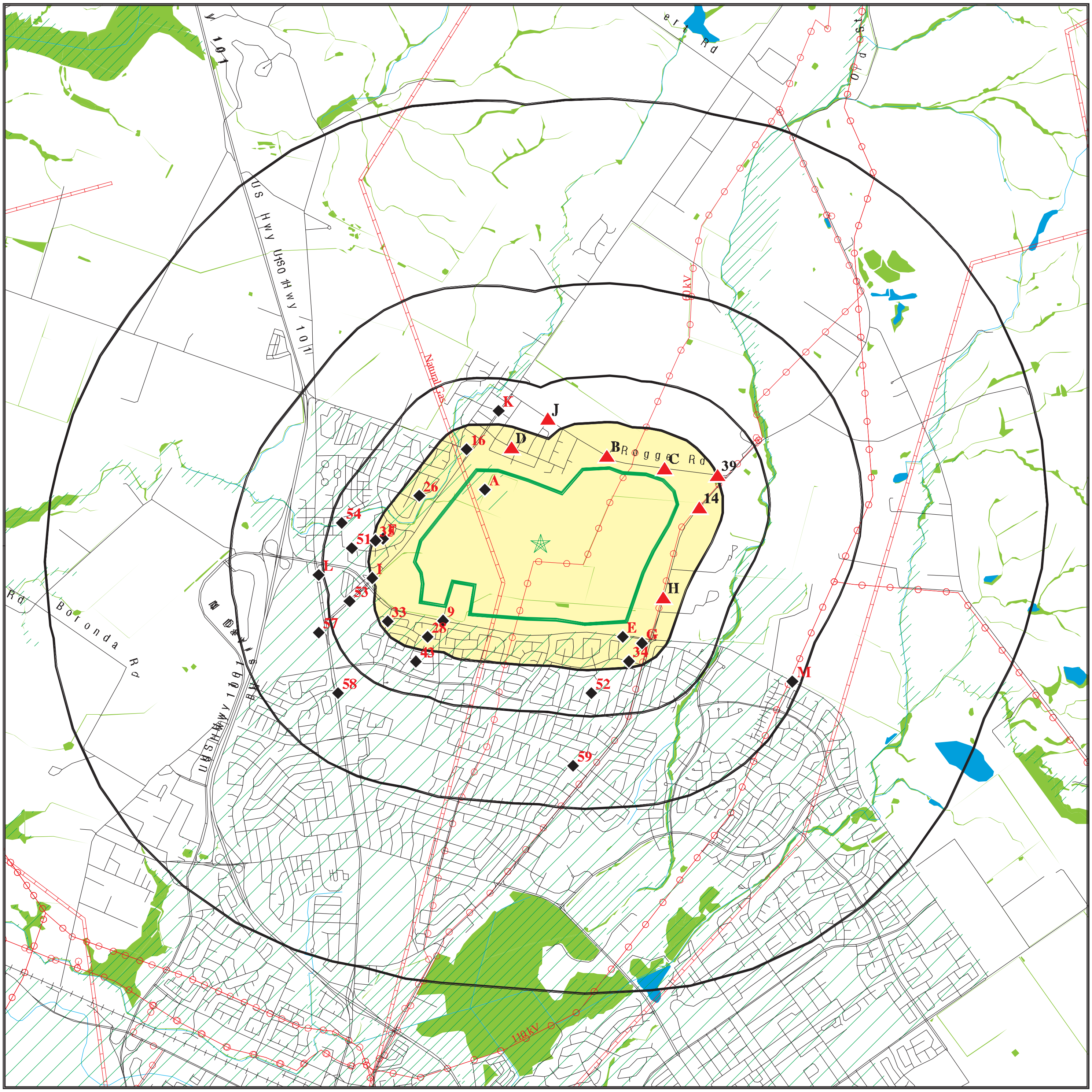
Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	15 YALE CIR	SW 1/8 - 1/4 (0.176 mi.)	28	38
Not reported	13433 JACKSON ST	W 1/8 - 1/4 (0.236 mi.)	35	44
Not reported	200 CLINTON CT	SW 1/4 - 1/2 (0.317 mi.)	43	50
Not reported	1789 HUMBOLDT DR	SSE 1/4 - 1/2 (0.374 mi.)	52	54

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

Site Name	Database(s)
	CDL
	CDL

OVERVIEW MAP - 4358345.2S



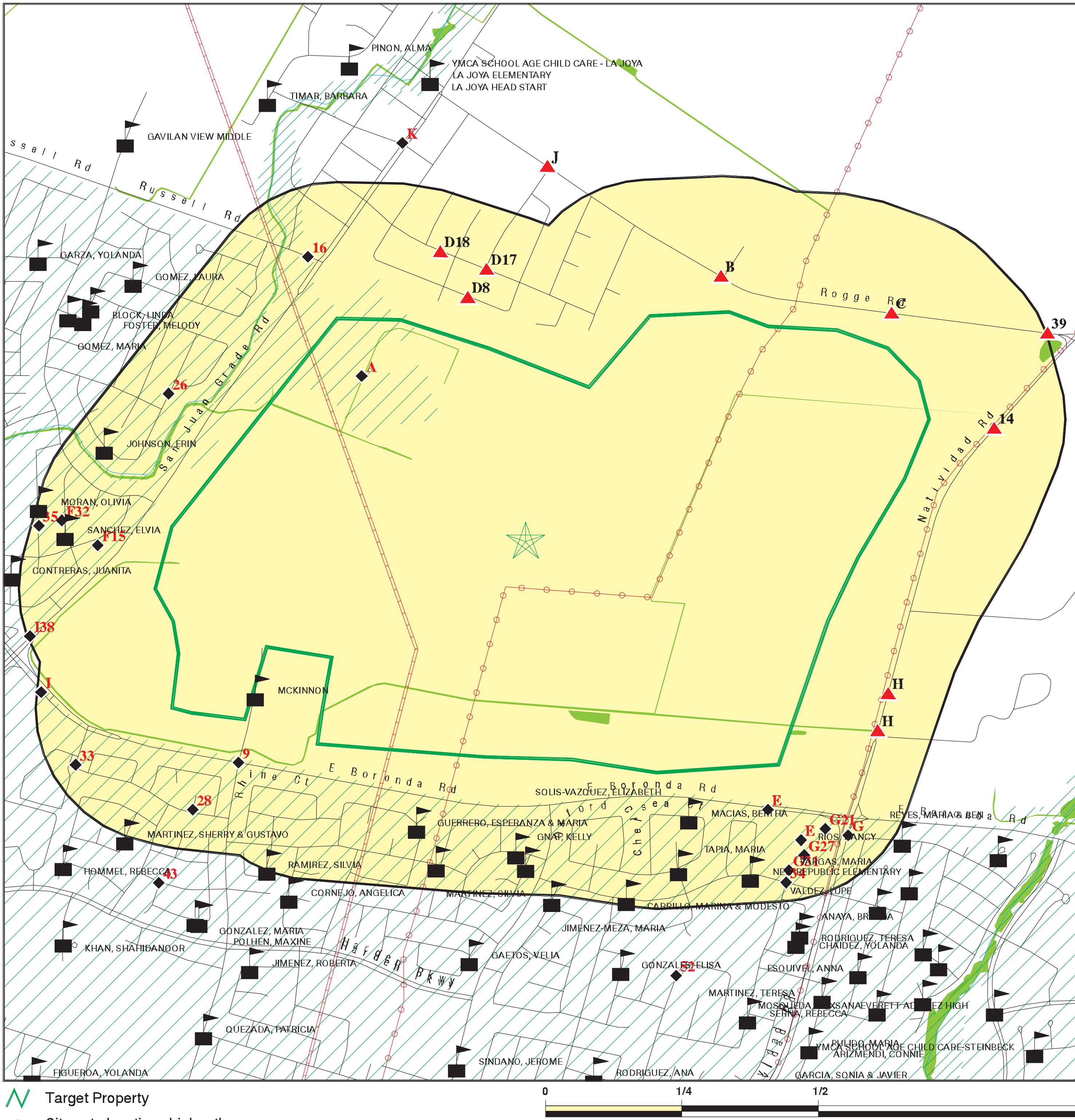
0 | 3/4 | 1 1/2 | 3 Miles

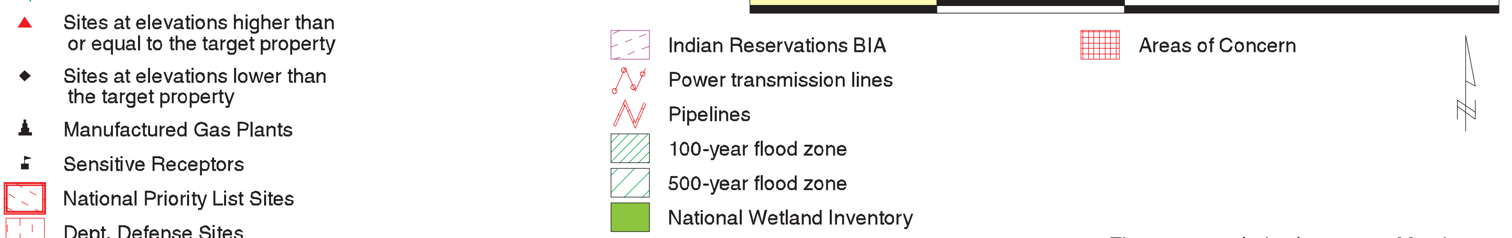
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas CA 93906 LAT/LONG: 36.7229 / 121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY #: 4358345.2s DATE: July 17, 2015 8:34 pm

DETAIL MAP - 4358345.2S





This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas CA 93906 LAT/LONG: 36.7229 / 121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY #: 4358345.2s DATE: July 17, 2015 8:35 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.125		0	0	0	0	0	0
Proposed NPL	1.125		0	0	0	0	0	0
NPL LIENS	0.125		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.125		0	0	0	0	0	0
Federal CERCLIS list								
CERCLIS	0.625		0	0	0	0	NR	0
FEDERAL FACILITY	0.625		0	0	0	0	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.625		0	0	0	0	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.125		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.625		0	0	0	0	NR	0
Federal RCRA generators list								
RCRA-LQG	0.375		1	0	0	NR	NR	1
RCRA-SQG	0.375		1	0	0	NR	NR	1
RCRA-CESQG	0.375		0	0	0	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.625		0	0	0	0	NR	0
US INST CONTROL	0.625		0	0	0	0	NR	0
LUCIS	0.625		0	0	0	0	NR	0
Federal ERNS list								
ERNS	0.125		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.125		0	0	0	0	0	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.125		2	2	1	4	0	9
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.625		0	0	0	0	NR	0
State and tribal leaking storage tank lists								
LUST	0.625		0	0	2	2	NR	4

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.625		0	0	0	1	NR	1
INDIAN LUST	0.625		0	0	0	0	NR	0
State and tribal registered storage tank lists								
UST	0.375		0	1	2	NR	NR	3
AST	0.375		2	1	0	NR	NR	3
INDIAN UST	0.375		0	0	0	NR	NR	0
FEMA UST	0.375		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.625		0	0	0	0	NR	0
VCP	0.625		0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.625		0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	0.625		0	0	0	0	NR	0
ODI	0.625		0	0	0	0	NR	0
SWRCY	0.625		0	1	0	0	NR	1
HAULERS	0.125		0	NR	NR	NR	NR	0
INDIAN ODI	0.625		0	0	0	0	NR	0
WMUDS/SWAT	0.625		0	0	0	0	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	0.125		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.125		0	0	0	0	0	0
SCH	0.375		2	2	1	NR	NR	5
Toxic Pits	1.125		0	0	0	0	0	0
CDL	0.125		0	NR	NR	NR	NR	0
US HIST CDL	0.125		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.375		0	2	1	NR	NR	3
HIST UST	0.375		0	3	1	NR	NR	4
SWEEPS UST	0.375		0	2	2	NR	NR	4
Local Land Records								
LIENS 2	0.125		0	NR	NR	NR	NR	0
LIENS	0.125		0	NR	NR	NR	NR	0
DEED	0.625		0	0	0	0	NR	0
Records of Emergency Release Reports								
HMIRS	0.125		0	NR	NR	NR	NR	0
CHMIRS	0.125		0	NR	NR	NR	NR	0
LDS	0.125		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	0.125		0	NR	NR	NR	NR	0
SPILLS 90	0.125		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.375		0	0	0	NR	NR	0
DOT OPS	0.125		0	NR	NR	NR	NR	0
DOD	1.125		0	0	0	0	0	0
FUDS	1.125		0	0	0	0	0	0
CONSENT	1.125		0	0	0	0	0	0
ROD	1.125		0	0	0	0	0	0
UMTRA	0.625		0	0	0	0	NR	0
US MINES	0.375		0	0	0	NR	NR	0
TRIS	0.125		0	NR	NR	NR	NR	0
TSCA	0.125		0	NR	NR	NR	NR	0
FTTS	0.125		0	NR	NR	NR	NR	0
HIST FTTS	0.125		0	NR	NR	NR	NR	0
SSTS	0.125		0	NR	NR	NR	NR	0
ICIS	0.125		0	NR	NR	NR	NR	0
PADS	0.125		0	NR	NR	NR	NR	0
MLTS	0.125		0	NR	NR	NR	NR	0
RADINFO	0.125		0	NR	NR	NR	NR	0
FINDS	0.125		2	NR	NR	NR	NR	2
RAATS	0.125		0	NR	NR	NR	NR	0
RMP	0.125		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.125		0	0	0	0	0	0
NPDES	0.125		0	NR	NR	NR	NR	0
UIC	0.125		0	NR	NR	NR	NR	0
Cortese	0.625		0	0	0	0	NR	0
HIST CORTESE	0.500		0	0	1	NR	NR	1
CUPA Listings	0.375		3	9	5	NR	NR	17
Notify 65	1.125		0	0	0	0	0	0
DRYCLEANERS	0.375		0	0	0	NR	NR	0
WIP	0.375		0	0	0	NR	NR	0
ENF	0.125		0	NR	NR	NR	NR	0
HAZNET	0.125		4	NR	NR	NR	NR	4
EMI	0.125		0	NR	NR	NR	NR	0
INDIAN RESERV	1.125		0	0	0	0	0	0
SCRD DRYCLEANERS	0.625		0	0	0	0	NR	0
WDS	0.125		0	NR	NR	NR	NR	0
Financial Assurance	0.125		0	NR	NR	NR	NR	0
PROC	0.625		0	0	0	0	NR	0
HWT	0.375		0	0	0	NR	NR	0
HWP	1.125		0	0	0	0	0	0
MWMP	0.375		0	0	0	NR	NR	0
LEAD SMELTERS	0.125		0	NR	NR	NR	NR	0
US AIRS	0.125		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.125		0	NR	NR	NR	NR	0
US FIN ASSUR	0.125		0	NR	NR	NR	NR	0
COAL ASH EPA	0.625		0	0	0	0	NR	0
PCB TRANSFORMER	0.125		0	NR	NR	NR	NR	0
COAL ASH DOE	0.125		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
2020 COR ACTION	0.375		0	0	0	NR	NR	0
PRP	0.125		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.125		0	0	0	0	0	0
EDR US Hist Auto Stat	0.375		1	2	2	NR	NR	5
EDR US Hist Cleaners	0.375		0	5	2	NR	NR	7
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LUST	0.125		0	NR	NR	NR	NR	0
RGA LF	0.125		0	NR	NR	NR	NR	0
- Totals --		0	18	30	20	7	0	75

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 | **THE PICTURE PEOPLE INC** | **HAZNET** | **S113019401**
1586 NORTHRIDGE SHOPPING CTR | **N/A**
< 1/8 | **SALINAS, CA 93906**
1 ft.

Site 1 of 2 in cluster A

Relative: Lower

Actual: 120 ft.

HAZNET:

envid:	S113019401
Year:	2000
GEPAID:	CAD983667213
Contact:	SCOTT YARDLEY
Telephone:	6505789291
Mailing Name:	Not reported
Mailing Address:	1157 TRITON DRIVE SUITE B
Mailing City,St,Zip:	FOSTER CITY, CA 944041213
Gen County:	Not reported
TSD EPA ID:	CAD003963592
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	0
Facility County:	Monterey

envid:	S113019401
Year:	1999
GEPAID:	CAD983667213
Contact:	THE PICTURE PEOPLE INC
Telephone:	6505789291
Mailing Name:	Not reported
Mailing Address:	1157 TRITON DRIVE SUITE B
Mailing City,St,Zip:	FOSTER CITY, CA 944041213
Gen County:	Not reported
TSD EPA ID:	CAD003963592
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	.0025
Facility County:	Monterey

envid:	S113019401
Year:	1998
GEPAID:	CAD983667213
Contact:	THE PICTURE PEOPLE INC
Telephone:	6505789291
Mailing Name:	Not reported
Mailing Address:	1157 TRITON DRIVE SUITE B
Mailing City,St,Zip:	FOSTER CITY, CA 944041213
Gen County:	Not reported
TSD EPA ID:	CAD003963592
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	.0125
Facility County:	Monterey

envid:	S113019401
Year:	1998
GEPAID:	CAD983667213
Contact:	THE PICTURE PEOPLE INC

THE PICTURE PEOPLE INC (Continued) **S113019401**

Telephone: 6505789291
Mailing Name: Not reported
Mailing Address: 1157 TRITON DRIVE SUITE B
Mailing City,St,Zip: FOSTER CITY, CA 944041213
Gen County: Not reported
TSD EPA ID: CAD003963592
TSD County: Not reported
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .2700
Facility County: Monterey

envid: S113019401
Year: 1997
GEPAID: CAD983667213
Contact: THE PICTURE PEOPLE INC
Telephone: 6505789291
Mailing Name: Not reported
Mailing Address: 1157 TRITON DRIVE SUITE B
Mailing City,St,Zip: FOSTER CITY, CA 944041213
Gen County: Not reported
TSD EPA ID: CAD003963592
TSD County: Not reported
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .0700
Facility County: Monterey

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

A2 **EXPRESSLY PORTRAITS INC** **RCRA-SQG** **1000857308**
1586 NORTHRIDGE SHOPPING CTR **FINDS** **CAD983667213**
< 1/8 **SALINAS, CA 93906**
1 ft.

Site 2 of 2 in cluster A

Relative:
Lower

Actual:
120 ft.

RCRA-SQG:
Date form received by agency: 05/05/1993
Facility name: EXPRESSLY PORTRAITS INC
Facility address: 1586 NORTHRIDGE SHOPPING CTR
SALINAS, CA 93906
EPA ID: CAD983667213
Mailing address: TRITON DR STE C
FOSTER CITY, CA 94404
Contact: MEL ORCHARD
Contact address: 1151 TRITON DR STE C
FOSTER CITY, CA 94404
Contact country: US
Contact telephone: (415) 578-9291
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

EXPRESSLY PORTRAITS INC (Continued) **1000857308**

Owner/Operator Summary:
Owner/operator name: EXPRESSLY PORTRAITS INC
Owner/operator address: 1151 TRITON DR STE C
FOSTER CITY, CA 94404
Owner/operator country: Not reported
Owner/operator telephone: (415) 578-9291
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002898357

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

B3
NE
< 1/8
0.052 mi.
273 ft.

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY **SCH** **S107737092**
1100 ROGGE ROAD **ENVIROSTOR** **N/A**
SALINAS, CA 93906

Site 1 of 3 in cluster B

Relative:
Higher

Actual:
151 ft.

SCH:

Facility ID: 60000165
Site Type: School Cleanup
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 38.97
National Priorities List: NO

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Mellan Songco
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204172
Assembly:	30
Senate:	12
Special Program Status:	Not reported
Status:	Active
Status Date:	09/26/2012
Restricted Use:	NO
Funding:	School District
Latitude:	36.72843
Longitude:	-121.6291
APN:	211-011-008, 211-011-011, 211011008000
Past Use:	ABOVE GROUND STORAGE TANKS, AGRICULTURAL - ROW CROPS
Potential COC:	Under Investigation, Arsenic, Chlordane, DDD, DDE, DDT, Endrin, Lead, Naturally Occurring Asbestos (NOA, TPH-MOTOR OIL, Dieldrin
Confirmed COC:	Under Investigation, 40002-NO, Dieldrin, 30001-NO, Chlordane, 30006-NO, 30007-NO, 30008-NO, 30010-NO, 30013-NO, 3002502-NO
Potential Description:	SOIL
Alias Name:	High School #5
Alias Type:	Alternate Name
Alias Name:	211-011-008
Alias Type:	APN
Alias Name:	211-011-011
Alias Type:	APN
Alias Name:	211011008000
Alias Type:	APN
Alias Name:	204172
Alias Type:	Project Code (Site Code)
Alias Name:	60000165
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	School Cleanup Agreement
Completed Date:	08/28/2007
Comments:	Sent fully executed agreement to district

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	4.15 Request
Completed Date:	09/06/2007
Comments:	DTSC approved the 4.15 with a Partial Site Approval. DTSC approved the 38.3-acre former agricultural area. Further Investigation is needed on the 0.66-acre residential parcel. The Distirct does not intend to construct on the site for 2 to 3 years, but will allow continued ag use.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Supplemental Site Investigation Tech Memo
Completed Date:	02/12/2013
Comments:	On February 12, 2013, DTSC approved the implementation of the SSI

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Tech memo.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 11/07/2013
Comments: On October 4, 2013, DTSC approved the SSI WP Addendum for the Proposed HS -Mortensen Property.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 05/28/2014
Comments: On May 2, 2014, DTSC concurred with the further action required determination at the site and approved the SSI report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 06/25/2013
Comments: On June 25, 2013, a DTSC representative observed the implementation of the approved SSI workplan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 02/24/2006
Comments: Rcv'd 1 copy of the Phase 1 ESA & copy of chk for $1500.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 10/26/2006
Comments: DTSC approved the PEA WP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/04/2007
Comments: DTSC approved the PEA with a further action determination. A Supplemental Site Investigation will be conducted to determine the extent of chlordan, dieldrin and PAH contamination in soils at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 07/16/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 04/17/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 05/23/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 11/14/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inactive Status Letter
Completed Date: 11/30/2007
Comments: DTSC issued an Inactive Status Letter

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Removal Action Workplan
Future Due Date: 2015
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 60000165
Status: Active
Status Date: 09/26/2012
Site Code: 204172
Site Type: School Cleanup
Site Type Detailed: School
Acres: 38.97
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Mellan Songco
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.72843
Longitude: -121.6291
APN: 211-011-008, 211-011-011, 211011008000
Past Use: ABOVE GROUND STORAGE TANKS, AGRICULTURAL - ROW CROPS
Potential COC: Under Investigation Arsenic Chlordane DDD DDE DDT Endrin Lead Naturally Occurring Asbestos (NOA TPH-MOTOR OIL Dieldrin
Confirmed COC: Under Investigation 40002-NO Dieldrin 30001-NO Chlordane 30006-NO 30007-NO 30008-NO 30010-NO 30013-NO 3002502-NO
Potential Description: SOIL
Alias Name: High School #5

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Alias Type: Alternate Name
Alias Name: 211-011-008
Alias Type: APN
Alias Name: 211-011-011
Alias Type: APN
Alias Name: 211011008000
Alias Type: APN
Alias Name: 204172
Alias Type: Project Code (Site Code)
Alias Name: 60000165
Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement
Completed Date: 08/28/2007
Comments: Sent fully executed agreement to district

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: 4.15 Request
Completed Date: 09/06/2007
Comments: DTSC approved the 4.15 with a Partial Site Approval. DTSC approved the 38.3-acre former agricultural area. Further Investigation is needed on the 0.66-acre residential parcel. The Distirct does not intend to construct on the site for 2 to 3 years, but will allow continued ag use.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 02/12/2013
Comments: On February 12, 2013, DTSC approved the implementation of the SSI Tech memo.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 11/07/2013
Comments: On October 4, 2013, DTSC approved the SSI WP Addendum for the Proposed HS -Mortensen Property.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 05/28/2014
Comments: On May 2, 2014, DTSC concurred with the further action required determination at the site and approved the SSI report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 06/25/2013
Comments: On June 25, 2013, a DTSC representative observed the implementation of the approved SSI workplan.

Completed Area Name: PROJECT WIDE

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 02/24/2006
Comments: Rcv'd 1 copy of the Phase 1 ESA & copy of chk for $1500.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 10/26/2006
Comments: DTSC approved the PEA WP.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/04/2007
Comments: DTSC approved the PEA with a further action determination. A Supplemental Site Investigation will be conducted to determine the extent of chlordan, dieldrin and PAH contamination in soils at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 07/16/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 04/17/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 05/23/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 11/14/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Inactive Status Letter
Completed Date: 11/30/2007
Comments: DTSC issued an Inactive Status Letter

Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: Removal Action Workplan
Future Due Date: 2015
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported

PROPOSED NEW SCHOOL SITE MORTENSEN PROPERTY (Continued) **S107737092**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported

C4
ENE
< 1/8
0.064 mi.
340 ft.

1151 ROGGE RD
SALINAS, CA

Site 1 of 2 in cluster C

AST **A100336681**
N/A

Relative:
Higher

Actual:
150 ft.

AST:
Certified Unified Program Agencies: Monterey
Owner: RIO MESA FARMS
Total Gallons: 1,500

C5
ENE
< 1/8
0.064 mi.
340 ft.

HIGASHI FARMS-ALEXNDR RCHCLOSED****
1151 ROGGE RD
SALINAS, CA 93901

Site 2 of 2 in cluster C

CUPA Listings **S110740595**
N/A

Relative:
Higher

Actual:
150 ft.

CUPA MONTEREY:

Facility Id: FA0811005
Region: MONTEREY
Program/Element Code: 5190
Program/Element: BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status: INACTIVE, NON-BILLABLE
EDR Link ID: Not reported
Record ID: PR0600582

Facility Id: FA0817327
Region: MONTEREY
Program/Element Code: 5190
Program/Element: BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status: INACTIVE, NON-BILLABLE
EDR Link ID: Not reported
Record ID: PR0609673

Facility Id: FA0818974
Region: MONTEREY
Program/Element Code: 5190
Program/Element: BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status: INACTIVE, NON-BILLABLE
EDR Link ID: Not reported
Record ID: PR0616729

B6 **A OSEGUERA COMPANY, INC** **CUPA Listings** **S110740018**
NE **1099 ROGGE RD** **N/A**
< 1/8 **SALINAS, CA 93907**
0.067 mi.
354 ft. **Site 2 of 3 in cluster B**

Relative: **Higher**

Actual: **150 ft.**

CUPA MONTEREY:

Facility Id:	FA0814765
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0608683

B7 **AST** **A100322963**
NE **1099 ROGGE RD** **N/A**
< 1/8 **SALINAS, CA**
0.067 mi.
354 ft. **Site 3 of 3 in cluster B**

Relative: **Higher**

Actual: **150 ft.**

AST:

Certified Unified Program Agencies:	Monterey
Owner:	A OSEGUERA COMPANY, INC
Total Gallons:	2,500

D8 **CONNIE RUIZ** **HAZNET** **S113788824**
NNW **69 NORMAN WAY** **N/A**
< 1/8 **SALINAS, CA 93906**
0.077 mi.
409 ft. **Site 1 of 3 in cluster D**

Relative: **Higher**

Actual: **134 ft.**

HAZNET:

envid:	S113788824
Year:	2012
GEPAID:	CAC002705548
Contact:	Connie Ruiz
Telephone:	8314422759
Mailing Name:	Not reported
Mailing Address:	69 Norman Way
Mailing City,St,Zip:	SALINAS, CA 93906
Gen County:	Monterey
TSD EPA ID:	CAD981382732
TSD County:	Alameda
Waste Category:	Not reported
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Monterey

9
SW
< 1/8
0.080 mi.
421 ft.

MCKINNON ELEMENTARY SCHOOL
BORONDA ROAD/MCKINNON STREET
SALINAS, CA 93906

SCH **S105628676**
ENVIROSTOR **N/A**

Relative:
Lower

Actual:
102 ft.

SCH:

Facility ID:	27010005
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	11.5
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Not reported
Supervisor:	Charles Ridenour
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204016
Assembly:	30
Senate:	12
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	11/22/2000
Restricted Use:	NO
Funding:	School District
Latitude:	36.71694
Longitude:	-121.6436
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	DDE, DDE, DDT, Toxaphene
Confirmed COC:	30023-NO, 30007-NO, 30008-NO, No Contaminants found
Potential Description:	SOIL
Alias Name:	MCKINNON ELEMENTARY SCHOOL
Alias Type:	Alternate Name
Alias Name:	MCKINNON ELEMENTARY SCHOOL SITE/VCA
Alias Type:	Alternate Name
Alias Name:	SANT RITA UNION SD
Alias Type:	Alternate Name
Alias Name:	204016
Alias Type:	Project Code (Site Code)
Alias Name:	27010005
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	11/22/2000
Comments:	DTSC approved the PEA with a no further action determination

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Workplan
Completed Date:	02/07/2000
Comments:	Not reported

Completed Area Name:	PROJECT WIDE

MCKINNON ELEMENTARY SCHOOL (Continued) **S105628676**

Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/13/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 05/18/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 02/04/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Public Participation
Completed Date: 11/16/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 27010005
Status: No Further Action
Status Date: 11/22/2000
Site Code: 204016
Site Type: School Investigation
Site Type Detailed: School
Acres: 11.5
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Charles Ridenour
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.71694
Longitude: -121.6436
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS

MCKINNON ELEMENTARY SCHOOL (Continued) **S105628676**

Potential COC: DDE DDT Toxaphene
Confirmed COC: 30023-NO 30007-NO 30008-NO No Contaminants found
Potential Description: SOIL
Alias Name: MCKINNON ELEMENTARY SCHOOL
Alias Type: Alternate Name
Alias Name: MCKINNON ELEMENTARY SCHOOL SITE/VCA
Alias Type: Alternate Name
Alias Name: SANT RITA UNION SD
Alias Type: Alternate Name
Alias Name: 204016
Alias Type: Project Code (Site Code)
Alias Name: 27010005
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 11/22/2000
Comments: DTSC approved the PEA with a no further action determination

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 02/07/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/13/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 05/18/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 02/04/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Public Participation
Completed Date: 11/16/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported

MCKINNON ELEMENTARY SCHOOL (Continued) **S105628676**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported

E10 SE < 1/8 0.081 mi. 428 ft.	**CVS PHARMACY #1300 662 E BORONDA RD SALINAS, CA 93906 Site 1 of 6 in cluster E**	**RCRA-LQG**	**1015740505 CAR000232231**

Relative: Lower

Actual: 118 ft.

RCRA-LQG:

Date form received by agency:	03/01/2014
Facility name:	CVS PHARMACY #1300
Facility address:	662 E BORONDA RD SALINAS, CA 93906
EPA ID:	CAR000232231
Mailing address:	CVS DR-23062A WOONSOCKET, CA 02895
Contact:	WENDY L BRANT
Contact address:	CVS DR-23062A WOONSOCKET, RI 02895
Contact country:	Not reported
Contact telephone:	(401) 770-7457
Contact email:	WENDY.BRANT@CVSCAREMARK.COM
EPA Region:	09
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	LONGS DRUG STORES CALIFORNIA LLC
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	10/22/2008
Owner/Op end date:	Not reported

Owner/operator name:	LONGS DRUG STORES CALIFORNIA, LLC
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	10/22/2008

CVS PHARMACY #1300 (Continued) **1015740505**

Owner/Op end date: Not reported

Owner/operator name: LD AND B INVESTMENT COMPANY LLC
Owner/operator address: 18201 VON KARMAN AVE STE 1000
IRVINE, CA 92612
Owner/operator country: US
Owner/operator telephone: 949-553-0450
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/29/2002
Owner/Op end date: Not reported

Owner/operator name: LD&B INVESTMENT COMPANY LLC
Owner/operator address: VON KARMAN AVE STE 1000
IRVINE, CA 92612
Owner/operator country: Not reported
Owner/operator telephone: (949) 553-0450
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/29/2002
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 122
. Waste name: 122

. Waste code: 123
. Waste name: 123

. Waste code: 131
. Waste name: 131

. Waste code: 134
. Waste name: 134

. Waste code: 141
. Waste name: 141

. Waste code: 181
. Waste name: 181

CVS PHARMACY #1300 (Continued) **1015740505**

. Waste code: 214
. Waste name: 214

. Waste code: 311
. Waste name: 311

. Waste code: 331
. Waste name: 331

. Waste code: 352
. Waste name: 352

. Waste code: 541
. Waste name: 541

. Waste code: 561
. Waste name: 561

. Waste code: 791
. Waste name: 791

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D016
. Waste name: 2,4-D (2,4-DICHLOROPHENOXYACETIC ACID)

. Waste code: D018
. Waste name: BENZENE

CVS PHARMACY #1300 (Continued) **1015740505**

. Waste code: D024
. Waste name: M-CRESOL

. Waste code: D027
. Waste name: 1,4-DICHLOROBENZENE

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P012
. Waste name: ARSENIC OXIDE AS2O3 (OR) ARSENIC TRIOXIDE

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: P081
. Waste name: 1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R)

. Waste code: P188
. Waste name: BENZOIC ACID, 2-HYDROXY-, COMPD. WITH (3AS-CIS)-1,2,3,3A,8,8A-HEXAHYDRO-1,3A,8-TRIMETHYLPYRROLO[2,3-B]INDOL- -YL METHYLCARBAMATE ESTER (1:1) (OR) PHYSOSTIGMINE SALICYLATE

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U010
. Waste name: AZIRINO [2',3':3,4]PYRROLO[1,2-A]INDOLE-4,7-DIONE, 6-AMINO-8-[[(AMINOCARBONYL)OXY]METHYL]-1,1A,2,8,8A,8B-HEXAHYDRO-8A-MET OXY-5-METHYL-, [1AS-(1AALPHA, 8BETA, 8AALPHA, 8BALPHA)]- (OR) MITOMYCIN C

. Waste code: U031
. Waste name: 1-BUTANOL (I) (OR) N-BUTYL ALCOHOL (I)

. Waste code: U034
. Waste name: ACETALDEHYDE, TRICHLORO- (OR) CHLORAL

. Waste code: U035
. Waste name: BENZENEBUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) CHLORAMBUCIL

. Waste code: U044
. Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-

. Waste code: U058
. Waste name: 2H-1,3,2-OXAZAPHOSPHORIN-2-AMINE, N,N-BIS(2-CHLOROETHYL)TETRAHYDRO-, 2-OXIDE (OR) CYCLOPHOSPHAMIDE

CVS PHARMACY #1300 (Continued) **1015740505**

. Waste code: U059
. Waste name: 5,12-NAPHTHACENEDIONE, 8-ACETYL-10-[(3-AMINO-2,3,6-TRIDEOXY)-ALPHA-L-LYXO-HEXOPYRANOSYL)OXY]-,8,9,10-TETRAHYDRO-6,8,11-TRIHYDROXY-1-METHOXY-, (8S-CIS)- (OR) DAUNOMYCIN

. Waste code: U070
. Waste name: BENZENE, 1,2-DICHLORO- (OR) O-DICHLOROBENZENE

. Waste code: U072
. Waste name: BENZENE, 1,4-DICHLORO- (OR) P-DICHLOROBENZENE

. Waste code: U089
. Waste name: DIETHYLSTILBESTEROL (OR) PHENOL, 4,4’-(1,2-DIETHYL-1,2-ETHENEDIYL)BIS, (E)-

. Waste code: U122
. Waste name: FORMALDEHYDE

. Waste code: U129
. Waste name: CYCLOHEXANE, 1,2,3,4,5,6-HEXACHLORO-, (1ALPHA, 2ALPHA, 3BETA, 4ALPHA, 5ALPHA, 6BETA)- (OR) LINDANE

. Waste code: U132
. Waste name: HEXACHLOROPHENE (OR) PHENOL, 2,2’-METHYLENEBIS[3,4,6-TRICHLORO-

. Waste code: U150
. Waste name: L-PHENYLALANINE, 4-[BIS(2-CHLOROETHYL)AMINO]- (OR) MELPHALAN

. Waste code: U151
. Waste name: MERCURY

. Waste code: U154
. Waste name: METHANOL (I) (OR) METHYL ALCOHOL (I)

. Waste code: U165
. Waste name: NAPHTHALENE

. Waste code: U188
. Waste name: PHENOL

. Waste code: U200
. Waste name: RESERPINE (OR) YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXYBENZOYL)OXY]-, METHYL ESTER, (3BETA, 16BETA, 17ALPHA, 18BETA, 20ALPHA)-

. Waste code: U201
. Waste name: 1,3-BENZENEDIOL (OR) RESORCINOL

. Waste code: U204
. Waste name: SELENIOUS ACID (OR) SELENIUM DIOXIDE

. Waste code: U205
. Waste name: SELENIUM SULFIDE (OR) SELENIUM SULFIDE SES2 (R,T)

. Waste code: U206
. Waste name: D-GLUCOSE, 2-DEOXY-2-[[(METHYLNITROSOAMINO)-CARBONYL]AMINO]- (OR)

CVS PHARMACY #1300 (Continued) **1015740505**

GLUCOPYRANOSE, 2-DEOXY-2-(3-METHYL-3-NITROSOUREIDO)-,D- (OR) STREPTOZOTOCIN

. Waste code: U210
. Waste name: ETHENE, TETRACHLORO- (OR) TETRACHLOROETHYLENE

. Waste code: U279
. Waste name: CARBARYL (OR) 1-NAPHTHALENOL, METHYLCARBAMATE

. Waste code: U411
. Waste name: PHENOL, 2-(1-METHYLETHOXY)-, METHYLCARBAMATE (OR) PROPOXUR

Historical Generators:
Date form received by agency: 10/25/2012
Site name: CVS PHARMACY NO 1300
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: P001
. Waste name: 2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%

. Waste code: P042
. Waste name: 1,2-BENZENEDIOL, 4-[1-HYDROXY-2-(METHYLAMINO)ETHYL]-, (R)- (OR) EPINEPHRINE

. Waste code: P075
. Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS

. Waste code: P081
. Waste name: 1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R)

Violation Status: No violations found

E11
SE
< 1/8
0.081 mi.
428 ft.

CVS PHARMACY NO 1300
662 E BORONDA RD
SALINAS, CA 93906

HAZNET **S113158741**
N/A

Site 2 of 6 in cluster E

Relative:
Lower

Actual:
118 ft.

HAZNET:
envid: S113158741
Year: 2013
GEPAID: CAR000232231
Contact: Wendy Brant
Telephone: 4017651500
Mailing Name: Not reported
Mailing Address: 1 CVS DR
Mailing City,St,Zip: WOONSOCKET, RI 02895
Gen County: Monterey
TSD EPA ID: INR000110197

CVS PHARMACY NO 1300 (Continued) **S113158741**

TSD County: Not reported
Waste Category: Not reported
Disposal Method: Not reported
Tons: 0.002
Facility County: Not reported

envid: S113158741
Year: 2013
GEPAID: CAR000232231
Contact: Wendy Brant
Telephone: 4017651500
Mailing Name: Not reported
Mailing Address: 1 CVS DR
Mailing City,St,Zip: WOONSOCKET, RI 02895
Gen County: Monterey
TSD EPA ID: INR000110197
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0055
Facility County: Not reported

envid: S113158741
Year: 2013
GEPAID: CAR000232231
Contact: Wendy Brant
Telephone: 4017651500
Mailing Name: Not reported
Mailing Address: 1 CVS DR
Mailing City,St,Zip: WOONSOCKET, RI 02895
Gen County: Monterey
TSD EPA ID: INR000110197
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.091
Facility County: Not reported

envid: S113158741
Year: 2013
GEPAID: CAR000232231
Contact: Wendy Brant
Telephone: 4017651500
Mailing Name: Not reported
Mailing Address: 1 CVS DR
Mailing City,St,Zip: WOONSOCKET, RI 02895
Gen County: Monterey
TSD EPA ID: INR000110197
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0645
Facility County: Not reported

CVS PHARMACY NO 1300 (Continued) **S113158741**

envid:	S113158741
Year:	2013
GEPAID:	CAR000232231
Contact:	Wendy Brant
Telephone:	4017651500
Mailing Name:	Not reported
Mailing Address:	1 CVS DR
Mailing City,St,Zip:	WOONSOCKET, RI 02895
Gen County:	Monterey
TSD EPA ID:	INR000110197
TSD County:	Not reported
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.011
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
22 additional CA_HAZNET: record(s) in the EDR Site Report.

E12
SE
< 1/8
0.081 mi.
428 ft.

LONGS DRUG STORE #479 **HAZNET** **S113103392**
662 E BORONDA RD **N/A**
SALINAS, CA 93906

Site 3 of 6 in cluster E

Relative:
Lower

Actual:
118 ft.

HAZNET:

envid:	S113103392
Year:	2011
GEPAID:	CAL000201133
Contact:	Raquel Karnes/ENV Coord
Telephone:	7077451654
Mailing Name:	Not reported
Mailing Address:	141 N CIVIC DR
Mailing City,St,Zip:	WALNUT CREEK, CA 945960000
Gen County:	Not reported
TSD EPA ID:	CAD980884183
TSD County:	Not reported
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.06255
Facility County:	Monterey

envid:	S113103392
Year:	2003
GEPAID:	CAL000201133
Contact:	Raquel Karnes/ENV Coord
Telephone:	7077451654
Mailing Name:	Not reported
Mailing Address:	141 N CIVIC DR
Mailing City,St,Zip:	WALNUT CREEK, CA 945960000
Gen County:	Not reported
TSD EPA ID:	CA0000084517
TSD County:	Not reported
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	0.12

LONGS DRUG STORE #479 (Continued) **S113103392**

Facility County: Monterey

E13 **CVS PHARMACY #1300** **FINDS** **1015781401**
SE **662 E BORONDA RD** **N/A**
< 1/8 **SALINAS, CA 93906**
0.081 mi.
428 ft. **Site 4 of 6 in cluster E**

Relative: Lower

Actual: 118 ft.

FINDS:

Registry ID: 110054823483

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

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14 **SALINAS BERRY FARMS-MADOLORA*CLOSED** **CUPA Listings** **S110739258**
ENE **261 NATIVIDAD RD** **N/A**
< 1/8 **SALINAS, CA 93906**
0.120 mi.
636 ft.

Relative: Higher

Actual: 145 ft.

CUPA MONTEREY:

Facility Id:	FA0810989
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0600565

F15 **EDR US Hist Auto Stat** **1015211660**
West **13450 GARFIELD CIR** **N/A**
< 1/8 **SALINAS, CA 93906**
0.122 mi.
645 ft. **Site 1 of 2 in cluster F**

Relative: Lower

Actual: 114 ft.

EDR Historical Auto Stations:

Name:	GONZALES MOTORCROSS RACING
Year:	2005
Address:	13450 GARFIELD CIR

16
NW **94 RUSSELL RD**
1/8-1/4 **SALINAS, CA 93906**
0.125 mi.
661 ft.

EDR US Hist Auto Stat **1015680147**
N/A

Relative:
Lower

Actual:
119 ft.

EDR Historical Auto Stations:

Name:	TURNERS AUTOMOTIVE
Year:	2001
Address:	94 RUSSELL RD

D17
North **60 PENZANCE ST**
1/8-1/4 **SALINAS, CA 93906**
0.138 mi.
727 ft. **Site 2 of 3 in cluster D**

EDR US Hist Cleaners **1015078856**
N/A

Relative:
Higher

Actual:
134 ft.

EDR Historical Cleaners:

Name:	DEEP STEAM CARPET & UPHOLSTERY CLEANING
Year:	1999
Address:	60 PENZANCE ST
Name:	DEEP STEAM CARPET & UPHOLSTERY CLEANING
Year:	2000
Address:	60 PENZANCE ST

D18
NNW **45 PENZANCE ST**
1/8-1/4 **SALINAS, CA 93906**
0.142 mi.
751 ft. **Site 3 of 3 in cluster D**

EDR US Hist Cleaners **1015062693**
N/A

Relative:
Higher

Actual:
134 ft.

EDR Historical Cleaners:

Name:	L & L SERVICES & CARPET CLEANING
Year:	2006
Address:	45 PENZANCE ST
Name:	L & L SERVICES & CARPET CLEANING
Year:	2007
Address:	45 PENZANCE ST
Name:	L & L SERVICES & CARPET CLEANING
Year:	2008
Address:	45 PENZANCE ST

E19 **FONTES FARMS**
SE **630 BORONDA RD**
1/8-1/4 **SALINAS, CA 93906**
0.144 mi.
762 ft. **Site 5 of 6 in cluster E**

HIST UST **U001593308**
CUPA Listings **N/A**

Relative:
Lower

Actual:
114 ft.

HIST UST:

Region:	STATE
Facility ID:	00000042677
Facility Type:	Other
Other Type:	FARMING
Contact Name:	EARL FONTES

FONTES FARMS (Continued) **U001593308**

Telephone:	4084246151
Owner Name:	FONTES FARMS
Owner Address:	630 BORONDA RD
Owner City,St,Zip:	SALINAS, CA 93906
Total Tanks:	0002

Tank Num:	001
Container Num:	#1
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

Tank Num:	002
Container Num:	#2
Year Installed:	1984
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

CUPA MONTEREY:

Facility Id:	FA0812174
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0602086

Facility Id:	FA0818027
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0610613

Facility Id:	FA0820892
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0620972

Facility Id:	FA0826695
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0634236

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
E20 **SE** **1/8-1/4** **0.144 mi.** **762 ft.**	**FONTES FARMS** **630 BORONDA RD** **SALINAS, CA 93906** **Site 6 of 6 in cluster E**	**CA FID UST** **SWEEPS UST**	**S101622753** **N/A**

Relative:
Lower

Actual:
114 ft.

CA FID UST:

Facility ID:	27002526
Regulated By:	UTNKA
Regulated ID:	00042677
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	4084246151
Mail To:	Not reported
Mailing Address:	P O BOX
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SALINAS 93906
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Active
Comp Number:	42677
Number:	9
Board Of Equalization:	Not reported
Referral Date:	07-01-85
Action Date:	Not reported
Created Date:	07-31-88
Owner Tank Id:	#1
SWRCB Tank Id:	27-000-042677-000001
Tank Status:	A
Capacity:	1000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	2

Status:	Active
Comp Number:	42677
Number:	9
Board Of Equalization:	Not reported
Referral Date:	07-01-85
Action Date:	Not reported
Created Date:	07-31-88
Owner Tank Id:	#2
SWRCB Tank Id:	27-000-042677-000002
Tank Status:	A
Capacity:	1000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

G21
SE
1/8-1/4
0.145 mi.
768 ft.

PROPOSED ELEMENTARY SCHOOL #5 HARROD PROPERTY
NORTHEST OF EAST BORONDA/NATIVIDAD ROAD
SALINAS, CA 93906

SCH **S110042438**
ENVIROSTOR **N/A**

Site 1 of 5 in cluster G

Relative:
Lower

Actual:
116 ft.

SCH:

Facility ID:	60001179
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	12.27
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Jose Luevano
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Site Code:	201852
Assembly:	30
Senate:	12
Special Program Status:	EPA - Target Site Investigation
Status:	No Further Action
Status Date:	08/03/2010
Restricted Use:	NO
Funding:	EPA Grant
Latitude:	36.71893
Longitude:	-121.6198
APN:	153-091-001
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Arsenic, Arsenic, Chlordane, DDD, DDE, DDT
Confirmed COC:	30001-NO, 30004-NO, 30006-NO, 30007-NO, 30008-NO, No Contaminants found
Potential Description:	SOIL
Alias Name:	153-091-001
Alias Type:	APN
Alias Name:	201852
Alias Type:	Project Code (Site Code)
Alias Name:	60001179
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	03/09/2010
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	01/25/2010
Comments:	DTSC received a copy of the Phase I ESA completed for a larger portion of the Harrod Property.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fieldwork

PROPOSED ELEMENTARY SCHOOL #5 HARROD PROPERTY (Continued) **S110042438**

Completed Date: 03/03/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/30/2010
Comments: DTSC concurred with the recommendation of the TSI PEA that no further action is required for the site and approved the TSI PEA Report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Work Order
Completed Date: 01/21/2010
Comments: Start work order approved by all parties.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 08/03/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Mitigated Neg. Dec. (MND)
Completed Date: 07/05/2011
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 60001179
Status: No Further Action
Status Date: 08/03/2010
Site Code: 201852
Site Type: School Investigation
Site Type Detailed: School
Acres: 12.27
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Jose Luevano
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: EPA - Target Site Investigation
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED

PROPOSED ELEMENTARY SCHOOL #5 HARROD PROPERTY (Continued) **S110042438**

Funding: EPA Grant
Latitude: 36.71893
Longitude: -121.6198
APN: 153-091-001
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: Arsenic Chlordane DDD DDE DDT
Confirmed COC: 30001-NO 30004-NO 30006-NO 30007-NO 30008-NO No Contaminants found
Potential Description: SOIL
Alias Name: 153-091-001
Alias Type: APN
Alias Name: 201852
Alias Type: Project Code (Site Code)
Alias Name: 60001179
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 03/09/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 01/25/2010
Comments: DTSC received a copy of the Phase I ESA completed for a larger portion of the Harrod Property.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 03/03/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/30/2010
Comments: DTSC concurred with the recommendation of the TSI PEA that no further action is required for the site and approved the TSI PEA Report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Work Order
Completed Date: 01/21/2010
Comments: Start work order approved by all parties.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 08/03/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Initial Study/ Mitigated Neg. Dec. (MND)
Completed Date: 07/05/2011

PROPOSED ELEMENTARY SCHOOL #5 HARROD PROPERTY (Continued) **S110042438**

Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

H22
ESE
1/8-1/4
0.148 mi.
779 ft.

SETTRINI RANCH
250 NATIVIDAD RD
SALINAS, CA 93906

HIST UST **U001593317**
CUPA Listings **N/A**

Site 1 of 4 in cluster H

Relative:
Higher

Actual:
134 ft.

HIST UST:
Region: STATE
Facility ID: 00000065307
Facility Type: Other
Other Type: FARMING
Contact Name: Not reported
Telephone: 4084490168
Owner Name: GUS W. SETTRINI
Owner Address: 250 NATIVIDAD ROAD
Owner City,St,Zip: SALINAS, CA 93906
Total Tanks: 0001

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

CUPA MONTEREY:
Facility Id: FA0814339
Region: MONTEREY
Program/Element Code: 5190
Program/Element: BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status: ACTIVE, BILLABLE
EDR Link ID: Not reported
Record ID: PR0604251

H23 **SETTRINI RANCH** **CA FID UST** **S101622758**
ESE **250 NATIVIDAD RD** **SWEEPS UST** **N/A**
1/8-1/4 **SALINAS, CA 93906**
0.148 mi.
779 ft. **Site 2 of 4 in cluster H**

Relative: Higher

Actual: 134 ft.

CA FID UST:

Facility ID:	27002679
Regulated By:	UTNKA
Regulated ID:	00065307
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	4084490168
Mail To:	Not reported
Mailing Address:	250 NATIVIDAD RD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SALINAS 93906
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Active
Comp Number:	65307
Number:	9
Board Of Equalization:	Not reported
Referral Date:	07-01-85
Action Date:	Not reported
Created Date:	07-31-88
Owner Tank Id:	1
SWRCB Tank Id:	27-000-065307-000001
Tank Status:	A
Capacity:	1000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	1

H24 **TRIANGLE FARMS, INC-BONDESEN RANCH** **CUPA Listings** **S110740147**
ESE **239 NATIVIDAD RD** **N/A**
1/8-1/4 **SALINAS, CA 93906**
0.152 mi.
800 ft. **Site 3 of 4 in cluster H**

Relative: Higher

Actual: 134 ft.

CUPA MONTEREY:

Facility Id:	FA0816660
Region:	MONTEREY
Program/Element Code:	5190
Program/Element:	BASE FEE-AG SITE-HAZARDOUS MAT REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0607656

H25 **ESE** **1/8-1/4** **0.152 mi.** **800 ft.**

239 NATIVIDAD RD
SALINAS, CA

Site 4 of 4 in cluster H

AST **A100336889** **N/A**

Relative: **Higher**

Actual: **134 ft.**

AST:
Certified Unified Program Agencies: Monterey
Owner: TRIANGLE FARMS, INC-BONDESEN RANCH
Total Gallons: 9,200

---

26 **WNW** **1/8-1/4** **0.156 mi.** **826 ft.**

18857 LENNY ST
SALINAS, CA 93906

EDR US Hist Cleaners **1015008844** **N/A**

Relative: **Lower**

Actual: **98 ft.**

EDR Historical Cleaners:
Name: OCEAN STEAM CLEANING
Year: 2010
Address: 18857 LENNY ST

G27 **SE** **1/8-1/4** **0.172 mi.** **910 ft.**

CVS 1300
662 E BORONDA RD
SALINAS, CA 93906

Site 2 of 5 in cluster G

CUPA Listings **S107146782** **N/A**

Relative: **Lower**

Actual: **114 ft.**

CUPA MONTEREY:
Facility Id: FA0821797
Region: MONTEREY
Program/Element Code: 5040
Program/Element: BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status: ACTIVE, BILLABLE
EDR Link ID: Not reported
Record ID: PR0625329

---

28 **SW** **1/8-1/4** **0.176 mi.** **927 ft.**

15 YALE CIR
SALINAS, CA 93906

EDR US Hist Cleaners **1014995851** **N/A**

Relative: **Lower**

Actual: **104 ft.**

EDR Historical Cleaners:
Name: THE CLEANING CO
Year: 2008
Address: 15 YALE CIR

G29 **SOUTHLAND STORE 32264** **UST** **U003781849**
SE **1992 NATIVIDAD RD.** **N/A**
1/8-1/4 **SALINAS, CA 93906**
0.182 mi.
960 ft. **Site 3 of 5 in cluster G**

Relative: Lower

Actual: 117 ft.

UST:

Facility ID:	27-000-6519
Permitting Agency:	MONTEREY COUNTY
Latitude:	36.7166753
Longitude:	-121.6231621

G30 **7-ELEVEN #32264** **CUPA Listings** **S107148578**
SE **1992 NATIVIDAD RD** **N/A**
1/8-1/4 **SALINAS, CA 93906**
0.182 mi.
960 ft. **Site 4 of 5 in cluster G**

Relative: Lower

Actual: 117 ft.

CUPA MONTEREY:

Facility Id:	FA0817953
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0600810

G31 **REPLANET LLC** **SWRCY** **S117311108**
SE **640 E BORONDA RD** **HAZNET** **N/A**
1/8-1/4 **SALINAS, CA 93907**
0.194 mi.
1026 ft. **Site 5 of 5 in cluster G**

Relative: Lower

Actual: 111 ft.

SWRCY:

Reg Id:	222646
Cert Id:	RC222646.001
Mailing Address:	800 N Haven Ave Suite 120
Mailing City:	Ontario
Mailing State:	CA
Mailing Zip Code:	91764
Website:	http://www.replanetusa.com
Email:	jennifer.june@replanet.com
Phone Number:	(877) 737-5263
Grand Father:	N
Rural:	N
Operation Begin Date:	01/31/2015
Aluminium:	Y
Glass:	Y
Plastic:	Y
Bimetal:	Y
Agency:	N/A
Monday Hours Of Operation:	CLOSED
Tuesday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Wednesday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Thursday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Friday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Saturday Hours Of Operation:	10:00 am - 4:30 pm; Closed 1:00 pm - 1:30 pm
Sunday Hours Of Operation:	CLOSED

REPLANET LLC (Continued) **S117311108**

Organization ID:	151891
Organization Name:	rePLANET LLC

HAZNET:

envid:	S117311108
Year:	2013
GEPAID:	CAL000382573
Contact:	ALFRED OROPESA
Telephone:	5626168800
Mailing Name:	Not reported
Mailing Address:	14601 LAKEWOOD BLVD STE B
Mailing City,St,Zip:	PARAMOUNT, CA 907233602
Gen County:	Monterey
TSD EPA ID:	AZD081705402
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.003
Facility County:	Not reported

F32
West
1/8-1/4
0.198 mi.
1045 ft.

FIRESTONE STORE #36F7
150 NORTHRIDGE MALL
SALINAS, CA 93906

HIST UST **U001593319**
CUPA Listings **N/A**

Site 2 of 2 in cluster F

Relative:
Lower

Actual:
102 ft.

HIST UST:

Region:	STATE
Facility ID:	00000037775
Facility Type:	Gas Station
Other Type:	Not reported
Contact Name:	PARTNERSHIP
Telephone:	4084491989
Owner Name:	J.C. PENNY CO
Owner Address:	NORTHRIDGE SHOPPING CENTER
Owner City,St,Zip:	SALINAS, CA 93906
Total Tanks:	0003

Tank Num:	001
Container Num:	1
Year Installed:	1973
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor, Pressure Test

Tank Num:	002
Container Num:	2
Year Installed:	1973
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor, Pressure Test

FIRESTONE STORE #36F7 (Continued) **U001593319**

Tank Num:	003
Container Num:	3
Year Installed:	1973
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor, Pressure Test

CUPA MONTEREY:

Facility Id:	FA0814369
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0610868

Facility Id:	FA0814369
Region:	MONTEREY
Program/Element Code:	5150
Program/Element:	BASE FEE HAZARDOUS WASTE GENERATOR
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0604281

33
WSW
1/8-1/4
0.205 mi.
1083 ft.

100 HARDEN PARKWAY LP
1907 DARTMOUTH WAY
SALINAS, CA 93906

CUPA Listings **S117898546**
N/A

Relative: Lower

Actual: 101 ft.

CUPA MONTEREY:

Facility Id:	FA0826219
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0634393

34
SE
1/8-1/4
0.216 mi.
1143 ft.

NATIVIDAD ELEMENTARY SCHOOL
ARCADIA STREET/EMERALD DRIVE
SALINAS, CA 93906

SCH **S107736823**
ENVIROSTOR **N/A**

Relative: Lower

Actual: 111 ft.

SCH:

Facility ID:	27010006
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	11.75
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC

NATIVIDAD ELEMENTARY SCHOOL (Continued) **S107736823**

Lead Agency: DTSC
Lead Agency Description: * DTSC
Project Manager: Not reported
Supervisor: Charles Ridenour
Division Branch: Northern California Schools & Santa Susana
Site Code: 204022
Assembly: 30
Senate: 12
Special Program Status: Not reported
Status: No Further Action
Status Date: 05/03/2001
Restricted Use: NO
Funding: School District
Latitude: 36.71157
Longitude: -121.6265
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: DDD, DDD, DDE, DDT, Endrin, Dieldrin, Endosulfan
Confirmed COC: 30207-NO, 30261-NO, 30006-NO, 30007-NO, 30008-NO, 30010-NO, No Contaminants found
Potential Description: SOIL
Alias Name: NATIVIDAD ELEMENTARY SCHOOL SITE
Alias Type: Alternate Name
Alias Name: NATIVIDAD ELEMENTARY SCHOOL SITE/VCA
Alias Type: Alternate Name
Alias Name: SANTA RITA UNION ELEMENTARY SCHOOL DIST
Alias Type: Alternate Name
Alias Name: 204022
Alias Type: Project Code (Site Code)
Alias Name: 27010006
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/03/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 03/10/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/04/2001
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported

NATIVIDAD ELEMENTARY SCHOOL (Continued) **S107736823**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 27010006
Status: No Further Action
Status Date: 05/03/2001
Site Code: 204022
Site Type: School Investigation
Site Type Detailed: School
Acres: 11.75
NPL: NO
Regulatory Agencies: DTSC
Lead Agency: DTSC
Program Manager: Not reported
Supervisor: Charles Ridenour
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.71157
Longitude: -121.6265
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: DDD DDE DDT Endrin Dieldrin Endosulfan
Confirmed COC: 30207-NO 30261-NO 30006-NO 30007-NO 30008-NO 30010-NO No Contaminants found
Potential Description: SOIL
Alias Name: NATIVIDAD ELEMENTARY SCHOOL SITE
Alias Type: Alternate Name
Alias Name: NATIVIDAD ELEMENTARY SCHOOL SITE/VCA
Alias Type: Alternate Name
Alias Name: SANTA RITA UNION ELEMENTARY SCHOOL DIST
Alias Type: Alternate Name
Alias Name: 204022
Alias Type: Project Code (Site Code)
Alias Name: 27010006
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/03/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 03/10/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

NATIVIDAD ELEMENTARY SCHOOL (Continued) **S107736823**

Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/04/2001
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

35
West
1/8-1/4
0.236 mi.
1244 ft.

13433 JACKSON ST
SALINAS, CA 93906

EDR US Hist Cleaners **1014989436**
N/A

Relative: Lower

Actual: 100 ft.

EDR Historical Cleaners:
Name: NORDIC CARPET & UPHOLSTERY CLEANING
Year: 2008
Address: 13433 JACKSON ST

I36
WSW
1/8-1/4
0.242 mi.
1276 ft.

TOWING DEPOTCLOSED**
218 BORONDA RD BLDG D-7
SALINAS, CA 93906

Site 1 of 6 in cluster I

CUPA Listings **S110740785**
N/A

Relative: Lower

Actual: 104 ft.

CUPA MONTEREY:
Facility Id: FA0819833
Region: MONTEREY
Program/Element Code: 5150
Program/Element: BASE FEE HAZARDOUS WASTE GENERATOR
Billing Status: INACTIVE, NON-BILLABLE
EDR Link ID: Not reported
Record ID: PR0618947

I37
WSW
1/8-1/4
0.242 mi.
1276 ft.

AUTOWORX SERVICECLOSED****
218 BORONDA RD BLDG C-3
SALINAS, CA 93906

Site 2 of 6 in cluster I

CUPA Listings **S110740487**
N/A

Relative: Lower

Actual: 104 ft.

CUPA MONTEREY:
Facility Id: FA0818538
Region: MONTEREY
Program/Element Code: 5150
Program/Element: BASE FEE HAZARDOUS WASTE GENERATOR
Billing Status: INACTIVE, NON-BILLABLE
EDR Link ID: Not reported
Record ID: PR0611469

I38
WSW
1/8-1/4
0.245 mi.
1296 ft.

55 SAN JUAN GRADE RD
SALINAS, CA 93906

Site 3 of 6 in cluster I

EDR US Hist Auto Stat **1015549598** **N/A**

Relative: **Lower**

Actual: **108 ft.**

EDR Historical Auto Stations:

Name:	RALPH FREILINGERS AUTO SERVICE
Year:	2008
Address:	55 SAN JUAN GRADE RD

39
ENE
1/4-1/2
0.252 mi.
1330 ft.

ROGGE ROAD SCHOOL
1301 ROGGE ROAD
SALINAS, CA 93906

SCH **ENVIROSTOR** **S107737164** **N/A**

Relative: **Higher**

Actual: **150 ft.**

SCH:

Facility ID:	27010004
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	19
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Not reported
Supervisor:	Mark Malinowski
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204017
Assembly:	30
Senate:	12
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	12/13/2000
Restricted Use:	NO
Funding:	School District
Latitude:	36.73343
Longitude:	-121.6322
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	DDD, DDD, DDE, DDT, HCH (beta, Endosulfan, 4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB), Endosulfan, Dieldrin
Confirmed COC:	NONE SPECIFIED
Potential Description:	SOIL
Alias Name:	POTENTIAL RAGGE ROAD SCHOOL SITE/VCA
Alias Type:	Alternate Name
Alias Name:	ROGGE ROAD SCHOOL SITE
Alias Type:	Alternate Name
Alias Name:	SANTA RITA UNION ELEM SD-ROGGE RD MID
Alias Type:	Alternate Name
Alias Name:	SANTA RITA UNION ELEMENTARY SCHOOL DIST
Alias Type:	Alternate Name
Alias Name:	204002
Alias Type:	Project Code (Site Code)
Alias Name:	204017
Alias Type:	Project Code (Site Code)
Alias Name:	27010004

ROGGE ROAD SCHOOL (Continued) **S107737164**

Alias Type: Envirostor ID Number

Completed Info:

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/28/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 12/13/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 01/14/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 04/10/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 02/04/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/19/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:

Facility ID: 27010004
Status: No Further Action
Status Date: 12/13/2000
Site Code: 204017
Site Type: School Investigation
Site Type Detailed: School
Acres: 19

ROGGE ROAD SCHOOL (Continued) **S107737164**

NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Mark Malinowski
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.73343
Longitude: -121.6322
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: DDD DDE DDT HCH (beta Endosulfan 4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB) Endosulfan Dieldrin
Confirmed COC: NONE SPECIFIED
Potential Description: SOIL
Alias Name: POTENTIAL RAGGE ROAD SCHOOL SITE/VCA
Alias Type: Alternate Name
Alias Name: ROGGE ROAD SCHOOL SITE
Alias Type: Alternate Name
Alias Name: SANTA RITA UNION ELEM SD-ROGGE RD MID
Alias Type: Alternate Name
Alias Name: SANTA RITA UNION ELEMENTARY SCHOOL DIST
Alias Type: Alternate Name
Alias Name: 204002
Alias Type: Project Code (Site Code)
Alias Name: 204017
Alias Type: Project Code (Site Code)
Alias Name: 27010004
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/28/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 12/13/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 01/14/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Workplan
Completed Date: 04/10/2000

ROGGE ROAD SCHOOL (Continued) **S107737164**

Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 02/04/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 12/19/2000
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

J40 **CA WATER SERVICE COMPANY STATION 103** **CUPA Listings** **S111075559**
North **19610 ROGGE RD** **N/A**
1/4-1/2 **SALINAS, CA 93901**
0.309 mi.
1630 ft. **Site 1 of 2 in cluster J**

Relative:
Higher

Actual:
144 ft.

CUPA MONTEREY:
Facility Id: FA0823750
Region: MONTEREY
Program/Element Code: 5040
Program/Element: BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status: ACTIVE, BILLABLE
EDR Link ID: Not reported
Record ID: PR0629115

K41 **DISTRICT OFFICE** **CA FID UST** **S101630185**
NNW **303 SAN JUAN GRADE RD** **SWEEPS UST** **N/A**
1/4-1/2 **SALINAS, CA 93906**
0.309 mi.
1633 ft. **Site 1 of 5 in cluster K**

Relative:
Lower

Actual:
130 ft.

CA FID UST:
Facility ID: 27002474
Regulated By: UTNKA
Regulated ID: 00037840
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 4084497288
Mail To: Not reported
Mailing Address: 303 SAN JUAN GRADE RD
Mailing Address 2: Not reported
Mailing City,St,Zip: SALINAS 93906

DISTRICT OFFICE (Continued) **S101630185**

Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Active
Comp Number:	37840
Number:	4
Board Of Equalization:	44-031643
Referral Date:	07-01-85
Action Date:	Not reported
Created Date:	07-31-88
Owner Tank Id:	1
SWRCB Tank Id:	27-000-037840-000001
Tank Status:	A
Capacity:	1000
Active Date:	07-01-85
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	1

K42
NNW
1/4-1/2
0.309 mi.
1633 ft.

DISTRICT OFFICE
303 SAN JUAN GRADE RD
SALINAS, CA 93906

Site 2 of 5 in cluster K

HIST UST **U001593305**
N/A

Relative:
Lower

Actual:
130 ft.

HIST UST:

Region:	STATE
Facility ID:	00000037840
Facility Type:	Other
Other Type:	PUBLIC SCHOOL DISTRI
Contact Name:	HAROLD E. BLYTHE, SUPERINTENDE
Telephone:	4084497288
Owner Name:	SANTA RITA UNION SCHOOL DISTRI
Owner Address:	303 SAN JUAN GRADE ROAD
Owner City,St,Zip:	SALINAS, CA 93906
Total Tanks:	0001

Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Visual

43
SW
1/4-1/2
0.317 mi.
1673 ft.

200 CLINTON CT
SALINAS, CA 93906

EDR US Hist Cleaners **1015012335**
N/A

Relative:
Lower

Actual:
101 ft.

EDR Historical Cleaners:

Name:	GARCIAS CARPET CLEANING
Year:	2004
Address:	200 CLINTON CT
Name:	GARCIAS CARPET CLEANING
Year:	2009
Address:	200 CLINTON CT

I44
WSW
1/4-1/2
0.320 mi.
1688 ft.

AT&T CALIFORNIA -NE120
33 SAN JUAN GRADE RD
SALINAS, CA 93902

CUPA Listings **S106930284**
SWEEPS UST **N/A**

Site 4 of 6 in cluster I

Relative:
Lower

Actual:
106 ft.

CUPA MONTEREY:

Facility Id:	FA0811258
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0600914

SWEEPS UST:

Status:	Not reported
Comp Number:	3524
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	27-000-003524-000002
Tank Status:	Not reported
Capacity:	4000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	DIESEL
Number Of Tanks:	1
Status:	Active
Comp Number:	3524
Number:	1
Board Of Equalization:	Not reported
Referral Date:	08-27-93
Action Date:	08-27-93
Created Date:	08-27-93
Owner Tank Id:	D2K93
SWRCB Tank Id:	27-000-003524-000001
Tank Status:	A
Capacity:	2000

AT&T CALIFORNIA -NE120 (Continued) **S106930284**

Active Date:	08-27-93
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	1

I45
WSW
1/4-1/2
0.320 mi.
1688 ft.

PACIFIC BELL - SLNSCA11
33 SAN JUAN GRADE RD.
SALINAS, CA 93906

Site 5 of 6 in cluster I

UST **U003781805**
N/A

Relative:
Lower

Actual:
106 ft.

UST:

Facility ID:	27-000-003524
Permitting Agency:	MONTEREY COUNTY
Latitude:	36.720091
Longitude:	-121.6523744

I46
WSW
1/4-1/2
0.320 mi.
1688 ft.

T-MOBILE SF05824A
33 E SAN JUAN GRADE RD
SALINAS, CA 93906

Site 6 of 6 in cluster I

CUPA Listings **S111347040**
N/A

Relative:
Lower

Actual:
106 ft.

CUPA MONTEREY:

Facility Id:	FA0824510
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0630148

K47
NNW
1/4-1/2
0.324 mi.
1713 ft.

CECIL'S CHEVRON
307 SAN JUAN GRADE RD.
SALINAS, CA 93906

Site 3 of 5 in cluster K

UST **U003976724**
N/A

Relative:
Lower

Actual:
130 ft.

UST:

Facility ID:	27-000-003235
Permitting Agency:	MONTEREY COUNTY
Latitude:	36.735202
Longitude:	-121.636925

K48 **EDR US Hist Auto Stat** **1015409377**
NNW **307 SAN JUAN GRADE RD** **N/A**
1/4-1/2 **SALINAS, CA 93906**
0.324 mi.
1713 ft. **Site 4 of 5 in cluster K**

Relative:
Lower

Actual:
130 ft.

EDR Historical Auto Stations:

Name:	CHEVRON CECILS
Year:	1999
Address:	307 SAN JUAN GRADE RD
Name:	CHEVRON CECILS
Year:	2000
Address:	307 SAN JUAN GRADE RD
Name:	CHEVRON CECILS
Year:	2001
Address:	307 SAN JUAN GRADE RD

K49 **BOLSA KNOLLS VALERO** **CUPA Listings** **S103955267**
NNW **307 SAN JUAN GRADE RD** **N/A**
1/4-1/2 **SALINAS, CA 93907**
0.324 mi.
1713 ft. **Site 5 of 5 in cluster K**

Relative:
Lower

Actual:
130 ft.

CUPA MONTEREY:

Facility Id:	FA0811199
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0600847
Facility Id:	FA0826172
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0633138
Facility Id:	FA0826331
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0633425

J50 **SANTA RITA SCHOOL DIST-MAINT. DEPT**CLOSED**** **CUPA Listings** **S110740162**
North **1027 ROGGE RD** **N/A**
1/4-1/2 **SALINAS, CA 93906**
0.333 mi.
1758 ft. **Site 2 of 2 in cluster J**

Relative:
Higher

Actual:
144 ft.

CUPA MONTEREY:

Facility Id:	FA0816733
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0606861

Facility Id:	FA0816733
Region:	MONTEREY
Program/Element Code:	5150
Program/Element:	BASE FEE HAZARDOUS WASTE GENERATOR
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0621475

---

51 **EDR US Hist Auto Stat** **1015284218**
West **18445 SWANER AVE** **N/A**
1/4-1/2 **SALINAS, CA 93906**
0.348 mi.
1837 ft.

Relative:
Lower

Actual:
104 ft.

EDR Historical Auto Stations:

Name:	TUCKERS REPAIR & MAINTENANCE
Year:	2002
Address:	18445 SWANER AVE

Name:	TUCKERS REPAIR & MAINTENANCE
Year:	2004
Address:	18445 SWANER AVE

Name:	TUCKERS REPAIR & MAINTENANCE
Year:	2006
Address:	18445 SWANER AVE

Name:	TUCKERS REPAIR & MAINTENANCE
Year:	2007
Address:	18445 SWANER AVE

Name:	TUCKERS REPAIR & MAINTENANCE
Year:	2008
Address:	18445 SWANER AVE

52
SSE
1/4-1/2
0.374 mi.
1974 ft.

1789 HUMBOLDT DR
SALINAS, CA 93906

EDR US Hist Cleaners **1015005976**
N/A

Relative: **Lower**

Actual: **101 ft.**

EDR Historical Cleaners:

Name:	MASTER CARPET CLEANING
Year:	2001
Address:	1789 HUMBOLDT DR
Name:	MASTER CARPET CLEANING
Year:	2002
Address:	1789 HUMBOLDT DR
Name:	MASTER CARPET CLEANING
Year:	2004
Address:	1789 HUMBOLDT DR
Name:	MASTER CARPET CLEANING
Year:	2005
Address:	1789 HUMBOLDT DR
Name:	MASTER CARPET CLEANING
Year:	2006
Address:	1789 HUMBOLDT DR

53
WSW
1/4-1/2
0.384 mi.
2026 ft.

SHELL OIL PRODUCTS US
1764 MAIN ST
SALINAS, CA 93906

FINDS **1007738150**
LUST **N/A**

Relative: **Lower**

Actual: **101 ft.**

FINDS:

Registry ID: 110018980496

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

LUST:

Region:	STATE
Global Id:	T0605307938
Latitude:	36.7180553606145
Longitude:	-121.652579605579
Case Type:	Not reported
Status:	Open - Verification Monitoring
Status Date:	02/01/2010
Lead Agency:	Not reported
Case Worker:	JWG
Local Agency:	Not reported
RB Case Number:	3569
LOC Case Number:	Not reported
File Location:	Regional Board
Potential Media Affect:	Other Groundwater (uses other than drinking water)

SHELL OIL PRODUCTS US (Continued) **1007738150**

Potential Contaminants of Concern:	Gasoline
Site History:	Quarterly groundwater monitoring, supply well 993 feet downgradient.

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0605307938
Contact Type:	Local Agency Caseworker
Contact Name:	EILEEN WOODBURY
Organization Name:	MO;NTEREY COUNTY HEALTH DEPT.
Address:	1270 NATIVIDAD RD
City:	SALINAS
Email:	Not reported
Phone Number:	Not reported
Global Id:	T0605307938
Contact Type:	Regional Board Caseworker
Contact Name:	JOHN GONI
Organization Name:	CENTRAL COAST RWQCB (REGION 3)
Address:	895 AEROVISTA PL, SUITE 101
City:	SAN LUIS OBISPO
Email:	jgoni@waterboards.ca.gov
Phone Number:	Not reported

Status History:

Global Id:	T0605307938
Status:	Open - Case Begin Date
Status Date:	12/03/2002
Global Id:	T0605307938
Status:	Open - Site Assessment
Status Date:	01/14/2004
Global Id:	T0605307938
Status:	Open - Site Assessment
Status Date:	09/03/2004
Global Id:	T0605307938
Status:	Open - Site Assessment
Status Date:	01/03/2005
Global Id:	T0605307938
Status:	Open - Site Assessment
Status Date:	09/30/2005
Global Id:	T0605307938
Status:	Open - Site Assessment
Status Date:	03/16/2006
Global Id:	T0605307938
Status:	Open - Verification Monitoring
Status Date:	02/01/2010

Regulatory Activities:

Global Id:	T0605307938
Action Type:	RESPONSE
Date:	10/20/2008

SHELL OIL PRODUCTS US (Continued) **1007738150**

Action:	Well Installation Report
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	01/20/2006
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	10/20/2006
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	01/20/2007
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	04/20/2007
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	04/20/2006
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	10/20/2008
Action:	Well Installation Report
Global Id:	T0605307938
Action Type:	Other
Date:	01/14/2004
Action:	Leak Reported
Global Id:	T0605307938
Action Type:	Other
Date:	12/03/2002
Action:	Leak Began
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2011
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	10/20/2009
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	01/20/2012
Action:	Monitoring Report - Quarterly

SHELL OIL PRODUCTS US (Continued) **1007738150**

Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2010
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	01/20/2010
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	10/20/2005
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2005
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	12/22/2006
Action:	Other Report / Document
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	ENFORCEMENT
Date:	11/24/2008
Action:	File review
Global Id:	T0605307938
Action Type:	ENFORCEMENT
Date:	10/01/2004
Action:	Staff Letter
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2009
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	01/20/2011
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	12/31/2010
Action:	Site Assessment Report
Global Id:	T0605307938
Action Type:	ENFORCEMENT

SHELL OIL PRODUCTS US (Continued) **1007738150**

Date:	04/20/2006
Action:	13267 Requirement
Global Id:	T0605307938
Action Type:	ENFORCEMENT
Date:	09/21/2009
Action:	13267 Requirement
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2007
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	ENFORCEMENT
Date:	08/18/2011
Action:	13267 Requirement
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	03/16/2006
Action:	Soil and Water Investigation Workplan
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	10/20/2005
Action:	Soil and Water Investigation Workplan
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	12/20/2007
Action:	Other Report / Document
Global Id:	T0605307938
Action Type:	ENFORCEMENT
Date:	03/16/2006
Action:	* No Action
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	04/20/2005
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	01/20/2015
Action:	Monitoring Report - Other
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	04/10/2014
Action:	Correspondence
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	02/20/2008
Action:	Well Installation Workplan

SHELL OIL PRODUCTS US (Continued) **1007738150**

Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2006
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	01/20/2009
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2012
Action:	Site Assessment Report - Regulator Responded
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	08/03/2011
Action:	Soil and Water Investigation Workplan - Regulator Responded
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	07/20/2012
Action:	Monitoring Report - Semi-Annually - Regulator Responded
Global Id:	T0605307938
Action Type:	Other
Date:	12/03/2002
Action:	Leak Discovery
Global Id:	T0605307938
Action Type:	ENFORCEMENT
Date:	12/31/2007
Action:	13267 Requirement
Global Id:	T0605307938
Action Type:	ENFORCEMENT
Date:	04/25/2005
Action:	Staff Letter
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	10/20/2007
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	01/20/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	04/20/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	RESPONSE

SHELL OIL PRODUCTS US (Continued) **1007738150**

Date:	04/20/2009
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	ENFORCEMENT
Date:	05/08/2007
Action:	13267 Requirement
Global Id:	T0605307938
Action Type:	Other
Date:	12/03/2002
Action:	Leak Stopped
Global Id:	T0605307938
Action Type:	RESPONSE
Date:	10/20/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0605307938
Action Type:	REMEDIATION
Date:	04/25/2005
Action:	Pump & Treat (P&T) Groundwater

54
West
1/4-1/2
0.436 mi.
2302 ft.

SANTA RITA SCHOOL DISTRICT
2014 SANTA RITA ST
SALINAS, CA 93907

HIST CORTESE **S102436483**
LUST **N/A**

Relative:
Lower

Actual:
81 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	27
Reg By:	LTNKA
Reg Id:	2468

LUST:

Region:	STATE
Global Id:	T0605300114
Latitude:	36.7244048
Longitude:	-121.6533542
Case Type:	Not reported
Status:	Completed - Case Closed
Status Date:	12/14/2012
Lead Agency:	Not reported
Case Worker:	JWG
Local Agency:	Not reported
RB Case Number:	2468
LOC Case Number:	Not reported
File Location:	Regional Board
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Based on the soil investigation, groundwater monitoring, and cleanup results, Central Coast Water Board staff believes there is no significant threat to groundwater resources, human health or the environment from this site. Petroleum hydrocarbon concentration trends are downward, and remaining residual soil and groundwater

SANTA RITA SCHOOL DISTRICT (Continued) **S102436483**

contamination are well characterized and contracting or declining in size and concentration. The contaminant mass has been removed from the site to the maximum extent practicable, and historical monitoring data indicate contaminant concentrations in groundwater will likely decrease to below cleanup goals in a reasonable time. The Monterey County Health Department (MCHD) agrees with our proposed closure of the case. Residual soil and groundwater contamination still underlies the site that could pose an unacceptable risk under certain site redevelopment activities such as site grading, excavation, or de-watering. The Central Coast Water Board, MCHD and the appropriate local planning and building departments must be notified prior to any changes in land use, grading activities, excavation, or dewatering. This notification should include a statement that residual soil and groundwater contamination underlie the property and may underlie nearby properties, and a description of the mitigation actions necessary (if any) to ensure that any possibly contaminated soil or groundwater brought to the surface by these activities are managed appropriately. Future site disturbance could require worker health and safety protection, and restrictions on the disposal of soil and groundwater. The levels of residual contamination and any associated risks are expected to diminish with time. The MCHD may require additional site assessment if the property is proposed to be redeveloped. Additional actions required by MCHD may include, but not limited to, a case review, further remedial action, soil gas analysis, and a human health risk assessment.

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0605300114
Contact Type:	Local Agency Caseworker
Contact Name:	CORY WELCH
Organization Name:	MONTEREY COUNTY
Address:	1270 NATIVIDAD ROAD, RM 301
City:	SALINAS
Email:	welchc@co.monterey.ca.us
Phone Number:	8317554570
Global Id:	T0605300114
Contact Type:	Regional Board Caseworker
Contact Name:	JOHN GONI
Organization Name:	CENTRAL COAST RWQCB (REGION 3)
Address:	895 AEROVISTA PL, SUITE 101
City:	SAN LUIS OBISPO
Email:	jgoni@waterboards.ca.gov
Phone Number:	Not reported

Status History:

Global Id:	T0605300114
Status:	Completed - Case Closed
Status Date:	12/14/2012
Global Id:	T0605300114
Status:	Open - Case Begin Date
Status Date:	08/18/1993
Global Id:	T0605300114

SANTA RITA SCHOOL DISTRICT (Continued) **S102436483**

Status: Open - Site Assessment
Status Date: 07/22/1998

Global Id: T0605300114
Status: Open - Site Assessment
Status Date: 06/17/2000

Global Id: T0605300114
Status: Open - Verification Monitoring
Status Date: 08/12/2002

Regulatory Activities:
Global Id: T0605300114
Action Type: RESPONSE
Date: 07/20/2008
Action: Monitoring Report - Semi-Annually

Global Id: T0605300114
Action Type: RESPONSE
Date: 01/20/2007
Action: Monitoring Report - Quarterly

Global Id: T0605300114
Action Type: RESPONSE
Date: 07/20/2007
Action: Monitoring Report - Quarterly

Global Id: T0605300114
Action Type: RESPONSE
Date: 01/20/2008
Action: Monitoring Report - Quarterly

Global Id: T0605300114
Action Type: Other
Date: 06/13/1994
Action: Leak Reported

Global Id: T0605300114
Action Type: ENFORCEMENT
Date: 12/24/2008
Action: File review

Global Id: T0605300114
Action Type: ENFORCEMENT
Date: 01/10/2012
Action: 13267 Requirement

Global Id: T0605300114
Action Type: RESPONSE
Date: 04/30/2012
Action: Well Destruction Report

Global Id: T0605300114
Action Type: RESPONSE
Date: 12/15/2006
Action: Well Installation Report

SANTA RITA SCHOOL DISTRICT (Continued) **S102436483**

Global Id:	T0605300114
Action Type:	ENFORCEMENT
Date:	07/29/2002
Action:	Staff Letter
Global Id:	T0605300114
Action Type:	ENFORCEMENT
Date:	09/28/1998
Action:	Staff Letter
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	12/20/2006
Action:	Well Installation Report
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	09/28/1998
Action:	Correspondence
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	07/20/2003
Action:	Monitoring Report - Quarterly
Global Id:	T0605300114
Action Type:	ENFORCEMENT
Date:	07/06/2006
Action:	13267 Requirement
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	02/20/2003
Action:	Well Installation Report
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	07/20/2010
Action:	Monitoring Report - Annually
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	07/20/2005
Action:	Monitoring Report - Quarterly
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	01/20/2006
Action:	Monitoring Report - Quarterly
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	07/20/2006
Action:	Monitoring Report - Quarterly
Global Id:	T0605300114
Action Type:	RESPONSE

SANTA RITA SCHOOL DISTRICT (Continued) **S102436483**

Date:	07/20/2004
Action:	Monitoring Report - Quarterly
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	01/20/2009
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	10/20/2010
Action:	Request for Closure
Global Id:	T0605300114
Action Type:	ENFORCEMENT
Date:	12/14/2012
Action:	Closure/No Further Action Letter
Global Id:	T0605300114
Action Type:	ENFORCEMENT
Date:	01/26/2010
Action:	File review
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	09/20/2006
Action:	Other Workplan
Global Id:	T0605300114
Action Type:	ENFORCEMENT
Date:	07/20/2010
Action:	File review
Global Id:	T0605300114
Action Type:	ENFORCEMENT
Date:	09/29/2006
Action:	13267 Requirement
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	02/20/2003
Action:	Monitoring Report - Quarterly
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	01/20/2010
Action:	Correspondence
Global Id:	T0605300114
Action Type:	Other
Date:	08/18/1993
Action:	Leak Discovery
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	07/20/2002
Action:	Monitoring Report - Quarterly

SANTA RITA SCHOOL DISTRICT (Continued) **S102436483**

Global Id:	T0605300114
Action Type:	RESPONSE
Date:	02/21/2012
Action:	Well Destruction Report
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	05/17/2012
Action:	Other Report / Document
Global Id:	T0605300114
Action Type:	ENFORCEMENT
Date:	06/26/2009
Action:	13267 Requirement
Global Id:	T0605300114
Action Type:	RESPONSE
Date:	07/20/2009
Action:	Monitoring Report - Semi-Annually

LUST REG 3:

Region:	3
Regional Board:	Central Coast Region
Facility County:	Monterey
Global ID:	T0605300114
Status:	Pollution Characterization
Case Number:	2468
Local Case Num:	Not reported
Case Type:	O
Substance:	Gasoline
Quantity:	Not reported
Abatement Method:	U
Leak Source:	Piping
Leak Cause:	Corrosion
How Stopped:	Not reported
How Discovered:	Tank Closure
Release Date:	06/13/1994
Discovered Date:	8/18/93
Enter Date:	07/26/1994
Stop Date:	Not reported
Review Date:	07/22/2002
Enforce Date:	Not reported
Close Date:	Not reported
Enforcement Type:	LET
Responsible Party:	HAROLD BLYTH
RP Address:	57 RUSSEL RD
Contact:	Not reported
Cross Street:	SWANER
Local Agency:	27000
Lead Agency:	Regional Board
Staff Initials:	JWG
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	7/22/98
Pollution Char:	06/17/2000
Remedial Plan:	Not reported

SANTA RITA SCHOOL DISTRICT (Continued) **S102436483**

Remedial Action: Not reported
Monitoring: / /
Pilot Program: UST
Interim Action: 0
Funding: Not reported
MTBE Class: C
Max MTBE Grnd Wtr: 5
Max MTBE Soil: Not reported
Max MTBE Data: 12/21/2000
MTBE Tested: YES
Lat/Long: 36.7244048 / -121.6533542
Soil Qualifier: Not reported
Grnd Wtr Qualifier: <
Mtbe Concentratn: 3
Mtbe Fuel: 1
Org Name: Not reported
Basin Plan: 9.10
Beneficial: MUN
Priority: 3A3
UST Cleanup Fund ID: Not reported
Suspended: Not reported
Operator: Not reported
Water System: Not reported
Well Name: Not reported
Distance From Well: 0
Assigned Name: Not reported
Summary: 06/13/94 - ODOR WAS DETECTED IN PIT DURING EXCAVATION. WATER ROSE INTO TANK PIT. MONITORING WELLS HAVE BEEN INSTALLED ON PROPERTY. EXTENT OF CONTAMINATION BEING DETERMINED.

L55
West
1/2-1
0.525 mi.
2771 ft.

GENTRY CLEANERS
1952 N MAIN ST
SALINAS, CA 93906

Site 1 of 2 in cluster L

RCRA-SQG **1000596632**
SLIC **CAD983606062**
CUPA Listings
HAZNET

Relative:
Lower

Actual:
104 ft.

RCRA-SQG:
Date form received by agency: 09/06/1991
Facility name: GENTRY CLEANERS
Facility address: 1952 N MAIN ST
SALINAS, CA 93906
EPA ID: CAD983606062
Contact: JOHN GORI
Contact address: 1952 N MAIN ST
SALINAS, CA 93906
Contact country: US
Contact telephone: (408) 442-1952
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

GENTRY CLEANERS (Continued) **1000596632**

Owner/operator name:	JOHN D GORI
Owner/operator address:	1952 N MAIN ST SALINAS, CA 93906
Owner/operator country:	Not reported
Owner/operator telephone:	(408) 442-1952
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	11/20/2002
Global Id:	SL0605340272
Lead Agency:	CENTRAL COAST RWQCB (REGION 3)
Lead Agency Case Number:	Not reported
Latitude:	36.7198856
Longitude:	-121.6557455
Case Type:	Cleanup Program Site
Case Worker:	Not reported
Local Agency:	MONTEREY COUNTY
RB Case Number:	S23798
File Location:	State Records Center
Potential Media Affected:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Tetrachloroethylene (PCE)
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

SLIC REG 3:

Region:	3
Leak Site Cross Street:	Not reported
Regional Board Case#:	S23798
Entered Into Database:	Not reported
Discovered:	Not reported
RB Case In:	GMS REALTY
Responsible Party:	GMS REALTY

GENTRY CLEANERS (Continued) **1000596632**

RP Contact:	Not reported
RP Phone:	Not reported
RP Number:	Not reported
RP Address:	5973 AVENIDA ENCINAS, SUITE 300
RP City,St,Zip:	CARLSBAD, CA 92009
Date First Reported:	12-Jan-01
Lead Agency:	Not reported
Program Type:	SLIC
Facility Status:	Case Closed
Case Type:	Other ground water affected
Case Type Undetermined:	No
Case Type Soil Impacted:	No
Case Type Surface Water:	No
Case Type Drinkin Water Well:	No
Case Type Drinking Water Aqfr:	No
Case Type Other Grnd Wtr:	Yes
PCA:	Not reported

CUPA MONTEREY:

Facility Id:	FA0813917
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0603829

HAZNET:

envid:	1000596632
Year:	2000
GEPAID:	CAD983606062
Contact:	--
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	1952 N MAIN ST
Mailing City,St,Zip:	SALINAS, CA 939062035
Gen County:	Not reported
TSD EPA ID:	CAD981397417
TSD County:	Not reported
Waste Category:	Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method:	Recycler
Tons:	0.08
Facility County:	Monterey

envid:	1000596632
Year:	1999
GEPAID:	CAD983606062
Contact:	JOHN D GORI
Telephone:	8314421952
Mailing Name:	Not reported
Mailing Address:	1952 N MAIN ST
Mailing City,St,Zip:	SALINAS, CA 939062035
Gen County:	Not reported
TSD EPA ID:	CAD981397417
TSD County:	Not reported

GENTRY CLEANERS (Continued) **1000596632**

Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Not reported
Tons: .0500
Facility County: Monterey

envid: 1000596632
Year: 1999
GEPAID: CAD983606062
Contact: JOHN D GORI
Telephone: 8314421952
Mailing Name: Not reported
Mailing Address: 1952 N MAIN ST
Mailing City,St,Zip: SALINAS, CA 939062035
Gen County: Not reported
TSD EPA ID: CAD981397417
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Not reported
Tons: .0000
Facility County: Monterey

envid: 1000596632
Year: 1999
GEPAID: CAD983606062
Contact: JOHN D GORI
Telephone: 8314421952
Mailing Name: Not reported
Mailing Address: 1952 N MAIN ST
Mailing City,St,Zip: SALINAS, CA 939062035
Gen County: Not reported
TSD EPA ID: CAD981397417
TSD County: Not reported
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Recycler
Tons: .3293
Facility County: Monterey

envid: 1000596632
Year: 1999
GEPAID: CAD983606062
Contact: JOHN D GORI
Telephone: 8314421952
Mailing Name: Not reported
Mailing Address: 1952 N MAIN ST
Mailing City,St,Zip: SALINAS, CA 939062035
Gen County: Not reported
TSD EPA ID: CAD981397417
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Recycler
Tons: .0000
Facility County: Monterey

GENTRY CLEANERS (Continued) **1000596632**

Click this hyperlink while viewing on your computer to access
11 additional CA_HAZNET: record(s) in the EDR Site Report.

L56
West
1/2-1
0.525 mi.
2771 ft.

NIELSON'S FEED STORE
1934 MAIN ST N
SALINAS, CA 93906

Site 2 of 2 in cluster L

HIST CORTESE **S102434380**
LUST **N/A**

Relative:
Lower

Actual:
104 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	27
Reg By:	LTNKA
Reg Id:	372

LUST:

Region:	STATE
Global Id:	T0605300282
Latitude:	36.7198785
Longitude:	-121.6557442
Case Type:	Not reported
Status:	Completed - Case Closed
Status Date:	08/12/1987
Lead Agency:	Not reported
Case Worker:	CLW
Local Agency:	Not reported
RB Case Number:	372
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0605300282
Contact Type:	Regional Board Caseworker
Contact Name:	JOHN GONI
Organization Name:	CENTRAL COAST RWQCB (REGION 3)
Address:	895 AEROVISTA PL, SUITE 101
City:	SAN LUIS OBISPO
Email:	jgoni@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0605300282
Contact Type:	Local Agency Caseworker
Contact Name:	CORY WELCH
Organization Name:	MONTEREY COUNTY
Address:	1270 NATIVIDAD ROAD, RM 301
City:	SALINAS
Email:	welchc@co.monterey.ca.us
Phone Number:	8317554570

Status History:

Global Id:	T0605300282
Status:	Completed - Case Closed

NIELSON'S FEED STORE (Continued) **S102434380**

Status Date: 08/12/1987

Global Id: T0605300282
Status: Open - Case Begin Date
Status Date: 04/01/1987

Regulatory Activities:

Global Id: T0605300282
Action Type: Other
Date: 05/04/1987
Action: Leak Reported

Global Id: T0605300282
Action Type: Other
Date: 04/24/1987
Action: Leak Discovery

Global Id: T0605300282
Action Type: Other
Date: 04/01/1987
Action: Leak Stopped

LUST REG 3:

Region: 3
Regional Board: Central Coast Region
Facility County: Monterey
Global ID: T0605300282
Status: Case Closed
Case Number: 372
Local Case Num: Not reported
Case Type: S
Substance: Gasoline
Quantity: Not reported
Abatement Method: Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming)
Leak Source: Tank
Leak Cause: Corrosion
How Stopped: Not reported
How Discovered: Tank Closure
Release Date: 05/04/1987
Discovered Date: 4/24/87
Enter Date: 07/15/1987
Stop Date: 4/1/87
Review Date: 08/17/1987
Enforce Date: Not reported
Close Date: 8/12/87
Enforcement Type: Not reported
Responsible Party: Not reported
RP Address: Not reported
Contact: Not reported
Cross Street: BORONDA
Local Agency: 27000
Lead Agency: Local Agency
Staff Initials: JWG
Confirm Leak: Not reported

NIELSON'S FEED STORE (Continued) **S102434380**

Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: / /
Remedial Plan: Not reported
Remedial Action: Not reported
Monitoring: / /
Pilot Program: UST
Interim Action: 0
Funding: Not reported
MTBE Class: *
Max MTBE Grnd Wtr: Not reported
Max MTBE Soil: Not reported
Max MTBE Data: / /
MTBE Tested: NT
Lat/Long: 36.7209878 / -121.6561672
Soil Qualifier: Not reported
Grnd Wtr Qualifier: Not reported
Mtbe Concentratn: 0
Mtbe Fuel: 1
Org Name: Not reported
Basin Plan: 9.10
Beneficial: Not reported
Priority: 0
UST Cleanup Fund ID: Not reported
Suspended: Not reported
Operator: Not reported
Water System: Not reported
Well Name: Not reported
Distance From Well: 0
Assigned Name: Not reported
Summary: 4 @ 550 GAL TANKS WERE REMOVED. 3 TANKS HAD SEVERAL HOLES. DEEPER SOIL SAMPLES HAD NO DETECTABLE CONTAMINATION. MONTEREY CO. HEALTH DEPT. AUTHORIZED THE BACKFILL OF EXCAV.

57
WSW
1/2-1
0.574 mi.
3030 ft.

JC PENNEY, FORMER TBA FACILITY
150 NORTHRIDGE MALL
SALINAS, CA 93906

LUST **S102431884**
N/A

Relative:
Lower

Actual:
98 ft.

LUST:
Region: STATE
Global Id: T0605300129
Latitude: 36.716564792
Longitude: -121.6554801
Case Type: Not reported
Status: Open - Eligible for Closure
Status Date: 06/02/2015
Lead Agency: Not reported
Case Worker: JWG
Local Agency: Not reported
RB Case Number: 2518
LOC Case Number: Not reported
File Location: Regional Board
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline
Site History: Semiannual groundwater monitoring for this case.

JC PENNEY, FORMER TBA FACILITY (Continued) **S102431884**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0605300129
Contact Type:	Local Agency Caseworker
Contact Name:	CORY WELCH
Organization Name:	MONTEREY COUNTY
Address:	1270 NATIVIDAD ROAD, RM 301
City:	SALINAS
Email:	welchc@co.monterey.ca.us
Phone Number:	8317554570
Global Id:	T0605300129
Contact Type:	Regional Board Caseworker
Contact Name:	JOHN GONI
Organization Name:	CENTRAL COAST RWQCB (REGION 3)
Address:	895 AEROVISTA PL, SUITE 101
City:	SAN LUIS OBISPO
Email:	jgoni@waterboards.ca.gov
Phone Number:	Not reported

Status History:

Global Id:	T0605300129
Status:	Open - Case Begin Date
Status Date:	12/10/1981
Global Id:	T0605300129
Status:	Open - Eligible for Closure
Status Date:	03/28/2013
Global Id:	T0605300129
Status:	Open - Eligible for Closure
Status Date:	04/15/2015
Global Id:	T0605300129
Status:	Open - Eligible for Closure
Status Date:	06/02/2015
Global Id:	T0605300129
Status:	Open - Remediation
Status Date:	01/17/1995
Global Id:	T0605300129
Status:	Open - Remediation
Status Date:	03/01/1997
Global Id:	T0605300129
Status:	Open - Verification Monitoring
Status Date:	07/27/1998
Global Id:	T0605300129
Status:	Open - Verification Monitoring
Status Date:	08/07/2014
Global Id:	T0605300129
Status:	Open - Verification Monitoring

JC PENNEY, FORMER TBA FACILITY (Continued) **S102431884**

Status Date: 11/18/2014

Regulatory Activities:

Global Id:	T0605300129
Action Type:	RESPONSE
Date:	09/02/2009
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	ENFORCEMENT
Date:	02/27/2015
Action:	13267 Requirement
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/20/2005
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	01/20/2006
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/20/2006
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	05/20/2006
Action:	Other Report / Document
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/27/2010
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	Other
Date:	01/04/1995
Action:	Leak Reported
Global Id:	T0605300129
Action Type:	ENFORCEMENT
Date:	05/08/2006
Action:	13267 Requirement
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	01/20/2007
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/20/2007
Action:	Monitoring Report - Quarterly

JC PENNEY, FORMER TBA FACILITY (Continued) **S102431884**

Global Id:	T0605300129
Action Type:	RESPONSE
Date:	01/20/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	ENFORCEMENT
Date:	12/27/2000
Action:	Staff Letter
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	02/21/2013
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/20/2013
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	01/20/2014
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	12/20/2004
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/20/2004
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	03/28/1994
Action:	Site Assessment Report
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/14/1994
Action:	Other Report / Document
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	01/20/2015
Action:	Correspondence
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	01/20/2010
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE

JC PENNEY, FORMER TBA FACILITY (Continued) **S102431884**

Date:	05/20/2006
Action:	Other Report / Document
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/20/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	05/23/1984
Action:	Tank Removal Report / UST Sampling Report
Global Id:	T0605300129
Action Type:	ENFORCEMENT
Date:	01/19/2006
Action:	13267 Requirement
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	08/30/2003
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	Other
Date:	12/10/1981
Action:	Leak Discovery
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	09/20/2002
Action:	Monitoring Report - Quarterly
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	02/27/2009
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	09/30/2014
Action:	Risk Assessment Report - Regulator Responded
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	02/20/2015
Action:	Soil Vapor Intrusion Investigation Workplan - Regulator Responded
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	05/27/2015
Action:	Soil Vapor Intrusion Investigation Report - Regulator Responded
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	07/20/2010
Action:	Monitoring Report - Semi-Annually

JC PENNEY, FORMER TBA FACILITY (Continued) **S102431884**

Global Id:	T0605300129
Action Type:	RESPONSE
Date:	06/06/2011
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	01/20/2012
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	04/20/2012
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	RESPONSE
Date:	10/24/2012
Action:	Monitoring Report - Semi-Annually
Global Id:	T0605300129
Action Type:	Other
Date:	12/15/1981
Action:	Leak Stopped
Global Id:	T0605300129
Action Type:	REMEDIATION
Date:	01/01/1995
Action:	Soil Vapor Extraction (SVE)

LUST REG 3:

Region:	3
Regional Board:	Central Coast Region
Facility County:	Monterey
Global ID:	T0605300129
Status:	Post remedial action monitoring
Case Number:	2518
Local Case Num:	Not reported
Case Type:	O
Substance:	Gasoline
Quantity:	Not reported
Abatement Method:	Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming), Pump and Treat Ground Water - generally employed to remove dissolved contaminants
Leak Source:	Tank
Leak Cause:	Other Cause
How Stopped:	Not reported
How Discovered:	Tank Closure
Release Date:	01/04/1995
Discovered Date:	12/10/81
Enter Date:	01/17/1995
Stop Date:	12/15/81
Review Date:	01/05/2002
Enforce Date:	Not reported
Close Date:	Not reported
Enforcement Type:	LET

JC PENNEY, FORMER TBA FACILITY (Continued) **S102431884**

Responsible Party:	RICHARD NELINSON
RP Address:	MAIL STOP 2113 6501 LEGACY DR
Contact:	Not reported
Cross Street:	MAIN ST N
Local Agency:	27000
Lead Agency:	Regional Board
Staff Initials:	JWG
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	/ /
Remedial Plan:	1/17/95
Remedial Action:	3/1/97
Monitoring:	07/27/1998
Pilot Program:	UST
Interim Action:	0
Funding:	Not reported
MTBE Class:	B
Max MTBE Grnd Wtr:	430
Max MTBE Soil:	Not reported
Max MTBE Data:	10/09/2001
MTBE Tested:	YES
Lat/Long:	36.7188419 / -121.6524801
Soil Qualifier:	Not reported
Grnd Wtr Qualifier:	<
Mtbe Concentratn:	3
Mtbe Fuel:	1
Org Name:	Not reported
Basin Plan:	9.10
Beneficial:	MUN
Priority:	3A3
UST Cleanup Fund ID:	Not reported
Suspended:	Not reported
Operator:	Not reported
Water System:	Not reported
Well Name:	Not reported
Distance From Well:	0
Assigned Name:	Not reported
Summary:	Not reported

58
SW
1/2-1
0.664 mi.
3507 ft.

HARDEN RANCH CLEANERS
1540 N MAIN ST
SALINAS, CA 93901

RCRA-SQG
CUPA Listings
DRYCLEANERS
HAZNET
ENVIROSTOR

1000686344
CAD983636176

Relative:
Lower

Actual:
92 ft.

RCRA-SQG:

Date form received by agency:	05/13/1992
Facility name:	HARDEN RANCH CLEANERS
Facility address:	1540 N MAIN ST SALINAS, CA 93901
EPA ID:	CAD983636176
Mailing address:	N MAIN ST SALINAS, CA 93901
Contact:	RICH SULLENS
Contact address:	1540 N MAIN ST SALINAS, CA 93901
Contact country:	US

HARDEN RANCH CLEANERS (Continued) **1000686344**

Contact telephone:	(408) 449-6443
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	RICH SULLENS
Owner/operator address:	1540 N MAIN ST SALINAS, CA 93901
Owner/operator country:	Not reported
Owner/operator telephone:	(408) 449-6443
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

CUPA MONTEREY:

Facility Id:	FA0817489
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	ACTIVE, BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0617104

Facility Id:	FA0817489
Region:	MONTEREY
Program/Element Code:	5150
Program/Element:	BASE FEE HAZARDOUS WASTE GENERATOR
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0609914

HARDEN RANCH CLEANERS (Continued) **1000686344**

Facility Id:	FA0813905
Region:	MONTEREY
Program/Element Code:	5040
Program/Element:	BASE FEE-HAZARDOUS MATERIALS REGISTRATION
Billing Status:	INACTIVE, NON-BILLABLE
EDR Link ID:	Not reported
Record ID:	PR0603817

DRYCLEANERS:

EPA Id:	CAD983636176
NAICS Code:	81232
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7211
SIC Description:	Power Laundries, Family and Commercial
Create Date:	05/13/1992
Facility Active:	No
Inactive Date:	06/30/2001
Facility Addr2:	Not reported
Owner Name:	LOIS SULLENS
Owner Address:	1540 N MAIN ST
Owner Address 2:	Not reported
Owner Telephone:	4084496443
Contact Name:	CAROL ANN SMITH BOOKKEEPER
Contact Address:	1540 N MAIN ST
Contact Address 2:	Not reported
Contact Telephone:	4084496443
Mailing Name:	Not reported
Mailing Address 1:	1585 WILLOWBROOK DR
Mailing Address 2:	Not reported
Mailing City:	SAN JOSE
Mailing State:	CA
Mailing Zip:	951181651
Owner Fax:	Not reported
Region Code:	Not reported

EPA Id:	CAL000205169
NAICS Code:	81232
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7211
SIC Description:	Power Laundries, Family and Commercial
Create Date:	09/21/2000
Facility Active:	No
Inactive Date:	06/30/2011
Facility Addr2:	Not reported
Owner Name:	KEN KYUHWAN LEE
Owner Address:	1540 N MAIN ST
Owner Address 2:	Not reported
Owner Telephone:	4084496443
Contact Name:	KEN KYUHWAN LEE
Contact Address:	1540 N MAIN ST
Contact Address 2:	Not reported
Contact Telephone:	8314496443
Mailing Name:	HARDEN RANCH CLEANERS
Mailing Address 1:	1540 N MAIN ST
Mailing Address 2:	Not reported
Mailing City:	SALINAS
Mailing State:	CA

HARDEN RANCH CLEANERS (Continued) **1000686344**

Mailing Zip: 939060000
Owner Fax: Not reported
Region Code: 0000000000

HAZNET:

envid: 1000686344
Year: 2000
GEPAID: CAD983636176
Contact: CAROL ANN SMITH BOOKKEEPER
Telephone: 4084496443
Mailing Name: Not reported
Mailing Address: 1585 WILLOWBROOK DR
Mailing City,St,Zip: SAN JOSE, CA 951181651
Gen County: Not reported
TSD EPA ID: CA0000084517
TSD County: Not reported
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Transfer Station
Tons: 0.9
Facility County: Monterey

envid: 1000686344
Year: 1999
GEPAID: CAD983636176
Contact: LOIS SULLENS
Telephone: 4084496443
Mailing Name: Not reported
Mailing Address: 1585 WILLOWBROOK DR
Mailing City,St,Zip: SAN JOSE, CA 951181651
Gen County: Not reported
TSD EPA ID: CA0000084517
TSD County: Not reported
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Transfer Station
Tons: 1.1925
Facility County: Monterey

envid: 1000686344
Year: 1998
GEPAID: CAD983636176
Contact: LOIS SULLENS
Telephone: 4084496443
Mailing Name: Not reported
Mailing Address: 1585 WILLOWBROOK DR
Mailing City,St,Zip: SAN JOSE, CA 951181651
Gen County: Not reported
TSD EPA ID: CA0000084517
TSD County: Not reported
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Transfer Station
Tons: .9000
Facility County: Monterey

envid: 1000686344
Year: 1997
GEPAID: CAD983636176
Contact: LOIS SULLENS

HARDEN RANCH CLEANERS (Continued) **1000686344**

Telephone:	4084496443
Mailing Name:	Not reported
Mailing Address:	1585 WILLOWBROOK DR
Mailing City,St,Zip:	SAN JOSE, CA 951181651
Gen County:	Not reported
TSD EPA ID:	CA0000084517
TSD County:	Not reported
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Not reported
Tons:	.0975
Facility County:	Monterey

envid:	1000686344
Year:	1997
GEPAID:	CAD983636176
Contact:	LOIS SULLENS
Telephone:	4084496443
Mailing Name:	Not reported
Mailing Address:	1585 WILLOWBROOK DR
Mailing City,St,Zip:	SAN JOSE, CA 951181651
Gen County:	Not reported
TSD EPA ID:	CA0000084517
TSD County:	Not reported
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	1.4850
Facility County:	Monterey

Click this hyperlink while viewing on your computer to access
10 additional CA_HAZNET: record(s) in the EDR Site Report.

ENVIROSTOR:

Facility ID:	27010002
Status:	Refer: Other Agency
Status Date:	07/29/1994
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Berkeley
Assembly:	30
Senate:	12
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	36.7275
Longitude:	-121.6552
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	* CONTAMINATED SOIL
Confirmed COC:	NONE SPECIFIED

HARDEN RANCH CLEANERS (Continued) **1000686344**

Potential Description: NONE SPECIFIED
Alias Name: 27010002
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 10/19/1990
Comments: SITE SCREENING DONE SITE IS A 300-ACRE PARCEL. COUNTY ENVIR- ONMENTAL HEALTH DEPT INDICATES THAT RES- IDUAL AMOUNTS OF DDE, DDT, DDA, DIELDRIN AND ENDRIN IN THE SOIL ARE NOT A SIGNIF- ICANT HEALTH CONCERN AND DO NOT POSE ANY ADDITIONAL CANCER RISK. COUNTY IS A LEAD AGENCY. DHS RECOMMENDS LOW PRIORITY PRELIMINARY ENDANGERMENT ASSESSMENT TO ASSESS CON- TAMINATION.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

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59 **SALINAS COMMUNITY SCHOOL** **SCH** **S115779960**
South **615 LESLIE DRIVE** **ENVIROSTOR** **N/A**
1/2-1 **SALINAS, CA 93906**
0.770 mi.
4063 ft.

Relative: SCH:
Lower

Actual:
95 ft.

Facility ID: 60001947
Site Type: School Cleanup
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 2
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Jose Luevano
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Site Code: 204258
Assembly: 30
Senate: 12
Special Program Status: Not reported
Status: Active
Status Date: 11/19/2013
Restricted Use: NO
Funding: School District
Latitude: 36.70582
Longitude: -121.6301
APN: 216-492-046
Past Use: AGRICULTURAL - ROW CROPS, OFFICE BUILDING

SALINAS COMMUNITY SCHOOL (Continued) **S115779960**

Potential COC:	Under Investigation, Arsenic, Chlordane, DDD, DDE, DDT, Lead, Polychlorinated biphenyls (PCBs
Confirmed COC:	Under Investigation
Potential Description:	SOIL, UE
Alias Name:	Board of American Missions, Lutheran Church in America
Alias Type:	Alternate Name
Alias Name:	New Community School
Alias Type:	Alternate Name
Alias Name:	Presbyterian of San Jose
Alias Type:	Alternate Name
Alias Name:	216-492-046
Alias Type:	APN
Alias Name:	204258
Alias Type:	Project Code (Site Code)
Alias Name:	60001947
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	01/21/2014
Comments:	DTSC approved the PEA Workplan.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	12/11/2013
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	12/11/2013
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fieldwork
Completed Date:	02/03/2014
Comments:	DTSC PM on-site during PEA fieldwork implementation.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	06/30/2014
Comments:	DTSC concurred with the recommendation of the PEA and issued further action determination letter.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Tech Memo
Completed Date:	04/01/2014
Comments:	DTSC approved the PEA Tech Memo in an e-mail dated March 21, 2014.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fieldwork

SALINAS COMMUNITY SCHOOL (Continued) **S115779960**

Completed Date: 04/02/2014
Comments: DTSC informed that step-out and step-down sampling activities are to be completed on April 2, 2014.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 06/17/2014
Comments: DTSC approved the SSI TM workplan via e-mail.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 07/11/2014
Comments: SSI fieldwork activities implemented by Padre Assoc. No DTSC oversight provided.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 09/24/2014
Comments: On Sep 24, 2014, DTSC approved the SSI summary report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: 4.15 Request
Completed Date: 01/05/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement
Completed Date: 12/30/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 09/11/2014
Comments: Fully executed VCA sent to District.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 11/22/2013
Comments: EOA signed and sent back to District. See uploaded document. Cost Est. $16,034; Adv payment requested is $8,017.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SALINAS COMMUNITY SCHOOL (Continued) **S115779960**

ENVIROSTOR:

Facility ID:	60001947
Status:	Active
Status Date:	11/19/2013
Site Code:	204258
Site Type:	School Cleanup
Site Type Detailed:	School
Acres:	2
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Jose Luevano
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Assembly:	30
Senate:	12
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	36.70582
Longitude:	-121.6301
APN:	216-492-046
Past Use:	AGRICULTURAL - ROW CROPS, OFFICE BUILDING
Potential COC:	Under Investigation Arsenic Chlordane DDD DDE DDT Lead Polychlorinated biphenyls (PCBs
Confirmed COC:	Under Investigation
Potential Description:	SOIL, UE
Alias Name:	Board of American Missions, Lutheran Church in America
Alias Type:	Alternate Name
Alias Name:	New Community School
Alias Type:	Alternate Name
Alias Name:	Presbyterian of San Jose
Alias Type:	Alternate Name
Alias Name:	216-492-046
Alias Type:	APN
Alias Name:	204258
Alias Type:	Project Code (Site Code)
Alias Name:	60001947
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	01/21/2014
Comments:	DTSC approved the PEA Workplan.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report
Completed Date:	12/11/2013
Comments:	Not reported

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Other Report

SALINAS COMMUNITY SCHOOL (Continued) **S115779960**

Completed Date: 12/11/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 02/03/2014
Comments: DTSC PM on-site during PEA fieldwork implementation.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/30/2014
Comments: DTSC concurred with the recommendation of the PEA and issued further action determination letter.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Tech Memo
Completed Date: 04/01/2014
Comments: DTSC approved the PEA Tech Memo in an e-mail dated March 21, 2014.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 04/02/2014
Comments: DTSC informed that step-out and step-down sampling activities are to be completed on April 2, 2014.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Tech Memo
Completed Date: 06/17/2014
Comments: DTSC approved the SSI TM workplan via e-mail.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 07/11/2014
Comments: SSI fieldwork activities implemented by Padre Assoc. No DTSC oversight provided.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Supplemental Site Investigation Report
Completed Date: 09/24/2014
Comments: On Sep 24, 2014, DTSC approved the SSI summary report.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: 4.15 Request
Completed Date: 01/05/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: School Cleanup Agreement

SALINAS COMMUNITY SCHOOL (Continued) **S115779960**

Completed Date:	12/30/2014
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	09/11/2014
Comments:	Fully executed VCA sent to District.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	11/22/2013
Comments:	EOA signed and sent back to District. See uploaded document. Cost Est. $16,034; Adv payment requested is $8,017.
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

M60 **CREEKBRIDGE MIDDLE SCHOOL** **SCH** **S109422408**
ESE **EAST BORONDA ROAD/HEMMINGWAY ROAD** **ENVIROSTOR** **N/A**
1/2-1 **SALINAS, CA 93906**
0.955 mi.
5044 ft. **Site 1 of 2 in cluster M**

Relative:
Lower

Actual:
127 ft.

SCH:

Facility ID:	60001058
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	18
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Jose Luevano
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204229
Assembly:	30
Senate:	12
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	06/02/2011
Restricted Use:	NO
Funding:	School District
Latitude:	36.7156
Longitude:	-121.6047
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - ROW CROPS, FUEL HYDRANT PUMPING STATIONS

CREEKBRIDGE MIDDLE SCHOOL (Continued) **S109422408**

Potential COC: Arsenic, Arsenic, Chlordane, DDD, DDE, DDT, Polychlorinated biphenyls (PCBs, Toxaphene, TPH-MOTOR OIL
Confirmed COC: 30001-NO, 30004-NO, 30006-NO, 30007-NO, 30008-NO, No Contaminants found, 3002502-NO, 30018-NO, 30023-NO
Potential Description: SOIL, WELL
Alias Name: 204229
Alias Type: Project Code (Site Code)
Alias Name: 60001058
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 02/18/2009
Comments: DTSC received one paper copy (only) of a Phase I for the subject site. The Phase I was submitted for background information.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 09/02/2009
Comments: DTSC conditionally approved the PEA workplan for implementation. Request made not to composite arsenic samples per DTSC Ag-guidance, and clarification added for human health risk evaluation for arsenic.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement Application
Completed Date: 02/10/2009
Comments: Received application.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 10/21/2009
Comments: PEA field work completed on Oct 20 and 21, 2009.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 05/26/2011
Comments: DTSC approved the PEA assessment report with a no further action is required

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 06/02/2011
Comments: CRU memo signed and approved 6/2/2011

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 03/26/2009
Comments: Mailed fully Executed Environmental Oversight Agreement to District

Completed Area Name: PROJECT WIDE

CREEKBRIDGE MIDDLE SCHOOL (Continued) **S109422408**

Completed Sub Area Name: Not reported
Completed Document Type: Inactive Status Letter
Completed Date: 03/24/2011
Comments: DTSC issued an Inactive Status notice for inactivity associated with compliance with 30-day public review and comment period pursuant with California Education Code, Section 17213.1(a)(6)(A) or Section 17213.1(a)(6)(B).

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 60001058
Status: No Further Action
Status Date: 06/02/2011
Site Code: 204229
Site Type: School Investigation
Site Type Detailed: School
Acres: 18
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Jose Luevano
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.7156
Longitude: -121.6047
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS, FUEL HYDRANT PUMPING STATIONS
Potential COC: Arsenic Chlordane DDD DDE DDT Polychlorinated biphenyls (PCBs Toxaphene TPH-MOTOR OIL
Confirmed COC: 30001-NO 30004-NO 30006-NO 30007-NO 30008-NO No Contaminants found 3002502-NO 30018-NO 30023-NO
Potential Description: SOIL, WELL
Alias Name: 204229
Alias Type: Project Code (Site Code)
Alias Name: 60001058
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 02/18/2009

CREEKBRIDGE MIDDLE SCHOOL (Continued) **S109422408**

Comments:	DTSC received one paper copy (only) of a Phase I for the subject site. The Phase I was submitted for background information.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	09/02/2009
Comments:	DTSC conditionally approved the PEA workplan for implementation. Request made not to composite arsenic samples per DTSC Ag-guidance, and clarification added for human health risk evaluation for arsenic.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement Application
Completed Date:	02/10/2009
Comments:	Received application.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fieldwork
Completed Date:	10/21/2009
Comments:	PEA field work completed on Oct 20 and 21, 2009.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	05/26/2011
Comments:	DTSC approved the PEA assessment report with a no further action is required
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	06/02/2011
Comments:	CRU memo signed and approved 6/2/2011
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	03/26/2009
Comments:	Mailed fully Executed Environmental Oversight Agreement to District
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Inactive Status Letter
Completed Date:	03/24/2011
Comments:	DTSC issued an Inactive Status notice for inactivity associated with compliance with 30-day public review and comment period pursuant with California Education Code, Section 17213.1(a)(6)(A) or Section 17213.1(a)(6)(B).
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported

CREEKBRIDGE MIDDLE SCHOOL (Continued) **S109422408**

Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

M61
ESE
1/2-1
0.955 mi.
5044 ft.

ELEMENTARY SCHOOL #12 (CREEK BRIDGE PROPERTY) — **SCH** — **S109149598**
EAST BORONDA ROAD/HEMINGWAY DRIVE — **ENVIROSTOR** — **N/A**
SALINAS, CA 93906

Site 2 of 2 in cluster M

Relative: **Lower**

Actual: **127 ft.**

SCH:

Facility ID:	60000914
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	12
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Mellan Songco
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204219
Assembly:	30
Senate:	12
Special Program Status:	EPA - Target Site Investigation
Status:	No Further Action
Status Date:	11/04/2010
Restricted Use:	NO
Funding:	School District
Latitude:	36.71818
Longitude:	-121.6090
APN:	153-091-006
Past Use:	AGRICULTURAL - ROW CROPS, FUEL - VEHICLE STORAGE/ REFUELING, PESTICIDE/INSECTIDE/RODENTICIDE STORAGE
Potential COC:	Arsenic, Arsenic, Benzene, Chlordane, DDT, TPH-diesel, TPH-gas
Confirmed COC:	30001-NO, 30003-NO, 30004-NO, 30008-NO, No Contaminants found, 30024-NO, 30025-NO
Potential Description:	SOIL
Alias Name:	153-091-006
Alias Type:	APN
Alias Name:	201851
Alias Type:	Project Code (Site Code)
Alias Name:	204219
Alias Type:	Project Code (Site Code)
Alias Name:	60000914
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	07/01/2008
Comments:	DTSC approved the Phase I with a PEA Required determination.
Completed Area Name:	PROJECT WIDE

ELEMENTARY SCHOOL #12 (CREEK BRIDGE PROPERTY) (Continued) **S109149598**

Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 09/22/2009
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 03/09/2010
Comments: DTSC approved the PEA Workplan

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/30/2010
Comments: DTSC approved the PEA letter with a no further action determination

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Work Order
Completed Date: 04/21/2010
Comments: The contract and the Start Work Order were amended to include a housekeeping activity as part of the scope of work within the TSI PEA project. Additional $7,593 was included in the contract. $42,593 is the new total amount for the project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 09/10/2009
Comments: Project Manager Change from Mike Hall to Mellan Songco

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 08/17/2010
Comments: DTSC sent a CRU to the accounting unit to summarize costs associated with this project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Contract
Completed Date: 01/13/2010
Comments: The Standard Agreement Number 09-T9064 for the Creek Bridge Property was signed and finalized on 1/13/2010.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Work Order
Completed Date: 01/21/2010
Comments: The Start Work Order for the Creek Bridge Property was signed and finalized on 1/21/2010.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 01/21/2010

ELEMENTARY SCHOOL #12 (CREEK BRIDGE PROPERTY) (Continued) **S109149598**

Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 04/19/2010
Comments: Observed the housekeeping activities and collecting confirmation soil samples by the AST.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Contract
Completed Date: 04/13/2010
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

ENVIROSTOR:
Facility ID: 60000914
Status: No Further Action
Status Date: 11/04/2010
Site Code: 204219
Site Type: School Investigation
Site Type Detailed: School
Acres: 12
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Mellan Songco
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 30
Senate: 12
Special Program: EPA - Target Site Investigation
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.71818
Longitude: -121.6090
APN: 153-091-006
Past Use: AGRICULTURAL - ROW CROPS, FUEL - VEHICLE STORAGE/ REFUELING, PESTICIDE/INSECTIDE/RODENTICIDE STORAGE
Potential COC: Arsenic Benzene Chlordane DDT TPH-diesel TPH-gas
Confirmed COC: 30001-NO 30003-NO 30004-NO 30008-NO No Contaminants found 30024-NO 30025-NO
Potential Description: SOIL
Alias Name: 153-091-006
Alias Type: APN
Alias Name: 201851

ELEMENTARY SCHOOL #12 (CREEK BRIDGE PROPERTY) (Continued) **S109149598**

Alias Type: Project Code (Site Code)
Alias Name: 204219
Alias Type: Project Code (Site Code)
Alias Name: 60000914
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 07/01/2008
Comments: DTSC approved the Phase I with a PEA Required determination.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 09/22/2009
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 03/09/2010
Comments: DTSC approved the PEA Workplan

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 04/30/2010
Comments: DTSC approved the PEA letter with a no further action determination

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Work Order
Completed Date: 04/21/2010
Comments: The contract and the Start Work Order were amended to include a housekeeping activity as part of the scope of work within the TSI PEA project. Additional $7,593 was included in the contract. $42,593 is the new total amount for the project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 09/10/2009
Comments: Project Manager Change from Mike Hall to Mellan Songco

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 08/17/2010
Comments: DTSC sent a CRU to the accounting unit to summarize costs associated with this project.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: State/Federal Funded Site Contract
Completed Date: 01/13/2010
Comments: The Standard Agreement Number 09-T9064 for the Creek Bridge Property

ELEMENTARY SCHOOL #12 (CREEK BRIDGE PROPERTY) (Continued) **S109149598**

was signed and finalized on 1/13/2010.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	State/Federal Funded Site Work Order
Completed Date:	01/21/2010
Comments:	The Start Work Order for the Creek Bridge Property was signed and finalized on 1/21/2010.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	01/21/2010
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	04/19/2010
Comments:	Observed the housekeeping activities and collecting confirmation soil samples by the AST.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	State/Federal Funded Site Contract
Completed Date:	04/13/2010
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 2 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MONTEREY COUNTY	S107526748		101 S BOUND KING CITY		CDL
SALINAS	S107540568		SAN JUAN GRADE RD (NO OF SALIN	93906	CDL

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 75

Source: EPA
Telephone: N/A
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/10/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/10/2015	Source: EPA
Date Data Arrived at EDR: 03/31/2015	Telephone: 800-424-9346
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 06/26/2015
Number of Days to Update: 72	Next Scheduled EDR Contact: 10/12/2015
	Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/10/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/31/2015	Telephone: (415) 495-8895
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 06/26/2015
Number of Days to Update: 72	Next Scheduled EDR Contact: 10/12/2015
	Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/10/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/31/2015	Telephone: (415) 495-8895
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 06/26/2015
Number of Days to Update: 72	Next Scheduled EDR Contact: 10/12/2015
	Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/10/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/31/2015	Telephone: (415) 495-8895
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 06/26/2015
Number of Days to Update: 72	Next Scheduled EDR Contact: 10/12/2015
	Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/10/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/31/2015	Telephone: (415) 495-8895
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 06/26/2015
Number of Days to Update: 72	Next Scheduled EDR Contact: 10/12/2015
	Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 63

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/20/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 16

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 48

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 03/17/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 52

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/03/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 24

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/08/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 19

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 27

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 03/17/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 52

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 48

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 53

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/28/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/06/2015
Date Data Arrived at EDR: 05/19/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 34

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Semi-Annually

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/10/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC’s costs.

Date of Government Version: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/23/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/24/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/23/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 8

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 05/04/2015
Date Data Arrived at EDR: 05/05/2015
Date Made Active in Reports: 05/14/2015
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 06/11/2015
Date Data Arrived at EDR: 06/16/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 06/08/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 35

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/09/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/14/2015
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/21/2015
Number of Days to Update: 22

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/05/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 07/08/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

ROD: Records Of Decision
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 12/30/2014
Date Data Arrived at EDR: 12/31/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/03/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 110

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/25/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 06/04/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/07/2015
Date Data Arrived at EDR: 04/09/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/29/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 11/19/2014
Date Data Arrived at EDR: 12/15/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 45

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/19/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 05/18/2015	Source: State Water Resources Control Board
Date Data Arrived at EDR: 05/20/2015	Telephone: 916-445-9379
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 05/20/2015
Number of Days to Update: 22	Next Scheduled EDR Contact: 08/31/2015
	Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/24/2015	Source: CAL EPA/Office of Emergency Information
Date Data Arrived at EDR: 06/26/2015	Telephone: 916-323-3400
Date Made Active in Reports: 07/14/2015	Last EDR Contact: 06/26/2015
Number of Days to Update: 18	Next Scheduled EDR Contact: 10/12/2015
	Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001	Source: Department of Toxic Substances Control
Date Data Arrived at EDR: 01/22/2009	Telephone: 916-323-3400
Date Made Active in Reports: 04/08/2009	Last EDR Contact: 01/22/2009
Number of Days to Update: 76	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993	Source: State Water Resources Control Board
Date Data Arrived at EDR: 11/01/1993	Telephone: 916-445-3846
Date Made Active in Reports: 11/19/1993	Last EDR Contact: 06/17/2015
Number of Days to Update: 18	Next Scheduled EDR Contact: 10/05/2015
	Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner’s agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 02/18/2015	Source: Department of Toxic Substance Control
Date Data Arrived at EDR: 02/20/2015	Telephone: 916-327-4498
Date Made Active in Reports: 03/12/2015	Last EDR Contact: 06/05/2015
Number of Days to Update: 20	Next Scheduled EDR Contact: 09/21/2015
	Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009	Source: Los Angeles Water Quality Control Board
Date Data Arrived at EDR: 07/21/2009	Telephone: 213-576-6726
Date Made Active in Reports: 08/03/2009	Last EDR Contact: 06/22/2015
Number of Days to Update: 13	Next Scheduled EDR Contact: 10/12/2015
	Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 12

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/19/2014
Number of Days to Update: 35

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 03/25/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 34

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/25/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 07/07/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 06/15/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 27

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/30/2015
Date Data Arrived at EDR: 05/01/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 12

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/22/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 14

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: N/A

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 05/14/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/01/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/07/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 35

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/09/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Quarterly

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/22/2015
Data Release Frequency: Annually

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/28/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 08/10/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List
Cupa Facility List

Date of Government Version: 06/05/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/10/2015
Number of Days to Update: 31

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 11/20/2014
Date Data Arrived at EDR: 11/24/2014
Date Made Active in Reports: 01/07/2015
Number of Days to Update: 44

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 04/17/2015
Date Data Arrived at EDR: 04/21/2015
Date Made Active in Reports: 05/07/2015
Number of Days to Update: 16

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/11/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/07/2014
Number of Days to Update: 24

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 05/19/2015
Date Data Arrived at EDR: 05/22/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 14

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 7

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 07/06/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 07/14/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 04/27/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 15

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/22/2014
Date Data Arrived at EDR: 11/12/2014
Date Made Active in Reports: 12/19/2014
Number of Days to Update: 37

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 06/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county’s Certified Unified Program Agency database. California’s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/26/2015
Date Data Arrived at EDR: 05/28/2015
Date Made Active in Reports: 06/15/2015
Number of Days to Update: 18

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/21/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 05/05/2015
Date Data Arrived at EDR: 05/07/2015
Date Made Active in Reports: 05/20/2015
Number of Days to Update: 13

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 33

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/10/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/20/2015
Date Data Arrived at EDR: 04/20/2015
Date Made Active in Reports: 05/07/2015
Number of Days to Update: 17

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/20/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/15/2015
Next Scheduled EDR Contact: 11/02/2015
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 03/06/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/03/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 16

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 06/03/2015
Date Data Arrived at EDR: 06/04/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 32

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 06/04/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/15/2015
Number of Days to Update: 17

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/08/2014
Date Data Arrived at EDR: 10/22/2014
Date Made Active in Reports: 12/15/2014
Number of Days to Update: 54

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 07/06/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 10

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 06/01/2015
Date Data Arrived at EDR: 06/03/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 33

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/30/2015
Date Data Arrived at EDR: 07/07/2015
Date Made Active in Reports: 07/16/2015
Number of Days to Update: 9

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/12/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 05/04/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 24

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 27

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 30

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities

List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites

Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/28/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Quarterly

Underground Storage Tank Tank List

Underground storage tank sites located in Riverside county.

Date of Government Version: 04/28/2015
Date Data Arrived at EDR: 04/30/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 04/16/2015
Number of Days to Update: 8

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 04/16/2015
Number of Days to Update: 8

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/09/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/30/2015
Date Data Arrived at EDR: 07/07/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 7

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/12/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2014
Date Data Arrived at EDR: 11/21/2014
Date Made Active in Reports: 12/29/2014
Number of Days to Update: 38

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 06/03/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 10

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/10/2015
Number of Days to Update: 15

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/20/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/15/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Annually

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 06/10/2015
Date Data Arrived at EDR: 06/16/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 28

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing

CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List

Cupa facility list

Date of Government Version: 06/10/2015
Date Data Arrived at EDR: 06/16/2015
Date Made Active in Reports: 07/10/2015
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 06/01/2015
Next Scheduled EDR Contact: 09/14/2015
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/07/2015
Date Data Arrived at EDR: 05/12/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 27

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/07/2015
Next Scheduled EDR Contact: 08/24/2015
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 05/22/2015
Date Data Arrived at EDR: 05/26/2015
Date Made Active in Reports: 06/08/2015
Number of Days to Update: 13

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/22/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 06/12/2015
Date Data Arrived at EDR: 06/16/2015
Date Made Active in Reports: 07/10/2015
Number of Days to Update: 24

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/19/2015
Date Data Arrived at EDR: 06/24/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 20

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 06/19/2015
Date Data Arrived at EDR: 06/30/2015
Date Made Active in Reports: 07/07/2015
Number of Days to Update: 7

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/10/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 18

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/01/2015
Date Data Arrived at EDR: 07/07/2015
Date Made Active in Reports: 07/14/2015
Number of Days to Update: 7

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/22/2015
Next Scheduled EDR Contact: 10/12/2015
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 06/05/2015
Date Data Arrived at EDR: 06/09/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 27

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 06/05/2015
Next Scheduled EDR Contact: 09/21/2015
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 05/05/2015
Date Data Arrived at EDR: 05/07/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 6

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Varies

VENTURA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 04/27/2015
Date Data Arrived at EDR: 05/22/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 14

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/15/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/26/2015
Next Scheduled EDR Contact: 10/19/2015
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 04/27/2015
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/13/2015
Number of Days to Update: 14

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/27/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/27/2015
Date Data Arrived at EDR: 06/17/2015
Date Made Active in Reports: 07/06/2015
Number of Days to Update: 19

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/17/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/01/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 12

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 07/06/2015
Next Scheduled EDR Contact: 10/05/2015
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 05/18/2015
Date Data Arrived at EDR: 05/19/2015
Date Made Active in Reports: 06/05/2015
Number of Days to Update: 17

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/18/2015
Next Scheduled EDR Contact: 08/31/2015
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 04/29/2015
Date Made Active in Reports: 05/29/2015
Number of Days to Update: 30

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 10/28/2015
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/01/2015
Date Data Arrived at EDR: 05/06/2015
Date Made Active in Reports: 05/20/2015
Number of Days to Update: 14

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/06/2015
Next Scheduled EDR Contact: 08/17/2015
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/26/2015
Next Scheduled EDR Contact: 09/07/2015
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2015
Next Scheduled EDR Contact: 09/28/2015
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Telephone: 281-546-1505
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: 800-823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.
Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.
Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.
Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.
Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5’ Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CITY OF SALINAS - WASP
CITY OF SALINAS - WASP
SALINAS, CA 93906

TARGET PROPERTY COORDINATES

Latitude (North):	36.7229 - 36˚ 43’ 22.44’’
Longitude (West):	121.6343 - 121˚ 38’ 3.48’’
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	621960.4
UTM Y (Meters):	4064800.2
Elevation:	134 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	36121-F6 SALINAS, CA
Version Date:	1984
East Map:	36121-F5 NATIVIDAD, CA
Version Date:	1984

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

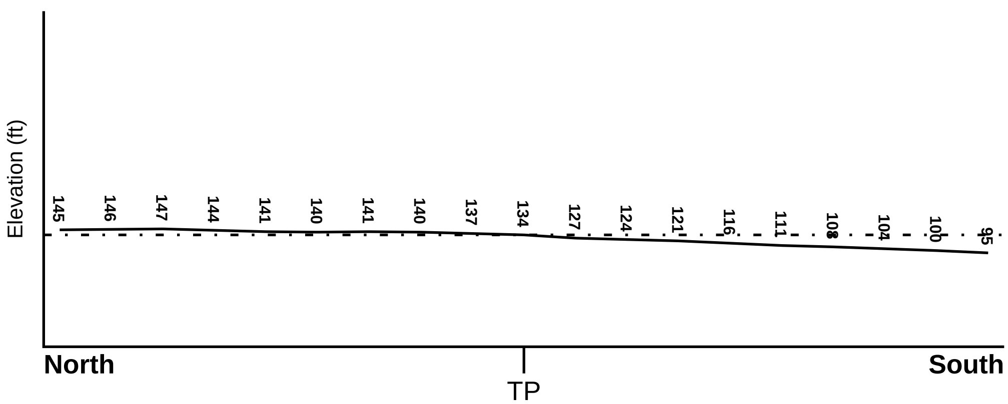
TOPOGRAPHIC INFORMATION

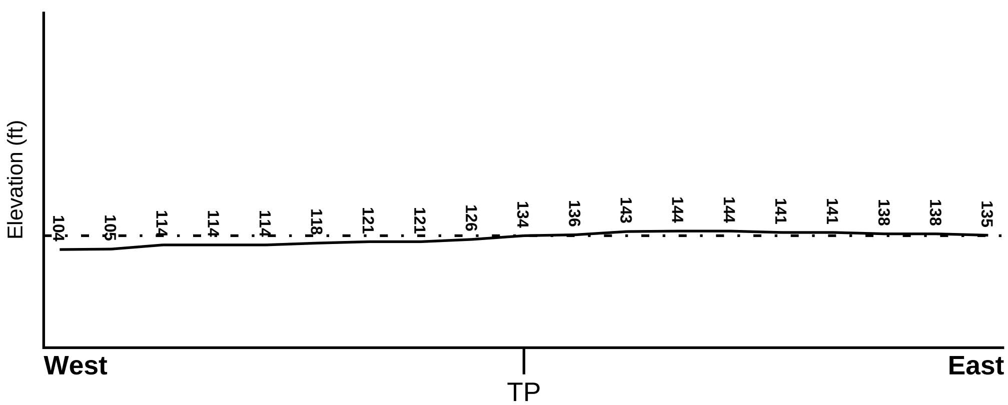
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 134 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
MONTEREY, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06053C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SALINAS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

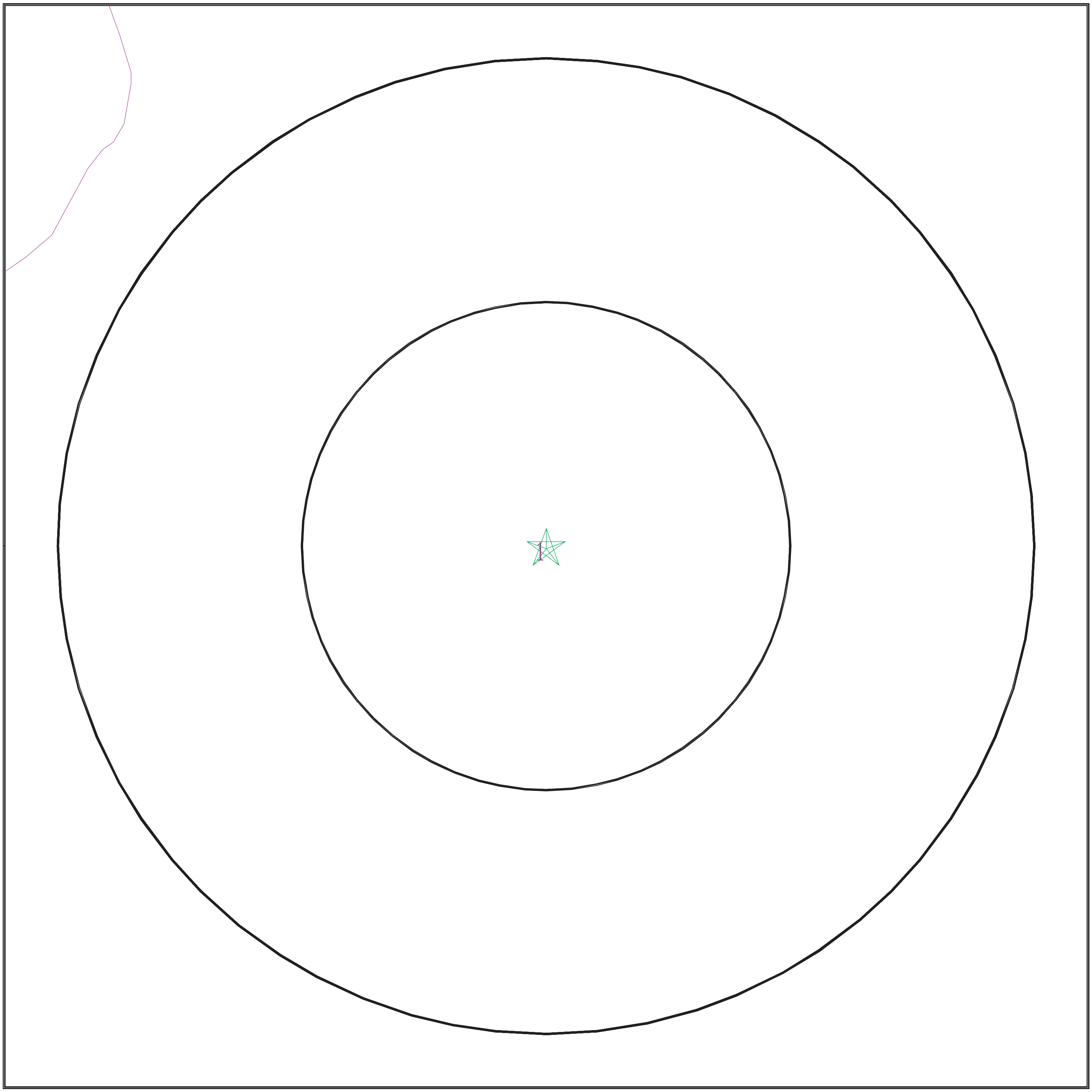
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4358345.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

SITE NAME:	City of Salinas - WASP
ADDRESS:	City of Salinas - WASP Salinas CA 93906
LAT/LONG:	36.7229 / 121.6343
CLIENT:	Geocon Consultants, Inc.
CONTACT:	Kristeen Bennett
INQUIRY #:	4358345.2s
DATE:	July 17, 2015 8:36 pm

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Chualar

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		Soil Reaction (pH)
1	0 inches	20 inches	loam	Not reported	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 7.8 Min: 6.1
2	20 inches	44 inches	sandy clay loam	Not reported	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 6.1
3	44 inches	59 inches	gravelly sandy loam	Not reported	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 4 Min: 1.4	Max: 8.4 Min: 6.1
4	59 inches	79 inches	gravelly coarse sand	Not reported	COARSE-GRAINED SOILS, Sands, Clean Sands, Well-graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 6.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000176960	1/2 - 1 Mile NNE
2	USGS40000176970	1/2 - 1 Mile NNE
3	USGS40000176984	1/2 - 1 Mile North
4	USGS40000176900	1/2 - 1 Mile West
7	USGS40000176836	1/2 - 1 Mile WSW
8	USGS40000177032	1/2 - 1 Mile NNW
9	USGS40000176955	1/2 - 1 Mile ENE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

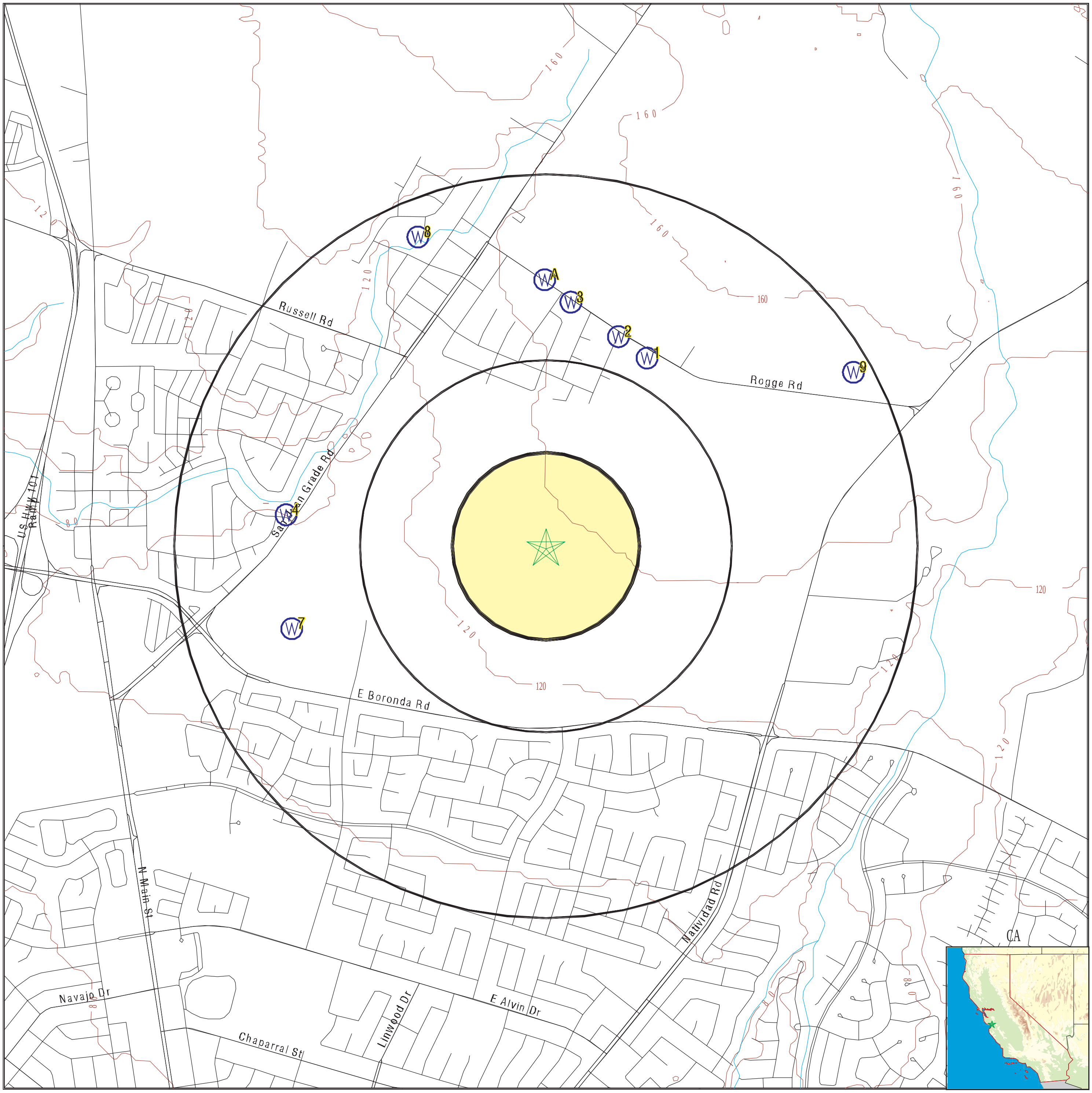
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A5	12057	1/2 - 1 Mile North
A6	12058	1/2 - 1 Mile North

PHYSICAL SETTING SOURCE MAP - 4358345.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	City of Salinas - WASP	CLIENT:	Geocon Consultants, Inc.
ADDRESS:	City of Salinas - WASP Salinas CA 93906	CONTACT:	Kristeen Bennett
		INQUIRY #:	4358345.2s
LAT/LONG:	36.7229 / 121.6343	DATE:	July 17, 2015 8:36 pm

Map ID Direction Distance Elevation		Database	EDR ID Number
1 **NNE** **1/2 - 1 Mile** **Higher**		**FED USGS**	**USGS40000176960**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364349121374201		
Monloc name:	014S003E10F003M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18060011	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.7302367
Longitude:	-121.6293898	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	148.60
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	706
Welldepth units:	ft	Wellholedepth:	706
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

2 **NNE** **1/2 - 1 Mile** **Higher**		**FED USGS**	**USGS40000176970**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364352121374701		
Monloc name:	014S003E10E004M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18060011	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.73107
Longitude:	-121.6307788	Sourcemap scale:	24000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	146.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19490101	Welldepth:	480
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

3
North
1/2 - 1 Mile
Higher

FED USGS **USGS40000176984**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364357121375701		
Monloc name:	014S003E10E003M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18060011	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.7324167
Longitude:	-121.6330833	Sourcemap scale:	24000
Horiz Acc measure:	.5	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	145.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19551210	Welldepth:	619
Welldepth units:	ft	Wellholedepth:	619
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1956-01-01	160.00	

4
West
1/2 - 1 Mile
Lower

FED USGS **USGS40000176900**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364327121384501		
Monloc name:	014S003E09P003M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18060011	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.7241255
Longitude:	-121.6468903	Sourcemap scale:	24000

Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	100.00
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19710311	Welldepth:	600
Welldepth units:	ft	Wellholedepth:	611
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

A5
North
1/2 - 1 Mile
Higher

CA WELLS 12057

Water System Information:

Prime Station Code:	14S/03E-10E03 M	User ID:	HEN
FRDS Number:	2710010034	County:	Monterey
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	364400.0 1213800.0	Precision:	Undefined
Source Name:	WELL 103-01		
System Number:	2710010		
System Name:	CWSC Salinas		
Organization That Operates System:			
	P.O. Box 1150		
	San Jose, CA 95108		
Pop Served:	100300	Connections:	1313
Area Served:	PORTION OF SALINAS		
Sample Collected:	12-JAN-06	Findings:	37.745 MG/L
Chemical:	NITRATE (AS NO3)		

A6
North
1/2 - 1 Mile
Higher

CA WELLS 12058

Water System Information:

Prime Station Code:	14S/03E-10E04 M	User ID:	HEN
FRDS Number:	2710010035	County:	Monterey
District Number:	05	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Destroyed
Source Lat/Long:	364400.0 1213800.0	Precision:	Undefined
Source Name:	WELL 104-01 - DESTROYED		
System Number:	2710010		
System Name:	CWSC Salinas		
Organization That Operates System:			
	P.O. Box 1150		
	San Jose, CA 95108		
Pop Served:	100300	Connections:	1313
Area Served:	PORTION OF SALINAS		

Map ID Direction Distance Elevation	Database	EDR ID Number
7 **WSW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000176836**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364311121384401		
Monloc name:	014S003E14C001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18060001	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.7196811
Longitude:	-121.6466125	Sourcemap scale:	Not Reported
Horiz Acc measure:	Unknown	Horiz Acc measure units:	Unknown
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation	Database	EDR ID Number
8 **NNW** **1/2 - 1 Mile** **Lower**	**FED USGS**	**USGS40000177032**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364406121382201		
Monloc name:	014S003E09B001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18060011	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.7349588
Longitude:	-121.6405013	Sourcemap scale:	24000
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	118.00
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19551130	Welldepth:	428
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1955-12-13	95.00	

9
ENE
1/2 - 1 Mile
Higher

FED USGS **USGS40000176955**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364347121370601		
Monloc name:	014S003E10F002M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18060011	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.7296813
Longitude:	-121.6193895	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	146.80
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	300
Welldepth units:	ft	Wellholedepth:	300
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93906	107	2

Federal EPA Radon Zone for MONTEREY County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93906

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	-0.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

City of Salinas - WASP
City of Salinas - WASP
Salinas, CA 93906

Inquiry Number: 4358345.9
July 22, 2015

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:

Aerial Photography July 22, 2015

Target Property:

City of Salinas - WASP

Salinas, CA 93906

Year	***Scale***	***Details***	***Source***
1956	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1956	Aero
1956	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1956	Aero
1968	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1968	USGS
1968	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1968	USGS
1971	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1971	Western
1971	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1971	Western
1981	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1981	USGS
1981	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1981	USGS
1987	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1987	USGS
1987	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1987	USGS
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
1998	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1998	USGS/DOQQ
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP

Year	***Scale***	***Details***	***Source***
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2009	Aerial Photograph. Scale: 1"=500'	Flight Year: 2009	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP

INQUIRY #: 4358345.9

YEAR: 1956

= 1000'


INQUIRY #: 4358345.9
YEAR: 1956
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N
EDR


INQUIRY #: 4358345.9
YEAR: 1968
N
= 1000'


INQUIRY #: 4358345.9
YEAR: 1968
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N
EDR

INQUIRY #: 4358345.9

YEAR: 1971

= 1000'

N


INQUIRY #: 4358345.9
YEAR: 1971
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N
EDR

INQUIRY #: 4358345.9

YEAR: 1981

= 1000'

N

EDR

INQUIRY #: 4358345.9
YEAR: 1981
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N
EDR


INQUIRY #: 4358345.9
YEAR: 1987
= 1000'
N
EDR


INQUIRY #: 4358345.9
YEAR: 1987
= 1000'
N
EDR


INQUIRY #: 4358345.9
YEAR: 1998
= 500'
N
EDR

INQUIRY #: 4358345.9

YEAR: 1998

= 500'

N

EDR

INQUIRY #: 4358345.9

YEAR: 1998

= 500'

N

INQUIRY #: 4358345.9

YEAR: 1998

= 500'

N

EDR


INQUIRY #: 4358345.9
YEAR: 1998
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 1998
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2005
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EDR


INQUIRY #: 4358345.9
YEAR: 2005
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N
EDR


INQUIRY #: 4358345.9
YEAR: 2005
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2005
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2005
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N
EDR


INQUIRY #: 4358345.9
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4358345.9

YEAR: 2009

= 500'

N

EDR


INQUIRY #: 4358345.9
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2009
= 500'
N


INQUIRY #: 4358345.9
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2009
= 500'
N
EDR

INQUIRY #: 4358345.9

YEAR: 2010

= 500'

N

EDR

INQUIRY #: 4358345.9
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 4358345.9

YEAR: 2010

= 500'


INQUIRY #: 4358345.9
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 4358345.9

YEAR: 2012

= 500'

N

EDR


INQUIRY #: 4358345.9
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 4358345.9

YEAR: 2012

= 500'

N

EDR


INQUIRY #: 4358345.9
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 4358345.9
YEAR: 2012
= 500'
N
EDR

City of Salinas - WASP
City of Salinas - WASP
Salinas, CA 93906

Inquiry Number: 4358345.4
July 18, 2015

EDR Historical Topographic Map Report

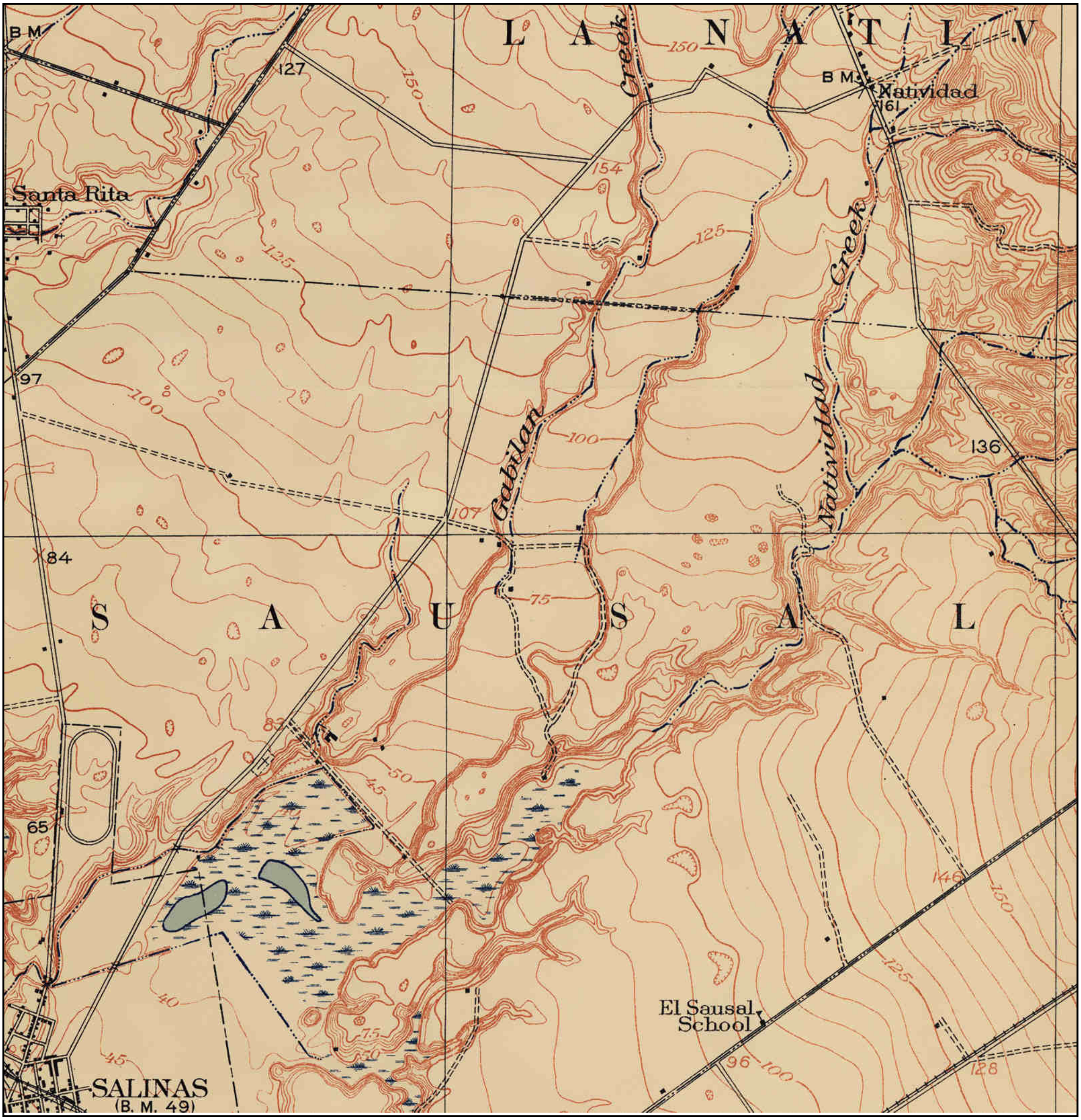
6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

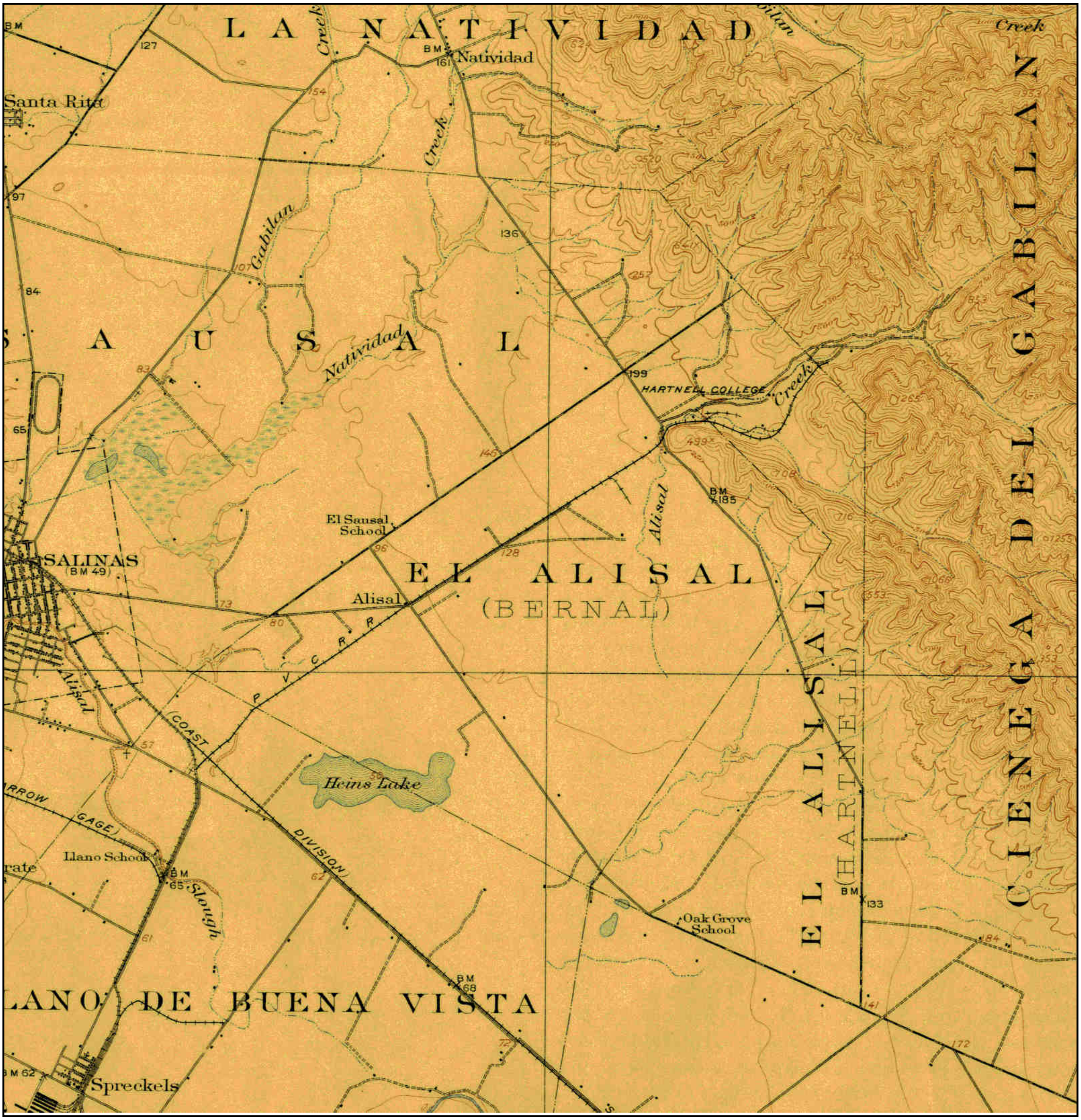
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map



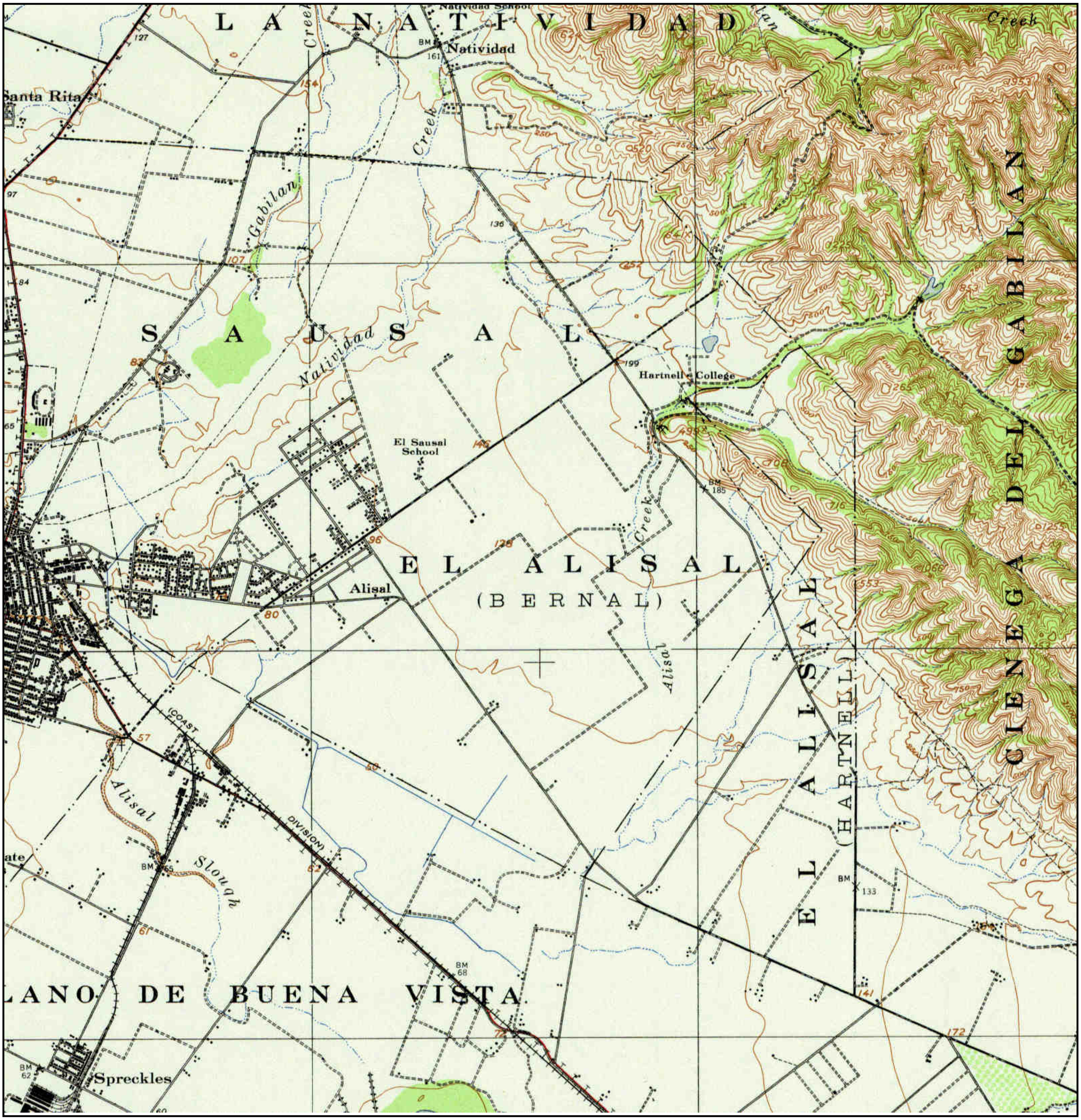
N	TARGET QUAD NAME: SALINAS VALLEY MAP YEAR: 1910 SERIES: 7.5 SCALE: 1:31680	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



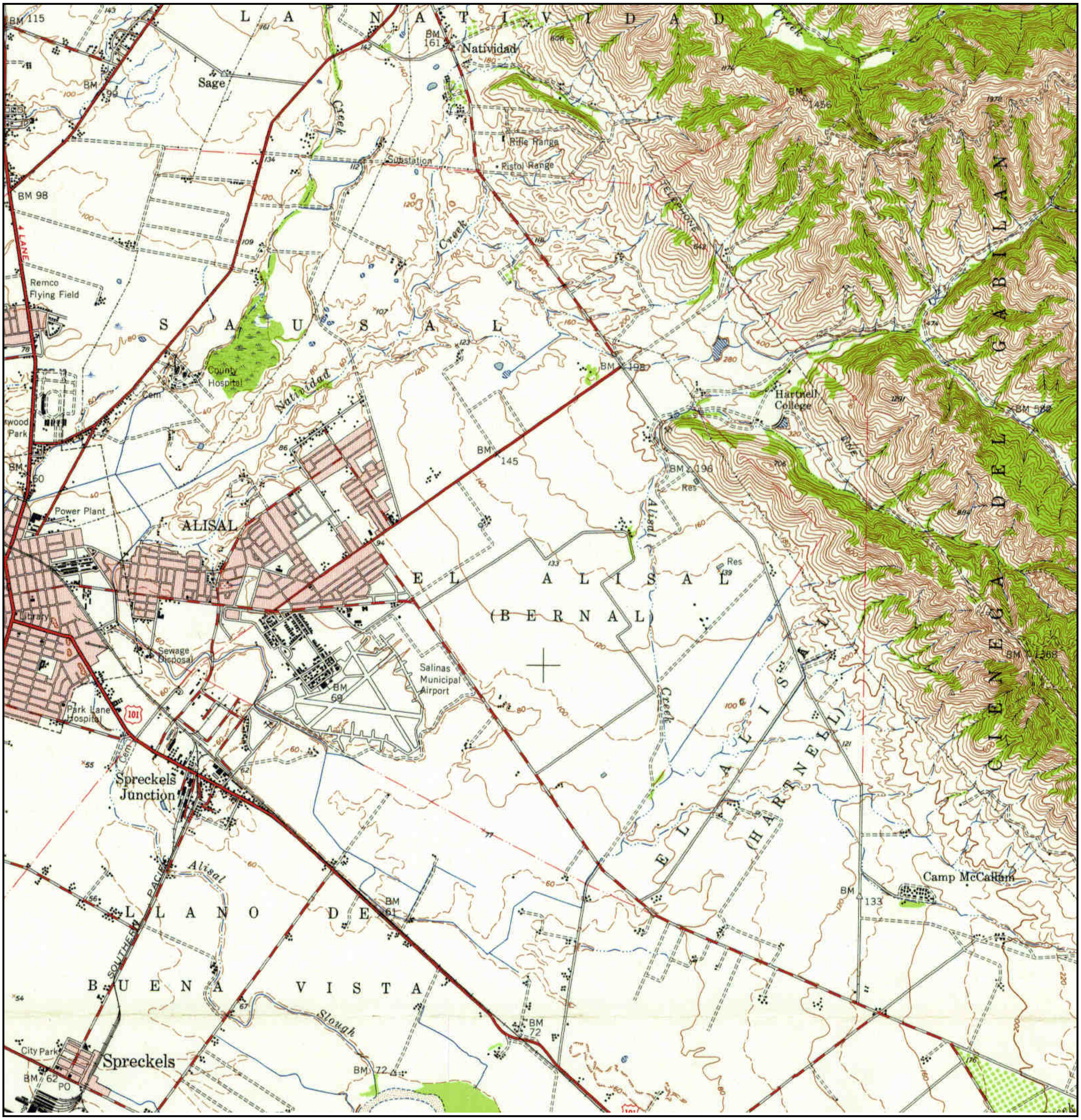
N	TARGET QUAD NAME: SALINAS MAP YEAR: 1912 SERIES: 15 SCALE: 1:62500	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



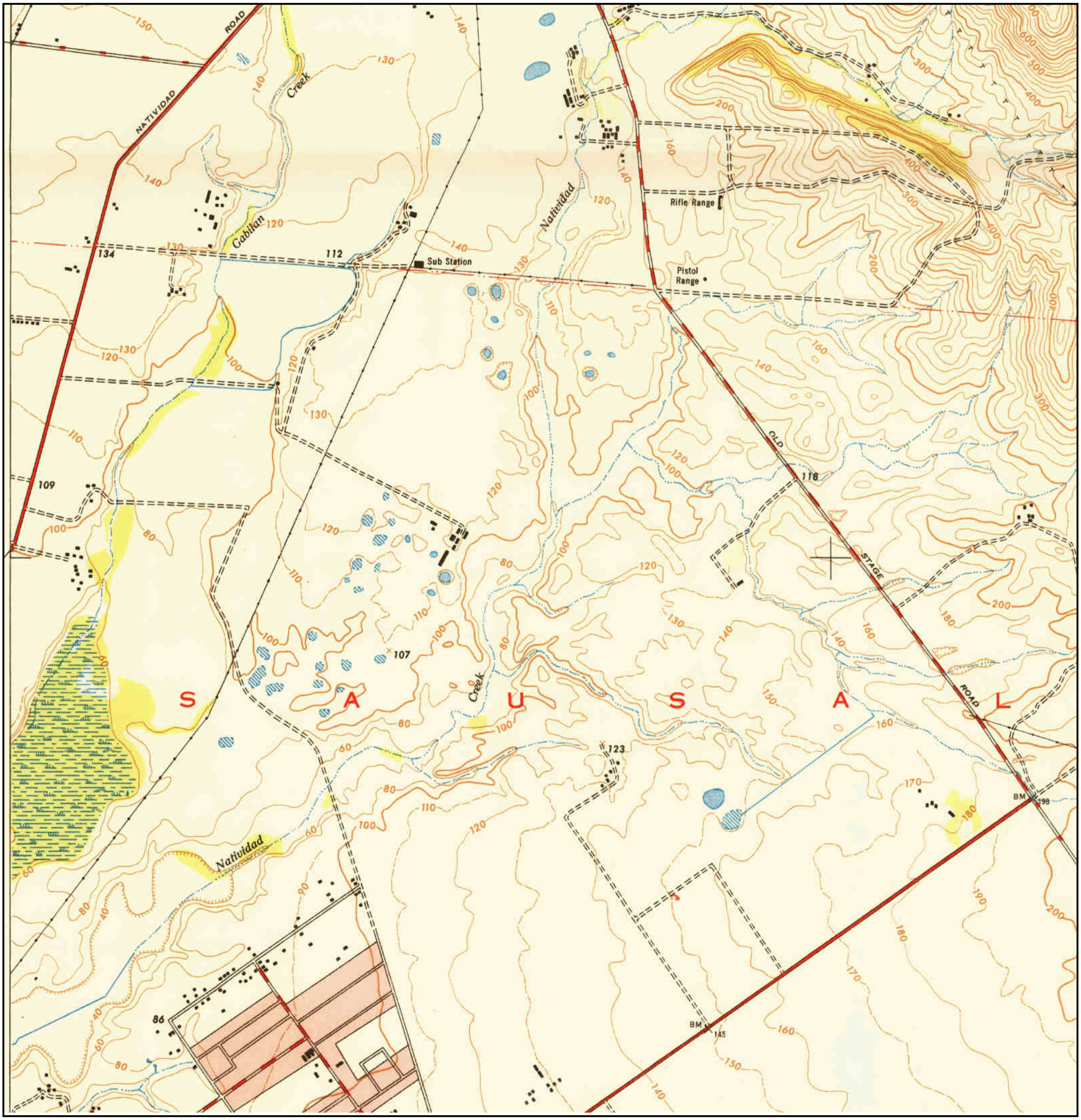
N	TARGET QUAD NAME: SALINAS MAP YEAR: 1940 SERIES: 15 SCALE: 1:62500	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



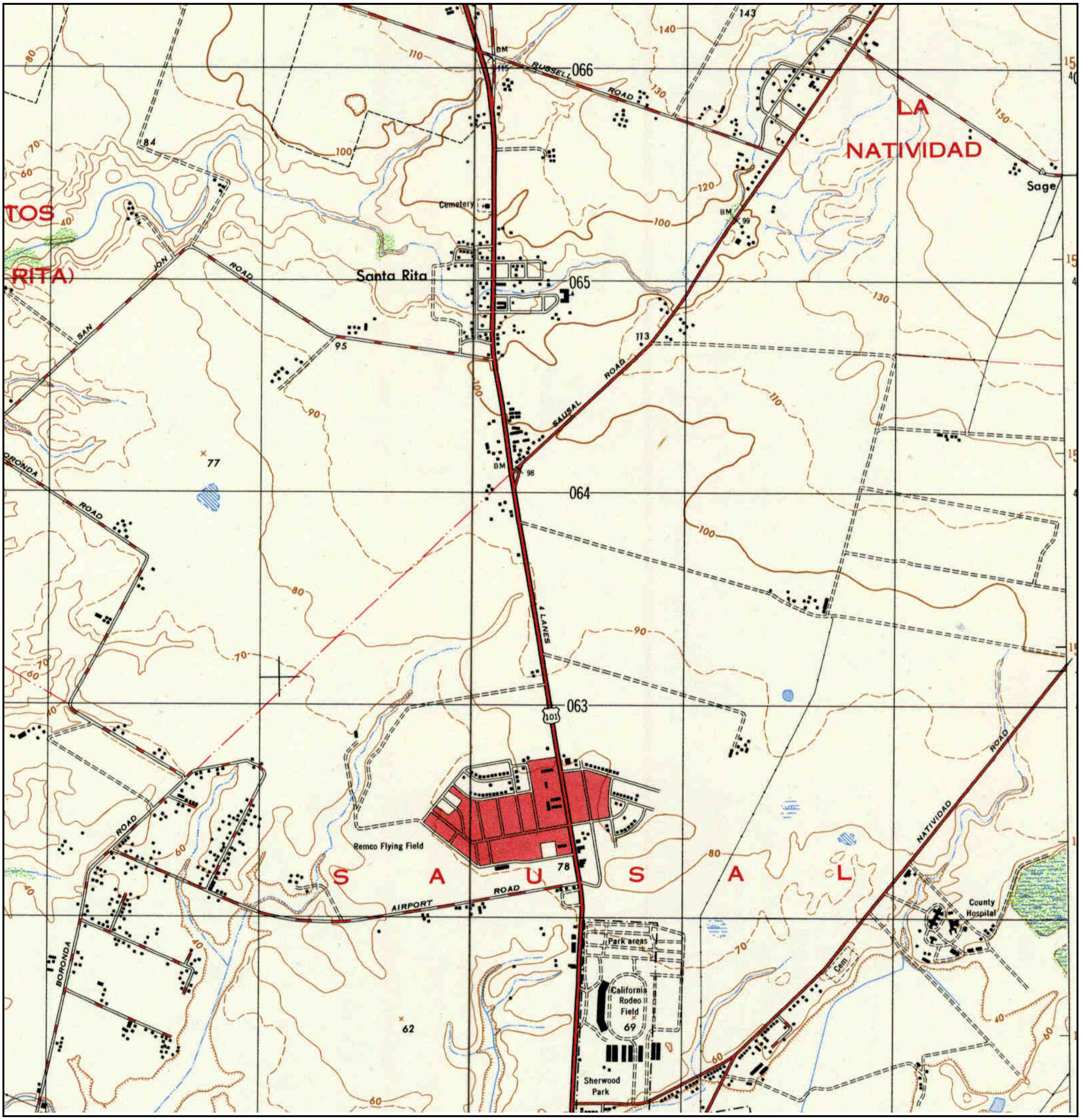
N ↑	TARGET QUAD NAME: SALINAS MAP YEAR: 1947 SERIES: 15 SCALE: 1:62500	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



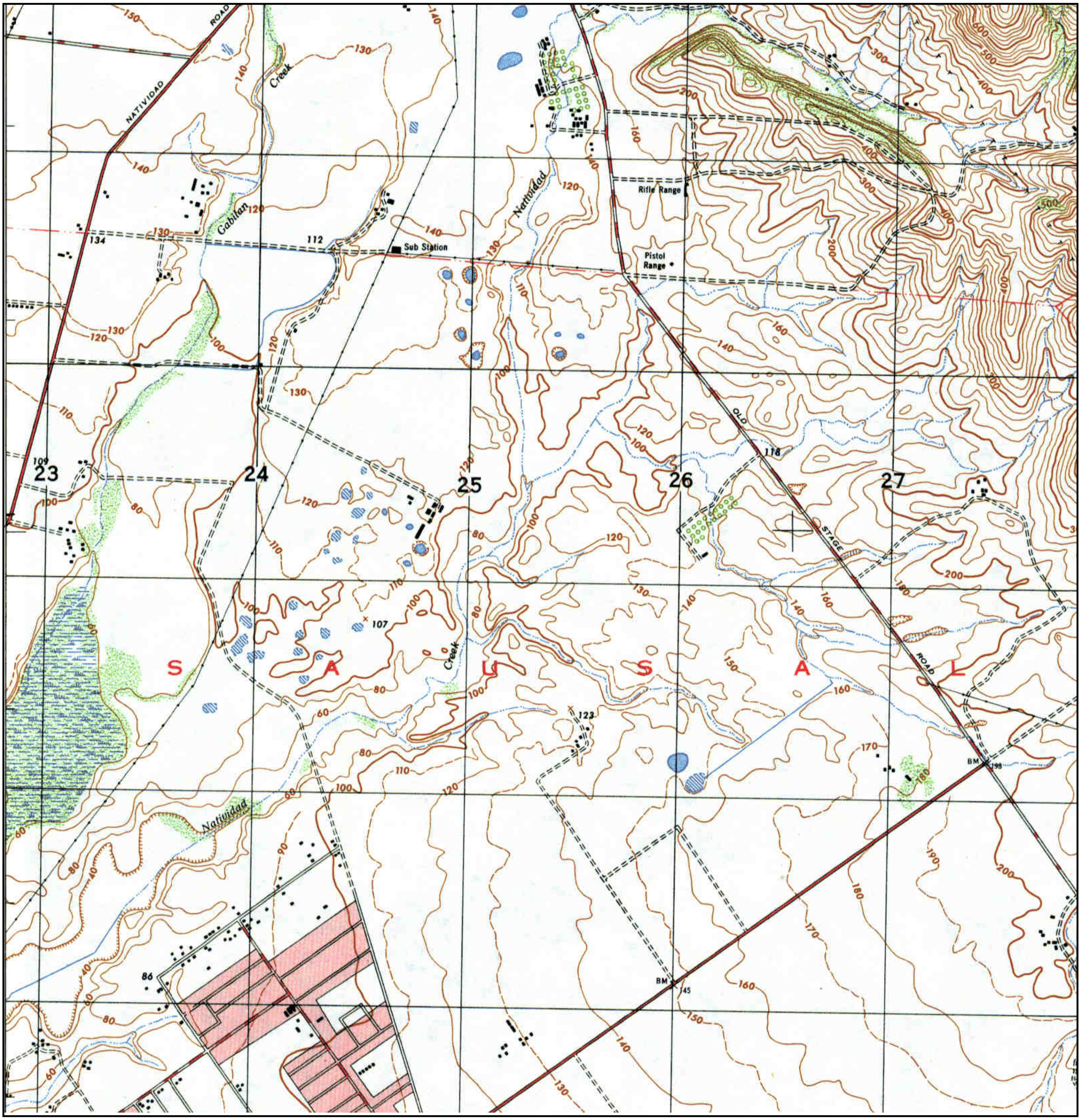
N	TARGET QUAD NAME: NATIVIDAD MAP YEAR: 1947 SERIES: 7.5 SCALE: 1:24000	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



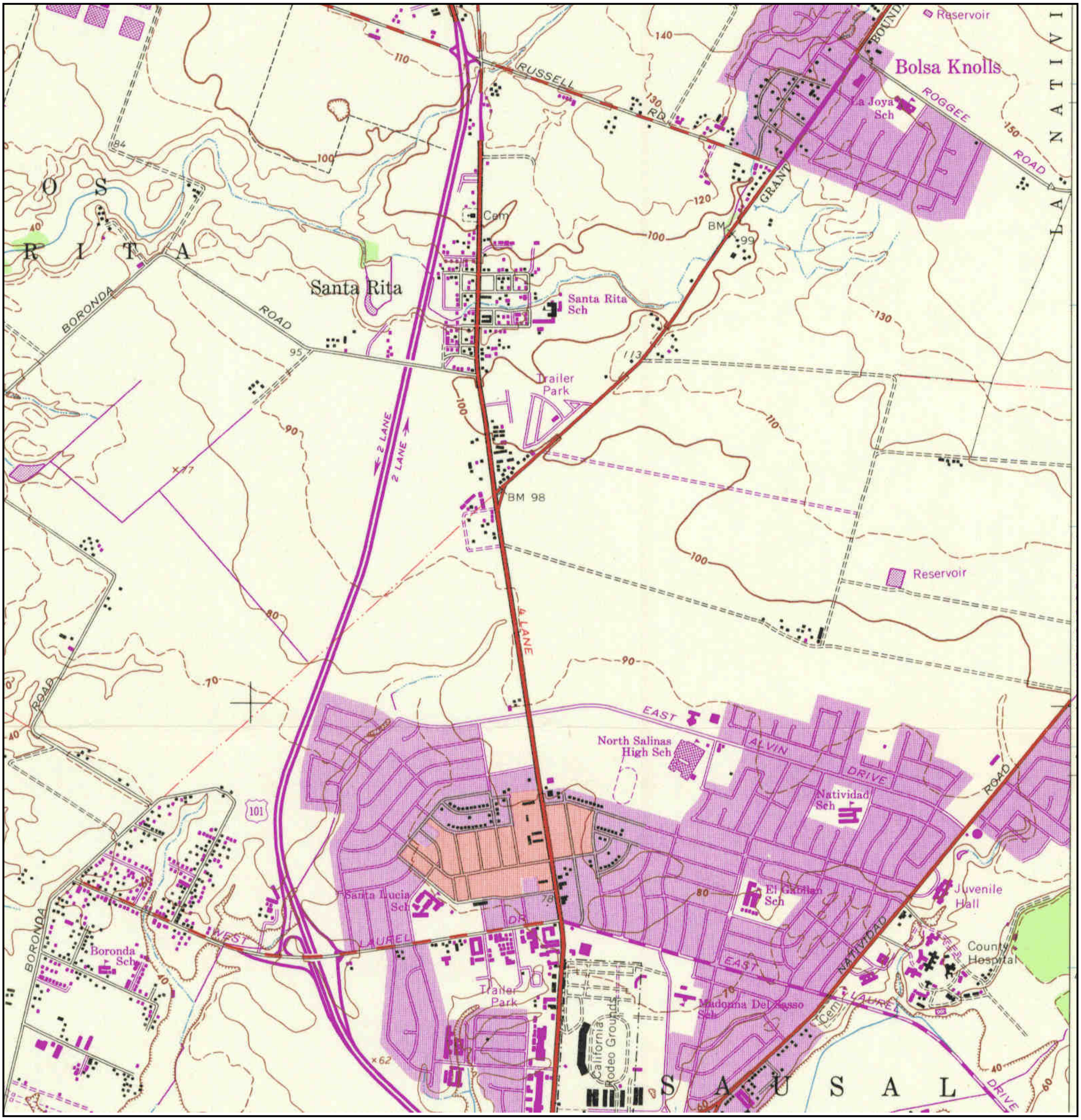
N	TARGET QUAD NAME: SALINAS MAP YEAR: 1948 SERIES: 7.5 SCALE: 1:25000	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



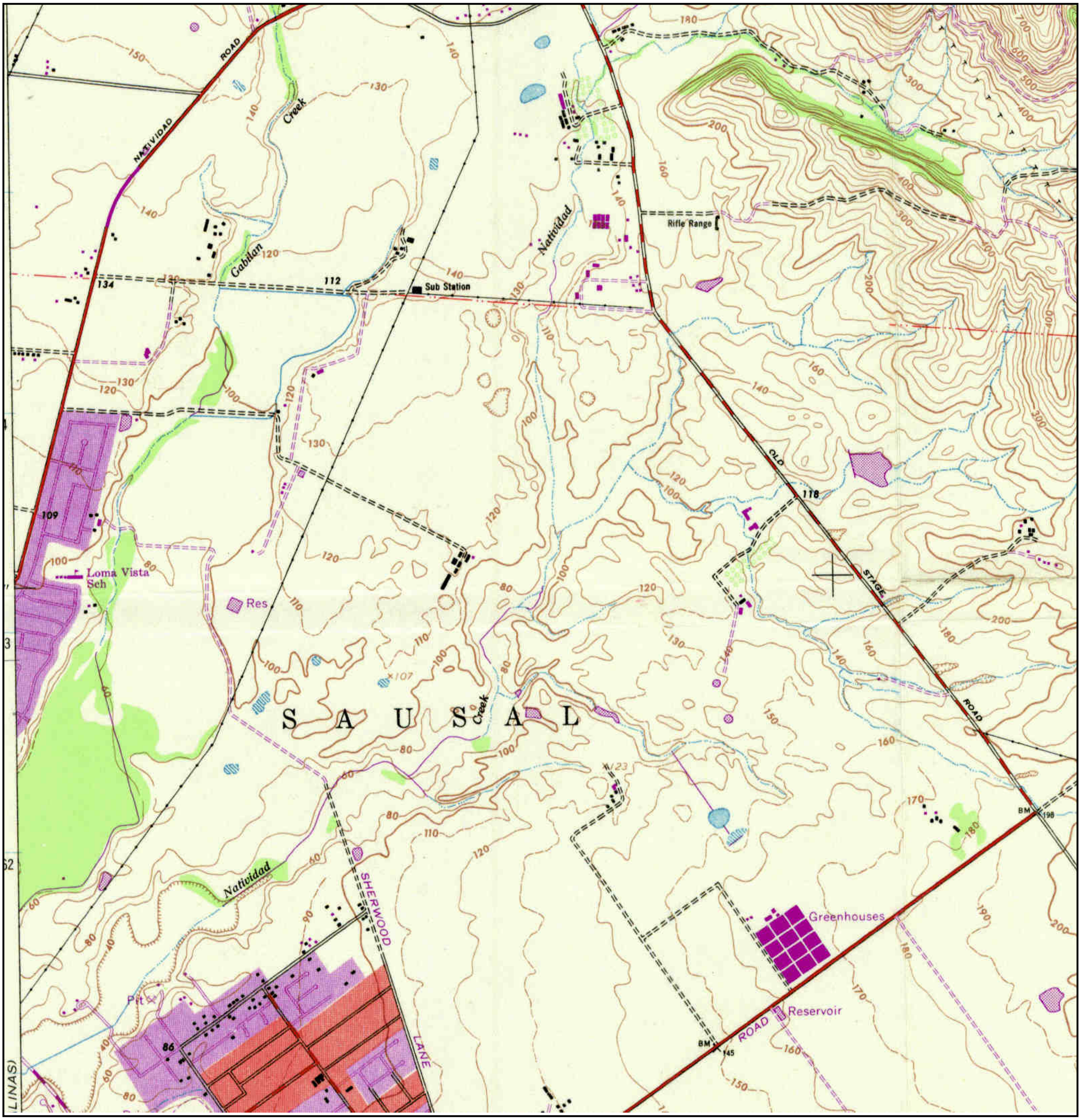
N	TARGET QUAD NAME: NATIVIDAD MAP YEAR: 1950 SERIES: 7.5 SCALE: 1:25000	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



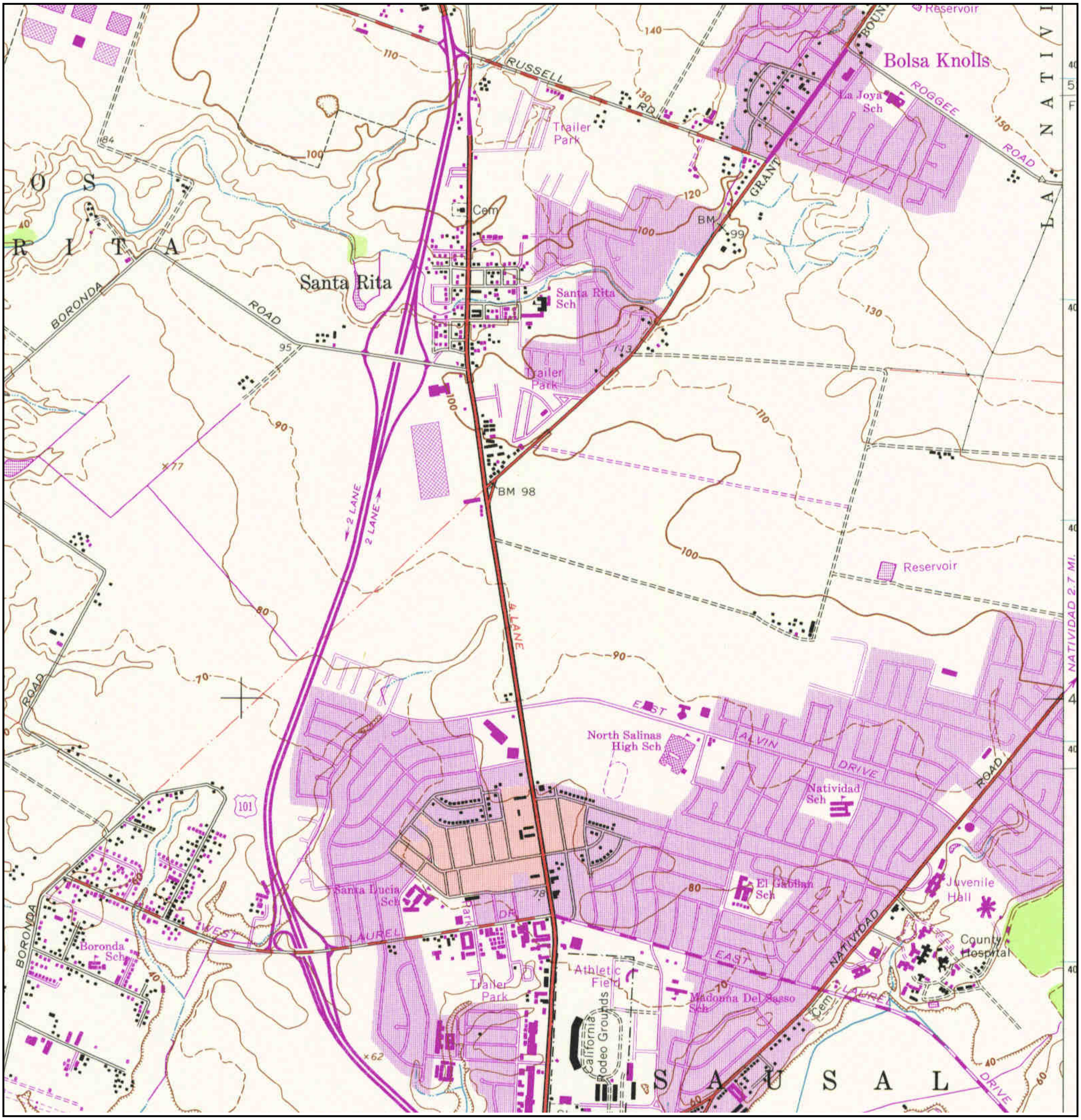
N ↑	TARGET QUAD NAME: SALINAS MAP YEAR: 1968 PHOTOREVISED FROM :1947 SERIES: 7.5 SCALE: 1:24000	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



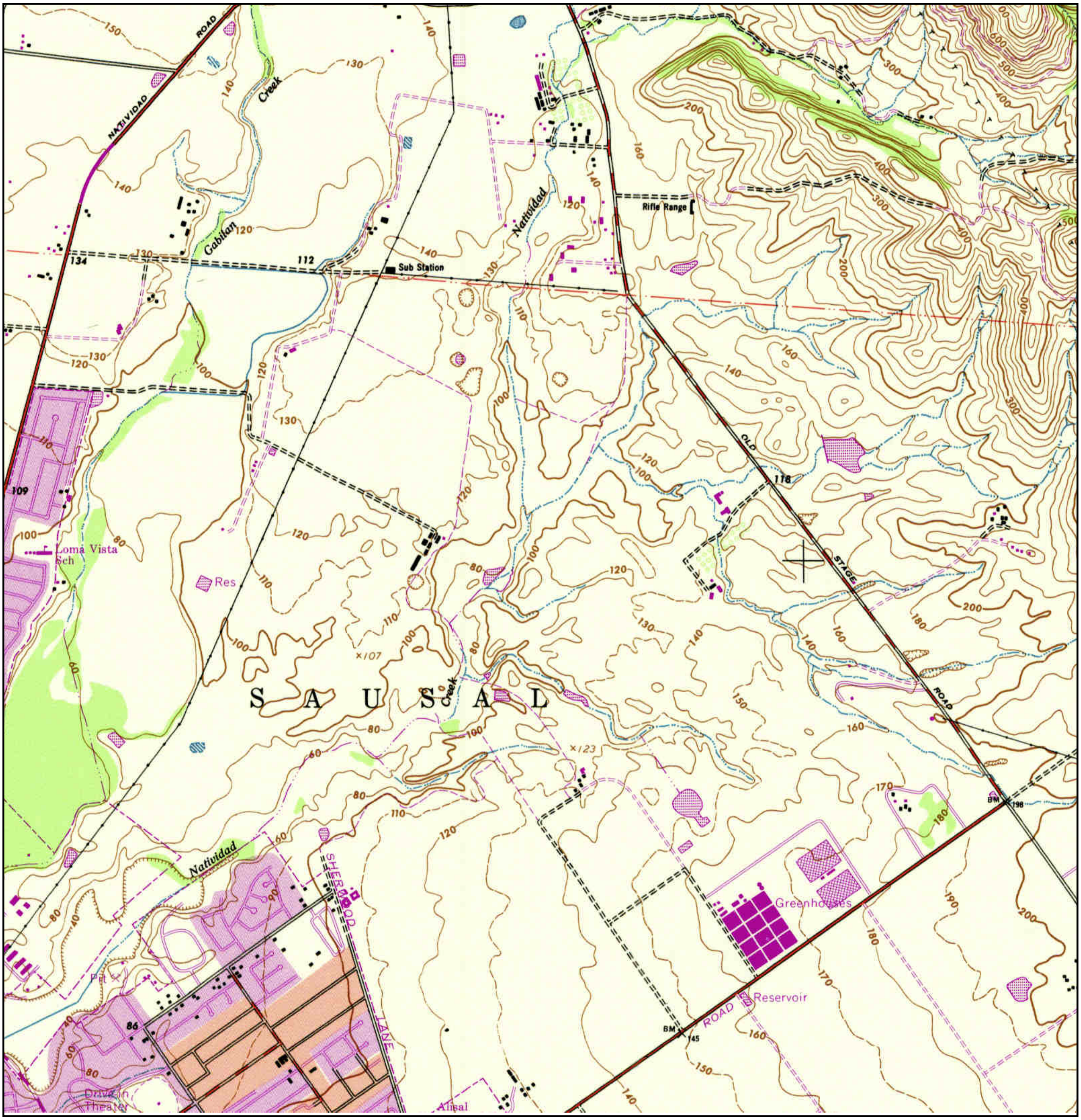
N	TARGET QUAD NAME: NATIVIDAD MAP YEAR: 1968 PHOTOREVISED FROM :1947 SERIES: 7.5 SCALE: 1:24000	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



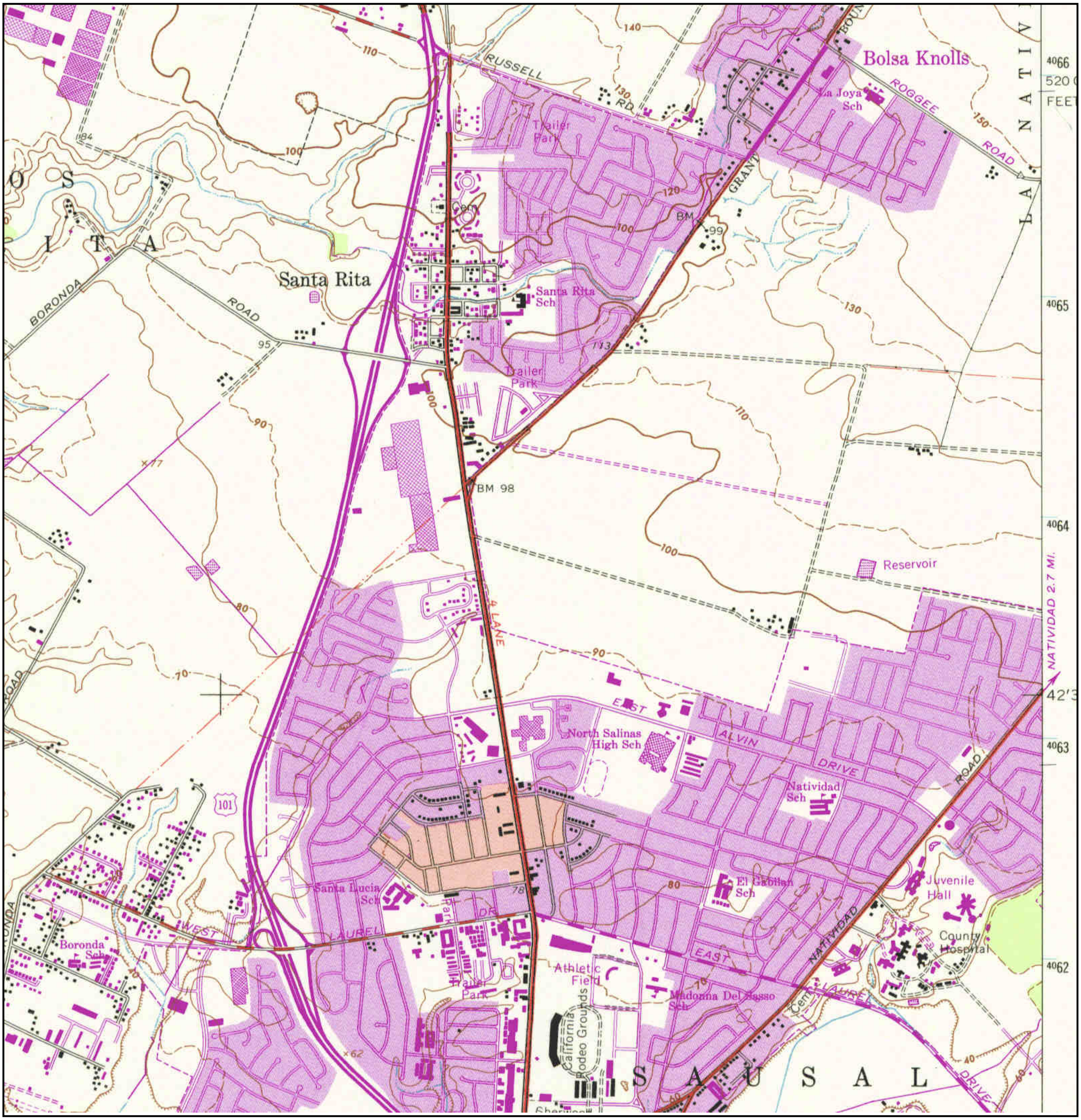
N	TARGET QUAD NAME: SALINAS MAP YEAR: 1975 PHOTOREVISED FROM :1947 SERIES: 7.5 SCALE: 1:24000	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



N	TARGET QUAD NAME: NATIVIDAD MAP YEAR: 1984 PHOTOREVISED FROM :1947 SERIES: 7.5 SCALE: 1:24000	SITE NAME: City of Salinas - WASP ADDRESS: City of Salinas - WASP Salinas, CA 93906 LAT/LONG: 36.7229 / -121.6343	CLIENT: Geocon Consultants, Inc. CONTACT: Kristeen Bennett INQUIRY#: 4358345.4 RESEARCH DATE: 07/18/2015

Historical Topographic Map



	TARGET QUAD				
N	NAME: SALINAS	SITE NAME:	City of Salinas - WASP	CLIENT:	Geocon Consultants, Inc.
	MAP YEAR: 1984	ADDRESS:	City of Salinas - WASP	CONTACT:	Kristeen Bennett
	PHOTOREVISED FROM :1947		Salinas, CA 93906	INQUIRY#:	4358345.4
	SERIES: 7.5	LAT/LONG:	36.7229 / -121.6343	RESEARCH DATE:	07/18/2015
	SCALE: 1:24000				

City of Salinas - WASP
City of Salinas - WASP
Salinas, CA 93906

Inquiry Number: 4358345.5
July 24, 2015

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☐	☑	Cole Information Services
2008	☐	☑	Cole Information Services
2003	☐	☑	Cole Information Services
1999	☐	☑	Cole Information Services
1995	☐	☑	Cole Information Services
1992	☐	☑	Cole Information Services
1987	☐	☑	Polk's City Directory
1981	☐	☑	Polk's City Directory
1976	☐	☑	Polk's City Directory
1971	☐	☑	Polk's City Directory
1965	☐	☑	Polk's City Directory
1960	☐	☑	Polk's City Directory

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

City of Salinas - WASP
Salinas, CA 93906

No Addresses Found

FINDINGS

CROSS STREETS

E BORONDA RD

Year	CD Image	Source	
2013	pg. A1	Cole Information Services	
2008	pg. A14	Cole Information Services	
2003	pg. A27	Cole Information Services	
1999	-	Cole Information Services	Target and Adjoining not listed in Source
1995	pg. A51	Cole Information Services	
1992	-	Cole Information Services	Target and Adjoining not listed in Source
1987	-	Polk's City Directory	Street not listed in Source
1981	-	Polk's City Directory	Street not listed in Source
1976	-	Polk's City Directory	Street not listed in Source
1971	-	Polk's City Directory	Street not listed in Source
1965	-	Polk's City Directory	Street not listed in Source
1960	-	Polk's City Directory	Street not listed in Source

NATIVIDAD RD

Year	CD Image	Source
2013	pg. A2	Cole Information Services
2008	pg. A15	Cole Information Services
2003	pg. A28	Cole Information Services
1999	pg. A39	Cole Information Services
1995	pg. A52	Cole Information Services
1992	pg. A63	Cole Information Services
1987	pg. A71	Polk's City Directory
1987	pg. A72	Polk's City Directory
1987	pg. A73	Polk's City Directory
1981	pg. A79	Polk's City Directory
1981	pg. A80	Polk's City Directory
1976	pg. A84	Polk's City Directory
1976	pg. A85	Polk's City Directory
1971	pg. A90	Polk's City Directory
1971	pg. A91	Polk's City Directory
1965	pg. A95	Polk's City Directory
1965	pg. A96	Polk's City Directory
1960	pg. A97	Polk's City Directory

FINDINGS

Year	CD Image	Source	
1960	pg. A98	Polk's City Directory	

ROGGE RD

2013	pg. A7	Cole Information Services	
2008	pg. A20	Cole Information Services	
2003	pg. A32	Cole Information Services	
1999	pg. A44	Cole Information Services	
1995	pg. A56	Cole Information Services	
1992	pg. A67	Cole Information Services	
1987	pg. A74	Polk's City Directory	
1981	pg. A81	Polk's City Directory	
1976	pg. A86	Polk's City Directory	
1971	pg. A92	Polk's City Directory	
1965	-	Polk's City Directory	Street not listed in Source
1960	-	Polk's City Directory	Street not listed in Source

SAN JUAN GDN RD

1995	pg. A57	Cole Information Services

SAN JUAN GRADE RD

2013	pg. A8	Cole Information Services
2008	pg. A21	Cole Information Services
2003	pg. A33	Cole Information Services
1999	pg. A45	Cole Information Services
1995	pg. A62	Cole Information Services
1992	pg. A68	Cole Information Services
1987	pg. A75	Polk's City Directory
1987	pg. A76	Polk's City Directory
1987	pg. A77	Polk's City Directory
1987	pg. A78	Polk's City Directory
1981	pg. A82	Polk's City Directory
1981	pg. A83	Polk's City Directory
1976	pg. A87	Polk's City Directory
1976	pg. A88	Polk's City Directory
1976	pg. A89	Polk's City Directory

FINDINGS

Year	CD Image	Source	
1971	pg. A93	Polk's City Directory	
1971	pg. A94	Polk's City Directory	
1965	-	Polk's City Directory	Street not listed in Source
1960	-	Polk's City Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✓	Cole Information Services

E BORONDA RD 2013

600	MCDONALDS
608	ENVISAGE REALTY INC
	GREENFIELD & SALINAS DENTAL GROUP
	KSEA LA CAMPESINA 1079 FM
	REALTY & HOME LOANS SALINAS
	TAN DANNY DDS
612	RADIOSHACK
616	PAPA MURPHYS TAKE N BAKE PIZZA
640	FIESTA FOODS
662	CVS PHARMACY
684	RED ROSE FLOWERS

NATIVIDAD RD 2013

2	LUCIA GONZALEZ
	M SOSA
	MARIA MENCHACA
4	GLORIA CALDERON
6	RAFAEL MENDOZA
8	IMELDA OJEDA
10	FEDERICO ZAVALA
12	MODESTO TORRES
16	AMBER RYKOWSKI
	ANA RAMIREZ
	CYNTHIA COLON
	E JON
	ELIZABETH PIMENTEL-ALVAREZ
	JAVIER GARCIA
	JESUS HERNANDEZ
	JON BEST
	JOSE BONILLA
	JOSE CERVANTES
	JOSE LOPEZ
	JUAN CABELLO
	MARTHA ORDAZ
	MARTIN CERVANTES
	MARTINEZ MARICAL
	MINERVA GOMEZ
	ROSENDO RODRIGUEZ
	ROY GUERRERO
	THORNDIKE APARTMENTS
	WUILVER CABRERA
20	ALMA PEREZ
22	JOAQUIN GOMEZ
24	ROMULO DIAZ
	SALINAS VALLEY PRIVATE SECURITY
25	JUAN AVILEZ
26	CHRISTIAN POKORN
28	CHRISTOPHER CHAVEZ
30	ARTURO MIRELES
32	LINCOLN FRAZIER
34	AUDELIA MONTOYA
	AUSENCIO ANGUIANO
	CHACON SANCHEZ
	CLAUDIA RAMIREZ
	JORGE ESPINOZA
	OCCUPANT UNKNOWN
	OSCAR SEVANO
36	ESTHER CORTES
44	ALFONSO SEDANO
	ANGEL HERNANDEZ
	ANGELINA RAMOS
	ARTEMIO MONZALBO
	AURORA ESTRADA

NATIVIDAD RD 2013 (Cont'd)

44	BILLIE PAYNE
	CARLOS RIVERA
	CLARISSA HALL
	CURTIS MONTGOMERY
	DANIEL ARCE
	EPIFANIO CHACON
	FRANCISCO NORIEGA
	GILBERT AGUIRRE
	HANNIBAL BATISTIANA
	JOEL GARCIA
	JUAN IBARRA
	JUAN OLIVARES
	LORENA FLOREZ
	MAGDALENA CENDEJA
	MARIA MARTINEZ
	NICOLE SANDOVAL
	PATRICIA ROWLAND
	PEDRO CARRIEDO
	RAQUEL JACOBO
	SANJUANA FERNANDEZ
	SARA CARRILLO
	SHIRLEY VIALINO
	VALINE ANDERSON
	VICENTE CABALLERO
	WILLIAM COFER
48	AARON SCHWEITZER
	CHRISTIAN ZAVALA
	OCCUPANT UNKNOWN
50	CATHY BARRIOS
	FIDEL RODRIGUEZ
	ISABEL ALVAREZ
54	ADRIANA CONTRERAS
	BRUCE FRAZURE
	CANDIDO BAROCIO
	CINITA ANGVIANO
	DIANA LARA
	ENID CRUZ
	ERNESTO GOMEZ
	IRMA ARANDA
	JESSE LOPEZ
	JESUS GONZALEZ
	JOSE CAUDILLO
	JUAN HERNANDEZ
	LIDIA GALINDO
	LUCIA QUINTERO
	MARGARITA DELREAL
	MARIA AGUAYO
	MARIA BARAJAS
	MARIA VILLASENOR
	MARY SEABORNE

NATIVIDAD RD 2013 (Cont'd)

54	MAURILIO ORTIZ
	MIRTA RUIZ
	NOA CHACON
	REGINO INZUNZA
	RODOLFO ALVAREZ
	ROSALBA CHAVEZ
	VEGA INVESTMENTS
	YESENIA RUIZ
55	ASSEMBLY OF GODNORTHSIDE
56	LARIE BLACK
57	EFRAIN ZAVALZA
	ENEDINA DANIEL
	ENEDINA PEREZ
	LETICIA MARTIMEZ
	MARIA SAUCEDO
	STEVEN CABRERA
58	AGUSTIN ROMO
	ALCALA NANCY
	ALEJANDRA ALCALA
	ALFREDO ZALDIVAR
	ANTONIA ESPINOZA
	CAITLIN COATS
	CHRISTOPHER BAGE
	CRUZ SALDANA
	DEBRA TELLO
	ELVIE MUYCO
	HUMBERTO GARCIA
	IRACEMA LOPEZ
	IRMA CARDONA
	JANA EWING
	JANNETH BARRON
	JEANNETTE COPAS
	JOHN PHILLIPS
	JONES ASHLEY
	JOSE RODRIGUEZ
	JOSEFINA HURTADO
	JUAN BAROCIO
	LUIS RAMIREZ
	MARIA JIMENEZ
	MARIA MENDOZA
	MARILYN RUEDA
	MARIO RAMOS
	MARLAND STEEPLES
	MARY PRICE
	MONIQUE GONZALES
	N GAXIOLA
	RENEE CASH
	SALVADOR PARRA
	TOMAS LEYVA
	TROY BEARDEN

NATIVIDAD RD 2013 (Cont'd)

58	URIEL MELGOZA
	ZULEMA ALVARADO
61	OCCUPANT UNKNOWN
	VICTOR CERVANTES
220	JULIA CHRISTENSEN
235	SMITH BONDESEN
250	JOHN SETTRINI
251	CHARLES EMLAY
256	MARIA GARCIA
357	IWAMOTO FARMS
	KONDO FARMS
	NATIVIDAD NURSERY
359	WILLIAM ALEXANDER
376	GUADALUPE SUAREZ
394	ESPERANZA CORTEZ
398	CHIZUKO TSURUMOTO
	TOYO FARMS
402	MICHAEL LOCKARD
	NATIVIDAD STABLES
	OCCUPANT UNKNOWN
	PATRICK BALLEW
	SHELBY LOCKARD
430	DAVID WALL
474	SAN GUERRERO
1270	COUNTY OF MONTEREY
	MONTEREY COUNTY HEALTH DEPARTMENT
1326	CHEN CHIENFANG MD FAMILY PRACTICE
	HUNTER LABORATORIES
	VIRAY VAL JR DDS
1328	ADAME MARK J MD
	CAMBIER DOUGLAS C MD
	CLIFT KATHY A PAC
	HOFFMAN JAMES K MD
	READER CARRIE L MPAS
	SALINAS FAMILY PRACTICE
1330	COUNTY OF MONTEREY
	DICKINSON SHIRLEY MD NATIVIDAD MEDIC
1332	CHAVEZ EUNICE PA C
	HARRY WENDELL MD
	OTANIAN SHANAZ PAC
	PAUDA MARIO J MD
	QUEST DIAGNOSTICS
	RADNER ALLEN MD
	ROSEN NORMAN MD
	SAGLIO BRENDA PA C
	SAGLIO STEPHEN D MD
	SHINGATE MANISHA MD
	VALLE VERDE MEDICAL GROUP
1336	BARCELO LAWRENCE MD
	DEL TORO VARGAS LUCIANO MD

NATIVIDAD RD 2013 (Cont'd)

1336	MARTINEZ EVANGELINA MD
	RODRIGUEZ ORLANDO MD
	ROMERO PABLO MD
	SANTA LUCIA MEDICAL GROUP INC
1410	COUNTY OF MONTEREY
1414	COUNTY OF MONTEREY
1420	COUNTY OF MONTEREY
1422	COUNTY OF MONTEREY
1903	WELLS FARGO
1909	CHINA ONE
1915	CONTRERAS INSURANCE
1921	GREAT CLIPS
1927	TAQUERIA EL FAMOSO
1933	CHIC NAILS
1939	SUBWAY SANDWICHES
1945	AT&T

ROGGE RD 2013

55	LA JOYA ELEMENTARY SCHOOL
	SANTA RITA UNION SCHOOL DISTRICT
69	OCCUPANT UNKNOWN
71	JASON CRUZ
100	JOSE VALENZUELA
101	TERRANCE KESELICA
102	LENORA MAY
103	NANCY TAYLOR
104	BEN KING
105	LOUIE RAMIREZ
107	ADRIAN ESPARZA
108	M RAMIREZ
795	MARIA BARRAZA
805	SERGIO GONZALEZ
815	MIGUEL EDEZA
825	EFRAIN VAZQUEZ
835	RICKIE WILLIAMS
845	CHRISSIE GRITZMACHER
855	OSCAR MARQUEZ
865	TERESA DESILVA
875	OCCUPANT UNKNOWN
885	SUMMER QUINTERO
895	CHRISTOPHER ALLEN
915	OCCUPANT UNKNOWN
925	OCCUPANT UNKNOWN
935	OCCUPANT UNKNOWN
945	OCCUPANT UNKNOWN
955	OCCUPANT UNKNOWN
965	OCCUPANT UNKNOWN
975	OCCUPANT UNKNOWN
985	OCCUPANT UNKNOWN
995	OCCUPANT UNKNOWN
1009	A ANGELES
	A OSEGUERA CO
1027	SANTA RITA TRANSPORTATION
1035	CROSSROADS CHRISTIAN CHURCH
1039	LARRY CRAWFORD
1043	OCCUPANT UNKNOWN
1047	OCCUPANT UNKNOWN
1099	VISTA LANDSCAPING
1100	CHRISTOPHER LENZ
1111	OCCUPANT UNKNOWN
1119	JASON HARBIN
1151	AMBER NORDIN
19624	KAY MAY
19658	GREGORIA TAGUIRAN
19670	COREY ROCAMORA
19682	JOHN PARKER
19700	MANUEL MELO

SAN JUAN GRADE RD 2013

25	REMAX COAST & COUNTRYSALINAS
27	HARDEN RANCH VETERINARY HOSPITAL
	RYAN HOGANS
55	AILINI AVEINA
	ALBERT WEBER
	ALFRED SASULES
	ANITA COWELL
	ANN NILSSON
	ANTHONY CRUZ
	ANTHONY SOUSA
	ARLENE RIOS
	ARMANDO BANUELOS
	BRIGID CUTINO
	BRUCE LAINE
	CARLOS ALDAPE
	CECILIA ARELLANO
	CHESTER LOPEZ
	CHRISTINE DRICHSWEILER
	CHUN KIM
	CLEM MORALES
	DAVID BURNES
	DEBORAH LEON
	DENNIS MARTINEZ
	DON THATCHER
	DONALD GUNDERSON
	DOROTHY STOUDT
	DUANE RICKS
	EARL FULLER
	EDWIN AVILA
	EUFROSINA PAREDES
	EVELYN COLOMA
	EVELYN SHEARER
	GLADYS GUNN
	GORDON TUCKER
	GRACIELA GARCIA
	IDA PRICE
	ISIDRO OLIVARES
	JAMES SERRANO
	JEAN CHAMBLESS
	JERRY SINGLEY
	JERRY WEBB
	JOE BRITANICO
	JOE SANTIAGO
	JOHN EVANS
	JONECE KIRBY
	JOSEFINA MONCAYO
	JUAN ORTIZ
	JULIA DELMURO
	JUNE GAGE
	KAZUKO SWIFT

SAN JUAN GRADE RD 2013 (Cont'd)

55	KEITH LEWIS
	LA CANADA MOBILE ESTATES
	LARRY KING
	LEONARD LAVORATO
	LIDIA ARROYO
	LOIS CHAVIS
	LONELLA JACKSON
	LUCILLE PALMER
	MARIO PAONESSA
	MARSHAL ROOT
	MARTHA WRING
	MICHAEL MILLAREZ
	NEMECIA LOMBOY
	PEGGY LANE
	PEGGY MYERS
	PHILLIP BEANE
	RALPH FREILINGER
	RALPH NORWOOD
	RALPH ONEIL
	RAYMOND PERDRIEL
	RICHARD CRANSTON
	ROBERT BLOCK
	ROBERTA STRANGER
	RON DAY
	ROSALIE MARCHY
	RUBY AMARO
	SANDRA CHANDLER
	SANDRA MENDOZA
	SUSIE KEHOE
	TERESA HENSON
	VALERIE STEUCK
	VERA SANDERS
	WILLIAM MEFALDA
75	JUAN NUNEZ
84	STAN PIFFERO
86	TINA KIRTLEY
109	BARBARA TRAYLOR
	DARLENE CASTILLO
	GONZALO MIRANDA
	HELEN RAMIREZ
	JUAN MARQUEZ
	MARCEL JIMENEZ
115	ADREANA CALDERON
	AMAL OSMAN
	ANGELA GRANT
	ANNETTE MACIAS
	CESAR NABOR
	CHRIS BERNAL
	DAVID JONES
	DENNIS COSTA

SAN JUAN GRADE RD 2013 (Cont'd)

115	EDMUND CARDONA
	FRANCISCO PULIDO
	FRANK GARCIA
	JENNIFER CASTILLO
	JOSEPH HAMOY
	JOSUE VERA
	JUAN CITAL
	KARYN HERBERT
	KATIE SCHULTHEIS
	KELLY MELLO
	KIMBERLY CASAREZ
	LESLIE ROZEN
	LILIA YEE
	NORMA MARTINEZ
	PINEDA ANGELICA
	RICHARD ESCARENO
	ROBIN GRAY
	ROSIE URIBE
	SL RENDON
	SOPHIE JAEGER
	STEVE DURAN
	TEOFY MANIWANG
	VILLA SAN JUAN APARTMENTS
	YOLANDA CERDA
	YVONNE TORRES
118	GUILLERMO PACHECO
119	RODOLFO ARROYO
225	HORACIO MURILLO
229	OCCUPANT UNKNOWN
235	OCCUPANT UNKNOWN
237	ANGELICA TORREZ
239	JUSTINO TAPIA
241	GILBERTO HERNANDEZ
243	SUSAN LAWS
247	ARNULFO RUIZ
251	THOMAS BLACKWELL
253	ADRIAN RUELAS
	CLASSIC DRAINS & PLUMBING INC
257	GABRIEL LANDA
259	RUBI SOTO
261	NICHOLAS CANNING
263	SALVADOR GARCIA
267	MICHAEL PERHAM
269	ELMER PAYONGAYONG
270	OCCUPANT UNKNOWN
274	JAIME CASILLAS
277	HENRY RAMIREZ
279	MARGARET ROSS
282	ERASMO OLIVAS
283	SAM TREVINO

SAN JUAN GRADE RD 2013 (Cont'd)

285	CHARLES HALLIDAY
286	ALONSOS PUMPING SERVICE
	SALVADOR CASILLAS
289	RUBEN MEDINA
290	DAVID VENAVIDES
293	OCCUPANT UNKNOWN
294	DORA CURIS
299	TONY FLORES
301	ONLY HAIR CUTS
302	LOUANN RARAS
303	RON PIEARCYS PUMP & MOTOR SERVICES
306	EMILY VILLANUEVA
307	LAS LOMAS MARKET & GAS
310	GERARDO JUAREZ
314	JOSE RODRIGUEZ
317	DAVID DOMINNO
319	OCCUPANT UNKNOWN
325	AMANDA ROTHSTEIN
329	ROBERT SMITH
335	EUGENE STOFFEY
336	OAK PARK MARKET
340	G & N JANITORIAL SUPPLY
344	JTZ BARBER & STYLIST CUTS
346	ANDERSENS LOCK & SAFE
	MONTEREY PENINSULA LOCKSMITH
348	CASA DEL POLLO
349	GREG ECKELS
350	MARISA BERMUDEZ
351	KYLE DIVINE
352	OCCUPANT UNKNOWN
353	OCCUPANT UNKNOWN
354	LOURDES MERCADO
355	GENE STOFFEY
356	DAVID HOYER
358	MAXIMO GARCIA
360	MARINA GARCILAZO
361	JUAN GARCIA
362	AMIR GARCIA
364	YANIDA MENDOZA
367	HILARIO LOPEZ
368	SALINAS VALLEY COMMUNITY CHURCH
375	OCCUPANT UNKNOWN
377	KENNY BECK
381	NORTH SALINAS BAPTIST CHURCH
385	JOSE GONZALEZ
	OCCUPANT UNKNOWN
387	CELERINO RAMIREZ
	GABRIELA RUELAS
	JOSE MORALES
	OCCUPANT UNKNOWN

SAN JUAN GRADE RD 2013 (Cont'd)

389	DAVID FERGUSON
475	SALINAS GOLF & COUNTRY CLUB
484	OCCUPANT UNKNOWN
485	OCCUPANT UNKNOWN
500	OCCUPANT UNKNOWN
580	B TORRES
	ERIK RASMUSSEN
	OCCUPANT UNKNOWN
	RAFAEL CASILLAS
	SARA MANCERA
581	M R DILLY INC
	MARIA VALADEZ
	ROD PORTSCHY
600	FRANCISCO SUAREZ
620	PABLO FREGOSO
624	MICHAEL JACKSON
625	JIM WALLACE
630	TOBY MILLS
632	JAMES SWAIN
638	CECIL SHORT
644	ARTURO VEGA
648	XIAO LEI
652	CARLTON CHOATE
654	PATRICIA NAVARRO
658	BIANCA GONZALEZ
	CARLOS PEREZ
	NEREIDA MARTINEZ
660	WILLIAM RITCHIE
662	JEFFREY SAVAGE
	SAVAGE ROOFING CO
674	CASEY GROSSEN
676	DAVID LOPEZ
680	JOSE GAITAN
682	SANDRA CORTEZ
684	JANET GREEN
686	RITA WILLIAMS
688	HENRY SOARES
690	RONNIE SEAY
694	MARY ORTIZ
700	OCCUPANT UNKNOWN
702	LARRY WELCH
704	ART SIORDIA
	HERITAGE HARDWOOD FLOORS
706	STEVEN AGUIRRE
716	OCCUPANT UNKNOWN
718	MARC COX
	SLATON & SON ROOFING INC
722	JOSE VIVEROS
726	CONCHA SOTO
730	JOSE LOPEZ

SAN JUAN GRADE RD 2013 (Cont'd)

734	CLOSE TOM & PAT
	THOMAS CLOSE
738	GERARDO ESTRADA
742	RAYMOND ROBISON
746	MARCELINO CONTRERAS
750	JASON BOWEN
754	OCCUPANT UNKNOWN
758	JOANN MOE
762	OCCUPANT UNKNOWN
766	EDWARD HOLZWART
770	LISA ARNER
774	IGNACIO ORTIZ
780	OCCUPANT UNKNOWN
782	MARIO RODRIGUEZ
896	OCCUPANT UNKNOWN
898	OCCUPANT UNKNOWN
975	LAGUNITA SCHOOL
1040	JON SALA
	LACY HEACOX
	PAUL FARO
1048	LINDA LOPEZ
1050	DOUG PETERSON
1052	BILLIE WOMACK
	JAMES ELLIOTT
	MELISSA ELLOPOULOS
	OCCUPANT UNKNOWN
	ROBERT ELLIOTT
1054	MANUEL LUNA
1056	SHERWOOD DARINGTON
1784	OCCUPANT UNKNOWN

E BORONDA RD 2008

608	DANNY TAN DMD
	GRACE C SCOTT DDS & ASSOCIATES
	GREENFIELD & SALINAS DENTAL
	LE FINANCIAL GROUP
	ROUND HILL FARMS INC
	WORLD GROUP SECURITIES
612	RADIOSHACK
616	PAPA MURPHYS TAKE N BAKE PIZZA
	PAPAS R & B LLC
640	ASSOCIATED FOREIGN
	FIESTA FOOD WAREHOUSE
	NOB HILL GENERAL STORE INC
662	LONGS DRUG PHARMACY 479
	LONGS DRUG STORE
684	SONIAS FLOWERS & GIFTS
688	RUSS WILCOX AGENCY IN C
	STATE FARM
21025	THRUST IV

NATIVIDAD RD 2008

2	ARCELIA SUAREZ
	IDELIO REYES
	MARIA BARAGAN
	MARIA MENCHACA
	OLGA ZATARAIN
4	GLORIA CALDERON
6	GUSTAVO MENDOZA
8	IMELDA OJEDA
	T C CONSTRUCTION CO
10	SUSANA LOPEZ
12	CONSUELO FLORES
16	A RYKOWSKI
	ALEJANDRA MAGANA
	CARLOS BLANCO
	CYNTHIA COLON
	DELGADINA GONZALEZ
	ELBA CORONA
	ERNESTO LOPEZ
	FLORA BALTAZAR
	FOOK TANG
	GILBERTO MUROS
	GUSTAVO ZARAGOZA
	JESUS HERNANDEZ
	JON BEST
	LAURA SANCHEZ
	LIDIA REGALADO
	LILIANA BECERRIL
	LORA TICEHURST
	LUIS CHAVES
	MARIA IBARRA
	MARTHA ORDAZ
	MARTIN CERVANTES
	MAYRA GENCEI
	MIGUEL MORENO
	MIRNA DELACRUZ
	NERY MORAN
	RAFAEL TORRES
	RUBEN PINHEIRO
	STEPHANIE DORSEY
	TALINA NOVOA
	WALLY WONG
20	ACEVEDO BEATRIZ
22	BEATRIZ MENDEZ
	JOAQUIN GOMEZ
24	ROMULO DIAZ
25	JUAN AVILEZ
26	OCCUPANT UNKNOWN
28	HECTOR AZPILCUETA
30	CASTILLO CHAVEZ
32	ALFREDO QUITERO

NATIVIDAD RD 2008 (Cont'd)

32	JOE DELACRUZ
	LAURA MOLINERO
	LINCOLN FRAZIER
34	AUDELIA MONTOYA
	AUSENCIO ANGUIANO
	CHACON SANCHEZ
	DIANE MERCADO
	GUILLERMINA MARTINEZ
	JORGE ESPINOZA
	JUAN NAVA
36	SUNRISE GROWERS INC
	VINCENTE ZATARAIN
38	PENNY MONTEZ
44	ALFONSO SEDANO
	ALICIA ALVAREZ
	ALICIA GARCIA
	ANA SANTANA
	ANNA GONZALEZ
	ARTEMIO MONZALVO
	BILLIE PAYNE
	ERICA RODRIGUEZ
	GILBERT AGUIRRE
	ISAURA NAMBO
	JOE RAMOS
	LORENA FLOREZ
	LORENA GAMEZ
	LUIS BARRIOS
	LYN BATISTIANA
	MARIA LOPEZ
	MARIA MARTINEZ
	MARTHA HERNANDEZ
	MARY NORIEGO
	MISTY CASTILLO
	RAQUEL JACOBO
	RUBEN SOTO
	SANJUANA FERNANDEZ
	SARA CARRILLO
	TINA MORRISON
	TRACY SMITH
	V ANDRADE
	VERONICA CASTRO
	X QIAN
48	GUSTAVO ACOSTA
	JAMIE MARTINEZ
	JORGE TORRES
	MARIBEL FRANCO
	NATHANIEL GARNER
50	HECTOR REGALADO
	MARIA DELTORO
54	ARICELI LARE

NATIVIDAD RD 2008 (Cont'd)

54	ARMANDO ANGELES
	ARTURO BELTRAN
	AUDREY NELSON
	CARLOS AGUILAR
	CARMEN BUENROSTRO
	DARYL BOWEN
	DIANA VILLALTA
	ENID CRUZ
	EVETTE GARCIA
	GILBERTO RODRIGUEZ
	IRMA ARANDA
	JASMINE SALAZAR
	JESSE LOPEZ
	JOSE CAUDILLO
	JUAN DOMINGUEZ
	JUAN LANDIN
	JUAN ZARAGOZA
	JULIO HURTADO
	LEEANN ROBERTS
	LIDIA GALINDO
	LUCAS BIZCARRA
	MANUEL SANCHEZ
	MANUELA LEEDS
	MARGARITA DELREAL
	MARIA AGUAYO
	MARIA CALDERON
	MARIA HERNANDEZ
	MAURILIO ORTIZ
	PEPPERTREES APTS
	RAFAEL RODRIGUEZ
	ROBERT QUARLES
	SARABIA GOMEZ
	VERONICA CUEVAS
	VICKE VU
	VICTORIANO DIAZ
	VINCENT RAMIREZ
	YOLANDA PENA
55	NORTHSIDE ASSEMBLY OF GOD
56	OCCUPANT UNKNOWN
	RUELAS LOCKSMITH
57	ANGEL CASTILLO
	BRENT BALL
	EDGARDO RAMOS
	ERICA DUNN
	JESUS ANGULO
	MARIA SAUCEDO
	MARIA SIGUEROA
	RACHEL OCHOA
	RUBY GOMEZ
	STEPHEN JOSEPH

NATIVIDAD RD 2008 (Cont'd)

57	STEVEN CABRERA
58	AGUSTIN ROMO
	AMINTA ZALDIVAR
	ANGELA VILLA
	ANGELICA ALVAREZ
	ANTONIA ESPINOZA
	BOBBY PAYNE
	CARMEN RUELAS
	EVETTE RAMIREZ
	FERN BATSON
	JAMES PRICE
	JEANNETTE COPAS
	JEREMY GARCIA
	JOSE MEDRANO
	JOSE RODRIGUEZ
	JUDY LEDFORD
	MAGDALENA RUEDA
	MARIA SALDANA
	MONICA MIRANDA
	MUNDO ATLAS
	PABLO ESPINOZA
	ROSA ROSAS
	S ACOSTA
	SALVADOR PARRA
	SANDRA DEAL
	TROY BEARDEN
	VERONICA RODRIGUEZ
61	LAWRENCE SAWYER
	OCCUPANT UNKNOWN
65	HELIODORO MARTINEZ
	NELIDA JACUINDE
	OLIVIA TAPIA
	ROCIO LOPEZ
	RUBEN CRUZ
220	JULIA CHRISTENSEN
235	SMITH BONDESEN
	TRIANGLE FARMS INC
250	GUS SETTRINI
	GUS SETTRINI
251	CHARLES EMLAY
256	PABLO AVILA
294	ENEDINA DELACRUZ
357	IWAMOTO FARMS
	KONDO FARMS INC
359	WILLIAM ALEXANDER
376	BERENICE ORTIZ
	EDITH GARCIA
	HECTOR SUAREZ
	MARIA SUAREZ
383	KIRK PRODUCE

NATIVIDAD RD 2008 (Cont'd)

383	NATIONAL PRESERVE CO
394	ROBERTO CORTEZ
398	JUNJIRO TOYOKURA
	TOYO FARMS
402	KAREN BALEW
	MICHAEL LOCKARD
430	DAVID WALL
	OCCUPANT UNKNOWN
474	CUAUTHEMOC GUERRERO
	HAIR WEST
1270	COUNTY OF MONTEREY HEALTH DEPARTMENT
	HEALTH PROMOTION PARTNERSHIP
	MONTEREY COUNTY BEHAVIORAL HEALTH CE
1322	MONTEREY COUNTY
1326	CHIEN FANG CHEN MD
	ROLANDO CABRERA MD
	VAL CRISTOBAL VIRAY DDS
1328	CAMBIER DOUGLAS C MD
	HOFFMAN JAMES K MD
	SALINAS FAMILY PRACTICE
1330	JACOBS CONSTRUCTORS INC
	NATIVIDAD MEDICAL CENTER
	PARTNERS FOR PEACE
1332	NORMAN B ROSEN MD
	RADNER ALLEN MD
	VALLE VERDE MEDICAL GROUP
1336	BARCELO LAWRENCE MD
	RODRIGUEZ ORLANDO MD
	SANTA LUCIA MEDICAL GROUP
1414	COUNTY OF MONTEREY
	COUNTY OF MONTEREY SHERRIFS DEPT
	COUNTYMONTEREY
1420	COUNTY OF MONTEREY
	COUNTY OF MONTEREY JUVENILE HALL
1903	WELLS FARGO BANK N A
1915	REALTY & HOME LOANS
1921	GREAT CLIPS
1927	OLE TAQUERIA & GRILL
1933	LINAS NAILS
1939	SUBWAY SANDWICH & SALADS
1985	BMR REALTY & HOME LOANS

ROGGE RD 2008

55	LA JOYA ELEMENTARY SCHOOL
	YMCA SCHOOL AIDS CHILD CARE
69	OCCUPANT UNKNOWN
71	M CRUZ
100	JOSE VALENZUELA
101	TERRANCE KESELICA
102	OCCUPANT UNKNOWN
103	JUAN CEJA
104	BEN KING
105	GILBERT RAMIREZ
107	JUAN ESPARZA
108	JOSE GONZALEZ
1001	MIGUEL OSORIO
1003	OCCUPANT UNKNOWN
1009	A ANGELES
	A OSEGUERA CO
1035	CROSSROADS CHRISTIAN CH SLINAS CAL
1039	LARRY CRAWFORD
	LARRY CRAWFORD CONSTRUCTION
1043	OCCUPANT UNKNOWN
1047	OCCUPANT UNKNOWN
1099	COACH FARMS
1100	MARY SHANLEY
1119	CARLOS COYT
1151	KATHLEEN MARTINEZ
19624	KAY MUULDONG
19658	GREGORIA TAGUIRAN
19670	COREY ROCAMORA
19682	JOHN PARKER
19700	MANUEL MELO

SAN JUAN GRADE RD 2008

25	STATE COMPENSATION INSURANCE FUND
27	CHAN AL DVM
31	GERONIMO VOLPINI
50	POUL RASMUSSEN
55	A THOMPSON
	ADELA GALAVIZ
	ADELINE ESPINOLA
	ALFRED SASULES
	ALICE JOHNSON
	ANITA COWELL
	ANN NILSSON
	AUGUSTINE GIANNOTTI
	AURORA OLIVARES
	B N A LP
	B WILSON
	BRIGID CUTINO
	BRUCE LAINE
	CAROLYN KEHOE
	CARRIE SMITH
	CHHIV UNG
	CHRISTINE HERMAN
	CHUCK SICKLER
	CHUN KIM
	CLARENCE FULLER
	CLEM MORALES
	DARLENE SELVY
	DAVID STEVENS
	DON MCKINLEY
	DON THATCHER
	DONALD GUNDERSON
	DOT DUNLAP
	DUANE RICKS
	EDWARD JACKSON
	ELWOOD KILLEN
	ERNEST TOTH
	EUGENE BRYSON
	EVELYN SHEARER
	FILICE FAMILY PARTNERSHIP
	FLORENCE BOWER
	GENOVEVA DIAZ
	GLADYS GUNN
	GORDON TUCKER
	GUNDA LAUCELLA
	IDA PRICE
	ISIDORA CORRAL
	JAVIER MONTANA
	JEAN CHAMBLESS
	JERRY FURR
	JERRY SINGLEY
	JESUS PAREDES

SAN JUAN GRADE RD 2008 (Cont'd)

55	JOAN LEBLANC
	JOHN EVANS
	JONECE KIRBY
	JULIA DELMURO
	JUNE GAGE
	KAZUKO SWIFT
	LACANADA MOBILE ESTATES
	LARRY ELLIS
	LARRY KING
	LEONARD LAVORATO
	LINDA PERKINS
	LOIS CHAVIS
	LOUISE FREED
	LOUISE SEEFELDT
	MARIA ORTIZ
	NANCY MATTOS
	NEMECIA LOMBOY
	PEGGY MYERS
	PHILLIP BEANE
	RALPH FREILINGER
	RALPH FREILINGERS AUTO SERVICE
	RALPH GEMIGNANI
	RALPH NORWOOD
	RICHARD JOHNSON
	RICK CASTRO
	ROBERT BLOCK
	ROBERT TIETZ
	ROBERTA STRANGER
	RON DAY
	ROSE ALARCON
	RUBY AMARO
	SANDRA CHANDLER
	STELLA GHIO
	VALERIE RANDALL
	VICTOR CARTER
	WARREN ADAMS
	WILLIAM RIDDELL
75	OCCUPANT UNKNOWN
	TELEFONE JACK
84	STAN PIFFERO
86	EDWARD YELLAND
109	ALLAN LAUREL
	BARBARA TRAYLOR
	GILBERT CAMPOS
	HELEN RAMIREZ
	OSCAR AGUILAR
	RHONDA BROWN
	RUDY DURAN
	SANDRA ESTRADA
	VERONICA CONTRERAS

SAN JUAN GRADE RD 2008 (Cont'd)

115	ANASTASIA JAEGER
	ANGELA CLARK
	ANNETTE MACIAS
	ANTHONY URANGO
	BABAIAN YOURGHANLOU
	BEN SAHAGUN
	BRIANNA RAMOS
	CHRIS BERNAL
	DAJUAN ONEAL
	DEBORAH RENFRO
	DENNIS BROWN
	DENNIS COSTA
	DIANE CHOI
	ERNEST HOWARD
	GRETCHEN BEDDINGFIELD
	JAIME MARTINEZ
	JEDIDIAH TROUT
	JOHN CAMACHO
	JON S SCHULTHEIS
	KIMBERLY CASAREZ
	L MAGOS
	LUAFULA PURCELL
	MARCY GONZALES
	MARK CUNNINGHAM
	MATTHEW MCCARTHY
	NOEL PEREZ
	RICARDO MEZA-TENA
	RICHARD ESCARENO
	ROBERT GARCIA
	ROBERT MCELROY
	RODRIGUEZ RITA
	ROSALIA ELIAS
	ROSE LUGO
	SEAN DALEY
	SL RENDON
	TEOFY MANIWANG
	USIEL GUERRERO
	VILLA SAN JUAN APTS
	YOLANDA CERDA
	YVETTE LOPEZ
118	GUILLERMO PACHECO
119	JOSE NAVARRO
225	HORACIO MURILLO
229	DENNIS SUTTON
235	EUGENIA ORTIZ
237	PASCUAL GARCIA
239	JUSTINO TAPIA
241	OCCUPANT UNKNOWN
243	OCCUPANT UNKNOWN
247	JENNIFER BURRITT-NELSON

SAN JUAN GRADE RD 2008 (Cont'd)

251	THOMAS BLACKWELL
253	JAMES ANDERSON
257	GABRIEL LANDA
259	OCCUPANT UNKNOWN
263	SALVADOR GARCIA
267	MICHAEL PERHAM
269	ELMER PAYONGAYONG
270	RITA CHAPPELL
274	JOSE CASILLAS
275	VERDA MARTINEZ
277	HENRY RAMIREZ
279	EDMUND BALL
282	DONNA CARDENAS
283	SAM TREVINO
285	HELEN BREWER
286	ALONSOS PUMPING SERVICE
	SALVADOR CASILLAS
289	OCCUPANT UNKNOWN
290	OCCUPANT UNKNOWN
293	CECIL WILLIAMS
294	DORA CURIS
298	ANNETTE BENAVIDES
299	OCCUPANT UNKNOWN
302	OCCUPANT UNKNOWN
306	REGINA VILLANUEVA
307	CECILS LIQUORS & DELI INC
	CHEVRON CECILS
310	JULIAN MAGANA
314	JOSE RODRIGUEZ
317	VIRGILIO DOMINGO
319	ISAIAS GARCIA
327	MARIA VILLALBAZO
329	ROBERT SMITH
335	EUGENE STOFFEY
336	NIELSEN BROTHERS MARKET INC
342	ALLSTATE
	RIOS BAKERY
	TOSCANO INSURANCE AGENCY
344	PARK OAKE BEAUTY SALON
346	ANDERSENS LOCK & SAFE
	GLENDAS CREATIONS & GOODIES
	KEYWAYS LOCKSMITH
349	GREG ECKELS
351	KYLE DIVINE
	RELIABLE REPAIR & MAINTENANCE
353	RONALD PIEARCY
355	GENE STOFFEY
	SPECIALTY CONTROLS
361	JUAN GARCIA
367	MIGUEL LOMELI

SAN JUAN GRADE RD 2008 (Cont'd)

368	SALINAS VALLEY COMMUNITY CHURCH
375	ALDINA SALA
377	KENNY BECK
381	NORTH SALINAS BAPTIST CHURCH
	PACIFIC COAST CHRISTIAN ACADEMY
385	JAMES HAAS
	JOHN LUNSFORD
387	CELERINO RAMIREZ
	CHRISTIE TAYLOR
	JOSE MORALES
	OCCUPANT UNKNOWN
389	JEROMY BECK
	OCCUPANT UNKNOWN
475	SALINAS GOLF & COUNTRY CLUB
	THE GOLF SHOP
485	S SMITH
518	OCCUPANT UNKNOWN
580	OCCUPANT UNKNOWN
	RAFAEL CASILLAS
	RUBEN BECERRA
	RYV ESPRESS TRUCKING
	SALVADOR JURADO
	SARA MANCERA
581	ALEX GWARTNEY
	JOSHUA EDDINGS
	ROD PORTSCHY
600	RENE MARTINEZ
620	PABLO FREGOSO
624	SAMMY DEE
625	JIM WALLACE
630	TOBY MILLS
632	FELIX SWAIN
638	CECIL SHORT
	SHORT JANITORIAL
640	JOE FANNING
644	ANA GONZALES
648	ISALIA REYES
652	CARLTON CHOATE
	CARLTON CHOATE FLOORING
	CENTRAL COAST FLOORING
654	THOMAS HILL
656	ESTELA VIRGEN
658	DEAN LINGBECK
	YAJAIRA VIGIL
660	WILLIAM RITCHIE
662	JEFFREY SAVAGE
	SAVAGE ROOFING CO
664	OCCUPANT UNKNOWN
674	CASEY GROSSEN
676	DAVID LOPEZ

SAN JUAN GRADE RD 2008 (Cont'd)

680	JOSE GAITAN
682	OCCUPANT UNKNOWN
684	JOEL GREEN
686	DENNIS GARNER
688	HENRY SOARES
690	RONNIE SEAY
694	MARY ORTIZ
700	LARRY WELCH
702	PATRICIA DIXON
704	ART SIORDIA
	MOBILE BOARD
706	STEVEN AGUIRRE
708	STEPHEN CASAREZ
716	OCCUPANT UNKNOWN
718	LLOYD SLATON
	SLATON & SON ROOFING INC
722	OCCUPANT UNKNOWN
726	ALFREDO SOTO
730	JAIMES PEREZ
734	CLOSE CONSTRUCTION
	THOMAS CLOSE
738	GERARDO ESTRADA
742	RAYMOND ROBISON
	ROBISON ENTERPRISES
746	MARCELINO CONTRERAS
750	OCCUPANT UNKNOWN
754	OCCUPANT UNKNOWN
758	WILLIAM MOE
762	JASON BOWEN
766	EDWARD HOLZWART
770	JEREMY BRUNSCHER
774	ROSA ZARATE
775	OCCUPANT UNKNOWN
780	OCCUPANT UNKNOWN
782	MARIO RODRIGUEZ
896	OCCUPANT UNKNOWN
898	OCCUPANT UNKNOWN
975	SUGAR LOAF PRESCHOOL
1040	MICHAEL SALA
1048	RW CROSWHITE
1050	OCCUPANT UNKNOWN
1052	JAMES ELLIOTT
	OCCUPANT UNKNOWN
	ROBERT ELLIOTT
1054	MANUEL LUNA
1056	SHERWOOD DARINGTON
1784	JEAN STROHN
1786	AGOSTINI & STROHN

Target Street	Cross Street	Source
-	✓	Cole Information Services

E BORONDA RD 2003

600	MCDONALDS RESTAURANT
608	ERNESTO MIRELES
	GRACE C SCOTT ATTY AT LAW
	GRACE C SCOTT DDS & ASSOCS
	GREENFIELD FAMILY DENTAL CTR
	WILLIAM SHAW
	WMA SECURITIES INC
612	TIMOTHY ZIMMERMAN
616	PAPA MRPHY TAKE N BAKE PIZZA S
	PAPA MURPHYS PIZZA
640	WELLS FARGO BANK BRANCH OFC
662	LONGS DRUG STORES
688	RUSS WILCOX STATE FARM INSRNC
	RUSSELL WILCOX
	STATE FARM INSURANCE CO
	WILCOX RUSS INS AGT
21025	THRUST IV INC
21621	MARY CUNHA
21673	GLORIA ZAMORA
	GRACY SERRATO
	INOCENCIA MARTINEZ
	TERESA SALAZAR

NATIVIDAD RD 2003

4	ADOLFO RANGEL
6	GUSTAVO MENDOZA
8	OJEDA MARTINEZ
	TC CONSTRUCTION
10	OCCUPANT UNKNOWN
12	OCCUPANT UNKNOWN
16	ALBERTO GONZALEZ
	BENJAMIN MARTINEZ
	CARLOS DIAZ
	FOOK TANG
	GABRIEL PEREZ
	GUSTAVO RAMIREZ
	HERNANDEZ LUIS
	JAIME RUIZ
	JESSICA CAVARRUBIAS
	JORGE FRAGOSO
	JOSE LOREDO
	JUAN ARIAS
	JULIO RODRIGUEZ
	LUCINA HERNANDEZ
	LUIS CHAVES
	MANUEL HERNANDEZ
	MARTHA ORDAZ
	MINERVA GOMEZ
	MOISES QUEZADA
	OSCAR CAMPOS
	PABLO ESQUIVEL
	RAQUEL CABELLO
	RUBY LOPEZ
	SYLVIA BRAVO
	TERESA FERVIN
	VICTOR CHAVEZ
	WALLY WONG
20	GUADALUPE CARDENAS
22	OCCUPANT UNKNOWN
	SERGIO GONZALEZ
24	OCCUPANT UNKNOWN
26	MIGUEL LECHUGA
28	OCCUPANT UNKNOWN
	VERONICA HERNANDEZ
30	PAUL CALINAWAN
32	JANE SINGH
	JOSEPHINE JUAREZ
34	GUILLERMINA MARTINEZ
	JORGE ESPINOZA
	ROSARIO CHACON
36	VICENTE VILLA
38	DAVID MONTOYA
44	ALFONSO SEDANO
	AMANDA VALENCIA

NATIVIDAD RD 2003 (Cont'd)

44	ARTEMIO MONZALVO
	BILLIE PAYNE
	CLAUDIA ALVAREZ
	DANIEL DOMINGUEZ
	DEYARA RAMIREZ
	GLORIA CORONA
	ISAURA NAMBO
	LILLIE SPARKS
	LORENA FLOREZ
	LUIS BARRIOS
	MARGARITA CARBAJAL
	MARIA MARTINEZ
	RUBEN SOTO
	SARA CARRILLO
48	ELADIO HERNANDEZ
	GUSTAVO ACOSTA
50	MARIA NOLASCO
	MARY PADILLA
54	ALICE SALAS
	ANTHONY MILANES
	ARMANDO ANGELES
	AUDREY NELSON
	DEBRA QUARLES
	DIANA LARA
	ELIZABETH CAUDILLO
	ESTEBAN GUZMAN
	GARY BELLOMY
	HECTOR PEREZ
	HERNANDEZ ROSARIO
	IRMA CAMACHO
	JUAN LANDIN
	JUAN ZARAGOZA
	LESLIE GONZALES
	MAGDALENA DELVALLE
	MARIA GONZALEZ
	MARIA OROZCO
	MARTIN MARQUEZ
	MONICA ARTEAGA
	NINA GONZALES
	PEDRO GALLO
	PEPPERTREES APARTMENTS
	Q TINOCO
	ROSIO ESTRADA
	SANTOS DELOF
	SARA GARCIA
	SARABIA DAGOMEZ
	VERONICA ORLANDO
	YOLANDA PENA
55	ASSEMBLY OF GOD NORTHSIDE
56	CHRISTIPHER BAGE

NATIVIDAD RD 2003 (Cont'd)

56	VICTOR CHAVEZ
57	MIGUEL CASTILLO
58	AGUSTIN ROMO
	ANGELA VILLA
	C BAGE
	D ZALVIDAR
	DOLORES CHAVEZ
	FRANCISCO PEREZ
	HONG TANG
	HUMBERTO GARCIA
	JOE ARGUELLES
	JUAN ALVAREZ
	LESLIE BEARDEN
	M VELA
	MARGARITA ESPINOZA
	MARIA LOPEZ
	MARTHA ZALDIVAR
	RAFAEL GARIBAY
	ROSA ROSAS
	ROSALINDA RODRIGUEZ
	SAUL GUZMAN
	TERESA MARAVILLA
	VALDEZ LEON
	YOLANDA GARCIA
61	JOSE HERNANDEZ
	MARIA KELLY
65	DAVID ESQUER
220	JULIA CHRISTENSEN
222	OCCUPANT UNKNOWN
235	B AGUIRRE
250	GUS SETTRINI
	SETTRINI RANCH
251	CLYDE GLOVER
256	PABLO AVILA
261	OCCUPANT UNKNOWN
357	IWAMOTO FARMS
	NATIVIDAD NURSERY
	S S SALINAS SANITATION
359	WILLIAM ALEXANDER
376	JOHN SINCLAIR
	YOLANDA OCHOA
383	SAHARA BOTELLO
394	RAMON DELREAL
397	THOMAS MATTART
398	TOYO FARMS
402	LYNETTE LOCKARD
	MICHAEL LOCKARD
	OCCUPANT UNKNOWN
430	DAVID WALL
	DUANE MITCHELL

NATIVIDAD RD 2003 (Cont'd)

474	CUAUTHEMOC GUERRERO
1220	MONTEREY COUNTY GRAPHIC
	MONTEREY COUNTY OF GEN SRVC
1270	MARILYN LANGE
	MONTEREY CO
	MONTEREY COUNTY HEALTH DEPT
1326	CHEN CHIEN FANG MD FMLY PRCTC
	VB VIRAY MD
1328	SALINAS FAMILY PRACTICE
1330	JANZEN JOHNSON & ROCKWELL
	MONTEREY COUNTY OF NTVDD MDCL
	OCCUPANT UNKNOWN
	SAGLIO STEPHEN MD NTVDD MDCL
1332	ALLEN RADNER MD
	ESTHER PEREZ
	NATIVIDAD MEDICAL CTR
	NORMAN ROSEN
	NORMAN ROSEN MD
	RADNER ALLEN MD INFECTIOUS DSS
	ROJAS SCOTT MD
	STEPHEN D SAGLIO M D INC
	VALLE VERDE MEDICAL GROUP
1336	JOAN HUGHES C
	ROLANDO CABRERA
1410	L RUIZ
	NATIVIDAD MEDICAL CTR
1414	BOB TAYLOR
	COUNTY OF MONTEREY
	LARRY DENISON
	MNTRY CNTY OF SHER COR PUB ADM
	MONTEREY COUNTY SHERIFF
	WILLIAM MACLANE
1420	OCCUPANT UNKNOWN
	WLNGTN M SMITH JR JVNL HALL
1422	OCCUPANT UNKNOWN
1903	UNITED STATES GOVERNMENT ARFRC
	UNITED STATES GVRNMNT RCRTNG
1909	NOODLES DELIGHT
1915	UNITED STATES GOVERNMENT
	UNITED STATES GVRNMNT RCRTNG
1921	CAROLYN LABIAK
1927	GABRIEL AVALOS
	OLE TAQUERIA & GRILL
1939	SUBWAY SANDWICH & SALAD
	SUSAN MCCORMICK
1945	BLOCKBUSTER VIDEO
1991	OCCUPANT UNKNOWN

ROGGE RD 2003

55	YMCA CHILD CARE
69	NEENA CAVAZOS
71	GIL CRUZ
100	JOSE VALENZUELA
101	TERRANCE KESELICA
102	OCCUPANT UNKNOWN
103	NANCY TAYLOR
104	BEN KING
105	ANTHONY RAMIREZ
107	JESUS LISEA
108	JOSE GONZALEZ
1001	ALEESA HARRIS
	BRENT LEAVITT
	JOSE GUERERO
1009	COACH FARMS
	FROZSUN FOODS
	UNITED PACKING CO
1039	LARRY CRAWFORD
1100	MITCH BASHAM
1111	SUE BLACK
1119	FRANK HARBIN
	FRANK HARBIN & SON
1151	KATHLEEN MARTINEZ
19624	ALBERT SERASIO
19658	DAVID DICKINSON
19670	COREY ROCAMORA
19682	JOHN PARKER
19700	MANUEL MELO

SAN JUAN GRADE RD 2003

25	BRUCE MCPHERSON
	CALIFORNIA STATE OF SENATE
	STATE COMPENSATION INS FUND
31	OCCUPANT UNKNOWN
50	MARIA LAMBARTE
55	A THOMPSON
	ADELA GALAVIZ
	ALFRED SASULES
	AUDREY SCHWARTZ
	AUGUSTINE GIANNOTTI
	CALVIN SNOW
	CAROLYN KEHOE
	CARRIE SMITH
	CLARENCE FULLER
	DEAN SEEFELDT
	DOROTHY WALLER
	DUANE RICKS
	EARNESTINA AVILES
	ELWOOD KILLEN
	ETHEL COFFEY
	EVELYN ROOT
	EVELYN SHEARER
	FERN BINAU
	FRANK PRICE
	GENOVEVA DIAZ
	GLADYS GUNN
	HARRY JACKSON
	HOWARD ENGLISH
	ISIDRO OLIVARES
	JAIME VILLAREAL
	JAMES PENDLETON
	JERRY FURR
	JIM HINRICH
	JOAN LEBLANC
	LACANADA MOBILE ESTATES
	LARRY KING
	LAVERNE MAMMINI
	LLOYD CHAPPEL
	LOUIS FUSCO
	LOUISE FREED
	MARVIN EMBRY
	MARY DENNEY
	MARY PRICE
	MERLE DAVIS
	MILLIE DEVARTI
	MIRIAM PARRISH
	NANCY MATTOS
	OCCUPANT UNKNOWN
	RALPH NORWOOD
	RAYMOND SIINO

SAN JUAN GRADE RD 2003 (Cont'd)

55	ROBERT BLOCK
	ROBERTA STRANGER
	SANDRA CHANDLER
	SIDNEY SCHLOEMER
	STELLA GHIO
	THOMAS ROSE
	WILLIAM RIDDELL
75	JEFFERY OLMS
84	NANCY PIFFERO
86	CURT DAVIS
109	ANTHONY POPE
	CHUCK EADS
	DON SHATRAW
	ETHEL MIRANDA
	GABRIEL CORTES
	LINDA MORTON
	MARY KOLUPSKI
	MICHAEL HOSKINS
	PAULA MATELLI
	RUDY DURAN
115	A MACIAS
	ANDREW ROJAS
	CHRIS BERNAL
	COREY YOUNG
	CYNTHIA CERECERES
	D AQUINO
	ELWYN PATOC
	GLORIANN BRO
	JAIME JIMENEZ
	JOB MARTINEZ
	JOE CUNNINGHAM
	JON SCHULTHEIS
	JON SCHULTHESIS
	JONATHAN CLARK
	JOSEPH ROBERTSON
	K MORRISROE
	KARYN BENTON
	KIMBERLY CASAREZ
	LILIA YEE
	MARIA QUINONES
	MARIA RAMIREZ
	MARICELA ALMANZA
	NICK APODACA
	PAUL CONTRERAS
	RICHARD ESCARENO
	ROBERT BYRNE
	SANDRA ESTRADA
	SHELLY KIRWIN
	TOBI SWAIN
118	OCCUPANT UNKNOWN

SAN JUAN GRADE RD 2003 (Cont'd)

119	ROBERT POLZKILL
225	FRANCISCO ZAVALA
229	DENNIS SUTTON
235	EUGENIA ORTIZ
237	PASCUAL GARCIA
239	JUSTINO TAPIA
241	OTILIA GUTIERREZ
243	BRAD SMITH
247	BEST BUILT PLANTERS & CRAFTS
	GEORGE BURRITT
251	THOMAS BLACKWELL
253	CLASSIC DRAINS & PLUMBING
	JAMES ANDERSON
257	JOHN JACOBAN
259	OCCUPANT UNKNOWN
	SERRANO ROOFING
261	EVANGELINA BECERRA
263	SALVADOR GARCIA
264	OAK PARK COMMUNITY CHURCH
269	LOTUS PAYONGAYONG
270	MICHAEL CHAPPELL
274	JOSE CASILLAS
275	ERNESTO CHAVARRIA
277	HENRY RAMIREZ
279	EDMUND BALL
282	OCCUPANT UNKNOWN
283	CONNIE TREVINO
285	CHUCKS LAWN TREE SRVC & MNTNNC
	HELEN BREWER
286	SALVADOR CASILLAS
289	OCCUPANT UNKNOWN
290	MIGUEL CASILLAS
293	OCCUPANT UNKNOWN
294	DORA CURTIS
298	ANNETTE BENAVIDES
299	CORINA GARZA
302	LOUANN RARAS
303	B & B CONSTRUCTION INC
	KEITH DAY
306	REGINA VILLANUEVA
307	WANDA WILLIAMS
310	BILL HATCH
	CENTRAL COAST CLEANING
314	ALMA BAZAN
317	VIRGILIO DOMINNO
319	ISAIAS GARCIA
327	AURELIO GUDINO
329	ROBERT SMITH
340	KENPO KARATE
342	OCCUPANT UNKNOWN

SAN JUAN GRADE RD 2003 (Cont'd)

344	OAK PARK BEAUTY SALON
	OCCUPANT UNKNOWN
346	ANDERSENS LOCK & SAFE
348	LITTLE PIZZARENA
	PIZZARENA LITTLE
349	GREG ECKELS
351	KYLE DIVINE
353	RONALD PIEARCY
355	EUGENE STOFFEY
361	ANNA WILLIAMS
366	LA PRINCESA MARKET
367	OCCUPANT UNKNOWN
368	OCCUPANT UNKNOWN
	SALINAS VALLEY COMMUNITY CHRCH
375	PAUL BECK
377	BECK KEN
	OCCUPANT UNKNOWN
381	NORTH SALINAS BAPTIST CHURCH
	OCCUPANT UNKNOWN
385	WILLIAM LAWSON
387	OCCUPANT UNKNOWN
389	JEROMY BECK
	OCCUPANT UNKNOWN
485	S SMITH
518	TIMOTHY MIYASAKA
580	JOSE GARCIA
	POUL RASMUSSEN
	RYV ESPRESS TRUCKING
581	ALEX GWARTNEY
	FRANK MUTHER
	OCCUPANT UNKNOWN
620	MARK SIEVERS
624	MANJEET KHINDA
625	JIM WALLACE
630	J OKA
632	FELIX SWAIN
634	ESTHER BIRD
638	CECIL SHORT
	KATHY SHORT
640	JOE FANNING
648	JOSE MUNOZ
652	CARLTON CHOATE FLOORING
654	PHILLIP HILL
656	OCCUPANT UNKNOWN
658	BAROCIO PEREZ
	JUAN GARCIA
660	WILLIAM RITCHIE
662	JEFFREY SAVAGE
664	JON HAGAN
674	CASEY GROSSEN

SAN JUAN GRADE RD 2003 (Cont'd)

676	DAVID LOPEZ
680	JOSE GAITAN
682	PHILLIP COSTA
684	JOEL GREEN
686	DENNIS GARNER
688	HENRY SOARES
690	RONNIE SEAY
694	MARY ORTIZ
700	LARRY WELCH
702	PATRICIA DIXON
704	OCCUPANT UNKNOWN
706	STEVEN AGUIRRE
708	GILBERTO HARO
	GILLS TRUCKING & REPAIR
716	CHARLES STOLZ
	MARY HANKINS
718	LLOYD SLATON
	SLATON & SON ROOFING INC
722	MARIO HERNANDEZ
726	MONICA CAMBUNGA
730	CHARLES HOLDEN
	HOLDEN FORKLIFT SERVICE
734	CLOSE CONSTRUCTION
	SGO DESIGNER GLASS
	THOMAS CLOSE
738	JOSE LUNA
742	RAYMOND ROBISON
746	MARCELINO CONTRERAS
750	BILL WHITE
754	MARVIN BALDWIN
758	WILLIAM MOE
760	POLLY BRADSHAW
762	OCCUPANT UNKNOWN
766	EDWARD HOLZWART
770	JEREMY BRUNSCHER
774	ALEJO AHUMADA
775	OCCUPANT UNKNOWN
780	CURTIS PARRY
782	MARIO RODRIGUEZ
898	LAWRENCE RICCA
	RICCA DAIRY
	RICCA LAWRENCE
975	LAGUNITA SCHOOL
1040	CLINTON ZOBEL
1048	OCCUPANT UNKNOWN
1050	STEPHEN JOHNSON
1052	GEORGE ELLIOTT
	LENA WRIGHT
	ROBERT ELLIOTT
	TROY WOMACK

SAN JUAN GRADE RD 2003 (Cont'd)

1054	MANUEL LUNA
1056	SHERWOOD DARINGTON
1784	AGOSTINI & STROHN
	LEE STROHN

Target Street	Cross Street	Source
-	✓	Cole Information Services

NATIVIDAD RD 1999

2	BLANCA VALDEZ
	CARLOS HERNANDEZ
	MARIA MENCHACA
6	GUSTAVO MENDOZA
8	IMELDA OJEDA
10	SUSANA LOPEZ
12	MODESTO TORRES
16	A RYKOWSKI
	B MARTINEZ
	BRIAN PATTEE
	CARLOS BLANCO
	CORAL RICO
	CRUZ DELUNA
	D LEON
	ERNESTO LOPEZ
	FOOK TANG
	JESUS HERNANDEZ
	JON BEST
	LIDIA REGALADO
	LORA TICEHURST
	LUIS CHAVES
	M VELEZ
	M VERDUSCO
	MARTHA ORDAZ
	MARTIN NUNEZ
	MIRNA DELACRUZ
	MORAN LEON
	RAFAEL TORRES
	ROY GUERRERO
	RUBEN PINHEIRO
	STEPHANIE DORSEY
	TALINA NOVOA
	THORNDIKE APARTMENTS
22	ALFREDO OCHOA
	BEATRIZ MENDEZ
	JOAQUIN GOMEZ
24	OCCUPANT UNKNOWN
	ROMULO DIAZ
25	JUAN AVILEZ
26	MARIYAH GUITIERREZ
28	GRISELDA AZPILCUETA
30	CASTILLO CHAVEZ
32	LINCOLN FRAZIER
34	AUSENCIO ANGUIANO
	DIANE MERCADO
	G MARTINEZ
	JORGE ESPINOZA
	JUAN NAVA
36	VINCENTE ZATARAIN
38	J BENITEZ

NATIVIDAD RD 1999 (Cont'd)

44	ALFONSO SEDANO
	ANGELINA RAMOS
	ANNA GONZALEZ
	BILLIE PAYNE
	CLAUDIA ALVAREZ
	G WILLIAMS
	GILBERT AGUIRRE
	LORENA FLOREZ
	MARTHA HERNANDEZ
	MARY NORIEGA
	RAQUEL JACOBO
	RUBEN SOTO
	SANJUANA FERNANDEZ
	TIMOTEO MATIAS
	TRACY SMITH
	X QIAN
48	CHRISTIAN ZAVALA
	GUSTAVO ACOSTA
	JORGE TORRES
	LORENA MARAVILLA
	MARIBEL FRANCO
	Z MARTINE
50	HECTOR REGALADO
54	ARMANDO ANGELES
	AUDREY NELSON
	BEATRIZ FERREYRA
	CARLOS AGUILAR
	DARYL BOWEN
	DIANA VILLALTA
	DOUG SEABORNE
	ENID CRUZ
	GILBERT LOZANO
	IRMA ARANDA
	JESSE LOPEZ
	JUAN DOMINGUEZ
	LUCAS BIZCARRA
	MARGARITA DELREAL
	MARIA HERNANDEZ
	MAURILIO ORTIZ
	NHU NGUYEN
	PEPPERTREES APARTMENTS
	ROGELIO MARTINEZ
	SARABIA GOMEZ
	VERONICA CUEVAS
	VICKE VU
	VICTORIANO DIAZ
	VINCENT RAMIREZ
	VIVIAN HERNANDEZ
55	ASSEMBLY OF GOD NORTHSIDE
56	OSCAR RUELAS

NATIVIDAD RD 1999 (Cont'd)

57	EFRAIN ZAVALZA
	JESUS ANGULO
	STEPHEN JOSEPH
58	ALEJANDRA ORTIZ
	AMINTA ZALDIVAR
	ANGELA VILLA
	ANGELICA ALVAREZ
	ANTONIA ESPINOZA
	DEBRA TELLO
	ELVIE MUYCO
	GREGORIO ESPINOZA
	JAMES PRICE
	JOSE MEDRANO
	JOSEFINA HERNANDEZ
	JUDY LEDFORD
	MAGDALENA RUEDA
	MARLAND STEEPLES
	MIGUEL PEREZ
	MONICA MIRANDA
	MUNDO ATLAS
	SALVADOR PARRA
	SANDRA CHAIREZ
	SANDRA DEAL
	SUSIE MALDONADO
	TROY BEARDEN
61	INNA CURRY
65	NELIDA JACUINDE
	OLIVIA TAPIA
	ROCIO LOPEZ
	RUBEN CRUZ
235	SMITH BONDESEN
250	JOHN SETTRINI
251	CHARLES EMLAY
256	PABLO AVILA
261	WEST COAST MANUFACTURING
294	ENEDINA DELACRUZ
301	AMERICAN TAKII INCORPORATED
357	IWAMOTO FARMS
	KONDO FARMS
	NATIVIDAD NURSERY
359	WILLIAM ALEXANDER
376	BERENICE ORTIZ
	HECTOR SUAREZ
	MARIA SUAREZ
	OCCUPANT UNKNOWN
383	NATIONAL PRESERVE COMPANY
398	HILLSIDE NURSERY
	JUNJIRO TOYOKURA
	TOYO FARMS
402	MICHAEL LOCKARD

NATIVIDAD RD 1999 (Cont'd)

430	DAVID WALL
	FLOYDENE MITCHELL
474	CUAUTHEMOC GUERRERO
1270	MONTEREY COUNTY OF HEALTH DEPARTMENT MONTEREY OFFICE
	MONTEREY COUNTY OF HEALTH DEPARTMENT SALINAS OFFICE
	MONTEREY COUNTY OF HEALTH DEPARTMENT SEASIDE OFFICE
1326	CHEN CHIEN FANG MD FAMILY PRACTICE
	NATIVIDAD RX PHARMACY
	RUMBEL HAROLD E MD SALINAS VALLEY RADIOLOGISTS INCORPORATED
	SALINAS VALLEY RADIOLOGISTS INCORPORATED VALLE VERDE OFFICE
	SMITHKLINE BEECHAM CLINICAL LABORATORIES
	VALERIANO BVIRAY
1328	ADAME MARK J MD
	CAMBIER DOUGLAS C MD
	DOUGLAS CCAMBIER
	HOFFMAN JAMES K MD
	JAMES KHOFFMAN
	MARK JADAME
	SALINAS FAMILY PRACTICE
	SUSAN JGANZHORN
1330	AL MARASHI MURTADHA MD NATIVIDAD MEDICAL CENTER
	ARNETTE ESTHER MD NATIVIDAD MEDICAL CENTER
	BARNES E VALERIE MD NATIVIDAD MEDICAL CENTER
	BRUNADER RICHARD MD NATIVIDAD MEDICAL CENTER
	CHABRA KIRAN MD NATIVIDAD MEDICAL CENTER
	DICKINSON SHIRLEY MD NATIVIDAD MEDICAL CENTER
	FAMILY PRACTICE CENTER NATIVIDAD MEDICAL CENTER
	GALICIA ANTHONY MD NATIVIDAD MEDICAL CENTER
	HARDISON CHARLES MD ALISAL HEALTH CENTER NATIVIDAD MED
	ISHIZUE KENNETH MD NATIVIDAD WOMENS HEALTH CENTER
	JAMESON JOHN MD NATIVIDAD MEDICAL CENTER
	JANI ATUL N MD NATIVIDAD MEDICAL CENTER
	JUNG CHUNG MD NATIVIDAD MEDICAL CENTER
	MACIAS EDWARD MD NATIVIDAD WOMENS HEALTH CENTER
	MALLAK KATHRYN MD NATIVIDAD MEDICAL CENTER
	MARK JOHN MD NATIVIDAD MEDICAL CENTER
	MENTAL HEALTH UNIT NATIVIDAD MEDICAL CENTER
	MILLER J ALLEN MD NATIVIDAD MEDICAL CENTER
	MONTEREY COUNTY OF NATIVIDAD MEDICAL CENTER
	MORENO ROSHEN DO NATIVIDAD MEDICAL CENTER
	MUNRO JOHN MD NATIVIDAD MEDICAL CENTER
	NATIVIDAD MEDICAL CENTER
	NATIVIDAD MEDICAL CENTER BUSINESS DEVELOPMENT
	NATIVIDAD MEDICAL CENTER CLINICS
	NATIVIDAD MEDICAL CENTER CUSTOM HEALTH PROGRAM
	NATIVIDAD MEDICAL CENTER FOUNDATION
	NATIVIDAD MEDICAL CENTER MEDICAL SERVICES
	NATIVIDAD MEDICAL CENTER NATIVIDAD HEALTHCARE ALLNCE M
	NATIVIDAD MEDICAL CENTER PERSONNEL EMPLOYMENT
	NATIVIDAD MEDICAL CENTER VOLUNTEER AUXILIARY

NATIVIDAD RD 1999 (Cont'd)

1330	ORTHOPEDIC CENTER NATIVIDAD MEDICAL CENTER
	PERFORMANCE CONTRACTING INCORPORATED
	POMPAN DONALD MD NATIVIDAD MEDICAL CENTER
	SAGLIO STEPHEN MD NATIVIDAD MEDICAL CENTER
	SANTELL ALLEN MD NATIVIDAD MEDICAL CENTER
	SASCO
	SCHATZ JOHN MD NATIVIDAD MEDICAL CENTER
	SOLORIO LAURA MD NATIVIDAD MEDICAL CENTER
	STOUT KEVIN MD NATIVIDAD MEDICAL CENTER
	SWEET BRICKLEY MD NATIVIDAD MEDICAL CENTER
	SWINERTON & WALBERG
	TAPSON KERRI MD NATIVIDAD MEDICAL CENTER
	TUNZI MARC MD NATIVIDAD MEDICAL CENTER
1332	ANTONIO RVELASCO
	B EBRANDT
	MEENA BSUBBARAO
	RADNER ALLEN MD NATIVIDAD MEDICAL CENTER
	ROSEN NORMAN MD GENL PRACTICE
	VELASCO ANTONIO R MD VALLE
1336	ANNA LORENZ
	BARCELO LAWRENCE MD
	HUGHES JOAN PA C
	JOAN HUGHES
	LAWRENCE BARCELO
	ORLANDO RODRIGUEZ
	PABLO ROMERO
	ROMERO PABLO MD
1352	ADOPTIONS SERVICE
1414	MONTEREY CNTY OF SHER COR PUB ADMNSTR
1420	MONTEREY CNTY OF SHER COR PUB ADMNSTR
1422	MONTEREY COUNTY OF PROBATION DEPARTMENT

ROGGE RD 1999

55	SANTA RITA UNION SCHOOL DIS
	Y M C A CHILD CARE
71	MARVIN CRUZ
100	JOSE VALENZUELA
101	TERRANCE KESELICA
103	JUAN CEJA
104	BEN KING
	OCCUPANT UNKNOWN
105	GILBERT RAMIREZ
	OCCUPANT UNKNOWN
107	ANA ESPARZA
	OCCUPANT UNKNOWN
108	JOSE GONZALEZ
1001	MIGUEL OSORIO
1003	BILL CLAIBORNE
1009	A ANGELES
1039	LARRY CRAWFORD
1100	OCCUPANT UNKNOWN
1151	A & C FARMS
	OCCUPANT UNKNOWN
19624	KAY MUULDONG
19658	GREGORIA TAGUIRAN
19670	OCCUPANT UNKNOWN
19682	ROBERT PARKER
19700	MANUEL MELO

SAN JUAN GRADE RD 1999

31	GERONIMO VOLPINI
	OCCUPANT UNKNOWN
55	ADELINE ESPINOLA
	ALBERT WEBER
	ANN NILSSON
	AURORA OLIVARES
	BEULAH MACK
	BRIGID CUTINO
	BRUCE LAINE
	CARRIE SMITH
	CHESTER LOPEZ
	CHHIV UNG
	CHRISTINE HERMAN
	CHUCK SICKLER
	CHUN KIM
	CLARENCE FULLER
	DAVID STEVENS
	DON MCKINLEY
	DON THATCHER
	DONALD GUNDERSON
	DUANE RICKS
	EDWARD JACKSON
	ELWOOD KILLEN
	ERNEST TOTH
	FLORENCE BOWER
	GENOVEVA DIAZ
	GLADYS GUNN
	GORDON TUCKER
	GUNDA LAUCELLA
	JEAN CHAMBLESS
	JERRY FURR
	JERRY SINGLEY
	JESUS CRUZ
	JIM MATTOS
	JOAN LEBLANC
	JOE BRITANICO
	JOHN EVANS
	JONECE KIRBY
	KAZUKO SWIFT
	LACANADA MOBILE ESTATES
	LARRY ELLIS
	LARRY KING
	LAURA WEBB
	LEONARD LAVORATO
	LINDA PERKINS
	LOIS CHAVIS
	LOUISE SEEFELDT
	MARIA ORTIZ
	MARY PARHAM
	MILTON STEWART

SAN JUAN GRADE RD 1999 (Cont'd)

55	PEGGY MYERS
	PHILLIP BEANE
	RALPH FREILINGER
	RALPH GEMIGNANI
	RALPH NORWOOD
	RICHARD CRANSTON
	RICHARD JOHNSON
	ROBERT BLOCK
	ROBERT TIETZ
	RON DAY
	ROSE ALARCON
	RUBY AMARO
	SANDRA CHANDLER
	SANDRA MENDOZA
	STELLA GHIO
	STEPHEN SKERCE
	VALERIE RANDALL
	VICKIE MEDLEY
	WARREN ADAMS
	WILLIAM RIDDELL
75	DEVIN FEHN
	OCCUPANT UNKNOWN
84	STAN PIFFERO
86	SWANSON WELDING & REPAIR
109	ALLAN LAUREL
	BARBARA TRAYLOR
	HELEN RAMIREZ
	RHONDA BROWN
	RUDY DURAN
	SANDRA ESTRADA
	SHAUN OWENS
115	ANASTASIA JAEGER
	ANTHONY URANGO
	BABAIAN YOURGHANLOU
	BRIANNA RAMOS
	CHARLES MANUEL
	CHRIS BERNAL
	DENNIS BROWN
	DIANE CHOI
	ERNEST HOWARD
	FRANCISCO GIRON
	GRETCHEN BEDDINGFIELD
	JEDIDIAH TROUT
	JON SCHULTHEIS
	JUAN CITAL
	LUAFULA PURCELL
	MARK CUNNINGHAM
	NOEL PEREZ
	RICARDO MEZA
	RICHARD ESCARENO

SAN JUAN GRADE RD 1999 (Cont'd)

115	ROBERT MCELROY
	RODRIGUEZ RITA
	ROSALIA ELIAS
	ROSE LUGO
	ROSIE URIBE
	SEAN DALEY
	VILLA SAN JUAN APARTMENTS
	YOLANDA CERDA
118	GUILLERMO PACHECO
	OCCUPANT UNKNOWN
	SALINAS BERRY FARMS
119	LOUIE JIMENEZ
225	HORACIO MURILLO
	OCCUPANT UNKNOWN
229	DENNIS SUTTON
	OCCUPANT UNKNOWN
235	JUAN BETENCOURT
237	OCCUPANT UNKNOWN
239	OCCUPANT UNKNOWN
	RUBICELIA TAPIA
243	OCCUPANT UNKNOWN
251	THOMAS BLACKWELL
253	JAMES ANDERSON
261	ISRAEL GUZMAN
263	OCCUPANT UNKNOWN
267	MICHAEL PERHAM
	OCCUPANT UNKNOWN
269	ELMER PAYONGAYONG
270	OAK PARK COMMUNITY CHURCH
	RITA CHAPPELL
275	GENARO MARTINEZ
277	HENRY RAMIREZ
279	CHRISTOPHER MEHARG
282	OCCUPANT UNKNOWN
283	OCCUPANT UNKNOWN
	SAM TREVINO
285	HELEN BREWER
289	RUBEN MEDINA
293	CECIL WILLIAMS
298	ANNETTE BENAVIDES
299	MANUELA TORRES
302	LOUANN RARAS
306	OCCUPANT UNKNOWN
	REGINA VILLANUEVA
307	CECILS LIQUOR & DELICATESSEN
	CHEVRON CECILS
	OCCUPANT UNKNOWN
317	VIRGILIO DOMINGO
319	OCCUPANT UNKNOWN
325	OCCUPANT UNKNOWN

SAN JUAN GRADE RD 1999 (Cont'd)

327	OCCUPANT UNKNOWN
	ORLANDO ORTIZ
329	OCCUPANT UNKNOWN
	ROBERT SMITH
335	EUGENE STOFFEY
336	OAK PARK FOOD CENTER
	OCCUPANT UNKNOWN
340	KENPO KARATE
	MARTIAL ARTS INSTITUTE
344	OAK PARK BEAUTY SALON
346	ANDERSENS LOCK & SAFE
349	GREG ECKELS
	OCCUPANT UNKNOWN
350	MARISA BERMUDEZ
351	KYLE DIVINE
353	OCCUPANT UNKNOWN
	RONALD PIEARCY
354	SARA MERCADO
355	GENE STOFFEY
367	MIGUEL LOMELI
368	SALINAS VALLEY COMMUNITY CHURCH
377	KENNY BECK
	OCCUPANT UNKNOWN
381	LITTLE LAMBS PRE SCHOOL
	NORTH SALINAS BAPTIST CHURCH
	PACIFIC COAST CHRISTIAN ACADEMY
385	JOHN LUNSFORD
	SUSAN MATTINGLY
387	CELERINO RAMIREZ
	OCCUPANT UNKNOWN
389	DAVID FERGUSON
	JEROMY BECK
475	SALINAS GOLF & COUNTRY CLUB
518	OCCUPANT UNKNOWN
580	B TORRES
	CLASSIC COOLING
	POUL RASMUSSEN
	PRIORITY BUSINESS & INFORMATION SERVICES
	RUBEN BECERRA
	SALVADOR JURADO
581	ALEX GWARTNEY
	GERARDO VALADEZ
	OCCUPANT UNKNOWN
	ROD PORTSCHY
620	OCCUPANT UNKNOWN
624	THOMAS BLAZEK
	TONY KHINDA
625	OCCUPANT UNKNOWN
630	TOBY MILLS
632	JAMES SWAIN

SAN JUAN GRADE RD 1999 (Cont'd)

638	CECIL SHORT
640	JOE FANNING
644	JAIMES PEREZ
	OCCUPANT UNKNOWN
648	LEONARDO LUCIO
652	CARLTON CHOATE
	OCCUPANT UNKNOWN
654	THOMAS HILL
656	ESTELA VIRGEN
658	CARLOS PEREZ
	YAJAIRA VIGIL
660	WILLIAM RITCHIE
662	OCCUPANT UNKNOWN
674	CASEY GROSSEN
	OCCUPANT UNKNOWN
676	DAVID LOPEZ
	OCCUPANT UNKNOWN
684	JOEL GREEN
688	HENRY SOARES
690	MARGARITO REGALADO
	OCCUPANT UNKNOWN
694	MARY ORTIZ
700	LARRY WELCH
	OCCUPANT UNKNOWN
702	OCCUPANT UNKNOWN
	PATRICIA DIXON
704	ART SIORDIA
706	STEVEN AGUIRRE
708	OCCUPANT UNKNOWN
718	LLOYD SLATON
	OCCUPANT UNKNOWN
	SLATON & SON ROOFING INCORPORATED
722	JOSE VIVEROS
726	ALFREDO SOTO
	OCCUPANT UNKNOWN
730	OCCUPANT UNKNOWN
734	CLOSE TOM & PAT
	SGO DESIGNER GLASS
	THOMAS CLOSE
738	GERARDO ESTRADA
	OCCUPANT UNKNOWN
	PAYLESS TOWING
746	OCCUPANT UNKNOWN
750	KRISTY CLARK
760	OCCUPANT UNKNOWN
766	EDWARD HOLZWART
770	JEREMY BRUNSCHER
774	ALEJO AHUMADA
775	OCCUPANT UNKNOWN
780	OCCUPANT UNKNOWN

SAN JUAN GRADE RD 1999 (Cont'd)

975	LAGUNITA SCHOOL
	SUGARLOAF PRESCHOOL
1048	RW CROSWHITE
1050	OCCUPANT UNKNOWN
1052	JAMES ELLIOTT
	ROBERT ELLIOTT
1054	NORMA VARILLAS
1056	SHERWOOD DARINGTON
1784	JEAN STROHN

Target Street	Cross Street	Source
-	✓	Cole Information Services

E BORONDA RD 1995

21621	CUNHA, JOHNNY
21673	CHAVEZ, JOSE P
	YANEZ, F R

NATIVIDAD RD 1995

2	GRANADOS, JESUS
4	OCCUPANT UNKNOWNN
6	MENDOZA, GUSTAVO
8	OCCUPANT UNKNOWNN
16	ANADALON, A
	ANDALON, A
	ANDRADE, JOSE
	GUTIERREZ, RAMIRO V
	HAMOY, JOSEPH N
	ISHCOMER, NAOMI
	MACIAS, JESUS
	PARRA, C
	THORNDIKE APARTMENTS
	WONG, WALLY
22	FUENTES, S
24	ACEVEDO, LEONEL
26	OCCUPANT UNKNOWNN
28	GARCIA, PETE
	LOPEZ, FELIPE
30	FERNANDES, ANTONIO
33	STEEN, EMELIA
34	MARTINEZ, G
35	OCCUPANT UNKNOWNN
36	OCCUPANT UNKNOWNN
38	OCCUPANT UNKNOWNN
42	OCCUPANT UNKNOWNN
44	CARRILLO, SARA
	DELGADOOLIVARES, VICENTE
	ESPARZA, NOEL
	FERNANDEZ, SAN
	HURTADO, MARIA G
	LOPEZ, MARIA
	SALAZAR, G
	SCHIVELEY, ESTHER
	SPARKS, LILLIE
48	DIAZ, TAURINO E
50	FLORES, LUIS A
54	ANGELES, ARMANDO
	CHAVEZ, GLORIA
	COREY, ROBERT
	CRITES, THOMAS R
	FAVELA, ALONSO
	FORD, P
	GUZMAN, ROY G
	IRVINE, LELAND
	JUAREZ, F
	OSBURN, ROSE
	PEPPERTREE APARTMENTS
	PRELLER, ROBERT K
	RESQUIR, ANSELMO C

NATIVIDAD RD 1995 (Cont'd)

54	RUANO, JUAN S
	SANDOVAL, SOPHIA
	SELLS, WENDELL
	SMITH, OLDEN JR
	STODDARD, KRISS
	WARD, LARRY
55	ASSEMBLIES OF GOD NORTHSIDE
	SALINAS TEEN CHALLENGE
56	OCCUPANT UNKNOWNN
57	LAWS, SUSAN
	MONTANO, ARTURO
	POWELL, NATHAN G
58	AYALA, JAIME A
	GARIBAL, MARIA
	GONZALES, C
	HUYNH, MUOI
	JIMENEZ, GABRIEL
	MEDRANO, DELFINO
	PIMENTEL, SANDRA
	ROCHA, ROSA
	ROJAS, HEIDI
	WOLOSZ, STANLEY
61	KELLYS BEL AIR LIQUORS
63	OCCUPANT UNKNOWNN
65	ESQUER, MIKE
	RIVERA, M
172	OCCUPANT UNKNOWNN
174	OCCUPANT UNKNOWNN
184	SALAZAR, JUAN
188	OCCUPANT UNKNOWNN
190	OCCUPANT UNKNOWNN
205	OCCUPANT UNKNOWNN
222	OCCUPANT UNKNOWNN
225	ARROYO, UBALDO
	AVILA, PABLO
	CANSECO, G M
	MARTINEZ, F
	PEREZ, JUAN
	RUIZ, FELIPE
	SANTOSMEDRANO, RAMIRO
	ZAVALA, SANTOS I
235	BONDESEN, HENRY
239	OCCUPANT UNKNOWNN
250	SETTRINI, GUS JR
251	EMLAY, RANDY S
	GLOVER, KATHRYN E
254	VCNM FARMS
261	OCCUPANT UNKNOWNN
	S S SALINAS SANITATION
	WEST COAST MFG

NATIVIDAD RD 1995 (Cont'd)

301	AMERICAN TAKII INC
	YAMAZAKI, AKIRA
357	NATIVIDAD NURSERY
359	ALEXANDER, WILLIAM D
369	OCCUPANT UNKNOWNN
376	FARM WORKERS SVC CTR
	SINCLAIR, JOHN W
383	NATIONAL PRESERVE CO
394	OCCUPANT UNKNOWNN
397	OCCUPANT UNKNOWNN
398	HILLSIDE NURSERY
	HIRAKAWA, SATSUKI
402	KRAUS, L
430	MITCHELL, DUANE E
	WALL, JODI K
474	OCCUPANT UNKNOWNN
489	MATTHEWS, HIRAM
1326	CHEN CHIEN FANG FAMILY PRCTC
	CHEN, C
	CHIEN FANG CHEN MD
	CRISTOBAL VIRAY VAL JR DDS
	DAVID A STAUNTON MD
	DONALD A CATALANO MD
	GARY E FALKOFF MD
	GILES A DUESDIEKER MD
	HAROLD E RUMBEL MD
	JAMES A KOWALSKI MD
	NATIVIDAD RX PHARMACY
	RICHARD L MATTSON MD
	SALINAS VALLEY RADIOLOGISTS
	SMITH KLINE BEECHAM CLINICAL
	WILLIAM S BERG MD
1328	DOUGLAS C CAMBIER MD
	JAMES K HOFFMAN MD
	SALINAS FAMILY PRACTICE CLINIC
	TERESA NEVITT
1330	ALLEN SANTELL MD
	CARY YOUNG MD
	GREG NUNEZ MD
	HAYWARD MABEN MD
	JOHN JAMESON MD
	JOHN MARK MD
	JOHN MORRISON MD
	JOHN SCHATZ MD
	KENNETH ISHIZUE MD
	LAURA SOLORIO MD
	MARK ROBINSON MD
	NATIVIDAD CHILD DEVELOPMENT
	NATIVIDAD MEDICAL CTR
	OGUSHI NKWOCHA MD

NATIVIDAD RD 1995 (Cont'd)

1330	RICHARD BRUNADER MD
	ROMAN MALVEHY MD
	STEPHEN VOORHIES MD
	SUNAH YOUNG MD
	VALERIE BARNES MD
	WALTER WILCOX MD
	WILLIAM HINDERSTEIN MD
1332	ANTONIO R VELASCO MD
	JEANETTE CISNEROS MD
	NORMAN ROSEN MD
	VALLE VERDE MEDICAL GROUP
	VELASCO, ANTONIO R
1336	ORLANDO RODRIGUEZ MD
	PABLO ROMERO MD
	SANTA LUCIA MEDICAL GROUP
1352	MONTEREY COUNTY DEPT OF SOCIAL
1414	HUTSCHNEIDER, JOSEF
1420	FOSTER GRANDPARENT PROGRAM
	MONTEREY COUNTY CORRECTIONS

ROGGE RD 1995

55	LA JOYA ELEMENTARY SCHOOL
	YMCA
71	CRUZ, ROSARIO L
100	VALENZUELA, JOSE M
101	HUNT, TRAVIS
103	ALLEN, CHARLES
105	DIAS, WILLIAM J
107	LICEA, JESUS S
1001	RANDTKE, M
1003	CLAIRBORNE, WILLIAM M
1111	SAETURN, KAKAO
1119	HARBIN, FRANK
19624	STOREY, PHILIP
19658	DICKINSON, DAVID G
	TAGUIRAN, G S
19670	OCCUPANT UNKNOWNN
19682	PARKER, JOHN L
19700	MELO, MANUEL

SAN JUAN GDN RD 1995

27	OCCUPANT UNKNOWNN
31	SILVA, RICK
55	ACKERMAN, NORBERT A
	CHAPPEL, LLOYD
	CHEADLE, M N
	COFFEY, E
	COTTINGHAM, DAE
	CUTSHALL, JOHN
	DAVIS, MERLE
	DENISON, JAMES
	DUNLAP, ELMER
	FRANK, ESTER
	FREED, L
	FULLER, EARL
	FURR, JERRY B
	GARCIA, EMMA
	GERVAIS, TED
	GESNER, PHYLLIS K
	GHIO, STELLA M
	GILES, HENRY A
	GIVAN, ESTHER
	GRECO, T E
	HOLMES, VIVIAN
	HUMMEL, E H
	JACKSON, HARRY
	JENSEN, M
	JONES, L M
	KERSCH, ARTHUR N
	KILLEN, ELWOOD
	KNOX, JOHN H
	LAUCELLA, K
	LAYNE, L
	LEBLANC, DENNIS
	LEWIS, DOROTHY
	LIGON, DOC W
	LITTLE, J
	LONGLEY, PAUL
	MASON, LILLIAN
	MATTOS, JIM
	MILLER, G F
	MORRIS, MILTON J
	MYERS, BILLIE J
	NATION, A L
	NIGUIDULA, LETICIA A
	NORWOOD, RALPH F
	PELLEGRINI, L
	PRICE, MARY M
	REMBOLD, SYLVAN L
	REYNOLDS, HAROLD O
	SANTIAGO, MIKE

SAN JUAN GDN RD 1995 (Cont'd)

55	SASULES, A
	SEEFELDT, DEAN
	SEYDEL, AMY D
	SLOAN, ROY
	SMITH, M
	SPARKS, J W
	STOUGHTON, JOE
	THOMPSON, A J
	TROLLINGER, ERVIN
	WHITSON, LYNN
	WOOTEN, K M
	YOUNG, DONALD L
75	MOORE, ROWE P
84	PIFFERO, STAN
86	OCCUPANT UNKNOWNN
109	HUGGINS, ISHMAEL
	RODRIGUEZ, F
115	BECKER, ROGER
	BROWN, WILLIAM N
	CASTOR, M
	COLORINA, L B
	DELREAL, HECTOR N
	DOMMER, SCOTT
	FLORA, DOUG
	HEINE, JUANITA
	HUBBS, WILLARD JR
	KEEMA, LINDA
	KOMMINENI, SUDHIR
	LEE, JEAN W
	LIVERMONT, L A
	PFAEFFLE, JAIME
	SWAIN, KEVIN
	SYED, ZAHEER
	WALKER, MICHAEL
	WALLACE, ELLIS
	WILSON, STEVEN JR
118	SANCHEZ, MIGUEL
119	POLZKILL, BOB
225	ZAVALA, F P
229	OCCUPANT UNKNOWNN
235	OCCUPANT UNKNOWNN
237	GARCIA, PASCUAL
241	OCCUPANT UNKNOWNN
243	OCCUPANT UNKNOWNN
247	BURRITT, GEORGE
251	OCCUPANT UNKNOWNN
253	WILLIAMS, THELMA S
257	JACOBAN, JOHN M
261	BECERRA, E
263	GARCIA, C L

SAN JUAN GDN RD 1995 (Cont'd)

267	WHITNEY, JAMES J
269	MCGONIGLE, CHRIS
270	OCCUPANT UNKNOWNN
274	CASILLAS, JOSE
275	OCCUPANT UNKNOWNN
277	RAMIREZ, HENRY J
279	BALL, EDMUND F SR
282	BROWN, GRADY G
283	TREVINO, LETICIA
285	BREWER, CHARLES C
286	CASILLAS, S A
289	MATTOX, GEORGE W
290	ADI, F
293	OCCUPANT UNKNOWNN
294	OCCUPANT UNKNOWNN
298	OCCUPANT UNKNOWNN
299	OCCUPANT UNKNOWNN
302	RARAS, MANUEL JR
306	VILLANUEVA, HENRY V
307	OCCUPANT UNKNOWNN
310	HOWARD, ED H
314	VALLE, ROGELIO
317	DOMINNO, V
319	GARCIA, ISAIAS
325	OCCUPANT UNKNOWNN
327	BAUSCH, MATT
329	RAMIREZ, LARRY
342	OCCUPANT UNKNOWNN
349	ECKELS, GREG
351	DIVINE, KYLE
353	OCCUPANT UNKNOWNN
355	STOFFEY, EUGENE
361	OCCUPANT UNKNOWNN
367	SOARES, JASON
368	OCCUPANT UNKNOWNN
385	BORBA, WILLIAM
386	OCCUPANT UNKNOWNN
387	CASTILLO, FRANK
389	BECK, ALICE
485	SMITH, S T
500	OCCUPANT UNKNOWNN
510	OCCUPANT UNKNOWNN
518	CRUZ, JESUS J
580	GARCIA, JOSE R
	MUTHER, FRANK
	RASMUSSEN, ERIK
624	OCCUPANT UNKNOWNN
625	OCCUPANT UNKNOWNN
630	MILLS, RICHARD
	OKA, J

SAN JUAN GDN RD 1995 (Cont'd)

632	SWAIN, FELIX R
634	BIRD, ESTHER M
638	OCCUPANT UNKNOWNN
640	FANNING, JOE D
644	SCHRIVER, DORTHA
648	NANCE, MIKE J
652	OCCUPANT UNKNOWNN
654	HILL, PHILLIP E
	WONCH, WILLIAM
656	OCCUPANT UNKNOWNN
658	MIRACLE, JAMES P
	SPARKS, WILLIAM F
660	RITCHIE, BILL
662	KIRBY, EILEEN
664	OCCUPANT UNKNOWNN
676	LOPEZ, P A
680	SORENSEN, ADA M
682	FORSGREN, BARBARA S
684	GREEN, JANET L
686	OCCUPANT UNKNOWNN
690	SEAY, RONNIE E
694	ORTIZ, BENNY V
700	PARKS, ANGEL
702	OCCUPANT UNKNOWNN
704	DIXON, P J
706	AGUIRRE, STEVE
708	SCHLALOS, JOHN W
716	OCCUPANT UNKNOWNN
718	OCCUPANT UNKNOWNN
722	WYRICK, JAMES
726	OCCUPANT UNKNOWNN
730	MELLOTT, GREGORY
734	CLOSE, TOM
738	OCCUPANT UNKNOWNN
742	ROBISON, RAYMOND
746	OCCUPANT UNKNOWNN
750	WHITE, BILL
754	BALDWIN, MARVIN R
758	MOE, WILLIAM E
760	OCCUPANT UNKNOWNN
762	SCHNEIDER, JOSEPH
766	HOLZWART, ED
770	BOLANOS, ELIAZ
	PATTERSON, CHESTER H
774	LOPEZ, EDUARDO
782	RODRIGUEZ, MARIO
898	RICCA, L
1040	ZOBEL, CLINTON J
1048	BEATTY, M C
1050	OCCUPANT UNKNOWNN

SAN JUAN GDN RD 1995 (Cont'd)

1052	ELLIOTT, GEORGE
	WRIGHT, PAUL T
1054	PURRIER, GRICE B
1056	DARINGTON, S

SAN JUAN GRADE RD 1995

55	LA CANADA MOBILE ESTATES
86	SWANSON WELDING & REPAIR
115	VILLA SAN JUAN APARTMENTS
269	MARK BAILEY GROUT PUMP SVC
270	OAK PARK COMMUNITY CHURCH
307	CECILS LIQUOR & DELICATESSEN
336	OAK PARK FOOD CTR
340	SANDPIPER INTERIORS
344	OAK PARK BEAUTY SALON
346	SANTA RITA VIDEO II
348	MAPLE CHILDRENS CTR
381	NORTH SALINAS BAPTIST CHURCH
	SALINAS SPANISH SEVENTH DAY
389	PAUL T BECK CONTRACTORS INC
475	SALINAS GOLF & COUNTRY CLUB
624	WRITE ON SCREENING
718	SLATON ROOFING
734	CLOSE CONSTRUCTION
750	WHITES ROOFING CO
780	LUME INDEPENDENT CONSULTANT
975	LAGUNITA SCHOOL
	SUGARLOAF PRESCHOOL

Target Street	Cross Street	Source
-	✓	Cole Information Services

NATIVIDAD RD 1992

6	MENDOZA, GUSTAVO
16	BECERRAMARQUEZ, PEDRO
	HERTZOG, BRIANNA N
	INFANTE, JULIE
	SANDOVAL, LOUISE M
	TELLEZ, RUBEN
	THORNDIKE APTS
	WONG, WALLY
20	AVILA, GONZALO
	ROSAS, B M
22	CAZARES, MARTIN
24	ACEVEDO, LEONEL
28	LOPEZ, FELIPE
30	FERNANDES, ANTONIO
32	HERNANDEZ, FLORES A
34	MARTINEZ, G
38	LUQUIN, JUAN M
44	ESPARZA, NOEL
	GAMBINO, M
	RAMON, H C
	RUG DOCTOR RENTS
48	DIAZ, TAURINO E
50	RAMOS, DANIEL
54	ALVARADO, ANGLES I
	CHAMPAGNE, GUY
	CRITES, THOMAS R
	DICKENSON, TODD
	KIM, NAMGYOO
	PEPPERTREES APTS
	RUANO, JUAN S
	VICENT, W O
55	ASSEMBLIES OF GOD
	SALINAS TEEN
	SALINAS TEEN CHLLNG
58	AYALA, JAIME A
	MARTINEZ, MARIA I
	MENDOZA, E
	RUBIO, SILVIA
65	ESQUER, MIKE
	RIVERA, M
135	PEPSI-COLA BOTTLING
186	CUNHA, JOHNNY A
	RAMIREZ, ANICETO
	SILVER&BLACK CONSTR
188	ESPINO, JOSE
194	AWARD HOMES
222	H & E CHRISTENSEN
	H&E CHRISTENSEN
	SUPNET, N I
225	AVILA, PABLO

NATIVIDAD RD 1992 (Cont'd)

225	CAMPUSANO, SIERRA I
	HERNANDEZ, ALFREDO
	MARTINEZ, F
	ZAVALA, SANTOS I
235	BONDESEN, HENRY
	ESCALON BERRY FARM
239	ESCALON BERRY FARMS
250	SETTRINI, GUS JR
251	EMLAY, RANDY S
	GLOVER, K E
254	MONTERY CO STRWBRRY
	VCNM FARMS
261	WEST COAST MANUFACT
	WEST COAST MFG
301	AMER TAKII INC
	AMERICAN TAKII INC
357	IWAMOTO M & D CO
	IWAMOTO M&D CO
	KONDO FARMS
	NATIVIDAD NURSERY
359	ALEXANDER, WILLIAM D
376	FARM WORKERS SV CTR
383	NATIONAL PRESERVE
	NATL PRESERVE CO
395	MONTEREY CO SHERIFF
	MONTERY CO SHERIFF
	YOSHIDA FARMS
397	SILVA, MANUEL B
398	HILLSIDE NURSERY
	HIRAKAWA SATSUKI
	HIRAKAWA, SATSUKI
474	VIERRA, MICHAEL
489	MATTHEWS, HIRAM
544	PRELLER, ROBERT K
572	ARREOLA, S
1220	MONT COUNTY GRAPHCS
	MONTERY CO GRAPHICS
1270	CO AIDS INFO
	CO CHILDRENS SERV
	CO ENVIRNMTL HEALTH
	CO EPIDEMIOLOGY
	CO HEALTH DEPT
	CO MENTAL HEALTH
	CO PATIENTS RIGHTS
	MONT HEALTH DEPT
	MONTERY CO HLTH
1322	CO AFDC
	CO SOCIAL SVCS DEPT
	MONTERY CO SOC SERV
1326	CHEN CHIEN FANG MD

NATIVIDAD RD 1992 (Cont'd)

1326	CHEN CHIEN-FANG MD
	MATTSON RICHARD L
	NATIVIDAD RX PHARM
	NATIVIDAD RX PHRMCY
	RUMBEL H E MD
	SALINAS RADIOLOGIST
	SALINAS VLY RDOLGST
	SMITHKLINE BEECHAM
	SMITHKLINE BIO SCI
	VIRAY VALERIANO MD
1328	CAMBIER DOUGLAS MD
	CARPER JOHN K MD
	HOFFMAN JAMES K MD
	NEVITT TERESA BS RD
	SALINAS FAMILY PRAC
1330	AL- MARASHI M M MD
	BARNES VALERIE MD
	CENTRAL EDUCATION
	CENTRL COAST HEALTH
	CHILDRENS SERV CNTR
	CHILDRENS SERVICES
	CUEVAS M MD
	FAMILY PRACTICE CTR
	FERNANDEZ M A MD
	FERNANDEZ MARY A MD
	HANNON JOSEPH MD
	HINDERSTEIN WM MD
	ISHUZUE KENNETH MD
	JAMESON JOHN MD
	JANZEN JOHNSTON
	LAUREL MEDICINE CLC
	LAUREL OAK MED CLNC
	LAUREL OAK MEDICINE
	MENTAL HEALTH UNIT
	NATIVIDAD MED CNTR
	NATIVIDAD MED CTR
	SCHATZ JOHN MD
	SKILL CENTER
1332	ADAME MARK J MD
	CISNEROS JEANETTE
	COLE JAMES F MD
	COLE, JAMES F
	ROSEN NORMAN MD
	VALLE VERDE MEDICAL
	VELASCO ANTONIO MD
1336	BARCELO LAWRENCE MD
	RODRIGUEZ O MD
	ROMERO PABLO MD
	SANTA LUCIA MEDICAL
1352	ADOPTIONS SERVICE

NATIVIDAD RD 1992 (Cont'd)

1352	ADOPTIONS SVC
	CO ADOPTIONS
	CO CHILDRENS SVCS
	CO LICENSNG DAYCARE
	MONT CNTY ADOPTIONS
1410	CO INMATE INFO
1414	CO INVESTIGATIV DIV
	CO SUPPORT SVCS
	MONTERY CO SHERIFF
1420	CO CORRECTIONS BUR
	CO JUVENILE HALL
	CO JUVENILE TRAFFIC
	FOSTER GRANDPARENT
	MONT JUVENILE HALL
	MONT JUVENILE TRFFC
	MONTEREY CRRCTN BUR
	MONTERY CO JVNL HLL
1422	MONT PROBATION DEPT
	MONTERY CO PROBATN
1623	ING, ALEX
1626	HAMOY, JOSEPH N
4410	CARRILLO, SARA
4413	SPARKS, LILLIE
4415	FERNANDEZ, S
4435	SCHIVELEY, ESTHER
4436	VARGAS, JOSE
4437	HUYNH, PHUOC H
5413	ANGELES, ARMANDO
5414	RESQUIR, ANSELMO C
5416	SHORTT, JAMES
5419	ARTHUR, MARY
5445	MILANES, ANTHONY
5815	MEDRANO, DELFINO
5817	JIMENEZ, ALBERTO
5818	HUYNH, MUOI
5820	OSUNA, V
5832	ROCHA, ROSA

ROGGE RD 1992

55	LA JOYA ELEM SCHL
	LA JOYA ELEM SCHOOL
	SANTA RITA SC ELEM
	Y M C A CHILD CARE
	YMCA CHILD CARE
71	CRUZ, ROSARIO L
100	VALENZUELA, JOSE M
103	ALLEN, CHARLES
107	FOSTER, CAREY M
1001	GREEN, RANDY
	RANDTKE, M
1100	T O TOMASELLO CO
1119	HARBIN, FRANK
1151	A & C FARMS
	A&C FARMS
19658	DICKINSON, DAVID G
	TAGUIRAN, G S
19700	MELO, MANUEL

SAN JUAN GRADE RD 1992

47	SALINAS GOLF &CNTRY
55	COFFEY, E
	COTTINGHAM, DAE
	CUTSHALL, JOHN
	FRANK, ESTER
	GERVAIS, TED
	GOOLSBY, K
	GRECO, T E
	HOLZ, ELISE
	HUMMEL, E H
	JENSEN, M
	JONES, L M
	KETTLE, PAUL
	LA CANADA ESTATES
	LACANADA MOBILE EST
	LAYNE, L
	MCCLOVIC, LEW
	MCFARLAND, SHANNON E
	MILLER, G F
	NATION, A L
	PRICE, MARY M
	REID, G W
	SIINO, RAYMOND
	SPARKS, J W
	STOUGHTON, JOE
	THOMPSON, A J
	WHITSON, LYNN
75	ERNER, PAMELA
84	PIFFERO, STAN
86	RICHARDS TED WELDNG
	SWANSON WELDING-RPR
109	SITTON, KIMARIE
115	KEEMA, LINDA
	LEE, JEAN W
	LIVERMONT, L A
	MACULANS, RAY
	PUTNAM, A S
	SCHIWAL, MANETTE
	SYED, ZAHEER
	VILLA SAN JN APT
	VILLA SAN JUAN APTS
118	SALINAS BERRY FARMS
	SANCHEZ, MIGUEL
119	POLZKILL, BOB
237	SALINAS CHRISTN CH
247	BURRITT, GEORGE
251	BLACKWELL, THOMAS L
261	BECERRA, E
264	OAK PARK CMNTY CHCH
	OAK PK COMMNTY CH

SAN JUAN GRADE RD 1992 (Cont'd)

269	BAILEY M GROUT PUMP
	BAILEY MARK GROUT
	BAILEY, MARK A
274	CASILLAS, JOSE
279	BALL, EDMUND F JR
283	TREVINO, LETICIA
290	ADI, F
301	GRACE FURNITURE
302	RARAS, MANUEL JR
303	SANTA RITA SC SUPT
	SANTA RITA SCHOOL
	SANTA RITA UNION
307	CECILS LIQUOR&DELI
310	HOWARD, ED H
317	DOMINNO, V
319	GARCIA, ISAIAS
325	ROTHSTEIN, LEONARD
336	OAK PARK FOOD CENTR
	OAK PK FOOD CENTER
340	SANDPIPER INTERIORS
342	HOUSE OF MAHOGANY
344	OAK PARK BEAUTY
	OAK PARK BEAUTY SLN
348	MAPLE CHILDRENS CTR
	MAPLE ST CHLDRN CTR
349	ECKELS, GREG
351	DIVINE, KYLE
361	BOWMAN, DAVID
367	BROMWELL, PHYLLIS
381	BOLSA KNLLS BAPT CH
	BOLSA KNOLLS BAPT
385	BORBA, WILLIAM
387	CASTILLO, FRANK
389	BECK PAUL CONTRCTS
	BECK PAUL T
	BECK, ALICE
	BOOTH, LEEROY
	ROBISON, LARRY L
475	SALINAS GOLF
	SALINAS GOLF CLB HS
485	SMITH, S T
552	LITTLE, J
554	HOLMES, WOODROW
580	BLANCO DAIRY RANCH
	GARCIA, JOSE R
	MUTHER, FRANK
	RASMUSSEN, ERIK
600	TITUS, KEITH
624	WRITE ON SCREENING
630	MILLS, RICHARD

SAN JUAN GRADE RD 1992 (Cont'd)

630	OKA, J
632	SWAIN, FELIX R
634	BIRD, ESTHER M
638	SHORT, WILLIS E JR
640	FANNING, JOE D
644	SCHRIVER, C W
648	NANCE, MIKE J
654	HILL, PHILLIP E
	JONES, K
658	MIRACLE, JAMES P
	SPARKS, WILLIAM F
660	RITCHIE, BILL
662	SMITH, DAVID
682	FORSGREN, BARBARA S
684	GREEN, JANET L
694	ORTIZ, BENNY V
700	ZACHARY, KEITH
706	AGUIRRE, STEVEN
708	BETTENCOURT, DAVID
	SCHLALOS, JOHN W
718	SLATON ROOFING
722	WYRICK, JAMES
734	CLOSE CONSTRUCTION
742	ROBISON, RAYMOND
750	WHITE, BILL
	WHITES ROOFING CO
758	MOE, WILLIAM E
766	HOLZWART, ED
770	PATTERSON, CHESTER H
782	RODRIGUEZ, MARIO
898	RICCA, L
975	LAGUNITA SCHOOL
	SUGARLOAF PRESCHOOL
1040	ZOBEL, CLINTON J
1048	FRIEDLE, DAREN S
1052	ELLIOTT, GEORGE
1054	PURRIER, GRICE B
1056	DARINGTON, S
1153	WINCHESTER, NORM A

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1987

34b★Taylor Teresa 424-8199
34c Luna Otilia
LUNSFORD DR INTERSECTS
36★Burke Fred 422-0277
36b Valic Celestino
38 Lerma Roman P ◎ 758-2099
38a Pizarro Luciano 757-4788
38b Mikell Ruth
38c★Peterson Angela
38d Lopez Calvin
38e Covarrubias Joseluis 424-4951
44 Monterey County Housing Authority housing 424-2892
1 Zavala Alberto 757-7946
2 Rodriguez Danl 757-6431
3 Vacant
4 Busby Darlene V
5 Coleman Veneta
6★Sampson Charito
7★Nunes Juan J
8 Cota Javier G 424-6465
9★Rodriquez Felipe
10 Lorono Patricia 424-6119
11 Oliver Rudy 424-1832
12 Wilby Patricia H
13 Sparks Lilly
14 Swain Otis 757-3618
15 Seki Liance 757-1344
16 Gonzales Angelo 754-9947
17 Micou N
18★Estrada Estella 757-6498
19 Wiley Roger
20 Zachary Kirk 757-4986
21 Arambula Manuel 758-8928
22★Dobson Kenneth
23 Green Roger 757-3390
24 Gonzales Laura
25 Kelly Frederick
26★Donner Randall 757-6842
27 Gibson Rhonda 422-0361
28★Villasenor Oscar
29★Lindsey Austin
30 Carbajal Gerardo 443-6285
31★Carmon Lolita
32 Relf Cynthia 422-6007
33 Roseo Larry 757-7973
34 King David 757-6611
35 Schiveley Esther 424-1067
36★Lewis Darryl
37 Huynh Phuoc 758-8504
38★Imperio John
39 Murphy Charles
40 Guzman P

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1987

NATIVIDAD RD–Contd
48★Alvarado Salcido
48½b★Balestri Sonya 757-9841
48c No Return
SORRENTINO DR INTERSECTS
50★Frederick Donald 757-1091
50b Balli Caterine 757-4825
50c★Lawrence David
52 Ochoa Danilo
52a Sanchez Reynaldo
52b★Wheeler Lorraine
54 No Return
Peppertree Apartments
1★Ndanui Jung
2★Paltz Thomas 757-1593
3★Osborne Anthony
★Preller Robt
5★Merseth Marilyn Mrs
6 Campbell Edw E
7★Trumbo John
8★Mc Fadden Michael
9★Quiros Roberto
10★Valdaz Priscilla 757-5723
11 Roman Salvadore
12★Cabacceng Lolita Mrs
13 Simon Gregory 757-8091
14★Dole Henry
15★Mann Allan 422-1825
16★Barnhart Doris
17 Perez Antonio 422-8170
18★Powell Martin 422-1152
19★Thomas Curtis 424-6042
20★Zaputa Geo
21★Schule Roger
22★Cerros Lillian
23★Nieberger Francis Mrs 442-3892
24★Fernandez Steven
25★Celone Roger
26★Schreiber Cheryl
27★Jackson Damien
28★Sierra Louis 442-1939
29★Chambers Dawn
30 Hass Dale
31★Stevenson Thomas 422-4552
31★Alben Travis
32★Sims Barbara
33★Delatorre Antonio
34★Buesgen Ira
5★Brown Dexter
36★James Edward 425-9758
37★Eggleston Steve 442-8299
39★Martinez Jose 424-5355
40★Martin David
41★Griggs Nelson
49★Torres Daniel
50 Driskill J
55 Northside Assembly Of God Church 422-1677
★Irving Lester 424-8443
56 Stewart Lenore E Mrs ◎
57 Vacant
Apartments
1 Smith Michl T 757-1740
2★Asher Daniel
3 Villarreal Tomas
4★Ramirez Diane
5 Pena Federico L
6★Simon Leslie 758-1642
58 Lakeview Apartments (City Housing Authority)
1 Gutierrez Able
2★Dorren Stanley 758-4940
3 Macias Richd
4★Richards Christopher
5 Garcia Violet
6 Mendez Sylvia
7★Ellis Daniel 424-6450
8★Galiste Virginia
9 Perez Debbie 422-7638
10 Hernandez Rita Mrs
11★Valdez Jarier
13 Urquidez Jessica
14 Acosta Enedina 424-8461
15★Ruffin George
16 Clark Solomon 449-8125
17★Fries Charles
18 Carter Betty Mrs
19★Tober Cedric 449-1814
20★Martin Anthony 424-3464
21 Serrato Salvador 424-3109
22 Guerrero Alfredo
23 Perez Frances
24★Crosby Steven 424-9711
25 Gutierrez Diana
26 Gamino Juanita 424-2648
27★Travallo Ernestto 424-7736
29 Estrada Jose
30★Marks David
31 Maciel Luis
32★Shaw Robin
33 Ochoa Jose
34★Young Iris
35★Pratt Harold
37★Espinosa Gabriel
38★Jones Mark
39★Crebbs Calvin 757-3814
40 Martinez Maria 758-3591
41 Nieto Vincente
42★Incariglia Mark 752-9389
43 Rodriguez Jose
44 Sotello Maria
45★Clark Dwayne 758-8426
46★Trujillo Eduardo 757-1993
47 Lopez Sabino
48★Valdez Richard
49★Bloom Sharon
50★Witt Paul
60 Chinese Cemetery
61 Kelly Melvin ◎
61a Vacant
63★Magie Ronald ◎ 422-6594
65a Esquer Mike ◎ 424-9803
65b Ramirez Juan ◎ 422-2031
65c Ramirez Ofelia D 422-2031
OLD NATIVIDAD RD INTERSECTS
474 No Return
E LAUREL DR INTERSECTS
17
1220 County Graphics Ofc 424-8611
1270 County Health Dept 757-1061
County Mental Health Clinic 424-0946
1322 County Dept Of Social Services (Income Mtce) 757-2911
1326 Salinas Valley Radiologists 422-1392
Simard Ernest E phys 754-1593
Natividad R X Pharmacy 424-7575
Rumbel Harold E phys 422-1392
Barcelo Lawrence phys 754-4459
Romero Pablo phys 754-4459
Berg Wm S phys 422-1392
Hoops Wm R phys 754-1593

NATIVIDAD RD 1987

NATIVIDAD RD–Contd
Bauer C Donald phys 754-1593
Petoe George phys 754-1593
Mattson Richd L phys 742-7426
Powers Colleen phys 424-1392
Hader Richard C phys 424-6426
Kowalski James A phys 422-1392
Catalano Donald phys 424-1392
Kloby Jay phys 424-6426
Calabrese Daniel P phys 424-6426
Viray Valeriano B phys 422-5557
1328 Mc Lemore John phys 757-8081
Hunt William P phys 757-8081
1330 Natividad Med Center Of Monterey County 757-0200
1332 Clinica Popular phys 757-6237
Romero Pablo phys 754-1544
Velasco Antonio R phys 754-1544
Navarro Corazon phys 754-1544
Barcelo Larry phys 754-1544
1352 County Dept Of Social Services childrens family servs 757-2911
PACHICO ST INTERSECTS
1410 Adult Rehabilitation Facility 757-1073
1420 County Juvenile Hall 758-1081
1422 Monterey County Probation Dept 758-1081
CHAPARRAL ST ENDS
RAINIER DR ENDS
EALVERI DR ENDS
MILLBRAE ST BEGINS
LESLIE DR ENDS
SARATOGA DR BEGINS
CALAVERAS DR ENDS
LOS COCHES AV INTERSECTS
COMPTON WAY INTERSECTS

207

NAVAJO DR –FROM 1368 N MAIN ST WEST

ZIP CODE 93906
1 Navajo Corner ofc bldg

Target Street	Cross Street	Source
-	✓	Polk's City Directory

ROGGE RD 1987

P.O. Box 5368 (93915)• 201 Suite "E" John Street• S

25

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ROGGE RD –FROM 328 PAUL AV EAST (NUMBERS IN REVERSE)

ZIP CODE 93906
55 La Joya School sch 449-5405
Gavilan View Middle Sch 449-2179
69 Cavazos Jose H ◎ 449-5844
71 Cruz Gil L ◎ 449-7676
SAN JUAN RD INTERSECTS
100 Roes Frank ◎ 449-2771
101 Brown Albert ◎ 449-6028
102★Reed Carl A 443-4714
103 Allen Chas S ◎ 449-0430
104 King Ben L ◎ 449-4412
105★Kelley Norma G ◎ 443-5509
107★Foster Carrie M ◎ 443-0898
108 Aguirre Walter J ◎ 449-3774
PAUL AV INTERSECTS
1001 Bishops Wm ◎
1001a Rabon Connie ◎ 449-2779
1001b Buckmiller Dennis
1001c Burnes John ◎ 449-8877
1001d Van Dusen Cindy ◎ 443-0772
1003 Adams Leonard P ◎ 449-1307
1100 Mortensen Carl M ◎ 449-1193
1111 No Return
1119 Harbin Frank E ◎ 449-5287
1151 A & C Farms 443-4677
Cloninger Loren E ◎ 443-4311
19624 Alexander Bobbie R ◎ 449-7044
19658 Taguiran Georgia S ◎ 449-7915
19670 Fejeran Vincent C ◎ 449-7959
19682 Vacant
19700★Melo Manuel D ◎ 449-8086

202

ROMIE LA E –FROM 1001 S MAIN ST EAST

ZIP CODE 93901
14 Cal's Valley Center Liquors 422-3950
16 Corpus Christi Bible Bookstore book store
422-6609

Target Street	Cross Street	Source
-	✓	Polk's City Directory

SAN JUAN GRADE RD 1987

321 No Return
332★Passmore Wm A ◎ 758-6223
333 Yamaguchi T ◎ 424-1704
337 Fife J Milton ◎ 422-4923
340 Thorton Richard V ◎ 424-4715
ENCINADA DR INTERSECTS
341 Firth Raymond A ◎ 422-7906
345 Payne June L Mrs ◎
2 349★Barstad Aldan ◎
353 Jobin Wm R Jr ◎ 422-0869
358 No Return
LA MESA DR INTERSECTS
364 Vacant
365 Finley David C ◎ 422-1694

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SAN JUAN GRADE RD –FROM N MAIN ST NORTHEAST

ZIP CODE 93906

Target Street	Cross Street	Source
-	✓	Polk's City Directory

SAN JUAN GRADE RD 1987

SAN JUAN GRADE RD–Contd
17 Vacant
25 Apartments
A★Jefferies James L 449-0904
B Kirby Kelly R
C★Smith Leon 449-7462
D★Perez John 449-6290
27 Aderson Stan ◎ 443-6000
31 Nielsen Richard B ◎
33 Federal Telecomms (Sub-Station) 443-0285
55 La Canada Mobile Estates 449-5765
Spaces
1★Thiessen Mary C ◎
2 Little Jane ◎
3 Tegg Alice ◎
4 Holmes Vivian M ◎ 449-2127
5★Whitson Lynn C
6 Cherry Morris ◎
7 Smith Marylee ◎ 449-8662
8 Edwards Foster R ◎ 449-6634
9★Stoudt Vernon
10 Ranard Ella Mae Mrs ◎ 449-4389
11 Young Donald L 449-2517
12 Greco Tennie E ◎
13 Grider Ed ◎ 449-9343
14★Porter Wm ◎
15 Vacant
16 Vacant
17 Foreman Ava S ◎
18★Lawless Bernice
19★Krier Steve ◎
20 Morrow Mildred R ◎ 448-9558
21 Weber Larry E ◎ 449-5569
22 Peake Emmett E ◎ 449-6446
23 Mc Coy Elma Mrs ◎
24 Severino Jos ◎
25★Coffey Ethel
26 Verdugo Frank J ◎ 449-0745
27 Rodrigus Joseph B ◎
28 Gray Ben ◎
29 Oddo Edwina L Mrs ◎
30 Kienbaum Effie Mrs ◎ 449-3045
31★Harvie Jean R ◎
32 Price Mary M Mrs ◎ 449-9484
33 Faughn Dorothy Mrs ◎
34 Wooten Katheryn M ◎ 449-5855
35 Lennox Ila Mrs ◎ 449-0545
36 Culver Walter G ◎ 449-1670
37 Horvath Mary E ◎ 443-1858
44 Zimmer Frances ◎ 449-9411
45 Cash Helen S Mrs ◎ 449-0283
46★Lee Winnie
47 Baker Lilian Mrs ◎ 449-6277
48 Denison James ◎ 449-3643
49 Jensen Margt ◎ 449-1712
50 Trollinger Ervin F ◎ 449-0626
51★Mc Kenzie Orville ◎
52★Dunlap Elmer ◎
53 Mills Ethell ◎
54 Rembold Sylvan L ◎ 449-8293
55 Thomas Eunice A ◎ 449-3247
56 Bower Florence Mrs
57 Koenig James H ◎ 449-7757
58 Sparks Arthur M ◎ 449-7266
59★Wallace Inga
60★Jones Lucille ◎
61★Hall Dorothy P ◎
62★Coleson Wm ◎
63 Killen Elwood 449-6904
64 Vacant
65 Jackson Harry
66★Johnson Mae
67 Vacant
68 Thompson Jewel G Mrs ◎ 449-2927
69 Carlisle Betty ◎
70 Hummel Ella H ◎ 499-2657
71★Ackerman Norbert A ◎
72 Furr Jerry ◎
73 Gesner Max H ◎ 443-3915
74 Mc Pherson Irene Mrs ◎
75 Mc Farland Shannon E ◎ 449-1046
76 Ebbert Clyde ◎
77★Dodd Wilton ◎
78 Holz Elise N ◎ 449-1887
79★Reinhardt Goldie ◎
80 Sindlinger Ernest H ◎ 449-8594
81 Vacant
82 Egrmayer Grace ◎ 449-5187
83★Mason Lillian Mrs
84 Ball Marie L ◎ 449-0226
85 Jackson Lona ◎ 443-0262
86★Stroh Flora
87 Goolsby Kay A ◎ 449-6288
88 Fletcher Nancy ◎
89 Tucker Gordon ◎ 449-1975
90 Layne Louise N Mrs ◎ 449-6500
91 Lundgren Albert ◎
92 Stewart Leonard ◎ 449-5201
93 Vacant
94★Knox John H ◎
95 Alford L B ◎ 443-1456
96 Kuechenmeister Pam J ◎
97 Maupin Waller S ◎ 449-2275
98 Cheadle Mary N ◎ 449-2045
99 Gage June Mrs ◎
100 Johnson Thos N ◎
101 Mc Intyre Joyce Mrs ◎
102 Sloan Ray ◎
103 Fenton Eldora Mrs ◎ 449-1891
104 Givan Esther L Mrs ◎ 443-1315
105 Green Willie M ◎
106★Leonard William ◎
107 Neklason Joy Mrs ◎ 449-9545
108★Rogers Frank ◎ 449-8898
109 Binau Howard B ◎
110 Ernest Hellen Mrs ◎
111★Haynes Ruby W Mrs
112 Belecci Jennie C Mrs ◎
113 Amaral Joyce Mrs ◎
114 Cutshall John ◎ 449-4881
115★Hinshaw Merton E ◎
116★Kole Michl
117 Palmer Lucille ◎
118★Lewis James
119★Waldrop Ruby
75 Erner Pamela 449-5680
84 Piffero Sergio 449-1734
NORTHRIDGE DR BEGINS
VAN BUREN AV ENDS
109 Bear Creek Square Apartments
1 Evangelista Raul
2 Flaherty R
3★Garcia Jose Rev
4 Wright John
5 Goularte Gregory 449-5271
6★Adair Wm
7★Mears H
8★Allsup Bruce
9★Hill Tari
10★Gurnsey Dvid
11★Chaffer Tony

Target Street	Cross Street	Source
-	✓	Polk's City Directory

SAN JUAN GRADE RD 1987

SAN JUAN GRADE RD–Contd
12 Strickland Thomas M
VAN BUREN AV ENDS
115 Villa San Juan Apartments 449-5131
1★Portschy R
2★Stallman W
3★Simmons J
4★Voughn P
5★Barrera C
6★Kasner Michl
7★Andrew R
8★Fletcher M
9★Chong K 449-4247
10 Longoria Norberto 443-1621
11★Lemons R
12★Bingham D
13★Sauret J
14★Jordan P
15★Mc Kenney D
16★Keema Linda
17★Cominos A
18★Gemdreau R
19 Walker Julietta
20 Moody Ben
21 Davison Pamela
22★Rodriuges S
23★Cominos Peter
24★Childers R
25 Walker Tom
26★Martinez B
27 Jones Wm
28★Tveisme B
29 Valencia J
30★Dias D
31★Leonard B
32 Reha Thelma
33★Brown R
34 Polson Jolene 443-0332
35★Mc Dowell Linda
36★Wilson M
37★Onoda M
38★Martinez F
39★Perez D
40★Miller E 449-7632
41★Havens R
42 Croshere Robt
43★Dunger D
44 Harris T 449-9409
45 Whitmire Wm
46★Holt N
47★Mena E
48★Henson B
49★Thompson S
50★Martinez K
51★Siewenie J
52★Stratt0n K
53 Mahoney Edw
54 Flores Alvino 449-9767
55★Burnes T
56★Lindquist Tom
57★Vezzolo K
58★Valencia H
59★Jacobo F
60 Pitoff Helen
119★Polzkill Robt A 449-2832
225 No Return
229 Bradley Freda S Mrs ◎ 449-0603
235 Vacant
237 Lopez Jesus ◎ 449-7005
239 Summa Eiko Mrs ◎ 449-2875
241 Fend Eugene E ◎ 449-3914
243★Berg Wm S ◎ 449-0670
247 Burritt Geo V ◎ 449-4726
251 Blackwell Thos L ◎ 449-0450
253★Williams Thelma Mrs ◎
RUSSELL RD INTERSECTS
40
RUSSELL RD INTERSECTS
257 Jacoban John M ◎
259★Gray Joe F 443-3658
261 Bruce James ◎ 449-7372
264 Oak Park Community Church 449-2004
Christian Counseling Cntr 449-2004
267★Whitney James J ◎ 449-1388
269★Valdez Gregorio S ◎ 443-6004
NEWLYN ST BEGINS
270★Rivera Louis 449-6821
274 Casillas Jose ◎ 443-0255
★Casillas Pedro J
275★Martinez Gerado ◎
277 Garcia Joseph ◎ 449-6708
279 Martinez Jas F ◎
PENZANCE ST INTERSECTS
282 No Return
283 Trevino Sam ◎ 449-7756
285 Brewer Charles C ◎ 449-2116
286 Reyes Ernest R ◎ 449-2985
289 Mattox George W ◎
290 Adi Fernando O ◎ 449-0961
293 Williams Wanda L Mrs ◎
TREVITHAL ST INTERSECTS
294★Curtis John D ◎ 443-0281
298 Benavides David G ◎
299 Little Jesse L ◎ 449-1172
301 Grace Temple Furniture Store furniture ret 449-5152
302 Raras Manuel R Jr ◎ 449-1069
303 Santa Rita Union Sch Dist 449-7288
CORNWALL ST INTERSECTS
306 Villanveva Henry D ◎ 449-7414
307 Cecil's Liquors & Delicatessen 449-3470
310 Sudaria Art ◎
314 Gloria's Residential Home Care Inc nursing home 449-5955
Gruspe Arnold F ◎
317★Dominno Virgilio R ◎ 443-6244
319 Garcia Isaias ◎ 449-7186
ROGGE RD INTERSECTS
325 Rothstein Leonard P ◎ 449-1642
327 Zwingman Duane ◎ 449-6494
329★Meno Ramon T ◎ 449-5045
336 Oak Park Food Center gro 449-1215
340 Sandpiper Custom Draperies & Interiors 449-0470
DENNER ST INTERSECTS
342 Hyde's Tang Soo Do martial arts instruction 449-5192
344 Oak Park Beauty Salon 449-3500
346 Warren Sales ret furn 449-9683
348 Salinas Adult Sch Parent Education Center 443-4727
349★Hyre Mona L 449-7832
ROGGE ST INTERSECTS
351 Divine Kyle E ◎ 449-2587
353★Knox Keith 443-1623
355 Aquino Baldomero ◎
361 Vanrenterghem Zulna A Mrs ◎ 449-1154
367★Monaghan Wm M ◎ 449-1644
375 Dickey Diane ◎
377 Beck Kenneth 449-3778
381 Bolsa Knolls Southern Bapt Ch 449-0140

SAN JUAN GRADE RD 1987

SAN JUAN GRADE RD–Contd
385 Borba Wm ◎ 449-1348
387 Castillo Frank ◎ 449-1548
387a Schwed Jay ◎ 449-7033
389 Beck Paul T Contractors Inc grating & paving 449-8818
389a Beck Paul T ◎
389b Robison Larry L ◎ 443-1220
389c Beck Danl R ◎
475 Salinas Golf & Country Club Inc 449-6617
483 Pennycock Wm ◎
484 Brundage Wm R ◎ 443-1156
485 Smith Helen Mrs ◎ 449-0196
485a Rompie Christopher ◎
500 Solis Esteban 443-6138
510★Cruz Jesse 443-1560
518★Abeloe E H
580a Smith Leon 449-7462
580 Blanco Dairy Ranch 449-0134
580a Muther Frank ◎ 449-1775
580b Rasmussen Erik 449-3321

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SAN JUAN GRADE RD (GABILAN ACRES)

ZIP CODE 93906
STIRLING RD INTERSECTS
600★Hincliff Layton ◎

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1981

539 Reyes Richd ◎ 449-6169
544 Vallejo Benigno A ◎ 449-6182
545 Stubblefield J Edw ◎ 449-5859
551 Kimberling Ronald

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NATIVIDAD RD —FROM JUNCTION OF SHERWOOD DR AND BERNAL DR NORTHEAST BEY CITY LIMITS

ZIP CODE 93901
2 Apartments
1★Mora Ruth
2 Lerma Ramon
3 Contreras Salvador
4 Miranda Saul R
STREET CONTINUED
4 Mata Enrique ◎ 424-7194
6 Searby Susan J
8 Harvey James Jr ◎ 422-7371
10★Flores Modesto 424-4573
12★Hernandez Octavio 422-0632
16 Thorndike Apartments 758-0166
1★Kunkle Charles
2 Harris Velma Mrs
3 Vacant
4 Green Grace 757-5646
5 Henry Nora Mrs
6 Ross Dan 424-4164

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1981

NATIVIDAD RD—Contd
7 O'Keefe Walter 422-2315
8★Moorefield Geo 422-1835
9★Toms Gary
10 Hall Fern W 758-0575
11★Benning Alan 424-7111
12 Steele B 757-3413
13★Fyler Vera 758-0388
14★Gonzalez Jose
15★Jackson Louis
16 Collins J K
17 Albaugh Ronald
18★Henry John
19★Palma Madaline
20 Salinas Ramiro
21 Martindale Joyce
22★Cardoza Hector
23★Escalante Josephine
24★Neal Carroll
25★Gesner Janet
26★Galvan Lourdes 757-1681
27★Kishimoto Keiko
28★Bush Larry 757-7433
29★Quintero Manuel
30 Berthold Andrew
31★Albaugh Nellie
32 Hill Beverly J 422-9213
33 Anderson Elmer 758-5491
34 Hotchkiss Susan
35★Caliras Rodolfo
36 Davidson Wm 424-9904
37 Stollery Edw W II 757-3596
38 Messerli Victor H 422-0462
39 Shin Sikun 422-7329
40★German Sandy
41★Alvitre Chas
42★Robinson Marty
43★Tucker Kenneth
44 Corbett Gordon F 759-9158
45 Ennes Darrell 422-1309
46★Baumgartner Tim
47★Craig Robt
22a Graham Martha Mrs
22b★Castillo Joe 422-4879
22c★Martinez Manuel 758-5604
24 Sanchez Frank
26 Garcia Juan M ◎ 758-8893
28a Vacant
28b Torres Jose C
30 Fernandez Antonia Mrs 422-5492
31-1 Savala Maria 758-6527
32-2 Randall Henry 758-0038
32-3★Bernal C
32-4★Diaz Laurnia 758-3476
34a Acosta David 758-3428
34b Vasquez Lorenzo 758-5768
34c★Hurtado Leticia L 758-4936
34d★Nieto Olga 424-7046
LUNSFORD DR INTERSECTS
36 Gallegos Paul
36a★Marin Conrad
36b Valic Celestino
38★Zarate Roy 757-2220
38a Pisaro Luciano
38b Michael Ruth
38c★Salas Bartolo 758-6512
38d Garcia Mauricio R
48 Valdez Albert H ◎
48½★Lopez Gustavo
48c Ortiz Carlos
SORRENTINO DR INTERSECTS
50 Cruz Juan A 422-9231
50b★Balli Caterine 757-4825
50c★Cervantes Victor
52★Casanova Alfonso 757-2813
52a★Ponce Moises 758-0162
52b Nunes Joseph 757-7416
54★Gambetta M 758-1403
55 Northside Assembly Of God Church 422-1677
56 Stewart Lenore E Mrs ◎
57★Stone Jeffrey L 424-1573
Apartments
1★Perry Jay 424-9186
2★Horrell Chris B 758-3128
★Davis Cathy
4 Gutierrez Corky
5★Bryant Mark A 757-0636
6★Robles Angel 757-8865
60 Chinese Cemetery
61★Kelly Melvin ◎
63 Hubbard Leo W ◎ 424-6660
65a Esquer Mike ◎ 424-9803
65b Ramirez Ricardo 422-2031
65c Ramirez Ofelia 422-2031
OLD NATIVIDAD RD INTERSECTS
E LAUREL DR INTERSECTS

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1220 County Consumer Affairs Weights & Measures 758-3859
1270 County Health Dept 757-1061
County Mental Health Clinic 424-0946
1322 County Welfare Dept 757-2911
1330 Natividad Med Center Of Monterey County 424-2541
1344 Vacant
1352 County Dept Of Social Services 757-2911
PACHICO ST INTERSECTS
1410 Adult Rehabilitation Facility 757-1073
1420 County Juvenile Hall 758-1081
1422 Monterey County Probation Dept 758-1081
CHAPARRAL ST ENDS
RAINIER DR ENDS
EALVERI DR ENDS
MILLBRAE ST BEGINS
LESLIE DR ENDS
SARATOGA DR BEGINS
CALAVERAS DR ENDS
LOS COCHES AV INTERSECTS
COMPTON WAY INTERSECTS

Target Street	Cross Street	Source
-	✓	Polk's City Directory

ROGGE RD 1981

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ROGGE RD (BOLSA KNOLLS)—FROM 328 PAUL AV EAST (NUMBERS IN REVERSE)

ZIP CODE 93901
55 La Joya School 449-5405
69 Bradley Don ◎
71 Cruz Gil L ◎ 449-7676
JASPER WAY INTERSECTS
100 Roes Frank A ◎ 449-2771
101 Brown Albert ◎ 449-6028
102★Gillott Tom L 443-1764
103 Allen Charles ◎ 449-0430
104 King Ben L ◎ 449-4412
105 Vacant
107 Sparks James W ◎ 449-1392
108 Aguirre Jesus ◎
SAN JUAN GRADE RD INTERSECTS
1001 Adams J P ◎ 449-0169
1001a Burnes David J ◎ 449-9388
1001b★Reinch Morris
1001c Burnes John ◎ 449-8877
1001d Vacant
1003 Adams Leonard P ◎ 449-1307
1100★Mortensen Carl M 449-1193
1119★Harbin Frank 449-5287
1151 A & C Farms 443-4677
★Cloninger Loren E 443-4311
19624 Alexander Bobbie ◎ 449-7044
19658★Taguiran Georgia S 449-7915
19670★Fejeran Vincent C 449-7959

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ROMIE LA E —FROM 1001 S MAIN ST EAST

ZIP CODE 93901
14 Cal's Valley Center Liquors 422-3950
16 Corpus Christi Bible Bookstore 422-6600

SAN JUAN GRADE RD 1981

SAN JUAN DR—Contd
332 Stats Fred ◎ 757-6733
333 Smith F Hilton ◎ 424-6394
337 Fife J Milton ◎ 422-4923
340 Thornton Richd V ◎ 424-4715
ENCINADA DR INTERSECTS
341 Firth Raymond A ◎ 422-7906
345 Payne June ◎
349 Barstad Alden W ◎ 758-0134
353 Jobin Wm R Jr ◎ 422-0869
358 No Return
LA MESA DR INTERSECTS
364 Long Carl D ◎ 424-1314
365 Wharton Geo W ◎

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SAN JUAN GRADE RD —FROM N MAIN ST NORTHEAST

ZIP CODE 93906
17 Poulton Realty 449-5474
25 Apartments
A Swinderman Gail B 449-2910
B★Jimenez Juan
C★Williamson Leslie
D Garrison Forrest L ◎
27★Babbish Tony A
31 Nielsien Richd B ◎ 449-3020
33 Federal Telecomms (Sub-Station) 443-0285
55 La Canada Mobile Estates 449-5765
Spaces
1 Brita M F ◎ 449-9583
2 Baker Eloise Mrs ◎ 449-9274
3 Kristan Andrew A ◎ 449-1883
4 Holmes Vivian ◎ 449-2127
5 Hendricks Richd ◎ 449-2138
6★Bennett Ray C ◎ 449-6904
7 Smith Marylee ◎ 449-8662
8 Edwards Foster ◎ 449-6634
9 Killen Elwood ◎ 449-1617
10 Ranard Ella M Mrs ◎ 449-4389
11 Young Donald L 449-2517
12★Nation A L ◎ 449-3124
13 Grider Ed ◎
14★Hanan D R ◎ 449-2366
15★Martsolf R W ◎ 449-8856
16 Mc Cord L Wm ◎ 449-7634
17 Ashdown Larry ◎ 449-5765
18 Smith Leah ◎
19 Mc Cain Marie Mrs ◎ 449-7065
20★Carroll Lela ◎ 443-0262
21 Weber Larry E ◎ 449-5569
22 Peake Emmett E ◎ 449-6446
23 Mc Coy Elma Mrs ◎ 449-9500
24 Bottini Silvio ◎ 443-4930
25★Overton Elmer W 449-8465
26 Verdugo Frank J ◎ 449-0745
27 Murdock Jack E ◎ 443-1822
28 Gray Ben ◎
29★Porter Wm ◎ 449-4074
30 Kienbaum Effie ◎ 449-3045
31 Laczkovits Joseph ◎
32 Price Mary M Mrs ◎ 449-9484
33★Climer Florence G ◎ 449-4900
34 Wooten Katheryn ◎ 449-5855
35 Lennox Ila Mrs ◎ 449-0545
36 Nation W F Mrs ◎ 449-9852
37★Waltrip Leroy ◎ 449-5669
44★Mignano Gordon ◎
45 Cash Helen S Mrs ◎ 449-0283
46★Van Dyke Edw
47 Baker Lilian Mrs ◎ 449-6277
48 Denison James ◎ 449-3643
49 Jensen Margt ◎ 449-1712
50 Trollinger Ervin E ◎ 449-0626
51 Laughton J Frank ◎ 449-3092
52 Benton Leslie C ◎
53 Hanson Clara ◎ 449-0796
54 Rembold Sylvan L ◎ 449-8293
55 Thomas Eunice A ◎ 449-3247
56 Bower Wm L 449-4900
57 Koenig James H ◎ 449-7757
58 Parker Walter C ◎ 449-7701
59 Rendleman Marcella
60 Jones Lucille M Mrs ◎ 449-6516
61 Schmidt Frank J ◎ 449-7545
62 Gissel Delwin ◎ 449-2029
63★Kennard Harry
64 Krause A H ◎ 449-0190
65 Morris Josephine M Mrs 449-2694
66 Gervais Ted 449-1537
67 Strom Crocia Mrs ◎ 449-4377
68 Thompson A J ◎ 449-2927
69★Early Steve ◎
70 Hummel E H ◎ 449-2657
71 Ackraman Norbert A ◎ 443-3928
72 Remley Wm M ◎ 449-7314
73 Gesner Max H ◎ 443-3915
74 Mc Pherson Ronald ◎
75 Mc Farland Shannon E ◎ 449-1046
76★Wheatley John ◎
77 Smith Wm V ◎ 449-5832
78 Holz Elsie N ◎ 449-1887
79 Sieler Robt J ◎ 449-1658
80 Sindlinger Ernest ◎ 449-8594
81 Pelligrini Louis ◎
82★Mc Collough Stanley ◎
83 Rush Bob
84 Ball Marie L ◎ 449-0226
85★Therezo Cathy ◎ 449-5705
86★Olmstadt Minnie Mrs
87 Goolsby Edw A ◎ 449-6288
88 Fletcher Nancy ◎
89★Ames Yolanda ◎
90 Layne Laurence ◎ 449-6500
91 Lundgren Albert ◎
92 Orgar Wm S ◎ 449-9386
93 Farnsworth Joanna B ◎ 449-6442
94 Johnson Robt M ◎ 449-4286
95 Alford L B ◎ 443-1456
96 Kuechenmeister Pam J ◎
97★Maupin Waller S ◎ 449-2275
98 Cheadle Mary N ◎ 449-2045
99 Gage June Mrs ◎
100★Paulson Daryl ◎
101 Simpson Nina Mrs ◎

Target Street	Cross Street	Source
-	✓	Polk's City Directory

SAN JUAN GRADE RD 1981

SAN JUAN GRADE RD—Contd
102 Handy Floyd B ◎
103 Fenton Reggie ◎ 449-1891
104 Givan Albert R ◎ 443-1315
105★Beelart Ernest ◎
106 Guernsey Wayne N ◎ 449-0797
107 Neklason Joy Mrs ◎ 449-9545
108 Rodgers Frank ◎ 449-8898
109 Hopper Charles F ◎ 449-3714
110★Saglem Gary ◎
111 Daniels Floy O
112 Belecci Jennie Mrs ◎ 443-1161
113 Amaral Joyce Mrs ◎
114 Cutshall John ◎ 449-4881
115 Devereaux Loise Mrs ◎
116 Ogden Wm T ◎ 449-2971
117 Palmer L Mrs ◎
118 Dunlap Elmer J ◎ 449-6386
119 No Return
75★Erner Pamela 449-5680
84★Piffero Sergio 449-1734
NORTHRIDGE DR BEGINS
VAN BUREN AV ENDS
109 Bear Creek Square Apartments
1★Derridge Ken 443-0872
2★Garcia L Jr 443-4906
3★Beadle Kurt
4★Dodd David 449-8968
5 No Return
6★Quilan Marc
7★Ward Mildred
8 Beruige Geo
9★Lima Jose
10★Gonzalez Fela
11 Vacant
12 Mendez R
VAN BUREN AV ENDS
115 Villa San Juan Apartments 449-5131
1 Eaton Mark 449-3252
2★De Salvo R J 449-1408
3 No Return
4★Park T 443-1841
5 Waddle B 449-7839
6★Reddy Kimberly A 449-9358
7 Vacant
8★Gravis Virginia L 443-0765
9 Rivera Connie
10 Ybarra Edw 449-3051
11★Dougherty A P 449-6950
12 Tomasini Edw
13 Begin Erich
14 Holzwart Ted 449-1691
15 Garcia Soni 449-7507
16★Specht Judy 449-7313
17 Ingram Fred 449-8391
18 Brown T W
19 Register Peter
20★Smith Dennis 449-5077
21 Davison Pam
22 Allen Fedirico E 449-4847
23 Murphy Joe
24 Duvall Glenn 449-8314
25★Emberton Ann 443-1763
26 Ruiz Felix
27 Manning Robt L 449-8016
28 Carrillo Louis
29★Sasules James 449-3370
30 Shelton M E 443-0158
31 Humphrey Bernard
32 De La Rosa Dino 449-5943
33 Villarreal J L
34 Polson J 443-0332
35 Johnson Paul K
36★Stewart D J 443-3977
37 De Rouchey D 449-5445
38 Talkington Clyde 443-3579
39 Webber Bertha
40 Inman Ronda 449-6484
41 Wilkes Earl
42 Vacant
43 Priddy Howard
44 Samples C Steve
45 Yanes Alan
46 Jenson Roger A
47 Kibbe Lyle 443-0661
48★Spencer P 449-4405
49 Stewart Thos 443-3977
50 Airhart Harold
51 Clevenger M E
52 Molinari V L
53★Cullum Stephen
54 Flores Alvino 449-9767
55★Kim Helen 449-6864
56★Ridgeway Martha
57★Stevens Lloyd
58 Du Bose Stanley 443-4383
59★Ledlow Lawrence
60 No Return
225★Kirby Roy N ◎
229★Bird H Mrs ◎ 449-0603
235 Mills Ella M Mrs ◎
237 Lopez Jesus ◎ 449-7005
239 Summa Bobby J ◎ 449-2875
241★Sanchez Evodid T ◎ 449-6112
243 No Return
247★Burritt Geo V ◎ 449-4726
251 Blackwell Thos L ◎ 449-0450
253★Montoya Alex F 449-4186
RUSSELL RD INTERSECTS

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SAN JUAN GRADE RD (BOLSA KNOLLS)—FROM RUSSEL RD NORTH

257 Jacoban John M ◎ 449-3073
259★Comer Rich
261 Vacant
264 Oak Park Community Church 449-2004
267 Wheeler Leo R ◎ 449-1287
269★Perez Ray ◎ 449-4358
NEWLYN ST BEGINS
270 Green Donald 443-4642
274★Casillas Jose ◎ 443-0255
275★Martinez Vicky 443-3675
277 Garcia Joseph 449-3056
279 Williams Lloyd D

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1976

544 Vallejo Benigno A ◎ 449-6182
545 Stubblefield James E ◎ 449-5859
551★Kimberling Ronald

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NATIVIDAD RD —FROM JUNCTION OF SHERWOOD DR AND BERNAL DR NORTHEAST BEY CITY LIMITS

ZIP CODE 93901
2 Apartments
 1 Vacant
 2★Mora Abe
 3★Mora Sara 758-3011
 4★Garcia Lerma
4 Mata Enrique ◎ 424-7194
6 Vacant
8 Harvey James Jr ◎ 422-7371
10★Lee James E
12 No Return
16 Thorndike Apartments 758-0166
 1★Mc Alpin R
 2 Garigliano Leonard
 3★Sands F
 4★Rowe G
 5★Garrillo O
 6 Ross Dan 424-4164
 7★O'Keefe W E
 8★Hendrix H
 9★Angell E M
 10★Hilbert G
 11★Green W

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1976

NATIVIDAD RD—Contd
12★Briggs B
13★Davenport O
14★Leber P
15★Bracken B
16★Quinn V
17★Norwood R
18★Sutherland G
19 Haritou H
20★Mock C F
21 Martindale Joyce
22★Dearwent E
23★Greenburg B
24★Burns T
25 Pine Alfred J 758-9201
26★Smith J
27★Smith M
28 Bearden Geo
29★Kittinger R
30★Tomasko J
31★Woodruff L
32 Hill Beverly
33 Anderson Elmer
34★Myers H
35 Vacant
36 Chaffin B
37★Davidson W
38 Butler Larry
39★Frederick M
40★Cape S
41 Ball Inez 758-3551
42★Miller G
43 Brown Blair
44★Dare E
45★Howell W
46★Gomez E
47★Rulien C
20 Karcich Walter ◎ 422-2691
22a Vacant 22a-22c
24 Garcia Joe
26 Lopes Benj
28 Vacant
28a Vacant
28b★Boswell Darrell
30 Fernandes Antonia Mrs ◎
32a Fontanette Hazel
32b Randall Henry
32c Parker Della Mrs
32d Vacant
34a★Acosta David
34b Vacant 34b-34d
LUNSFORD DR INTERSECTS
36a Gallegas Paulina ◎ 422-1210
36b Vacant
38★Esparza Guadalupe
38a★Garcia Marta
38b Michael Ruth Mrs
38c Minervia Guajardo
48★Valdez Albert H
48½ Vacant
50 Wilson James W
52 Antazo Lela Mrs ◎ 422-5647
52a★Pender Elija
52b★Fredwell James
54 Vacant
55 Northside Assembly Of God Church 422-1677
56 Stewart Lenore E Mrs 422-2095
57★Johnson Richard E 758-5547
Apartments
1 Vacant
2 Vacant
3 Beck Donald
4 Vacant
5 Vacant
6 Gonzales Eulijio S
58 Bianco Ercole Mrs ◎ 424-3304
60 Chinese Cemetery
61★Hicks Tony
63 Hubbard Leo W ◎ 424-6660
65a Esquer Mike ◎ 424-9803
65b★Ramirez Ricardo
65c★Ramirez Ofelia 422-2031
1220 County Weights & Measures 758-3859
1270 County Animal Control 424-7627
County Health Dept 424-7627
County Mental Health Clinic 424-7627
1322 County Welfare Dept 424-2821
1330 Natividad Med Center Of Monterey County 424-2541
1344 Vacant
1352 County Dept Of Social Services 757-2911
1410 Adult Rehabilitation Facility 424-2941
1420 County Juvenile Hall 758-1081
1422 Monterey County Probation Dept 758-1081

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NATIVIDAD ST —FROM SP RY TRACKS NORTH 1 WEST OF N MAIN ST

ZIP CODE 93901
95 Priddy H L Co insulation 424-1783

4358345.5 Page: A85

Target Street	Cross Street	Source
-	✓	Polk's City Directory

ROGGE RD 1976

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ROGGE RD (BOLSA KNOLLS)—FROM 328 PAUL AV EAST (NUMBERS IN REVERSE)

ZIP CODE 93901
55 La Joya School 449-4022
69 Bradley Don ◎ 449-3071
71 Philips Thos ◎ 449-5563
JASPER WAY INTERSECTS
100 Roes Frank ◎ 449-0039
101★Seals R A ◎
102 Jeska Brian D 449-5506
103 Allen Charles ◎
104 King Ben L ◎ 449-4412
105 Mathews Arth J ◎ 449-2697
107 Sparks James W ◎ 449-1392
108 Vacant
SAN JUAN GRADE RD INTERSECTS
1001 Adams J P ◎ 449-0169
1001a Madruga Richard
1001b Westmoreland Velda A
1001c Burnes John 449-8877
1003 Adams Leonard P ◎ 449-1307
19624 Alexander Bobbie ◎ 449-7044

202

ROMIE LA E —FROM 995 S MAIN ST SOUTHEAST

ZIP CODE 93901
14 Cal's Valley Center Liquors 422-3950
16 Corpus Christi Bible Bookstore
19 Quik Stop Market No 24 758-5850

Target Street	Cross Street	Source
-	✓	Polk's City Directory

SAN JUAN GRADE RD 1976

LA MESA DR INTERSECTS
364 Long Carl D ◎ 424-1314
365 Wharton Geo W ◎ 422-7129

70

SAN JUAN GRADE RD —FROM 430 EL CAMINO REAL NORTHEAST

ZIP CODE 93901
17 Poulton Realty 449-5474
25 Williams Olive ◎ 449-0123
27★Stephans Robt W 449-6536
31 Nielsien Jack A ◎ 449-1134
35 Pacific Telephone Co (Sub-Station)
55 La Canada Mobile Estates 449-5765
Spaces
1★Brita M F
2 Brown H
3 Kristan Andrew A 449-1883
4 Holmes Woodrow 449-2127
5 Parker Edmond 449-4414
6 Cherry E Morris 424-6219
7 Wanderer W
8 Edwards Foster 449-6634
9 Killen Elwood
10★Godfrey W
11 Jensen John T 449-6556
12 Haley Maurice
13 Kauffman C V
14 De Brouwer Walter 449-6693
15★Norwood F
16 Mc Cord L Wm 449-7634
17 Avila John 449-6695
18 Stokes James L 449-0612
19 Henley James 449-1251
20★Morrow M
21 Meserole P J

Target Street	Cross Street	Source
-	✓	Polk's City Directory

SAN JUAN GRADE RD 1976

SAN JUAN GRADE RD —Contd

22★Orgar Lee
23★Risinger W
24★Gresham L D
25 Wiseman Howard
26 Verdugo Frank 449-0745
27 Murdock D
28★Voltz J
29 Hayes Harvey
30 Steuernagel Virginia 449-6458
31★Zimmer B
32★Trulson J
33 Patterson T A 449-4177
34 Wooten Katheryn 449-5855
35 Lennox I
36★Nation W
37 Zeltner Louise
44★Slusser J
45 Cash Vernon C 449-0283
46 Ne Smith Robt A 449-4979
47 Ramly Hart
48 Brackett Katheryn 449-5817
49★Jensen M
50 Trollinger Ervin F 449-0626
51 Laughlin Frank
52 Benton Lois
53 Maloney C B
54 Rembold Sylvan L 449-8293
55 Thomas Eunice 449-3247
56★Coldren L 449-2767
57 Christine Chris
58 Parker Walter C 449-7701
59★Blackley C
60 Larkins S J 449-6516
61 Schmidt Frank J 449-7545
62 Giessel Delwin
63 Johnson Sybil 449-7984
64 Krause Hy 449-0190
65 Schaffer Donnie 449-6898
66 Abbott Grace L 449-5244
67 Strom Crocia Mrs 449-4377
68 Kirkland Albert L 449-5533
69 Carlisle David C 449-2512
70 Humell Clarence L 449-2657
71 Hines Charles W 449-4228
72 Remley Mike 424-7961
73 Powell Jewell
74 Neeley Ken 449-1253
75 Alexander Bessie
76 Rossman Pealer 449-7100
77 Harder Hans P 449-2011
78 Holz Elsie 449-1887
79 Hall J
80★Stidman L
81 Visser D
82 Egrmayer Grace 449-5187
83 Emberson H A 449-5695
84 Ball Marie L 449-0543
85 Richards G
86 Therezo Catherine 449-5705
87 Goolsby Edward 449-6288
88★Fletcher N
89 Tucker Gordon
90 Layne Lawrence 499-6500
91 Lundgren Alex
92 Cowles Wm 449-7543
93 Farnsworth Joanna 449-6442
94 Johnson Robt M 449-4286
95★Alford L R
96★Kuechenmeister P
97 Maupin Walter S 449-2275
98 Cheadle Mary 449-2045
99 Bancom D
100★Mays S
101 Tanksley Lawrence J 449-1653
102★Perkins J D
103 Hampshire Lucille Mrs 449-6583
104★Givan A
105 Iverson Lillian 449-3249
106 Guernsey W N
107★Mc Coy L
108★Leonard Charles E 449-4807
109★Hopper C
110 Earnest Ben 449-4273
111 Pellegrini
112 Beardslee Lyle C 449-1079
113★Francis U
114 Cutshall James
115 Padgett Dowl
116 Ogden Robt
117 Palmer Lucy
118 Dunlap Elmer 449-6386
119 Waltrip Leroy 449-5669

40

SAN JUAN GRADE RD (BOLSA KNOLLS)

ZIP CODE 93901
119 Costa Frank L ◎ 449-1161
225 Reynolds James ◎ 449-6127
229 Bird Hulda Mrs ◎ 449-0603
235★Mouzer Herschell
237 No Return
239 Summa Bobby J ◎ 449-2875
241 Sintas Rita 449-7893
243 Serio Katie E ◎
247 Vacant
251 Blackwell Thos L ◎ 449-0450
253 Leonard Wm R ◎ 449-0468
RUSSELL RD INTERSECTS
257 Jacoban John ◎ 449-3073
259 Hankins Ronald C ◎
261 Bruce James M ◎ 449-0187
264 Oak Park Community Church 449-2004
267 Wheeler Leo R ◎ 449-1287
268 Oak Park Community Church 449-2004
269 Conley Barbara Mrs 449-0833
NEWLYN ST INTERSECTS

Target Street	Cross Street	Source
-	✓	Polk's City Directory

SAN JUAN GRADE RD 1976

SAN JUAN GRADE RD —Contd

270 Fahey Norma E Mrs ◎ 449-3159
274 Herrier Clyde H ◎ 449-3188
277 Smoot Earl ◎ 449-6855
279 Lebow Dennis ◎ 449-3086
PENZANCE ST INTERSECTS
282 Vacant
283★Gallegly Gary L ◎ 449-8603
285 Brewer Charles ◎ 449-2116
286★Reyes Ernasto ◎
289 Mattox George W ◎ 449-5863
290 Adi Fernando O ◎ 449-0961
293 Williams Wanda L Mrs ◎ 449-1289
294 Sisler Marion ◎ 449-7553
298 Burgess Donald N ◎ 449-5279
299 Little Jesse L ◎ 449-1172
301 Continental Baking Co (Depot) whol 449-1309
302 Raras Manuel R ◎ 449-1069
303★Wasson Charles
CORNWALL ST INTERSECTS
306 Taguiran Gregoria Mrs ◎
310 Almajera Felipe
314 Pascua Catalino
317 Buch David
319 Barchus Alva M Jr ◎ 449-1379
ROGGE RD INTERSECTS
325 Rothstein Leonard P ◎ 449-1642
327 Harvey Alvis D ◎ 449-2135
329 Youngblood Chester R ◎ 449-4303
336 Oak Park Food Center
340 Miller's Bike & Hobby Shop
DENNER ST INTERSECTS
342 C & M T V & Electronics 449-0723
344 Oak Park Beauty Salon 449-3500
346 Stan's Custom Upholstery 449-6487
348 Cecil's Liquor & Delicatessen 449-3470
349 Turner James M ◎ 449-6825
ROGGE ST INTERSECTS
351 Divine Kyle E ◎ 449-2587
353 Garcia Al D ◎
355 Vacant
361 Van Renterghem Alice Mrs ◎ 449-1154
375 Booth Lee Roy 449-0962
377 Beck T B 449-4247
381 Bolsa Knoll's Southern Baptist Church 449-0140
385 Borba Bill ◎ 449-1348
387 Castillo Frank ◎ 449-1548
389 Beck Paul Construction Co
389a Beck Danl R ◎ 449-2991
389b Beck Paul
389c Heavrin Gerald 449-0391
475 Salinas Golf & Country Club Inc 499-1527
485 Pennycook M S 449-1367
485a Smith Helen Mrs ◎ 449-0196

50

SAN JUAN GRADE RD (GABILAN ACRES)

ZIP CODE 93901
600 White Wm G ◎ 449-4323
620★Ormand Willard
624 Krieger D L 449-1678
625 Wallace Wally D ◎ 449-4797
630 Mills Richd J Jr ◎ 449-1368
632 Swain Felix R ◎ 449-4641
634 Bird Esther M Mrs ◎ 449-0697
638 Dixson Harvey L ◎
640 Fanning Joe D ◎ 449-2825
644 Schriver Clarence W ◎ 449-3264
648 French Kevin L 449-8209
Rear Vacant
652 Tomasini Edwin D Jr ◎
654 Jones Ray ◎ 449-1203
Rear Vacant
656 Smith Jack S ◎ 449-1290
658 Sparks Wm F ◎ 449-0903
658a Miracle James P ◎ 449-1274
660 King James E ◎ 449-4844
662★Purcell R
664 Brey Allen

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1971

NACIONAL ST—Contd
59 Phillips T Dayton 422-2225
PARK ST INTERSECTS
62 Gregorio Richd W 424-9914
69 Rustad Olaf M ◎ 422-1258
71 Buckman Gail Mrs
73 Martella Thos F 422-7008
74 Del Valle Felipa Mrs ◎ 422-6270
75 Ledesma Lupe Mrs Mrs 422-9143
76 Caliva Raymond A ◎ 422-7357
77 No Return
78 Ratto Rose M Mrs ◎ 422-2768
79 Sanchez Nick ◎ 422-3309
ARCHER ST INTERSECTS
80 Mc Dowell Barbara J
86 Leon Heracleo R ◎ 422-1692
87 Perry Earl ◎ 424-8970
88 Hutchinson Louada Mrs 424-7949
92 Rincon Raul V 758-0916
98 Guillen Petra C Mrs Mrs 422-6620

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CENTRAL AV INTERSECTS
101 Stidolph David L 424-3079
103 Miller Geo E ◎ 424-6584
108 Andre Thienpondt M
114 Moreno Aaron ◎
115 Flegal Agnes V Mrs 422-8013
Rear Gibson James M 424-9758
118 Palma Louis M ◎ 424-9228

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NAPA WAY —FROM 1585 EL DORADO DR EAST

ZIP CODE 93901
506 No Return
507 Huggins Wm S
510 Obrera Young B 449-6112
511 Romano Fred ◎ 449-5383
517 Peden Rudy H 449-3216
518 Galster Gene ◎ 449-6509
529 Cabaccang Fred C 449-6269
530 Seay Charles ◎ 449-5975
533 Salinas Danl ◎ 449-4587
536 Shaw Edw L 449-2318
539 Reyes Richd ◎ 449-6169
544 Vallejo Benigno A 449-6182
545 Whisenant Melvin L ◎
551 Griffin John C 449-6548

16

NATIVIDAD RD —FROM JUNCTION OF SHERWOOD DR AND BERNAL DR NORTHEAST, BEY CITY LIMITS

ZIP CODE 93901
2 Apartments
A Vacant
B Vacant
C Vacant
D Rushing Betty Mrs
4 Mata Enrique ◎ 424-7194
6 Hightower Nola M Mrs ◎ 422-4325
8 Harvey James Jr ◎ 422-7371
10 Gardner Larry A
12 Ebell J W ◎ 424-1261
16 Apartments
1 Morrisset Kenneth
2 Wensinger Haven
3 Tomlinson William 758-3033
4 Watanabe Gary Y 422-1722
5 Brown Myra
6 Ross Dan
7 O'Keefe Walter
8 Lawton William
10 Wallace Michael R 758-3632
11 Scarff James
12 Del Rio Arturo
13 Jensen Derryl
14 Stagnar James 758-4240
15 Uthoff John S 424-2028
16 Hall Manuel
17 Kling Wm H 758-4555
18 Vacant
19 Encinas Wm 422-2156
20 Gonzales Paul
21 Simons Robt
22 Chase John 758-4235
23 Burgess Pauline
24 Peterson Jeff
25 Bennett Sherry 758-3759
26 Brown Don
27 Rey Richd
28 Frank Dianna 758-3483
29 Ayars Robt
30 Huff Gary L 424-9903
31 Zahn Gary
32 Michael Paul
33 Wood Robert
34 Barons Geo S
35 Guzman David 758-3142
36 Rice Wayne 422-0691
37 Victorino William A 422-5181
38 Mc Gregory Michl
39 Goncher Greg
40 Harris Stanley 422-2934
41 Ball Inez 758-3551
42 Thomas Gordon
43 Brown Blair
44 Pereria Jordan
45 Geller Frank 758-0614
46 Shanley John
47 Martinelli Thos
20 Vacant
Rear Vacant
22a Torres Eustolio 758-3938
22b Hensley Grace Mrs 422-7250
22c Newman Earl C 422-0723
24 Vernal Rosie Mrs
26 Garcia Joe
28 Madruga William 422-0352
28a Neria Albert
28b No Return

NATIVIDAD RD 1971

NATIVIDAD RD—Contd
30 Fernandes Antonia Mrs ◎ 422-5492
32a Fontanette Hazel Mrs 422-3166
32b Randall Henry 758-0038
32c Parker Della Mrs 424-1316
32d Cortes Sarah Mrs
34a Romero Rosuara Mrs 422-1190
34b Hernandez Paul
34c Matamoros Faustino 758-4748
34d Matamoros Bonifacio
LUNSFORD DR INTERSECTS
38 Salvador Owyter Mrs ◎ 424-4907
38a Miller Rose M Mrs
38b Michael Ruth Mrs
38c Evangelesta Felip
48 Mc Intosh Doug
48½ Arnold Ernest C 422-2045
50 Anderson Wm D Jr 424-5904
52 Antazo Simeon V ◎ 422-5647
52a Amorsolo Santos
52b Cortez E Terry 422-5423
54 Miller Virgil 422-7491
55 Northside Assembly Of God Church 422-1677
56 Stewart Lenore Mrs ◎ 422-2095
57 Johnson Alice Mrs ◎ 422-6209
Apartments
1 Billups Clarence 422-1207
2 Moses Wm
3 No Return
4 Foster Theresa
5 Vacant
6 Vacant
58 Bianco Ercole Mrs ◎ 424-3304
60 Chinese Cemetery
61 Patton Don 758-3035
63 Hubbard Leo W ◎ 424-6660
65a Esquer Mike ◎ 424-9803
65b Gonzalez Danl 758-0480
65c Ramirez Ofelia D Mrs 422-2031
67 Cachaque Council No 197 (Degree Of Pocahontas) Portuguese Hall
1270 County Weights & Measures 424-8611
Smith Danl R
County Animal Control 424-7627
County Health Dept 424-7627
County Mental Health Clinic 424-7627
1322 County Welfare Dept 424-2821
1330 County Genl Hospital 424-2541
1344 Vacant
1352 County Probation Dept 424-0681
1358 Under Constn
1420 County Juvenile Hall 424-3926

11
NATIVIDAD ST —FROM SP RY TRACKS NORTH, 1 WEST OF N MAIN ST

ZIP CODE 93901
95 Priddy H L Co insulation 424-1783
101 Alhambra National Water Co Inc 424-7700
107 Breschini Walter W ◎ 424-3884
Molinari Candido E ◎ 424-3884
108 Davila Elena Mrs 422-3008
112 Aragon John 422-8389
122 Miyanaga Jean Mrs 422-4058
126 Shaw Faith J Mrs ◎ 424-7282
126b No Return
Rear Ulloa Manuel
130 Landavaso Jesus A 422-5113
135 Pepsi Cola Bottling Co 424-3728
CARNEROS ST BEGINS
214 Aragon Nellie Mrs 422-2931
216 Conklin Harvey R ◎
230 Berry James
235 Valley Auto Body repr 422-9495
MENKE ST INTERSECTS
301 Harper Rena A Mrs ◎ 422-0370
301½ Halls Earnest
305 Green Jimmy ◎ 422-5730
307 Cervantes Emerterio ◎ 424-1086
309 No Return

13
NAVAJO DR —FROM 1368 N MAIN ST WEST

ZIP CODE 93901
71 Johnson Wm T 449-5346
73 No Return
75 Hill Linda J Mrs 449-4490
77 Armour Wm E 449-6248
79 No Return

ROGGE RD 1971

252 Guerrero Roy M 449-2506
254 Pineda Judy Mrs 449-6333
256 Liberto Frank 449-5032
258 Sims Thos E
259 Alford Lester H ◎

40

ROGGE RD (BOLSA KNOLLS)—FROM 328 PAUL AV EAST (NUMBERS IN REVERSE)

ZIP CODE 93901
55 La Joya School 449-4022
69 Clark Weldon L ◎ 449-2836
71 Redhouse Rex ◎ 449-1252
SAN JUAN RD INTERSECTS
100 Roes Frank ◎ 449-0039
101 Brown Albert ◎ 449-3285
102 Ogden Leon 449-4187
103 Mc Gee Edith M Mrs ◎ 449-0430
104 No Return
105 Mathews Arth J ◎ 449-2697
107 Sparks James W ◎ 449-1392
108 Strickling Clifton L ◎ 449-6313
1001 Adams J P ◎ 449-0169
1001a Madruga Richd
1001b Scattini Vernon C
1003 Adams Leonard P ◎ 449-1307

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ROMIE LA E —FROM 995 S MAIN ST SOUTHEAST, 2 SOUTH OF ACACIA

ZIP CODE 93901
14 Cal's Valley Center Liquors 422-3950

358 Vivolo Ernest R © 424-7422
LA MESA DR INTERSECTS
364 Long Carl D © 424-1314
365 Wharton Geo W © 422-7129

70

SAN JUAN GRADE RD —FROM 430 EL CAMINO REAL NORTHEAST

55 La Canada Mobile Estates 449-5765
Williams Edith M Mrs

40

SAN JUAN GRADE RD (BOLSA KNOLLS)—FROM 24 RUSSELL RD NORTHEAST

ZIP CODE 93901
119 Costa Frank M © 449-1161
225 Estrada Andy E © 449-4653
229 Bird Hulda © 449-0603
235 Mouser Herchel C © 449-4864
237 Shields Lee G © 449-0176
239 Vacant
241 Peebles Wm M 449-3780
243 Derio Katie E © 449-4206
247 Manders Clyde S Jr © 449-3617
251 Blackwell Thos L © 449-0450
253 Leonard Wm © 449-0468

Target Street	Cross Street	Source
-	✓	Polk's City Directory

SAN JUAN GRADE RD 1971

SAN JUAN GRADE RD —Contd

RUSSELL RD INTERSECTS
257 Jacoban John ◎ 449-3073
259 Hall Ethel Mrs ◎
261 Bruce James M ◎ 449-0187
267 Wheeler Leo R ◎ 449-1287
268 Oak Park Community Church 449-2004
269 Beardsley Saml L ◎ 449-1740
NEWLYN ST INTERSECTS
270 Fahey Norman E ◎ 449-3159
274 Herrier Clyde H ◎ 449-3188
275 Morgan James ◎ 449-3632
277 Pruett Buell ◎ 449-2227
279 Lebow Dennis ◎ 449-3086
PENZANCE ST INTERSECTS
282 Brown Glody ◎
283 Smith Eug L ◎ 449-1615
285 Brewer Charles C ◎ 449-2116
286 Flores Melch Jr ◎ 449-6338
289 Mattox Geo W ◎
290 Adi Fernando O ◎ 449-0961
293 Williams Cecil E ◎ 449-1289
TREVITHAL ST INTERSECTS
294 Hurley Michl 449-2718
298 Burgess Donald N ◎ 449-5279
299 Little Jess L ◎ 449-1172
301 Continental Baking Co (Depot) whol 449-1309
302 Thomas Lawrence ◎ 449-5516
303 Harris James D 449-4105
306 Taguiran Georgoria Mrs 449-5660
310 Sudaria Pascual ◎ 449-0346
314 Baang Guillermo 449-0346
317 Bush David C ◎ 449-5609
319 Barchus Alva M Jr ◎ 449-1379
325 Rothstein Leonard P ◎ 449-1642
327 Harvey Alvis D ◎ 449-2135
329 Youngblood Chester R ◎ 449-4303
336 Williams Food Center 449-1215
340 Cecil's Liquors & Delicatessen 449-3470
DENNER ST INTERSECTS
342 Salinas Central Service appliances 449-1561
344 Oak Park Beauty Salon 449-3500
346 Oak Park Barber Shop 449-2761
349 Tuner Jim ◎ 449-2204
ROGGE ST INTERSECTS
351 Divine Kyle E ◎ 449-2587
353 Garcia Al D ◎
355 Aquino Julia H Mrs ◎ 449-3018
361 Van Renterghem Alice Mrs ◎
375 Vacant
377 Beck T B 449-4247
381 Bolsa Knoll's Southern Baptist Church 449-0140
387 Castillo Frank ◎ 449-1548
475 Salinas Golf & Country Club Inc 449-1526
485 Pennycook Madalene S Mrs ◎ 449-1367
Smith Sherwin T ◎ 449-0196

50

SAN JUAN GRADE RD (GABILAN ACRES)

ZIP CODE 93901
600 White W Glen ◎ 449-4323
620 Stockton Frank T 449-2042
624 Harbin Jessie B ◎ 449-1678
625 Wallace Wally D ◎ 449-4797
630 Mills Richd J Jr ◎ 449-1368
632 Swain Felix R ◎ 449-4641
634 Bird Esther M Mrs ◎ 449-0697
638 No Return
640 Fanning Joe D ◎ 449-2825
644 Schriver Clarence ◎ 449-3264
648 No Return
Rear Forbes Allen 449-4930
652 Tomasini Edwin D Jr ◎
654 Jones Ray ◎ 449-1203
Sumter Baron E
656 Smith Jack S ◎ 449-1290
658 Sparks Wm F ◎ 449-0903
658a Miracle James P ◎ 449-1274
660 King James ◎ 449-4844
662 Purcell Rose Mrs ◎ 449-1153
664 Vacant
674 Bradley Thos W ◎ 449-0475
676 Young Nolan ◎ 449-0470
680 Smith Jimmy D ◎ 449-5045
682 Murphy Garry L ◎ 449-3274
684 Green J D ◎ 449-2712
686 Casa Leo M ◎ 449-2005
688 Barlow N D
LAGUNITA RD INTERSECTS
690 Hall Robt R ◎ 449-1393
694 Ortiz Benny V ◎ 449-0183

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1965

422-5792

W Menke intersects

301 Harper Rena A Mrs ◎ 422-0370

301½ Halls Earnest

305 Harris Lee E Mrs ◎ HA2-5730

307 Cervantes Emeterio 424-1086

309 Calbert Bob 422-0633

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NATIVIDAD ROAD–From junction of Sherwood dr and Bernal dr northeast, bey city limits

2 Vacant

4 Mata Enrique ◎ 424-7194

6 Hightower Ted ◎ 422-4454

NATIVIDAD RD—Contd
8 DeLeon Andy C ◎ 422-7985
10 Mann John C ◎ 422-2170
12 Ebell J W
20 Crouch Jerry L 424-9720
rear Karcich Walter ◎ 422-2691
22a Campbell Ruby Mrs 422-8522
22b Hensley Grace Mrs
22c Newman Earl C 422-0723
24 Vernat C R
26 Garcia Joe
28 Madruga Wm E 422-0352
28a Ramos Maria Mrs 422-4847
28b Souza Manuel 422-4373
30 Fernandes Antonia Mrs ◎ 422-5492
32 Lopez Joe
32a Williams Frank 422-6107
32b Washington Henry
34 Betancourt Geo G 424-5901
34b Marquez Frank
34c Vacant
34d Gomez Paul
36 Gallegos Paulino ◎ 422-1210
36a Vacant
36b Lopez Salvador
38 Salvador Rita Mrs ◎
38a Vacant
38b Mikell Ruth
38c Torres Raul M
38d Thompson Billy W 424-6939
Lunsford dr begins
42b Martinez Jose
42c Pizzaro Mary Mrs 422-2958
46 Batzloff Clifford
Poor Wm
48 Barrera Jos
50 Kelly Melvin L ◎ 422-4871
52 Antazo Simeon V ◎ 422-5647
52a Bautista Santos 422-6997
52b Cortez Terry E 422-5423
52c Galinato Antonio
54 Day Harwood B ◎
55 Northside Assembly of God Church 422-1677
Myatt Lehman Rev 422-1677
56 Stewart Floyd T ◎ 424-5675
57 Johnson Alice Mrs ◎ 422-6209
58 Bianco Ercole ◎ 424-3304
Apartments
1 Chrisman Dan 422-1080
2 Fietz David A 424-1034
3 Legg Kenneth 424-6379
4 Stewart Grace M Mrs 422-4662
5 Patterson Chas A 422-7513
6 Meadows David 422-8444
Street continued
58 Bianco Ercole Mrs ◎ 424-3304
60 Chinese Cemetery
61 Alwarado Easter
63 Hubbard Leo W ◎ 424-6660
65 Esquer Mike ◎ 424-9803
65b Esquar Peter A
65c Vacant
67 Portuguese Hall
Cachague Council No 197 Degree of Pocahontos
70 County Dept of Weights & Measures 424-8611
1270 County Health Dept 424-7627
Animal Control 424-7627
Psychiatric Clinic 424-7627
1330 Monterey County Hosp 424-2541
Grove Ray B
1344 Communications Dept
1352 County Probation Dept 424-0681
1420 County Juvenile Hall 424-3926

13
NAVAJO DRIVE—From 1368 N Main west, 1 north of W Curtis
207 Dostie Jos F ◎ 449-4073
208 Cacas John F ur ◎ 449-3762
211 Williams Fred M ◎ 449-3189
214 Pipe Jack W ◎ 449-1194
217 Wilson Herbert C jr ◎ HI9-3201
218 Ferrer Anastacio ◎ 449-0932

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1960

301 Harper Andrew T ◎
ΔHA2-0370
305 Harris Preston C ◎
ΔHA2-2130
307 Harrison Herman ◎
ΔHA2-0455

16

NATIVIDAD ROAD—From junction of Sherwood dr and Bernal dr northeast, beyond city limits

2 Vacant
4 Mendoza Pablo ◎
6 Hightower Ted ◎
ΔHA2-4454
8 DeLeon Andrew ◎
ΔHA2-7985
10 Mann John C ◎
ΔHA2-2170
12 Bull Rennie L ◎
ΔHA4-7791
16 Simpson's Body Shop
ΔHA4-5991

Target Street	Cross Street	Source
-	✓	Polk's City Directory

NATIVIDAD RD 1960

NATIVIDAD RD--Contd
rear Bolden Paul
20 Vacant
rear Karcich Walter ◎ ΔHA2-2691
22a Campbell Ruby Mrs
22b Hensley Grace Mrs
22c Newman Earl C ΔHA2-0723
24 Rodriguez Everett ΔHA2-5798
26 Fisher Randell ΔHA2-2340
28 Madruga Wm E
28a Espino Felix ΔHA2-3098
28b Vacant
30 Fernandes Antonia Mrs ΔHA2-5492
rear Vacant
32 Bias Clarence E jr ΔHA4-9582
32a Drisdale John ΔHA2-3994
32b Vacant
34 Romero Folgencio ◎ ΔHA2-0162
34a Vacant
34b Vacant
34c Quintero Manuel ΔHA2-0391
34d Carron John
36 Gallegos Paulino ◎ ΔHA2-1210
36a Marine Conrad
36b Ramos Gilbert
38a Rogers John
38b Parker Walter
38c Woodmore Owyter Mrs ◎ ΔHA4-4907
Lunsford dr begins
42a Soria Fred
42b Soria Frank ΔHA4-9009
42c Aquilera Frank ◎ ΔHA2-0553
44 Vacant
46 Locatelli Pete ◎ ΔHA4-3727
48 Lunsford Harold ◎ ΔHA4-5116
50 Good Stanley ΔHA2-7709
52 Antazo Simeon V ◎ ΔHA2-5647
52a Bautista Santos ΔHA2-6997
52b Cortez Terry ΔHA2-5423
52c Galinato Antonio
54 Day Harwood B ◎
55 Northside Assembly of God Ch
Hart Oral A Rev ΔHA2-1677
57 Johnson Carl M ◎ ΔHA2-6209
rear Bilo John A ΔHA2-0387
58 Bianco Ercole ◎ ΔHA4-3304
60 Chinese Cemetery
61 Vacant
63 Hubbard Leo W ◎ ΔHA4-6660
65 Esquer Mike ◎ ΔHA4-9803
65b Flores Jose M
65c Gonzales Cleofas L ΔHA2-1780
67 Portuguese Hall
Cachague Council No 197 Degree of Pocahontos
70 County Dept of Weights & Measures ΔHA4-3911
80 County Juvenile Hall
end Monterey County Hosp ΔHA4-2541
—— Grove Ray B

6

NEIL—From Griffin east, 1 north of Alisal
8 Odom Carl
10 King Margt Mrs ◎
10½ King Maria ◎
23 Abney J C
rear Munsell Elvira Mrs ◎ ΔHA2-7124

14

NEUBERT—From E Market northeast, 2 east of Sun

11

NEW—From Market northeast, 6 northwest of Main
8 Vacant
8½ Sabori Jesus N ΔHA2-8584
10 Ryan Cath Mrs ◎ ΔHA2-8626
12 Long Harold N ΔHA2-7073
12½ Gonzales Felipe
Railroad av intersects

28

NEW DEAL AV (East Salinas) —From point east of Garner av east, 1 north of Williams rd
603 Phillips Jas F ◎ ΔHA4-6768
604a Serna Alfredo

City of Salinas - WASP

City of Salinas - WASP

Salinas, CA 93906

Inquiry Number: 4358345.3

July 18, 2015

Certified Sanborn® Map Report

EDR®

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

7/18/15

Site Name:	**Client Name:**
City of Salinas - WASP	Geocon Consultants, Inc.
City of Salinas - WASP	3160 Gold Valley Drive
Salinas, CA 93906	Rancho Cordova, CA 95742
EDR Inquiry # 4358345.3	Contact: Kristeen Bennett

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Certified Sanborn Results:

Site Name:	City of Salinas - WASP
Address:	City of Salinas - WASP
City, State, Zip:	Salinas, CA 93906
Cross Street:	
P.O. #	S1049-03-01
Project:	Boronda Rd FGA - WASP
Certification #	A6F2-4F3D-845E

Sanborn® Library search results
Certification # A6F2-4F3D-845E

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
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APPENDIX C

ADVANCED TECHNOLOGY
LABORATORIES

January 07, 2016

Kristeen Bennett
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Tel: (916) 852-9118
Fax:(916) 852-9132

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1504447

Client Reference : Boronda Road Future Growth Area, S1049-03-01

Enclosed are the results for sample(s) received on December 30, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S1	1504447-01	Soil	12/28/15 11:45	12/30/15 9:11
S2	1504447-02	Soil	12/28/15 12:00	12/30/15 9:11
S3	1504447-03	Soil	12/28/15 12:15	12/30/15 9:11
S4	1504447-04	Soil	12/28/15 12:30	12/30/15 9:11
S5	1504447-05	Soil	12/28/15 12:45	12/30/15 9:11
S6	1504447-06	Soil	12/28/15 16:40	12/30/15 9:11
S7	1504447-07	Soil	12/28/15 16:50	12/30/15 9:11
S8	1504447-08	Soil	12/28/15 16:20	12/30/15 9:11
S9	1504447-09	Soil	12/28/15 16:30	12/30/15 9:11
S10	1504447-10	Soil	12/28/15 16:00	12/30/15 9:11
S11	1504447-11	Soil	12/28/15 16:10	12/30/15 9:11
S12	1504447-12	Soil	12/28/15 15:50	12/30/15 9:11
S13	1504447-13	Soil	12/28/15 15:40	12/30/15 9:11
S14	1504447-14	Soil	12/28/15 14:40	12/30/15 9:11
S15	1504447-15	Soil	12/28/15 14:50	12/30/15 9:11
S16	1504447-16	Soil	12/28/15 15:00	12/30/15 9:11
S17	1504447-17	Soil	12/28/15 14:30	12/30/15 9:11
S18	1504447-18	Soil	12/28/15 14:00	12/30/15 9:11
S19	1504447-19	Soil	12/28/15 14:10	12/30/15 9:11
S20	1504447-20	Soil	12/28/15 14:20	12/30/15 9:11

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S1

Lab ID: 1504447-01

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD		ND	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
4,4´-DDE [2C]		**35**	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
4,4´-DDT [2C]		**45**	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Aldrin		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
alpha-BHC		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
alpha-Chlordane		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
beta-BHC		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Chlordane		ND	85	10	B6A0036	01/05/2016	01/06/16 14:52	D1
delta-BHC		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Dieldrin		ND	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Endosulfan I		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Endosulfan II		ND	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Endosulfan sulfate		ND	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Endrin		ND	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Endrin aldehyde		ND	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Endrin ketone		ND	20	10	B6A0036	01/05/2016	01/06/16 14:52	D1
gamma-BHC		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
gamma-Chlordane		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Heptachlor		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Heptachlor epoxide		ND	10	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Methoxychlor		ND	50	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Toxaphene		ND	500	10	B6A0036	01/05/2016	01/06/16 14:52	D1
Surrogate: Decachlorobiphenyl [2C]	*644 %*		*16 - 137*		B6A0036	01/05/2016	*01/06/16 14:52*	S10
Surrogate: Tetrachloro-m-xylene	*64.5 %*		*16 - 105*		B6A0036	01/05/2016	*01/06/16 14:52*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S2

Lab ID: 1504447-02

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
4,4´-DDE	**5.5**	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
4,4´-DDT	**5.0**	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 12:47	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:47	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 12:47	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 12:47	
Surrogate: Decachlorobiphenyl	*71.5 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 12:47*	
Surrogate: Tetrachloro-m-xylene	*71.2 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 12:47*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S3
Lab ID: 1504447-03

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
4,4´-DDE	**45**	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
4,4´-DDT	**50**	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 12:59	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Dieldrin	**2.0**	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 12:59	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 12:59	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 12:59	
Surrogate: Decachlorobiphenyl	*81.5 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 12:59*	
Surrogate: Tetrachloro-m-xylene	*70.8 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 12:59*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	Boronda Road Future Growth Area, S104'
3160 Gold Valley Drive, Suite 800	Report To :	Kristeen Bennett
Rancho Cordova , CA 95742	Reported :	01/07/2016

Client Sample ID S4

Lab ID: 1504447-04

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
4,4´-DDE	**33**	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
4,4´-DDT	**38**	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 13:11	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Dieldrin	**4.7**	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:11	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 13:11	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 13:11	
Surrogate: Decachlorobiphenyl	*71.1 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 13:11*	
Surrogate: Tetrachloro-m-xylene	*68.2 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 13:11*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800	Report To :	Kristeen Bennett
Rancho Cordova , CA 95742	Reported :	01/07/2016

Client Sample ID S5

Lab ID: 1504447-05

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
4,4´-DDE	**31**	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
4,4´-DDT	**37**	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 13:24	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Dieldrin	**4.3**	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:24	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 13:24	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 13:24	
Surrogate: Decachlorobiphenyl	*69.9 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 13:24*	
Surrogate: Tetrachloro-m-xylene	*68.5 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 13:24*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S6

Lab ID: 1504447-06

Organochlorine Pesticides by EPA 8081

Analyst: MFR

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	**2.5**	2.0	1	B6A0044	01/05/2016	01/06/16 13:36	
4,4´-DDE	**130**	20	10	B6A0044	01/05/2016	01/07/16 10:07	
4,4´-DDT	**110**	20	10	B6A0044	01/05/2016	01/07/16 10:07	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 13:36	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Dieldrin	**15**	2.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:36	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 13:36	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 13:36	
Surrogate: Decachlorobiphenyl	*77.3 %*	*16 - 137*		B6A0044	01/05/2016	*01/07/16 10:07*	
Surrogate: Decachlorobiphenyl	*69.0 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 13:36*	
Surrogate: Tetrachloro-m-xylene	*63.9 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 13:36*	
Surrogate: Tetrachloro-m-xylene	*69.8 %*	*16 - 105*		B6A0044	01/05/2016	*01/07/16 10:07*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S7

Lab ID: 1504447-07

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD		**2.1**	2.0	1	B6A0044	01/05/2016	01/06/16 13:48	
4,4´-DDE		**120**	20	10	B6A0044	01/05/2016	01/07/16 10:19	
4,4´-DDT		**91**	20	10	B6A0044	01/05/2016	01/07/16 10:19	
Aldrin		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
alpha-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
alpha-Chlordane		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
beta-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Chlordane		ND	8.5	1	B6A0044	01/05/2016	01/06/16 13:48	
delta-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Dieldrin		**10**	2.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Endosulfan I		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Endosulfan II		ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Endosulfan sulfate		ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Endrin		ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Endrin aldehyde		ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Endrin ketone		ND	2.0	1	B6A0044	01/05/2016	01/06/16 13:48	
gamma-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
gamma-Chlordane		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Heptachlor		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Heptachlor epoxide		ND	1.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Methoxychlor		ND	5.0	1	B6A0044	01/05/2016	01/06/16 13:48	
Toxaphene		ND	50	1	B6A0044	01/05/2016	01/06/16 13:48	
Surrogate: Decachlorobiphenyl	*96.3 %*		*16 - 137*		B6A0044	01/05/2016	*01/07/16 10:19*	
Surrogate: Decachlorobiphenyl	*72.2 %*		*16 - 137*		B6A0044	01/05/2016	*01/06/16 13:48*	
Surrogate: Tetrachloro-m-xylene	*65.0 %*		*16 - 105*		B6A0044	01/05/2016	*01/06/16 13:48*	
Surrogate: Tetrachloro-m-xylene	*73.3 %*		*16 - 105*		B6A0044	01/05/2016	*01/07/16 10:19*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800	Report To :	Kristeen Bennett
Rancho Cordova , CA 95742	Reported :	01/07/2016

Client Sample ID S8

Lab ID: 1504447-08

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
4,4´-DDE	**12**	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
4,4´-DDT	**7.1**	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 14:00	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:00	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 14:00	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 14:00	
Surrogate: Decachlorobiphenyl	*83.8 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 14:00*	
Surrogate: Tetrachloro-m-xylene	*89.2 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 14:00*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S9

Lab ID: 1504447-09

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
4,4´-DDE	**52**	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
4,4´-DDT	**31**	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 14:13	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Dieldrin	**5.5**	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:13	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 14:13	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 14:13	
Surrogate: Decachlorobiphenyl	*68.7 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 14:13*	
Surrogate: Tetrachloro-m-xylene	*66.6 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 14:13*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S10

Lab ID: 1504447-10

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
4,4´-DDE	**5.5**	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
4,4´-DDT	**3.9**	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 14:25	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:25	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 14:25	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 14:25	
Surrogate: Decachlorobiphenyl	*83.9 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 14:25*	
Surrogate: Tetrachloro-m-xylene	*85.1 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 14:25*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S11

Lab ID: 1504447-11

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
4,4´-DDE	**7.4**	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
4,4´-DDT	**5.2**	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 14:37	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:37	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 14:37	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 14:37	
Surrogate: Decachlorobiphenyl	*83.4 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 14:37*	
Surrogate: Tetrachloro-m-xylene	*82.0 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 14:37*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S12
Lab ID: 1504447-12

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD		ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
4,4´-DDE		**26**	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
4,4´-DDT		**21**	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Aldrin		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
alpha-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
alpha-Chlordane		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
beta-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Chlordane		ND	8.5	1	B6A0044	01/05/2016	01/06/16 14:49	
delta-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Dieldrin		**5.3**	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Endosulfan I		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Endosulfan II		ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Endosulfan sulfate		ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Endrin		ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Endrin aldehyde		ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Endrin ketone		ND	2.0	1	B6A0044	01/05/2016	01/06/16 14:49	
gamma-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
gamma-Chlordane		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Heptachlor		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Heptachlor epoxide		ND	1.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Methoxychlor		ND	5.0	1	B6A0044	01/05/2016	01/06/16 14:49	
Toxaphene		ND	50	1	B6A0044	01/05/2016	01/06/16 14:49	
Surrogate: Decachlorobiphenyl	*69.2 %*		*16 - 137*		B6A0044	01/05/2016	*01/06/16 14:49*	
Surrogate: Tetrachloro-m-xylene	*66.7 %*		*16 - 105*		B6A0044	01/05/2016	*01/06/16 14:49*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S13
Lab ID: 1504447-13

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
4,4´-DDE	**7.4**	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
4,4´-DDT	**4.7**	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 15:02	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:02	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 15:02	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 15:02	
Surrogate: Decachlorobiphenyl	*71.0 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 15:02*	
Surrogate: Tetrachloro-m-xylene	*68.6 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 15:02*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800	Report To :	Kristeen Bennett
Rancho Cordova , CA 95742	Reported :	01/07/2016

Client Sample ID S14
Lab ID: 1504447-14

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
4,4´-DDE	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
4,4´-DDT	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 15:14	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:14	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 15:14	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 15:14	
Surrogate: Decachlorobiphenyl	*88.1 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 15:14*	
Surrogate: Tetrachloro-m-xylene	*88.4 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 15:14*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800	Report To : Kristeen Bennett
Rancho Cordova , CA 95742	Reported : 01/07/2016

Client Sample ID S15

Lab ID: 1504447-15

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
4,4´-DDE	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
4,4´-DDT	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 15:26	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:26	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 15:26	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 15:26	
Surrogate: Decachlorobiphenyl	*89.4 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 15:26*	
Surrogate: Tetrachloro-m-xylene	*84.0 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 15:26*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800	Report To :	Kristeen Bennett
Rancho Cordova , CA 95742	Reported :	01/07/2016

Client Sample ID S16
Lab ID: 1504447-16

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
4,4´-DDE	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
4,4´-DDT	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 15:38	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:38	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 15:38	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 15:38	
Surrogate: Decachlorobiphenyl	*93.7 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 15:38*	
Surrogate: Tetrachloro-m-xylene	*77.4 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 15:38*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S17
Lab ID: 1504447-17

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD		ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
4,4´-DDE		**5.9**	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
4,4´-DDT		**8.7**	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Aldrin		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
alpha-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
alpha-Chlordane		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
beta-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Chlordane		ND	8.5	1	B6A0044	01/05/2016	01/06/16 15:51	
delta-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Dieldrin		ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Endosulfan I		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Endosulfan II		ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Endosulfan sulfate		ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Endrin		ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Endrin aldehyde		ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Endrin ketone		ND	2.0	1	B6A0044	01/05/2016	01/06/16 15:51	
gamma-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
gamma-Chlordane		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Heptachlor		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Heptachlor epoxide		ND	1.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Methoxychlor		ND	5.0	1	B6A0044	01/05/2016	01/06/16 15:51	
Toxaphene		ND	50	1	B6A0044	01/05/2016	01/06/16 15:51	
Surrogate: Decachlorobiphenyl	*74.3 %*		*16 - 137*		B6A0044	01/05/2016	*01/06/16 15:51*	
Surrogate: Tetrachloro-m-xylene	*64.0 %*		*16 - 105*		B6A0044	01/05/2016	*01/06/16 15:51*	

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800	Report To :	Kristeen Bennett
Rancho Cordova , CA 95742	Reported :	01/07/2016

Client Sample ID S18
Lab ID: 1504447-18

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
4,4´-DDE	**20**	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
4,4´-DDT	**8.5**	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 16:03	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:03	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 16:03	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 16:03	
Surrogate: Decachlorobiphenyl	*78.8 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 16:03*	
Surrogate: Tetrachloro-m-xylene	*65.4 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 16:03*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S19
Lab ID: 1504447-19

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD		ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
4,4´-DDE		**3.6**	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
4,4´-DDT		**2.9**	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Aldrin		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
alpha-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
alpha-Chlordane		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
beta-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Chlordane		ND	8.5	1	B6A0044	01/05/2016	01/06/16 16:15	
delta-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Dieldrin		ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Endosulfan I		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Endosulfan II		ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Endosulfan sulfate		ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Endrin		ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Endrin aldehyde		ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Endrin ketone		ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:15	
gamma-BHC		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
gamma-Chlordane		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Heptachlor		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Heptachlor epoxide		ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Methoxychlor		ND	5.0	1	B6A0044	01/05/2016	01/06/16 16:15	
Toxaphene		ND	50	1	B6A0044	01/05/2016	01/06/16 16:15	
Surrogate: Decachlorobiphenyl	*90.1 %*		*16 - 137*		B6A0044	01/05/2016	*01/06/16 16:15*	
Surrogate: Tetrachloro-m-xylene	*85.1 %*		*16 - 105*		B6A0044	01/05/2016	*01/06/16 16:15*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Client Sample ID S20

Lab ID: 1504447-20

Organochlorine Pesticides by EPA 8081 **Analyst: MFR**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
4,4´-DDE	**12**	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
4,4´-DDT	**9.3**	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Aldrin	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
alpha-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
alpha-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
beta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Chlordane	ND	8.5	1	B6A0044	01/05/2016	01/06/16 16:28	
delta-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Dieldrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Endosulfan I	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Endosulfan II	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Endosulfan sulfate	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Endrin	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Endrin aldehyde	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Endrin ketone	ND	2.0	1	B6A0044	01/05/2016	01/06/16 16:28	
gamma-BHC	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
gamma-Chlordane	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Heptachlor	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Heptachlor epoxide	ND	1.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Methoxychlor	ND	5.0	1	B6A0044	01/05/2016	01/06/16 16:28	
Toxaphene	ND	50	1	B6A0044	01/05/2016	01/06/16 16:28	
Surrogate: Decachlorobiphenyl	*63.9 %*	*16 - 137*		B6A0044	01/05/2016	*01/06/16 16:28*	
Surrogate: Tetrachloro-m-xylene	*60.8 %*	*16 - 105*		B6A0044	01/05/2016	*01/06/16 16:28*	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

QUALITY CONTROL SECTION

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0036 - GCSEMI_PCB/PEST_S									
Blank (B6A0036-BLK1)				Prepared: 1/5/2016 Analyzed: 1/6/2016					
4,4´-DDD	ND	2.0			NR				
4,4´-DDD [2C]	ND	2.0			NR				
4,4´-DDE	ND	2.0			NR				
4,4´-DDE [2C]	ND	2.0			NR				
4,4´-DDT	ND	2.0			NR				
4,4´-DDT [2C]	ND	2.0			NR				
Aldrin	ND	1.0			NR				
Aldrin [2C]	ND	1.0			NR				
alpha-BHC	ND	1.0			NR				
alpha-BHC [2C]	ND	1.0			NR				
alpha-Chlordane	ND	1.0			NR				
alpha-Chlordane [2C]	ND	1.0			NR				
beta-BHC	ND	1.0			NR				
beta-BHC [2C]	ND	1.0			NR				
Chlordane	ND	8.5			NR				
Chlordane [2C]	ND	8.5			NR				
delta-BHC	ND	1.0			NR				
delta-BHC [2C]	ND	1.0			NR				
Dieldrin	ND	2.0			NR				
Dieldrin [2C]	ND	2.0			NR				
Endosulfan I	ND	1.0			NR				
Endosulfan I [2C]	ND	1.0			NR				
Endosulfan II	ND	2.0			NR				
Endosulfan II [2C]	ND	2.0			NR				
Endosulfan sulfate	ND	2.0			NR				
Endosulfan Sulfate [2C]	ND	2.0			NR				
Endrin	ND	2.0			NR				
Endrin [2C]	ND	2.0			NR				
Endrin aldehyde	ND	2.0			NR				
Endrin aldehyde [2C]	ND	2.0			NR				
Endrin ketone	ND	2.0			NR				
Endrin ketone [2C]	ND	2.0			NR				
gamma-BHC	ND	1.0			NR				
gamma-BHC [2C]	ND	1.0			NR				
gamma-Chlordane	ND	1.0			NR				
gamma-Chlordane [2C]	ND	1.0			NR				
Heptachlor	ND	1.0			NR				
Heptachlor [2C]	ND	1.0			NR				
Heptachlor epoxide	ND	1.0			NR				

Certificate of Analysis

Geocon Consultants, Inc.	Project Number : Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800	Report To : Kristeen Bennett
Rancho Cordova , CA 95742	Reported : 01/07/2016

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0036 - GCSEMI_PCB/PEST_S (continued)									
Blank (B6A0036-BLK1) - Continued				Prepared: 1/5/2016 Analyzed: 1/6/2016					
Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
Surrogate: Decachlorobiphenyl	*15.06*		*16.6667*		*90.3*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*13.70*		*16.6667*		*82.2*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*13.51*		*16.6667*		*81.1*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*13.76*		*16.6667*		*82.5*	*16 - 105*			
LCS (B6A0036-BS1)				Prepared: 1/5/2016 Analyzed: 1/6/2016					
4,4´-DDD	14.8733	2.0	16.6667		89.2	58 - 100			
4,4´-DDD [2C]	14.3043	2.0	16.6667		85.8	58 - 100			
4,4´-DDE	14.7257	2.0	16.6667		88.4	65 - 99			
4,4´-DDE [2C]	16.1827	2.0	16.6667		97.1	65 - 99			
4,4´-DDT	12.2968	2.0	16.6667		73.8	39 - 116			
4,4´-DDT [2C]	10.7187	2.0	16.6667		64.3	39 - 116			
Aldrin	13.7710	1.0	16.6667		82.6	57 - 94			
Aldrin [2C]	14.5062	1.0	16.6667		87.0	57 - 94			
alpha-BHC	13.1382	1.0	16.6667		78.8	58 - 84			
alpha-BHC [2C]	13.8967	1.0	16.6667		83.4	58 - 84			
alpha-Chlordane	13.8965	1.0	16.6667		83.4	58 - 96			
alpha-Chlordane [2C]	14.6882	1.0	16.6667		88.1	58 - 96			
beta-BHC	13.0648	1.0	16.6667		78.4	58 - 87			
beta-BHC [2C]	13.1973	1.0	16.6667		79.2	58 - 87			
delta-BHC	8.86933	1.0	16.6667		53.2	18 - 75			
delta-BHC [2C]	8.99717	1.0	16.6667		54.0	18 - 75			
Dieldrin	14.1418	2.0	16.6667		84.9	62 - 94			
Dieldrin [2C]	14.4312	2.0	16.6667		86.6	62 - 94			
Endosulfan I	13.5232	1.0	16.6667		81.1	58 - 90			
Endosulfan I [2C]	12.9600	1.0	16.6667		77.8	58 - 90			
Endosulfan II	13.7893	2.0	16.6667		82.7	63 - 95			
Endosulfan II [2C]	14.0097	2.0	16.6667		84.1	63 - 95			
Endosulfan sulfate	13.4732	2.0	16.6667		80.8	59 - 89			
Endosulfan Sulfate [2C]	13.5278	2.0	16.6667		81.2	59 - 89			
Endrin	14.6385	2.0	16.6667		87.8	64 - 96			
Endrin [2C]	15.3307	2.0	16.6667		92.0	64 - 96			
Endrin aldehyde	14.7493	2.0	16.6667		88.5	65 - 95			
Endrin aldehyde [2C]	15.0098	2.0	16.6667		90.1	65 - 95			
Endrin ketone	14.0900	2.0	16.6667		84.5	59 - 101			
Endrin ketone [2C]	14.2128	2.0	16.6667		85.3	59 - 101			

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Rancho Cordova , CA 95742		Reported :	01/07/2016

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0036 - GCSEMI_PCB/PEST_S (continued)									
LCS (B6A0036-BS1) - Continued				Prepared: 1/5/2016 Analyzed: 1/6/2016					
gamma-BHC	13.3493	1.0	16.6667		80.1	63 - 89			
gamma-BHC [2C]	14.0847	1.0	16.6667		84.5	63 - 89			
gamma-Chlordane	13.8745	1.0	16.6667		83.2	61 - 95			
gamma-Chlordane [2C]	14.4785	1.0	16.6667		86.9	61 - 95			
Heptachlor	13.5872	1.0	16.6667		81.5	65 - 102			
Heptachlor [2C]	13.7417	1.0	16.6667		82.4	65 - 102			
Heptachlor epoxide	14.0398	1.0	16.6667		84.2	61 - 95			
Heptachlor epoxide [2C]	14.5645	1.0	16.6667		87.4	61 - 95			
Methoxychlor	12.6362	5.0	16.6667		75.8	29 - 128			
Methoxychlor [2C]	21.4252	5.0	16.6667		129	29 - 128			L4, L5
Surrogate: Decachlorobiphenyl	*14.45*		*16.6667*		*86.7*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*13.48*		*16.6667*		*80.9*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*13.49*		*16.6667*		*80.9*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*14.35*		*16.6667*		*86.1*	*16 - 105*			
Matrix Spike (B6A0036-MS1)		**Source: 1504436-24**		Prepared: 1/5/2016 Analyzed: 1/6/2016					
4,4´-DDD	17.0595	2.0	16.6667	ND	102	27 - 123			
4,4´-DDD [2C]	16.2428	2.0	16.6667	ND	97.5	27 - 123			
4,4´-DDE	16.4467	2.0	16.6667	ND	98.7	28 - 126			
4,4´-DDE [2C]	18.8252	2.0	16.6667	ND	113	28 - 126			
4,4´-DDT	15.2432	2.0	16.6667	ND	91.5	12 - 149			
4,4´-DDT [2C]	14.6612	2.0	16.6667	ND	88.0	12 - 149			
Aldrin	14.9935	1.0	16.6667	ND	90.0	29 - 116			
Aldrin [2C]	16.0567	1.0	16.6667	ND	96.3	29 - 116			
alpha-BHC	14.5270	1.0	16.6667	ND	87.2	27 - 104			
alpha-BHC [2C]	15.6690	1.0	16.6667	ND	94.0	27 - 104			
alpha-Chlordane	15.4765	1.0	16.6667	ND	92.9	14 - 130			
alpha-Chlordane [2C]	16.4690	1.0	16.6667	ND	98.8	14 - 130			
beta-BHC	14.4648	1.0	16.6667	ND	86.8	20 - 115			
beta-BHC [2C]	15.6690	1.0	16.6667	ND	94.0	20 - 115			
delta-BHC	10.0122	1.0	16.6667	ND	60.1	8 - 78			
delta-BHC [2C]	10.4798	1.0	16.6667	ND	62.9	8 - 78			
Dieldrin	15.7612	2.0	16.6667	ND	94.6	20 - 134			
Dieldrin [2C]	16.5335	2.0	16.6667	ND	99.2	20 - 134			
Endosulfan I	14.2457	1.0	16.6667	ND	85.5	27 - 114			
Endosulfan I [2C]	14.3307	1.0	16.6667	ND	86.0	27 - 114			
Endosulfan II	15.8907	2.0	16.6667	ND	95.3	16 - 125			
Endosulfan II [2C]	16.0807	2.0	16.6667	ND	96.5	16 - 125			
Endosulfan sulfate	15.1343	2.0	16.6667	ND	90.8	1 - 126			
Endosulfan Sulfate [2C]	15.3257	2.0	16.6667	ND	92.0	1 - 126			
Endrin	16.4353	2.0	16.6667	ND	98.6	33 - 122			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0036 - GCSEMI_PCB/PEST_S (continued)									
Matrix Spike (B6A0036-MS1) - Continued		**Source: 1504436-24**		Prepared: 1/5/2016 Analyzed: 1/6/2016					
Endrin [2C]	17.2857	2.0	16.6667	ND	104	33 - 122			
Endrin aldehyde	16.4943	2.0	16.6667	ND	99.0	0 - 137			
Endrin aldehyde [2C]	17.0617	2.0	16.6667	ND	102	0 - 137			
Endrin ketone	16.6688	2.0	16.6667	ND	100	10 - 126			
Endrin ketone [2C]	16.4725	2.0	16.6667	ND	98.8	10 - 126			
gamma-BHC	14.8147	1.0	16.6667	ND	88.9	30 - 111			
gamma-BHC [2C]	16.0505	1.0	16.6667	ND	96.3	30 - 111			
gamma-Chlordane	15.3598	1.0	16.6667	ND	92.2	16 - 130			
gamma-Chlordane [2C]	16.3192	1.0	16.6667	ND	97.9	16 - 130			
Heptachlor	15.1367	1.0	16.6667	ND	90.8	34 - 127			
Heptachlor [2C]	15.9162	1.0	16.6667	ND	95.5	34 - 127			
Heptachlor epoxide	15.5675	1.0	16.6667	ND	93.4	19 - 130			
Heptachlor epoxide [2C]	15.9508	1.0	16.6667	ND	95.7	19 - 130			
Methoxychlor	16.6150	5.0	16.6667	ND	99.7	16 - 153			
Methoxychlor [2C]	25.8355	5.0	16.6667	ND	155	16 - 153			M2
Surrogate: Decachlorobiphenyl	*16.36*		*16.6667*		*98.2*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*15.35*		*16.6667*		*92.1*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*14.31*		*16.6667*		*85.9*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*15.48*		*16.6667*		*92.9*	*16 - 105*			
Matrix Spike Dup (B6A0036-MSD1)		**Source: 1504436-24**		Prepared: 1/5/2016 Analyzed: 1/6/2016					
4,4´-DDD	17.8855	2.0	16.6667	ND	107	27 - 123	4.73	20	
4,4´-DDD [2C]	17.4253	2.0	16.6667	ND	105	27 - 123	7.02	20	
4,4´-DDE	17.1823	2.0	16.6667	ND	103	28 - 126	4.38	20	
4,4´-DDE [2C]	20.1712	2.0	16.6667	ND	121	28 - 126	6.90	20	
4,4´-DDT	16.3032	2.0	16.6667	ND	97.8	12 - 149	6.72	20	
4,4´-DDT [2C]	15.9932	2.0	16.6667	ND	96.0	12 - 149	8.69	20	
Aldrin	15.6068	1.0	16.6667	ND	93.6	29 - 116	4.01	20	
Aldrin [2C]	16.9140	1.0	16.6667	ND	101	29 - 116	5.20	20	
alpha-BHC	15.0018	1.0	16.6667	ND	90.0	27 - 104	3.22	20	
alpha-BHC [2C]	16.4105	1.0	16.6667	ND	98.5	27 - 104	4.62	20	
alpha-Chlordane	16.0723	1.0	16.6667	ND	96.4	14 - 130	3.78	20	
alpha-Chlordane [2C]	17.3832	1.0	16.6667	ND	104	14 - 130	5.40	20	
beta-BHC	15.0213	1.0	16.6667	ND	90.1	20 - 115	3.77	20	
beta-BHC [2C]	15.8607	1.0	16.6667	ND	95.2	20 - 115	1.22	20	
delta-BHC	10.3747	1.0	16.6667	ND	62.2	8 - 78	3.56	20	
delta-BHC [2C]	11.1460	1.0	16.6667	ND	66.9	8 - 78	6.16	20	
Dieldrin	16.4427	2.0	16.6667	ND	98.7	20 - 134	4.23	20	
Dieldrin [2C]	17.3788	2.0	16.6667	ND	104	20 - 134	4.99	20	
Endosulfan I	14.7562	1.0	16.6667	ND	88.5	27 - 114	3.52	20	
Endosulfan I [2C]	14.9865	1.0	16.6667	ND	89.9	27 - 114	4.47	20	

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0036 - GCSEMI_PCB/PEST_S (continued)									
Matrix Spike Dup (B6A0036-MSD1) - Continued		**Source: 1504436-24**		Prepared: 1/5/2016 Analyzed: 1/6/2016					
Endosulfan II	16.9463	2.0	16.6667	ND	102	16 - 125	6.43	20	
Endosulfan II [2C]	16.8297	2.0	16.6667	ND	101	16 - 125	4.55	20	
Endosulfan sulfate	15.7805	2.0	16.6667	ND	94.7	1 - 126	4.18	20	
Endosulfan Sulfate [2C]	16.1235	2.0	16.6667	ND	96.7	1 - 126	5.07	20	
Endrin	17.0857	2.0	16.6667	ND	103	33 - 122	3.88	20	
Endrin [2C]	18.1077	2.0	16.6667	ND	109	33 - 122	4.64	20	
Endrin aldehyde	17.0700	2.0	16.6667	ND	102	0 - 137	3.43	20	
Endrin aldehyde [2C]	17.6510	2.0	16.6667	ND	106	0 - 137	3.40	20	
Endrin ketone	17.2448	2.0	16.6667	ND	103	10 - 126	3.40	20	
Endrin ketone [2C]	17.7053	2.0	16.6667	ND	106	10 - 126	7.21	20	
gamma-BHC	15.3515	1.0	16.6667	ND	92.1	30 - 111	3.56	20	
gamma-BHC [2C]	16.7538	1.0	16.6667	ND	101	30 - 111	4.29	20	
gamma-Chlordane	16.1257	1.0	16.6667	ND	96.8	16 - 130	4.86	20	
gamma-Chlordane [2C]	17.2318	1.0	16.6667	ND	103	16 - 130	5.44	20	
Heptachlor	15.7630	1.0	16.6667	ND	94.6	34 - 127	4.05	20	
Heptachlor [2C]	16.9210	1.0	16.6667	ND	102	34 - 127	6.12	20	
Heptachlor epoxide	16.2133	1.0	16.6667	ND	97.3	19 - 130	4.06	20	
Heptachlor epoxide [2C]	16.7755	1.0	16.6667	ND	101	19 - 130	5.04	20	
Methoxychlor	17.7215	5.0	16.6667	ND	106	16 - 153	6.45	20	
Methoxychlor [2C]	27.4452	5.0	16.6667	ND	165	16 - 153	6.04	20	M2
Surrogate: Decachlorobiphenyl	*16.60*		*16.6667*		*99.6*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*15.40*		*16.6667*		*92.4*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*14.78*		*16.6667*		*88.7*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*16.16*		*16.6667*		*97.0*	*16 - 105*			

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Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0044 - GCSEMI_PCB/PEST_S									
Blank (B6A0044-BLK1)				Prepared: 1/5/2016 Analyzed: 1/6/2016					
4,4´-DDD	ND	2.0			NR				
4,4´-DDD [2C]	ND	2.0			NR				
4,4´-DDE	ND	2.0			NR				
4,4´-DDE [2C]	ND	2.0			NR				
4,4´-DDT	ND	2.0			NR				
4,4´-DDT [2C]	ND	2.0			NR				
Aldrin	ND	1.0			NR				
Aldrin [2C]	ND	1.0			NR				
alpha-BHC	ND	1.0			NR				
alpha-BHC [2C]	ND	1.0			NR				
alpha-Chlordane	ND	1.0			NR				
alpha-Chlordane [2C]	ND	1.0			NR				
beta-BHC	ND	1.0			NR				
beta-BHC [2C]	ND	1.0			NR				
Chlordane	ND	8.5			NR				
Chlordane [2C]	ND	8.5			NR				
delta-BHC	ND	1.0			NR				
delta-BHC [2C]	ND	1.0			NR				
Dieldrin	ND	2.0			NR				
Dieldrin [2C]	ND	2.0			NR				
Endosulfan I	ND	1.0			NR				
Endosulfan I [2C]	ND	1.0			NR				
Endosulfan II	ND	2.0			NR				
Endosulfan II [2C]	ND	2.0			NR				
Endosulfan sulfate	ND	2.0			NR				
Endosulfan Sulfate [2C]	ND	2.0			NR				
Endrin	ND	2.0			NR				
Endrin [2C]	ND	2.0			NR				
Endrin aldehyde	ND	2.0			NR				
Endrin aldehyde [2C]	ND	2.0			NR				
Endrin ketone	ND	2.0			NR				
Endrin ketone [2C]	ND	2.0			NR				
gamma-BHC	ND	1.0			NR				
gamma-BHC [2C]	ND	1.0			NR				
gamma-Chlordane	ND	1.0			NR				
gamma-Chlordane [2C]	ND	1.0			NR				
Heptachlor	ND	1.0			NR				
Heptachlor [2C]	ND	1.0			NR				
Heptachlor epoxide	ND	1.0			NR				
Heptachlor epoxide [2C]	ND	1.0			NR				
Methoxychlor	ND	5.0			NR				

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0044 - GCSEMI_PCB/PEST_S (continued)									
Blank (B6A0044-BLK1) - Continued				Prepared: 1/5/2016 Analyzed: 1/6/2016					
Methoxychlor [2C]	ND	5.0			NR				
Toxaphene	ND	50			NR				
Toxaphene [2C]	ND	50			NR				
Surrogate: Decachlorobiphenyl	*12.87*		*16.6667*		*77.2*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*11.91*		*16.6667*		*71.5*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*13.50*		*16.6667*		*81.0*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*13.37*		*16.6667*		*80.2*	*16 - 105*			
LCS (B6A0044-BS1)				Prepared: 1/5/2016 Analyzed: 1/6/2016					
4,4´-DDD	12.0047	2.0	16.6667		72.0	58 - 100			
4,4´-DDD [2C]	11.6060	2.0	16.6667		69.6	58 - 100			
4,4´-DDE	12.7650	2.0	16.6667		76.6	65 - 99			
4,4´-DDE [2C]	12.5532	2.0	16.6667		75.3	65 - 99			
4,4´-DDT	12.8072	2.0	16.6667		76.8	39 - 116			
4,4´-DDT [2C]	12.3120	2.0	16.6667		73.9	39 - 116			
Aldrin	12.6058	1.0	16.6667		75.6	57 - 94			
Aldrin [2C]	12.6458	1.0	16.6667		75.9	57 - 94			
alpha-BHC	11.7638	1.0	16.6667		70.6	58 - 84			
alpha-BHC [2C]	11.7628	1.0	16.6667		70.6	58 - 84			
alpha-Chlordane	11.6913	1.0	16.6667		70.1	58 - 96			
alpha-Chlordane [2C]	12.0060	1.0	16.6667		72.0	58 - 96			
beta-BHC	11.6990	1.0	16.6667		70.2	58 - 87			
beta-BHC [2C]	11.5583	1.0	16.6667		69.3	58 - 87			
delta-BHC	7.25183	1.0	16.6667		43.5	18 - 75			
delta-BHC [2C]	7.07400	1.0	16.6667		42.4	18 - 75			
Dieldrin	12.7780	2.0	16.6667		76.7	62 - 94			
Dieldrin [2C]	12.6453	2.0	16.6667		75.9	62 - 94			
Endosulfan I	12.5080	1.0	16.6667		75.0	58 - 90			
Endosulfan I [2C]	12.0695	1.0	16.6667		72.4	58 - 90			
Endosulfan II	12.2683	2.0	16.6667		73.6	63 - 95			
Endosulfan II [2C]	11.9620	2.0	16.6667		71.8	63 - 95			
Endosulfan sulfate	10.8762	2.0	16.6667		65.3	59 - 89			
Endosulfan Sulfate [2C]	10.6217	2.0	16.6667		63.7	59 - 89			
Endrin	13.9405	2.0	16.6667		83.6	64 - 96			
Endrin [2C]	13.9610	2.0	16.6667		83.8	64 - 96			
Endrin aldehyde	14.3315	2.0	16.6667		86.0	65 - 95			
Endrin aldehyde [2C]	13.3920	2.0	16.6667		80.4	65 - 95			
Endrin ketone	11.3332	2.0	16.6667		68.0	59 - 101			
Endrin ketone [2C]	10.7748	2.0	16.6667		64.6	59 - 101			
gamma-BHC	12.1987	1.0	16.6667		73.2	63 - 89			
gamma-BHC [2C]	12.2680	1.0	16.6667		73.6	63 - 89			

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800	Report To :	Kristeen Bennett
Rancho Cordova , CA 95742	Reported :	01/07/2016

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0044 - GCSEMI_PCB/PEST_S (continued)									
LCS (B6A0044-BS1) - Continued				Prepared: 1/5/2016 Analyzed: 1/6/2016					
gamma-Chlordane	12.2547	1.0	16.6667		73.5	61 - 95			
gamma-Chlordane [2C]	12.0562	1.0	16.6667		72.3	61 - 95			
Heptachlor	12.6928	1.0	16.6667		76.2	65 - 102			
Heptachlor [2C]	13.0168	1.0	16.6667		78.1	65 - 102			
Heptachlor epoxide	12.8470	1.0	16.6667		77.1	61 - 95			
Heptachlor epoxide [2C]	12.8013	1.0	16.6667		76.8	61 - 95			
Methoxychlor	12.3200	5.0	16.6667		73.9	29 - 128			
Methoxychlor [2C]	12.3067	5.0	16.6667		73.8	29 - 128			
Surrogate: Decachlorobiphenyl	*11.78*		*16.6667*		*70.7*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*11.10*		*16.6667*		*66.6*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*12.30*		*16.6667*		*73.8*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*12.30*		*16.6667*		*73.8*	*16 - 105*			
Matrix Spike (B6A0044-MS1)		**Source: 1504447-07**		Prepared: 1/5/2016 Analyzed: 1/6/2016					
4,4´-DDD	17.5828	2.0	16.6667	2.12367	92.8	27 - 123			
4,4´-DDD [2C]	15.7240	2.0	16.6667	1.82883	83.4	27 - 123			
Aldrin	13.9837	1.0	16.6667	ND	83.9	29 - 116			
Aldrin [2C]	13.0723	1.0	16.6667	ND	78.4	29 - 116			
alpha-BHC	12.4357	1.0	16.6667	ND	74.6	27 - 104			
alpha-BHC [2C]	11.6220	1.0	16.6667	ND	69.7	27 - 104			
alpha-Chlordane	13.3143	1.0	16.6667	ND	79.9	14 - 130			
alpha-Chlordane [2C]	12.5515	1.0	16.6667	ND	75.3	14 - 130			
beta-BHC	12.5775	1.0	16.6667	ND	75.5	20 - 115			
beta-BHC [2C]	11.3035	1.0	16.6667	ND	67.8	20 - 115			
delta-BHC	7.21033	1.0	16.6667	ND	43.3	8 - 78			
delta-BHC [2C]	6.70150	1.0	16.6667	ND	40.2	8 - 78			
Dieldrin	26.3997	2.0	16.6667	10.4670	95.6	20 - 134			
Dieldrin [2C]	24.8585	2.0	16.6667	9.23100	93.8	20 - 134			
Endosulfan I	14.5783	1.0	16.6667	ND	87.5	27 - 114			
Endosulfan I [2C]	13.2138	1.0	16.6667	ND	79.3	27 - 114			
Endosulfan II	11.9823	2.0	16.6667	ND	71.9	16 - 125			
Endosulfan II [2C]	10.2305	2.0	16.6667	ND	61.4	16 - 125			
Endosulfan sulfate	8.11533	2.0	16.6667	ND	48.7	1 - 126			
Endosulfan Sulfate [2C]	6.25833	2.0	16.6667	ND	37.5	1 - 126			
Endrin	17.9135	2.0	16.6667	ND	107	33 - 122			
Endrin [2C]	15.6697	2.0	16.6667	ND	94.0	33 - 122			
Endrin aldehyde	10.9765	2.0	16.6667	ND	65.9	0 - 137			
Endrin aldehyde [2C]	12.3453	2.0	16.6667	ND	74.1	0 - 137			
Endrin ketone	8.75917	2.0	16.6667	ND	52.6	10 - 126			
Endrin ketone [2C]	7.34850	2.0	16.6667	ND	44.1	10 - 126			
gamma-BHC	12.8010	1.0	16.6667	ND	76.8	30 - 111			

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0044 - GCSEMI_PCB/PEST_S (continued)									
Matrix Spike (B6A0044-MS1) - Continued		**Source: 1504447-07**		Prepared: 1/5/2016 Analyzed: 1/6/2016					
gamma-BHC [2C]	12.9733	1.0	16.6667	ND	77.8	30 - 111			
gamma-Chlordane	13.4942	1.0	16.6667	ND	81.0	16 - 130			
gamma-Chlordane [2C]	14.1547	1.0	16.6667	ND	84.9	16 - 130			
Heptachlor	13.7210	1.0	16.6667	ND	82.3	34 - 127			
Heptachlor [2C]	13.0008	1.0	16.6667	ND	78.0	34 - 127			
Heptachlor epoxide	15.7298	1.0	16.6667	ND	94.4	19 - 130			
Heptachlor epoxide [2C]	13.0977	1.0	16.6667	ND	78.6	19 - 130			
Methoxychlor	15.0202	5.0	16.6667	ND	90.1	16 - 153			
Methoxychlor [2C]	15.7540	5.0	16.6667	ND	94.5	16 - 153			
Surrogate: Decachlorobiphenyl	*12.95*		*16.6667*		*77.7*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*11.32*		*16.6667*		*67.9*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*12.30*		*16.6667*		*73.8*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*12.58*		*16.6667*		*75.5*	*16 - 105*			
Matrix Spike (B6A0044-MS2)		**Source: 1504447-07RE1**		Prepared: 1/5/2016 Analyzed: 1/7/2016					
4,4´-DDE	144.208	20	16.6667	116.027	169	28 - 126			M2
4,4´-DDE [2C]	145.165	20	16.6667	111.675	201	28 - 126			M2
4,4´-DDT	87.8150	20	16.6667	91.1450	-20.0	12 - 149			M2
4,4´-DDT [2C]	70.3900	20	16.6667	66.8983	21.0	12 - 149			
Surrogate: Decachlorobiphenyl	*17.90*		*16.6667*		*107*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*16.84*		*16.6667*		*101*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*15.83*		*16.6667*		*95.0*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*13.67*		*16.6667*		*82.0*	*16 - 105*			
Matrix Spike Dup (B6A0044-MSD1)		**Source: 1504447-07**		Prepared: 1/5/2016 Analyzed: 1/6/2016					
4,4´-DDD	17.0475	2.0	16.6667	2.12367	89.5	27 - 123	3.09	20	
4,4´-DDD [2C]	15.2503	2.0	16.6667	1.82883	80.5	27 - 123	3.06	20	
Aldrin	13.4337	1.0	16.6667	ND	80.6	29 - 116	4.01	20	
Aldrin [2C]	12.8125	1.0	16.6667	ND	76.9	29 - 116	2.01	20	
alpha-BHC	13.0013	1.0	16.6667	ND	78.0	27 - 104	4.45	20	
alpha-BHC [2C]	11.3332	1.0	16.6667	ND	68.0	27 - 104	2.52	20	
alpha-Chlordane	18.7622	1.0	16.6667	ND	113	14 - 130	34.0	20	R
alpha-Chlordane [2C]	14.6068	1.0	16.6667	ND	87.6	14 - 130	15.1	20	
beta-BHC	12.0333	1.0	16.6667	ND	72.2	20 - 115	4.42	20	
beta-BHC [2C]	11.2792	1.0	16.6667	ND	67.7	20 - 115	0.215	20	
delta-BHC	6.96483	1.0	16.6667	ND	41.8	8 - 78	3.46	20	
delta-BHC [2C]	6.63667	1.0	16.6667	ND	39.8	8 - 78	0.972	20	
Dieldrin	25.3427	2.0	16.6667	10.4670	89.3	20 - 134	4.09	20	
Dieldrin [2C]	24.0798	2.0	16.6667	9.23100	89.1	20 - 134	3.18	20	
Endosulfan I	13.7672	1.0	16.6667	ND	82.6	27 - 114	5.72	20	
Endosulfan I [2C]	12.8493	1.0	16.6667	ND	77.1	27 - 114	2.80	20	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104(
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0044 - GCSEMI_PCB/PEST_S (continued)									
Matrix Spike Dup (B6A0044-MSD1) - Continued		**Source: 1504447-07**		Prepared: 1/5/2016 Analyzed: 1/6/2016					
Endosulfan II	11.3702	2.0	16.6667	ND	68.2	16 - 125	5.24	20	
Endosulfan II [2C]	9.79950	2.0	16.6667	ND	58.8	16 - 125	4.30	20	
Endosulfan sulfate	7.67333	2.0	16.6667	ND	46.0	1 - 126	5.60	20	
Endosulfan Sulfate [2C]	6.07733	2.0	16.6667	ND	36.5	1 - 126	2.93	20	
Endrin	17.6812	2.0	16.6667	ND	106	33 - 122	1.31	20	
Endrin [2C]	15.1467	2.0	16.6667	ND	90.9	33 - 122	3.39	20	
Endrin aldehyde	9.76650	2.0	16.6667	ND	58.6	0 - 137	11.7	20	
Endrin aldehyde [2C]	11.9725	2.0	16.6667	ND	71.8	0 - 137	3.07	20	
Endrin ketone	8.06917	2.0	16.6667	ND	48.4	10 - 126	8.20	20	
Endrin ketone [2C]	7.22250	2.0	16.6667	ND	43.3	10 - 126	1.73	20	
gamma-BHC	12.1963	1.0	16.6667	ND	73.2	30 - 111	4.84	20	
gamma-BHC [2C]	12.7350	1.0	16.6667	ND	76.4	30 - 111	1.85	20	
gamma-Chlordane	16.4192	1.0	16.6667	ND	98.5	16 - 130	19.6	20	
gamma-Chlordane [2C]	16.8803	1.0	16.6667	ND	101	16 - 130	17.6	20	
Heptachlor	13.7085	1.0	16.6667	ND	82.3	34 - 127	0.0911	20	
Heptachlor [2C]	13.0525	1.0	16.6667	ND	78.3	34 - 127	0.397	20	
Heptachlor epoxide	15.3203	1.0	16.6667	ND	91.9	19 - 130	2.64	20	
Heptachlor epoxide [2C]	13.2078	1.0	16.6667	ND	79.2	19 - 130	0.838	20	
Methoxychlor	14.1953	5.0	16.6667	ND	85.2	16 - 153	5.65	20	
Methoxychlor [2C]	15.8695	5.0	16.6667	ND	95.2	16 - 153	0.730	20	
Surrogate: Decachlorobiphenyl	*13.04*		*16.6667*		*78.2*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*10.79*		*16.6667*		*64.7*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*12.30*		*16.6667*		*73.8*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*14.21*		*16.6667*		*85.3*	*16 - 105*			
Matrix Spike Dup (B6A0044-MSD2)		**Source: 1504447-07RE1**		Prepared: 1/5/2016 Analyzed: 1/7/2016					
4,4´-DDE	141.397	20	16.6667	116.027	152	28 - 126	1.97	20	M2
4,4´-DDE [2C]	139.975	20	16.6667	111.675	170	28 - 126	3.64	20	M2
4,4´-DDT	92.3250	20	16.6667	91.1450	7.08	12 - 149	5.01	20	M2
4,4´-DDT [2C]	75.2583	20	16.6667	66.8983	50.2	12 - 149	6.69	20	
Surrogate: Decachlorobiphenyl	*18.96*		*16.6667*		*114*	*16 - 137*			
Surrogate: Decachlorobiphenyl [2C]	*13.93*		*16.6667*		*83.6*	*16 - 137*			
Surrogate: Tetrachloro-m-xylene	*12.79*		*16.6667*		*76.7*	*16 - 105*			
Surrogate: Tetrachloro-m-xylene [2C]	*13.19*		*16.6667*		*79.1*	*16 - 105*			

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	Boronda Road Future Growth Area, S104!
3160 Gold Valley Drive, Suite 800		Report To :	Kristeen Bennett
Rancho Cordova , CA 95742		Reported :	01/07/2016

Notes and Definitions

S10	Surrogate recovery was outside of laboratory acceptance limit due to possible matrix interference.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
D1	Sample required dilution due to possible matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Page 1 of 2

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Tel: (562) 989-4045• Fax: (562) 989-4040

FOR LABORATORY USE ONLY

P.O. #: S1049-03-01
Logged By: C. Dennig Date: 12/28/15

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: Ontrac

Sample Condition Upon Receipt
1. CHILLED 3.6 Y ☑ N ☐
2. HEADSPACE (VOA) Y ☐ N ☐
3. CONTAINER INTACT Y ☑ N ☐
4. SEALED Y ☐ N ☑
5. # OF SPLS MATCH COC Y ☑ N ☐
6. PRESERVED Y ☐ N ☑

Client: GEOCON Consultants, Inc
Attention: ~~Rebecca Silva~~ Kristeen Bennett
Address: 3160 Gold Valley Drive
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: ~~916.852.9132~~
Project Name: Boronda Road Future Growth Area
Project #: S1049-03-01
Sampler: (Printed Name) Cord Dennig (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Cord Dennig	12/29/15	1500	Ontrac	12/29/15	1500
Relinquished by:			Received by: ATL	12/30/15	911
Relinquished by:			Received by:		

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: ~~Rebecca Silva~~ Kristeen Bennett 12/29/15
Print Name: C. Dennig for K. Bennett Date
Signature

Send Report To: Attn: Co: SAME AS ABOVE Addr: City: State: Zip:

Bill To: Attn: Co: SAME AS ABOVE Addr: City: State: Zip:

Special Instructions/Comments: Analyze all samples for OCP pesticides by EPA Method 8082A.

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested: 8081 (Pesticides), 8082 (PCB), 8260B (Volatiles), 8270C (SVOCs), 6010B (Total Lead) Bid Item #67, 8015B (GRO), 8015B (DRO)/(ORO), 8021 (BTEX), CAM 17, MTBE (8260B), pH (9045), ~~TPHg Package - Bid Item # 52~~ 8082A OCP Pesticides

SPECIFY APPROPRIATE MATRIX: SOIL, WATER, GROUND WATER, WASTEWATER, CARBON

QA / QC: RTNE ☒ CT ☐ SWRCB Logcode ☐ OTHER

ITEM	Lab No.	Sample ID / Location	Date	Time	8082A OCP Pesticides	SOIL	TAT	#	Type	PRESERVATION	REMARKS
		S1	12/28	1145	X	X	E	1	Jar	C	
		S2		1200							
		S3		1215							
		S4		1230							
		S5		1245							
		S6		1640							
		S7		1650							
		S8		1620							
		S9		1630							
		S10		1600							

TAT starts 8AM the following day if samples received after 3 PM

TAT: A = Overnight ≤ 24 hrs B = Emergency Next Workday C = Critical 2 Workdays D = Urgent 3 Workdays E = Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Tel: (562) 989-4045• Fax: (562) 989-4040

FOR LABORATORY USE ONLY

P.O. #: S1049-03-01
Logged By: C. Dennig Date: 12/28/15

Method of Transport: Client ☐ ATL ☐ CA OverN ☐ FedEx ☐ Other: ______

Sample Condition Upon Receipt

1. CHILLED	Y ☑ N ☐	4. SEALED	Y ☐ N ☑
2. HEADSPACE (VOA)	Y ☐ N ☑	5. # OF SPLS MATCH COC	Y ☑ N ☐
3. CONTAINER INTACT	Y ☑ N ☐	6. PRESERVED	Y ☐ N ☑

Client: GEOCON Consultants, Inc
Attention: ~~Rebecca Silva~~ Kristeen Bennett
Address: 3160 Gold Valley Drive
City: Rancho Cordova State: CA Zip Code: 95742
Tel: 916.852.9118
Fax: ~~916.852.9132~~
Project Name: Boronda Road Future Growth Area Project #: S1049-03-01
Sampler: (Printed Name) Cord Dennig (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Cord Dennig	12/29/15	1500	OnTrac	12/29/15	1500
Relinquished by:			Received by:	12/30/15	911
Relinquished by:			Received by:		

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: ~~Rebecca Silva~~ Kristeen Bennett 12/29/15
Print Name Date
C. Dennig for K. Bennett
Signature

Send Report To: Attn: Co: SAME AS ABOVE Addr: City: State: Zip:

Bill To: Attn: Co: SAME AS ABOVE Addr: City: State: Zip:

Special Instructions/Comments: Analyze all samples for OCP pesticides by EPA Method 8082A.

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.

Storage Fees (applies when storage is requested):
- Sample :$2.00 / sample /mo (after 45 days)
- Records: $1 /ATL workorder /mo (after 1 year)

Circle or Add Analysis(es) Requested; SPECIFY APPROPRIATE MATRIX; Q A / Q C: RTNE X, CT; SWRCB Logcode; OTHER

ITEM	LAB USE ONLY: Lab No.	Sample ID / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (SVOCs)	6010B (Total Lead) Bid Item #67	8015B (GRO)	8015B (DRO)/(ORO)	8021 (BTEX)	CAM 17	MTBE (8260B)	pH (9045)	TPHg Package - Bid Item # 52 8082A OCP Pesticides	SOIL	WATER	GROUND WATER	WASTEWATER	CARBON	TAT	#	Type	PRESERVATION	REMARKS
		S11	12/28	1610												X	X					E	1	Jar	C	
		S12		1550																						
		S13		1540																						
		S14		1440																						
		S15		1450																						
		S16		1500																						
		S17		1430																						
		S18		1400																						
		S19		1410																						
		S20		1420																						

- TAT starts 8AM the following day if samples received after 3 PM

TAT: A = Overnight ≤ 24 hrs B = Emergency Next Workday C = Critical 2 Workdays D = Urgent 3 Workdays E = Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

Carmen Aguila

From: Kristeen Bennett [bennett@geoconinc.com]
Sent: Wednesday, December 30, 2015 1:54 PM
To: Carmen Aguila
Cc: Cord Dennig
Subject: RE: Boronda Road Future Growth Area, S1049-03-01

Hi Carmen:

It is supposed to be OC Pesticides by EPA Method 8081A. Sorry for the confusion.

Ms. Kristeen Bennett, PG | *Project Geologist*
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800, Rancho Cordova, CA 95742
P|916.852.9118 M|714.742.6151
www.geoconinc.com / Facebook / Linkedin
Sacramento / Bay Area / Fairfield / Los Angeles / Orange County / Riverside County / Palm Desert / San Diego
Environmental Services, Brownfields/Redevelopment, Geotechnical Engineering, Engineering Geology, Construction Inspection, Transportation, Land Development, Infrastructure, Institutional, Natural Resources

From: Carmen Aguila [mailto:Carmen@atlglobal.com]
Sent: Wednesday, December 30, 2015 1:52 PM
To: Kristeen Bennett; Cord Dennig
Cc: customer.relations@atlglobal.com
Subject: Boronda Road Future Growth Area, S1049-03-01

Hi Kristeen/Cord,

We would like to clarify if you need OCP Pesticides by Method 8081 or Method 8082 which is PCB. Please advise.

Attached is a copy of the CoC received.

Thank you,

Carmen Aguila
Sample Control

Advanced Technology Laboratories
www.atlglobal.com
Tel: (562) 989-4045 ext. 245
Fax: (562) 989-4040

ADVANCED TECHNOLOGY
LABORATORIES

January 19, 2016

Dan Easter
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Tel: (916) 852-9118
Fax:(916) 852-9132

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1504447

Client Reference : Boronda Road Future Growth Area, S1049-03-01

Enclosed are the results for sample(s) received on December 30, 2015 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Geocon Consultants, Inc.	Project Number :	Boronda Road Future Growth Area, S1049-03-01
3160 Gold Valley Drive, Suite 800	Report To :	Dan Easter
Rancho Cordova , CA 95742	Reported :	01/19/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S1	1504447-01	Soil	12/28/15 11:45	12/30/15 9:11
S2	1504447-02	Soil	12/28/15 12:00	12/30/15 9:11
S3	1504447-03	Soil	12/28/15 12:15	12/30/15 9:11
S4	1504447-04	Soil	12/28/15 12:30	12/30/15 9:11
S5	1504447-05	Soil	12/28/15 12:45	12/30/15 9:11
S6	1504447-06	Soil	12/28/15 16:40	12/30/15 9:11
S7	1504447-07	Soil	12/28/15 16:50	12/30/15 9:11
S8	1504447-08	Soil	12/28/15 16:20	12/30/15 9:11
S9	1504447-09	Soil	12/28/15 16:30	12/30/15 9:11
S10	1504447-10	Soil	12/28/15 16:00	12/30/15 9:11
S11	1504447-11	Soil	12/28/15 16:10	12/30/15 9:11
S12	1504447-12	Soil	12/28/15 15:50	12/30/15 9:11
S13	1504447-13	Soil	12/28/15 15:40	12/30/15 9:11
S14	1504447-14	Soil	12/28/15 14:40	12/30/15 9:11
S15	1504447-15	Soil	12/28/15 14:50	12/30/15 9:11
S16	1504447-16	Soil	12/28/15 15:00	12/30/15 9:11
S17	1504447-17	Soil	12/28/15 14:30	12/30/15 9:11
S18	1504447-18	Soil	12/28/15 14:00	12/30/15 9:11
S19	1504447-19	Soil	12/28/15 14:10	12/30/15 9:11
S20	1504447-20	Soil	12/28/15 14:20	12/30/15 9:11

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3160 Gold Valley Drive, Suite 800		Report To :	Dan Easter
Rancho Cordova , CA 95742		Reported :	01/19/2016

Total Metals by ICP-AES EPA 6010B

Analyte: Arsenic **Analyst: SB**

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1504447-01	S1	**1.1**	mg/kg	1.0	1	B6A0306	01/14/2016	01/15/16 13:26	
1504447-02	S2	**2.7**	mg/kg	1.0	1	B6A0306	01/14/2016	01/15/16 13:38	
1504447-03	S3	**2.7**	mg/kg	1.0	1	B6A0306	01/14/2016	01/15/16 13:40	
1504447-04	S4	**3.8**	mg/kg	1.0	1	B6A0306	01/14/2016	01/15/16 13:41	
1504447-05	S5	**3.9**	mg/kg	1.0	1	B6A0306	01/14/2016	01/15/16 13:43	
1504447-06	S6	**3.8**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:12	
1504447-07	S7	**4.1**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:17	
1504447-08	S8	**3.1**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:19	
1504447-09	S9	**3.5**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:20	
1504447-10	S10	**3.4**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:22	
1504447-11	S11	**3.5**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:28	
1504447-12	S12	**2.7**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:29	
1504447-13	S13	**1.7**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:31	
1504447-14	S14	**3.1**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:33	
1504447-15	S15	**3.1**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:35	
1504447-16	S16	**2.3**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:37	
1504447-17	S17	**2.0**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:39	
1504447-18	S18	**2.0**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:41	
1504447-19	S19	**2.6**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:43	
1504447-20	S20	**3.1**	mg/kg	1.0	1	B6A0307	01/14/2016	01/15/16 14:44	

Certificate of Analysis

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3160 Gold Valley Drive, Suite 800		Report To :	Dan Easter
Rancho Cordova , CA 95742		Reported :	01/19/2016

QUALITY CONTROL SECTION

Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0306 - EPA 3050B_S									
Blank (B6A0306-BLK1)					Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	ND	1.0			NR				
LCS (B6A0306-BS1)					Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	46.5770	1.0	50.0000		93.2	80 - 120			
Duplicate (B6A0306-DUP1)		**Source: 1504447-01**			Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	0.893290	1.0		1.11701	NR		22.3	20	R
Matrix Spike (B6A0306-MS1)		**Source: 1504447-01**			Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	83.2546	1.0	125.000	1.11701	65.7	57 - 109			
Matrix Spike Dup (B6A0306-MSD1)		**Source: 1504447-01**			Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	74.1140	1.0	125.000	1.11701	58.4	57 - 109	11.6	20	

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3160 Gold Valley Drive, Suite 800		Report To :	Dan Easter
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Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6A0307 - EPA 3050B_S									
Blank (B6A0307-BLK1)					Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	ND	1.0			NR				
LCS (B6A0307-BS1)					Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	45.4781	1.0	50.0000		91.0	80 - 120			
Matrix Spike (B6A0307-MS1)		**Source: 1504447-06**			Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	106.565	1.0	125.000	3.76871	82.2	57 - 109			
Matrix Spike Dup (B6A0307-MSD1)		**Source: 1504447-06**			Prepared: 1/14/2016 Analyzed: 1/15/2016				
Arsenic	104.484	1.0	125.000	3.76871	80.6	57 - 109	1.97	20	

Certificate of Analysis

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3160 Gold Valley Drive, Suite 800		Report To :	Dan Easter
Rancho Cordova , CA 95742		Reported :	01/19/2016

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Diane Galvan

From: Dan Easter [easter@geoconinc.com]
Sent: Tuesday, January 12, 2016 8:22 AM
To: Diane Galvan
Subject: RE: Results/EDD/Invoice - Boronda Road Future Growth Area (1504447)

H Diane:
It turns out that Kristeen forgot to include arsenic analysis for the 20 samples that you already analyzed for OCPs.
Would you please have the lab analyze the samples for arsenic (standard turnaround)?
ATL Work Order No 1504447
Thank you.

Dan Easter, PG, CEG | *Senior Geologist*
Geocon Consultants, Inc.
3160 Gold Valley Drive Suite 800, Rancho Cordova, CA 95742
Tel 916.852.9118 Fax 916.852.9132 Mobile 530.417.4003
www.geoconinc.com

APPENDIX F –HYDROLOGY AND WATER QUALITY TECHNICAL STUDY

Hydrology and Water Quality Technical Study for West Area Specific Plan EIR

Prepared for:

DE NOVO PLANNING GROUP

Prepared by:

Balance Hydrologics, Inc.®

January 2017

January 30, 2017

A REPORT PREPARED FOR:

De Novo Planning Group
1020 Suncast Lane #106
Dorado Hills, California 95762
(916) 812-7929

by

Benjamin Roberts, PhD, P.E.
Senior Hydraulic Engineer

Edward D. Ballman, P.E.
Principal Civil Engineer

Balance Hydrologics, Inc.®

Project Assignment: 214140

800 Bancroft Way, Suite 101
Berkeley, California 94710
(510) 704-1000
office@balancehydro.com

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1 INTRODUCTION

The proposed West Area Specific Plan (hereinafter referred to as the Specific Plan, West Area or WASP) will establish the land use planning and regulatory guidance including the land use and zoning designations and policies, development regulations, and design standards for the approximately 797-acre Specific Plan Area. The Specific Plan will serve as a bridge between the Salinas General Plan and individual development applications in the Specific Plan Area, applying—and adding greater specificity to—the goals, policies, and concepts of the General Plan for that area.

The City of Salinas is located in northern Monterey County, within the Salinas Valley between the Gabilan and Santa Lucia mountain ranges. Salinas is situated approximately 20 miles northeast of the city of Monterey, 60 miles south of San Jose (Figure 1), 100 miles south of San Francisco and 325 miles north of Los Angeles. Several regional transportation routes are located within or near Salinas, including U.S. Highway 101 (U.S. 101), State Routes 68 (SR 68) and 183 (SR 183), the Union Pacific Railroad line, and the Monterey Regional Airport in Monterey. Salinas Municipal Airport, a general aviation facility, is located in the southeastern portion of the city. The Specific Plan Area is located within the Salinas incorporated city limits. It is bounded by San Juan Grade Road on the west, East Boronda Road (herein referred to as “Boronda Road”) on the south, Natividad Road on the east, and Rogge Road and the future extension of Russell Road on the north. Gabilan Creek is located east of the Specific Plan Area, while U.S. 101 and North Main Street are located to the west. Unincorporated land under the jurisdiction of the County of Monterey abuts the Specific Plan Area on the north and northeast.

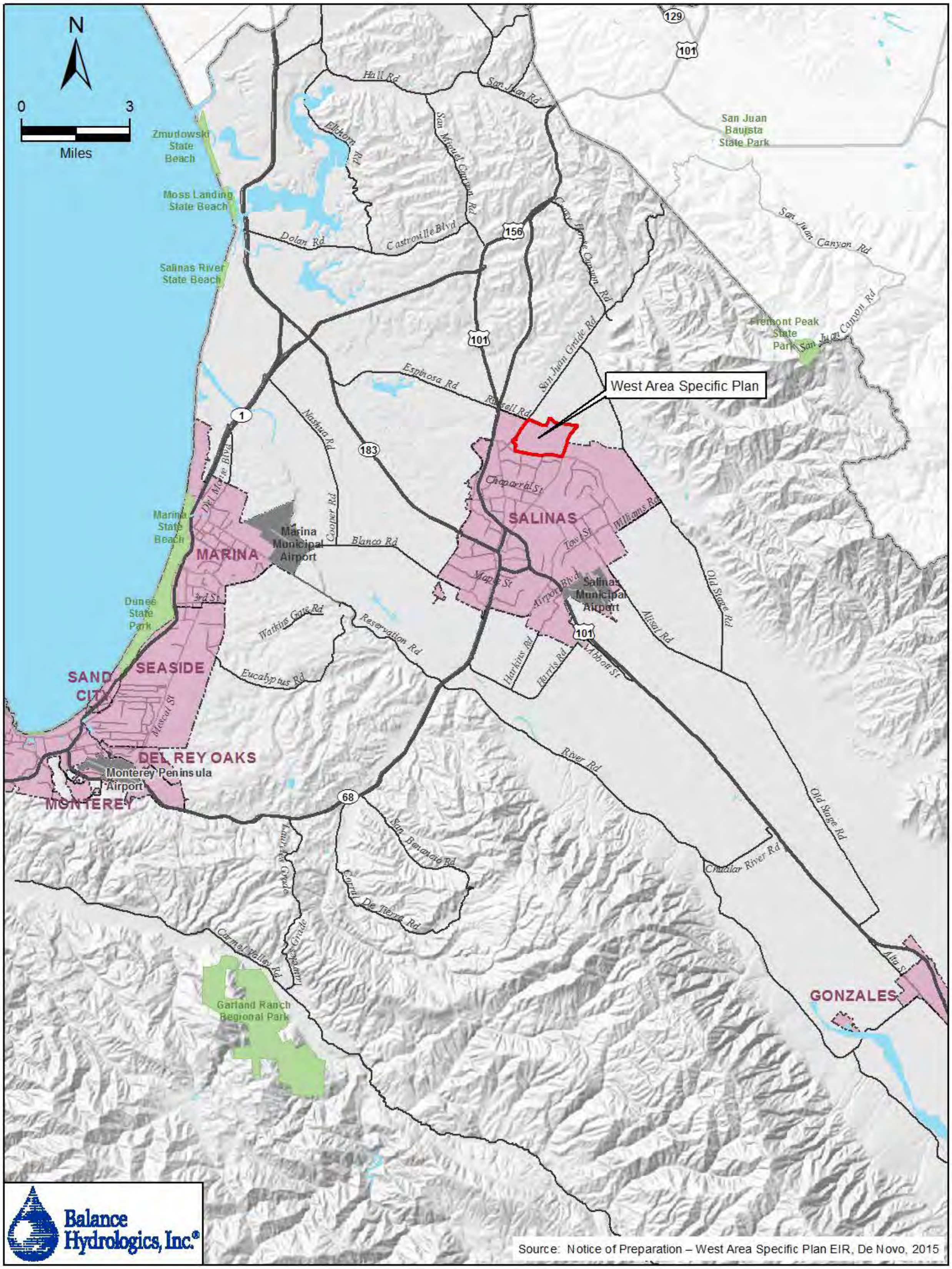


Figure 1 Project vicinity

The principal objective of the proposed project is the approval and subsequent implementation of the proposed West Area Specific Plan and related entitlements. Proposed land uses in the 797-acre Specific Plan Area include residential, mixed use commercial, community park, neighborhood parks, small parks, and open space (including supplemental storm water detention/retention basins). The proposed project includes the development of up to 4,340 residential dwelling units (with a minimum of 3,553 required under the General Plan), up to 571,500 square feet of commercial/mixed use building area, and up to 177 acres of public facilities (including three elementary schools, a high school, middle school, supplemental detention/retention basins and 11 parks). It is anticipated that the Specific Plan Area will have up to 15,928 residents at project build-out.

This report addresses the potential hydrologic and water quality impacts of the project and is structured as an appendix to the Administrative Draft Environmental Impact Statement.

2 EXISTING SITE CONDITIONS

2.1 Land Use and Topography

The existing site conditions are largely agricultural, with associated residences and farm yards. The ground surface is relatively uniformly sloped with crop tilling slowing and retaining overland flow. No paved roads cross the project site; however, much of the site is bounded by roadways. Figure 2 provides an overview of the land uses on the project site.

Figure 2 Existing land use

2.2 Hydrology and Surface Water Drainage

Rainfall in the project area and contributing watershed is relatively uniform across the area. Average annual rainfall is calculated to be 15.5 to 16.1 inches, depending on the reporting agency (U.S. Climate data, 2016). Average rainfall depths have been estimated to be 2.4 to 2.5 inches for the 10-year, 24-hour event and 4.0 to 4.2 inches for the 100-year, 24-hour event (PACE, March 2007). Table 1, below, summarizes NOAA Atlas 14 precipitation frequency estimates for the plan area (National Weather Service, 2016). Monthly evapotranspiration in the project vicinity varied from 1.5 to 4.7 inches in 2015, with a total for that year of 38.0 inches (CIMIS Station 116, Salinas North).

Table 1 Precipitation Frequency Estimates for the Plan Area

Rainfall Depth Estimates

	Return Interval (years)			
Duration	2	10	25	100
60-min:	0.42	0.61	0.75	1.02
6-hr:	1.08	1.57	1.91	2.49
24-hr:	1.9	2.8	3.41	4.47
3-day:	2.75	4.1	4.99	6.47

Rainfall Depth in inches

Estimates from NOAA Atlas 14 precipitation frequency estimates

Figure 3 depicts the existing watershed boundaries and drainage paths associated with the WASP area. No streams flow through the project site. Runoff from the subdivisions to the west and northwest (across San Juan Grade Road to the west and across Russel Road to the north) is diverted away from the site by existing storm drain lines which direct flow to Santa Rita Creek. Runoff from agricultural land (approximately 222 acres) to the northeast of the project crosses Rogge Road and enters the project area. The remainder of upslope runoff drains to Gabilan Creek to the east, which flows to Carr Lake. All runoff from the site is eventually conveyed to Monterey Bay via the Zone 9 Reclamation Ditch and Tembladero Slough approximately ten miles northwest of the site, though runoff reaches the Reclamation Ditch by several distinct pathways. Constructed beginning in 1912, the Reclamation Ditch is the major drainage conveyance for the lower Salinas Valley north of the Salinas River itself and is owned and maintained by the Monterey County Water Resources Agency (MCWRA)

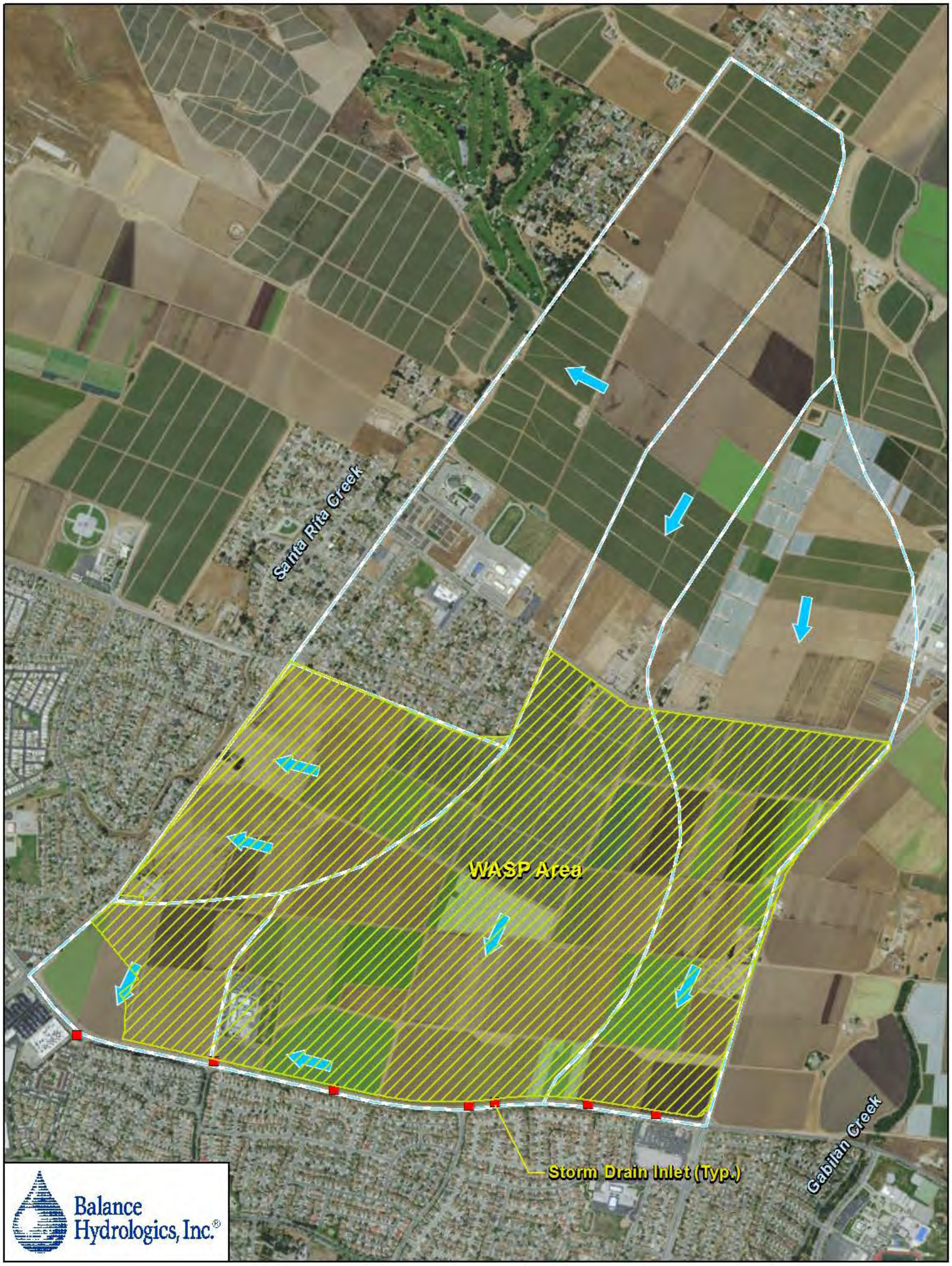


Figure 3 **Watersheds and drainage paths**

Figure 4 shows the city drainage system, as defined in the City of Salinas Stormwater Master Plan (CDM, May 2004). Upgrades and additions to the system have occurred since that time but the drainage paths relating to the WASP are shown.

Existing drainage pathways from the project site consist of:

- Drainage ditches from the agricultural areas immediately east of San Juan Grade Road and a culvert under San Juan Grade Road which discharges to Santa Rita Creek,
- a storm drain inlet at intersection of Boronda Road and Dartmouth Way,
- a storm drain inlet at intersection of Boronda Road and McKinnon Street, and
- a series of storm drain inlets along Boronda Road (from east of El Dorado Drive) that flow to Gabilan Creek.

These locations are shown on Figure 5. Photos show the four drainage pathways from the existing site, as follows: Plate 3 – drainage path running south along the east side of San Juan Grade Road; Plate 4 – Santa Rita Creek looking south towards the point of the culvert discharge; Plate 5 – Dartmouth Way storm drain inlet on the north side of Boronda Road; and Plate 6 – McKinnon Road storm drain inlet on the north side of Boronda Road. As shown on Figure 3, under existing conditions runoff flowing west from the WASP area enters Santa Rita Creek by flowing in a culvert under San Juan Grade Road. Santa Rita Creek flows west away from the city and enters the Reclamation Ditch east of SR 183 just over one-mile south of Castroville.

Runoff flowing from the southwest corner of the WASP area flows to the 36-inch diameter Dartmouth storm drain system; while runoff flowing south from the central part of the WASP area flows to the north side of Boronda Road and then flows in earthen ditches westward to the 60-inch diameter McKinnon storm drain system. These storm drains direct stormwater west into larger pipes and then ultimately to Markeley Swamp, which in turn flows to the Reclamation Ditch.

Runoff from the eastern part of the WASP area flows south to storm drain inlets along Boronda Road (42- and 48-inch diameter trunk storm drain line) and then to Gabilan Creek approximately 2,000 feet east of Natividad Road. Gabilan Creek is a major tributary to Carr Lake, a regionally important drainage feature that represents the confluence point for Gabilan, Natividad, and Alisal Creeks northeast of U.S. 101. Total area tributary to Carr Lake is approximately 100 square miles. Carr Lake is one of the remnant lake features in the lower Salinas Valley, and the lake bed is currently in agricultural uses. The lake is drained by the Reclamation Ditch and has been the site of past flooding.

Carr Lake functions as a thru-flow detention basin, where flows exiting the lake are controlled by the lake's water elevation. Drainage out of the lake is regulated by a double 8 ft x 8 ft box culvert under the Main Street bridge. The box culvert itself is undersized compared to others upstream and downstream of it and therefore restricts peak flows and downstream flooding (Schaafe and Wheeler, 2002). In addition, the culvert is usually impacted by accumulated sediments which require regular dredging (Casagrande and Watson, 2006). This generally results in partial flooding of the lake during most storm events.

During a 2-year event, more than half of the Carr Lake bottom is flooded. This has been observed several times since 2000. During a ten-year event, nearly 90% of the lake bed is inundated and in a 25-year event, the entire lake and some areas outside including the Sherwood Lake Mobile Home Park are inundated. During a 100-year event, water elevations could spill onto Highway 101 and into parts of downtown Salinas (Schaafe and Wheeler, 2002).

The 1995 and 1998 El Nino events resulted in substantial flooding and property damage throughout the northern Salinas Valley, including Carr Lake and the Reclamation Ditch system. During the 1995 event, the City of Salinas received 20.1 inches of rainfall, approximately 6 inches above the annual average. Rainfall in the southern half of the Salinas Valley was more substantial (25.3 inches in King City) which caused the Salinas River to peak at 95,000 cfs at the Spreckels gage. The lower portions of the Gabilan Watershed were most impacted by floodwaters from the Salinas River which overtopped its banks at several locations sending river water onto the flat areas. Carr Lake was partially filled due to heavy runoff from the Gabilan, Natividad and Alisal drainages.

During the winter of 1998, the city of Salinas received 30.1 inches of rain (second highest total on record). Carr Lake reached an elevation of 42.9 feet, flooding the Sherwood Lake Mobile Home Park for 11 days. While physical property damage was not significant, damage to fields and the drainage system itself were substantial (Casagrande and Watson 2007).

The agricultural uses of the Carr Lake basin can be impacted both by wet season storm flows and dry weather flows from the upstream agricultural and developed areas. Schaafe and Wheeler (2002) in their study of Carr Lake flood control, estimated that a potential 66 percent increase in impermeable surface areas upstream of Carr Lake would result in a 4 to 9 percent increase in peak flows during storm events, with frequent events posing a greater relative increase in peak flows. However, it is important to note that the 2002 report was completed before the City adopted stormwater management policies that preclude increases in peak flow from new development. Other studies (Woodward and Foster, 1997) predict that conversion of land from row crops to residential will result in reductions in sediment loads that reach Carr Lake.

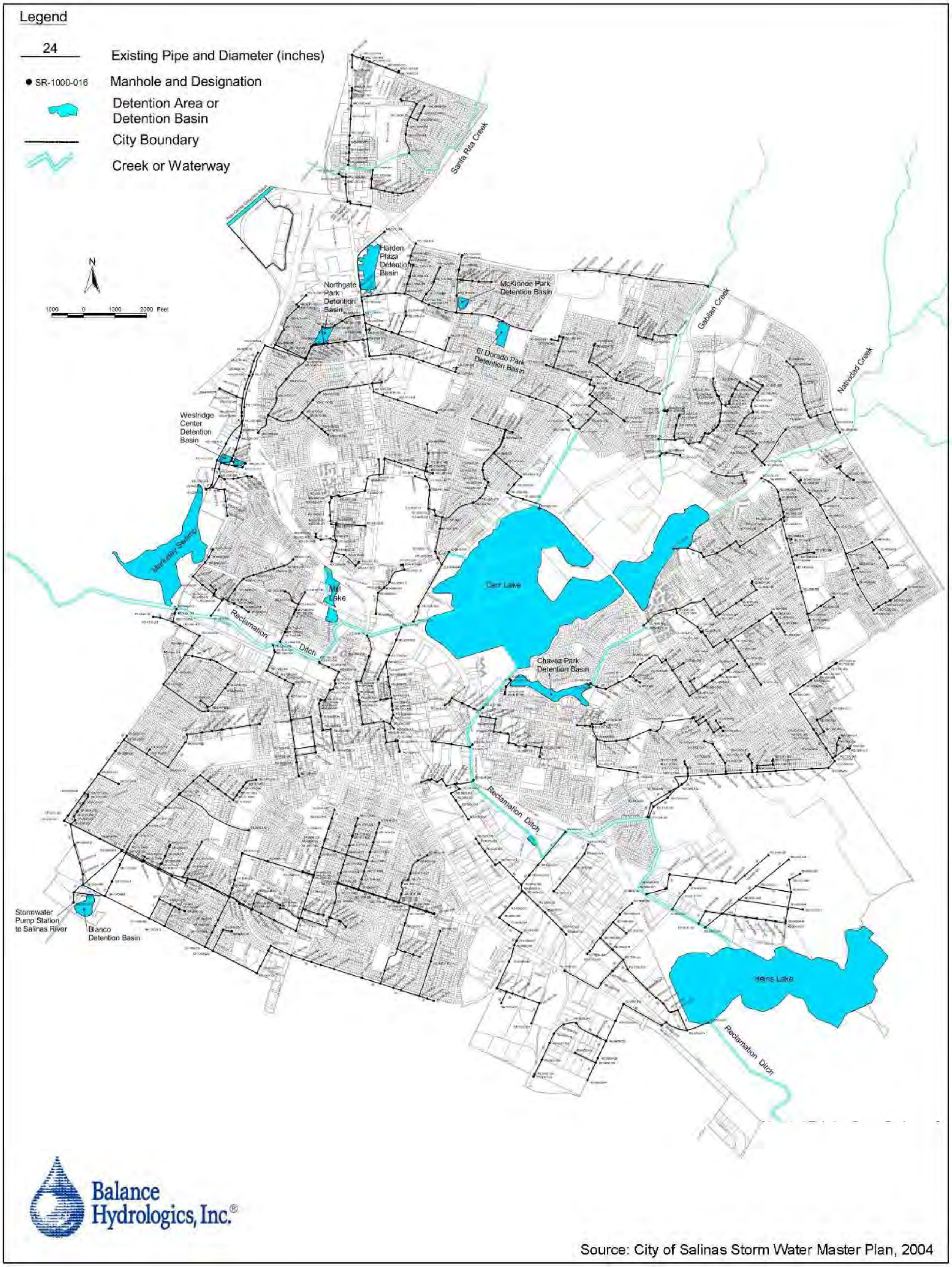


Figure 4 **Existing City of Salinas Storm Drainage System**

Table 2 provides existing peak flow estimates from computer simulations at the storm drain inlets (Wood Rogers 2007).

Table 2 Computed peak discharge to storm drain inlets under existing conditions

Discharge Location	Peak Flow (cfs)
10-year, 24-hour Event	
Santa Rita Creek @ San Juan Grade Road	50
Dartmouth Way & McKinnon Street Inlets (combined)	57
Natividad Road at East Boronda Road	105
100-year, 24-hour Event	
Santa Rita Creek @ San Juan Grade Road	105
Dartmouth Way & McKinnon Street Inlets (combined)	115
Natividad Road at East Boronda Road	210

The City of Salinas Stormwater Master Plan makes the following statements regarding the potential effects of urbanization in the WASP area.

- Existing storm drains within Salinas are at maximum capacity and cannot accept increased peak flows without causing additional flooding.
- Certain reaches of Santa Rita Creek through the city are already at capacity and cannot accept increased peak flow rates without flooding.
- Detention storage will be required for all new development that contributes to the Markeley Swamp stormwater sub-system and to the Santa Rita Creek stormwater sub-system.
- Detention storage will be required for all new development in the WASP area that contributes to Gabilan Creek, to avoid adversely impacting Carr Lake and the Reclamation Ditch.
- The hydraulic capacity of the Boronda Road storm drain flowing to Gabilan Creek is 50 cfs for the 42-inch segment and 120 cfs for the 48-inch segment.

The Stormwater Master Plan also identifies two potential stormwater detention basins within the WASP area: a 40 acre-foot capacity basin east of San Juan Grade Road (draining to the Santa Rita Creek stormwater sub-basin) and a 40 acre-foot capacity basin immediately north of Boronda Road near McKinnon Street (draining to the

Markeley Swamp stormwater sub-basin). The plan states that these basins would be added during development of the WASP area.

Figure 5 Existing storm drain locations

2.3 Flooding

Predicted flood conditions in the vicinity of the WASP area are shown on FEMA FIRM panels 06053C0207G, 06053C0209G, 06053C0228G, and 0653C0226G (FEMA 2009). Figure 6 is a compilation of those four panels with the boundaries of the WASP area shown. Flood zones associated with Santa Rita, Gabilan, and Natividad creeks can be seen in this figure. Delineated flood zones within the WASP area are limited to a small area designated as shaded Zone X immediately east of San Juan Grade Road and south of Norman Way. A detail of that delineation is shown in Figure 7. Flood conditions in Zone X ("Other Flooded Areas") are limited to less than one-foot depth during the 100-year event and/or are subject to flooding between the 100- and 500-year events. The extent of flooding is naturally limited by existing topography. The parts of the WASP area outside of the shaded Zone X are designated Zone X - minimal flood hazard and would not be expected to have a flood hazard up to the level of the 500-year event.

Lands designated as Zone X are outside of the Special Flood Hazard Areas. Changes to land surfaces in these areas do not trigger map revisions and no flood insurance requirements are imposed on structures in these areas.

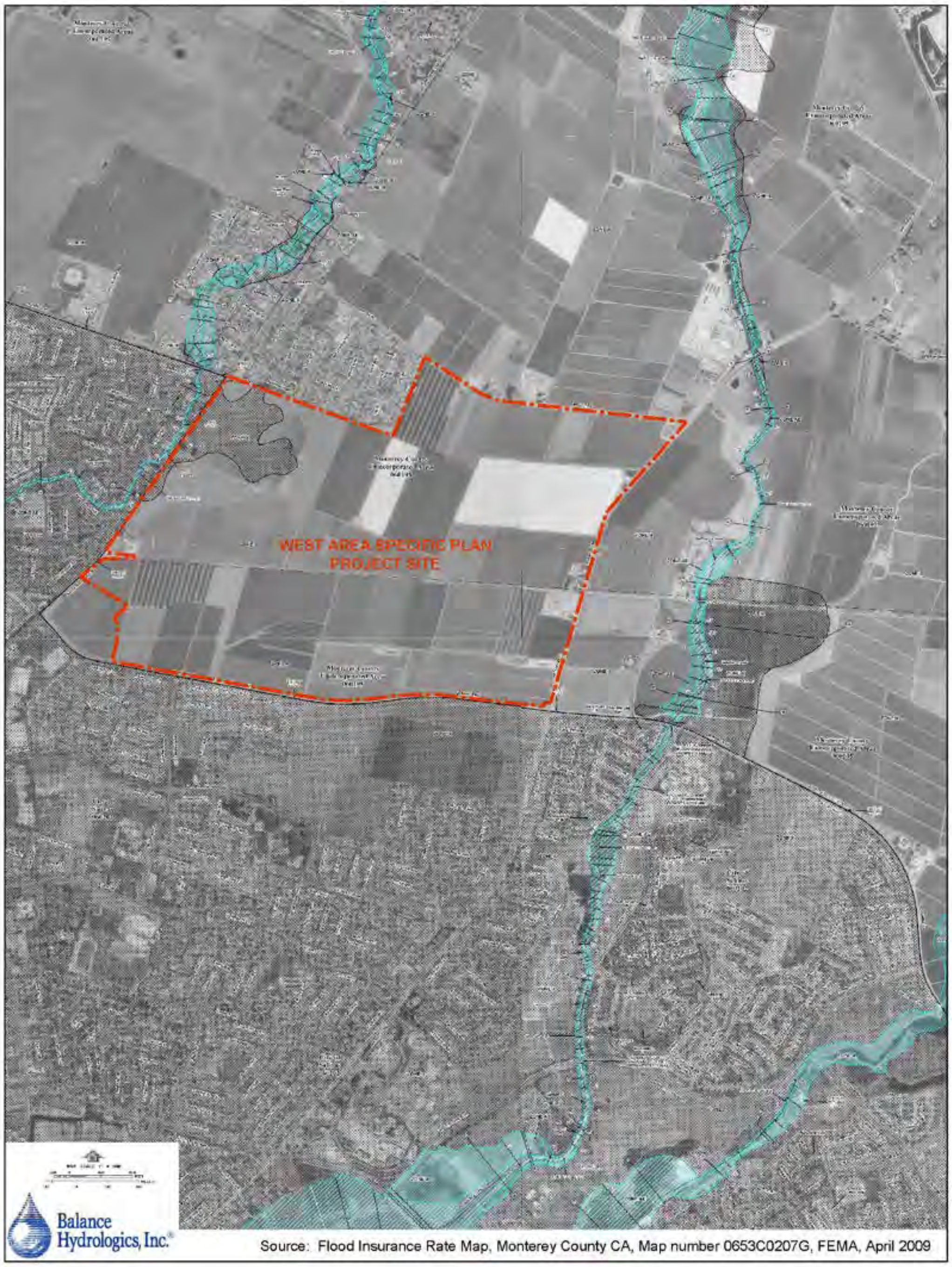


Figure 6 FEMA flood zones identified in the vicinity of the WASP area

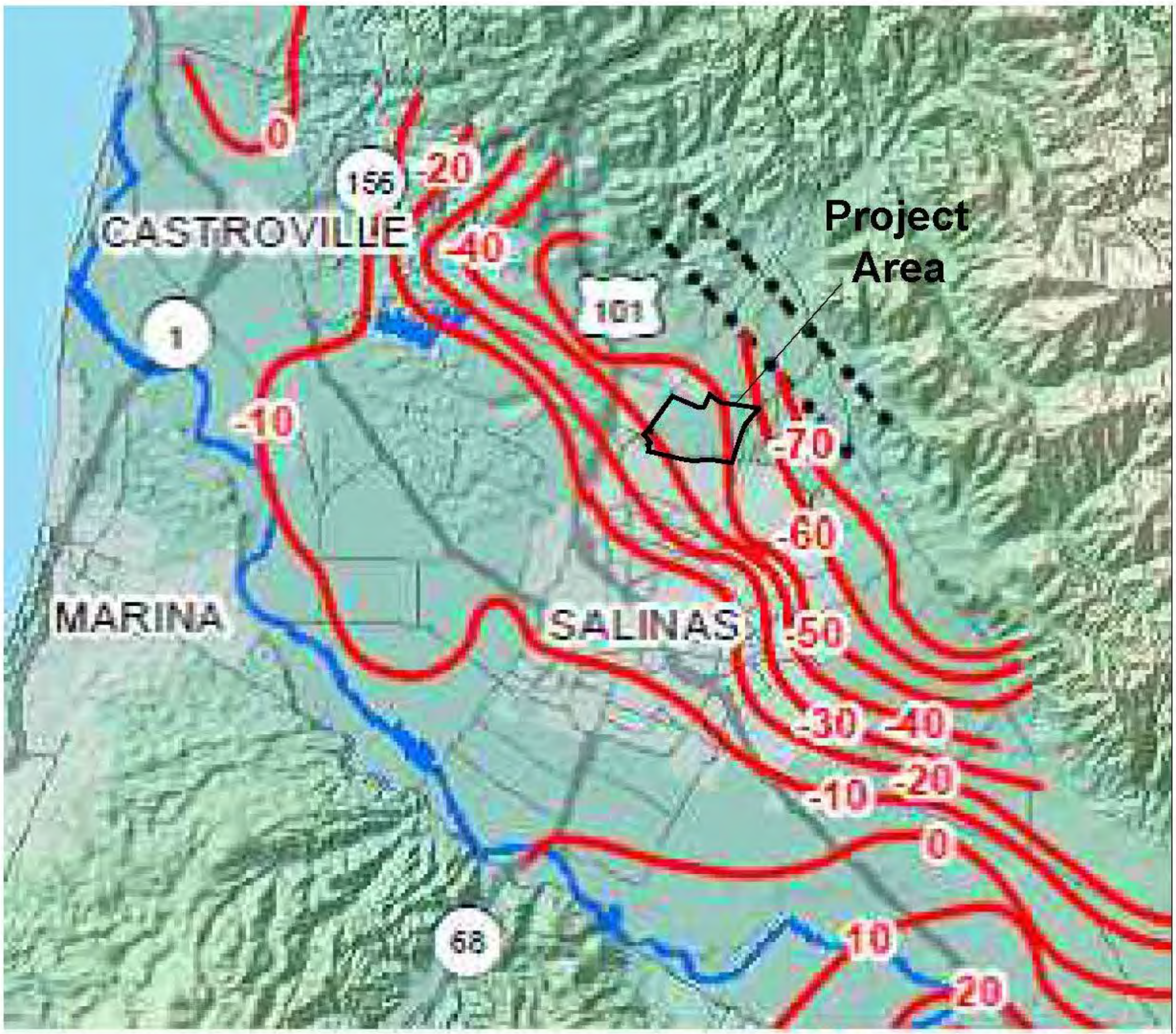
Figure 7 Detail of predicted flooding from FEMA Flood Insurance Rate Maps

2.4 Groundwater Quantity and Quality

The project area is located in the East Side sub-area of the Salinas River Groundwater Basin. Surficial soils are primarily alluvium formed by alluvial fan deposits (U.S. Soil Conservation Service, 1978), with incomplete separation of the pressure aquifers from the surface by aquitards. Groundwater underlying the project area has direct connection to the surface and lies at depths of 40-60 feet. Figure 7 depicts the groundwater subareas and Figure 8 shows groundwater surface elevations in the vicinity (Monterey County Water Resources Agency, 2014).

Figure 8 Groundwater aquifers in the northern Salinas valley

Over-drafting of the pressure aquifers (confined by aquitards) and surface aquifers in the lower Salinas Valley continues to be a problem, resulting in seawater intrusion into the aquifers. The extent of seawater intrusion in the pressure aquifers is limited to areas west of Highway 101 (Monterey County Resource Management Agency, 2015). Impact of seawater intrusion on aquifers underlying the WASP area is negligible. However, recharge of the aquifers via infiltration from surface flows and steams (Santa Rita and Gabilan in the plan area) supports groundwater quality in the underlying aquifers and helps to limit seawater intrusion to the west. Therefore, maintenance of recharge to the groundwater basin is an important priority.



Source: Monterey County Resource Agency, 2014
Datum: NAVD88

Figure 9 **Lines of Equal Ground Water Elevation in the Pressure 180-foot, East Side Shallow, Forebay, and Upper Valley Aquifers – Fall 2013**

Groundwater quality data reported in the Monterey Bay and Salinas Valley Groundwater Ambient Monitoring and Assessment study (Kulongoski and Belitz, 2007) shows that water quality for the 400-foot aquifer (a confined aquifer in the lower Salinas Valley which is located approximately 400 feet below the valley floor) in the vicinity of the plan area meets drinking water standards for all constituents except for Radon-222. Nitrate contamination of surficial aquifers and some deeper aquifers used for water supply is a significant problem in the Salinas Valley. "Technical Report 4: Groundwater Nitrate

Occurrence" (Center for Watershed Sciences, U.C. Davis, July 2012) states that numerous water supply wells in the Salinas Valley have been "closed" due to nitrate contamination. Further, the report states that, as of 1988, 48 percent of the monitoring wells located in the unconfined aquifer regions had nitrate measurements which exceed the nitrate drinking water MCL (maximum concentration limit for drinking water). The report identifies rising trends in groundwater nitrate concentrations from 1978 through 2007, with the Eastside area (where the plan area is located) average nitrate concentrations increasing from 40 mg/L to 105 mg/L during that period. The California GAMA special study on nitrate fate and transport in the Salinas Valley (Moran, et al, 2011) states that geochemical and isotopic results for groundwater samples containing nitrate have a signature consistent with inorganic fertilizers, demonstrating that the primary source of nitrate contamination of Salinas Valley groundwater is agriculture.

2.5 Surface Water Quality

Some runoff from the plan area currently flows to Santa Rita Creek and some runoff flows to Gabilan Creek via existing storm drains. Gabilan Creek flows into the Carr Lake basin, while Santa Rita Creek flows westward and enters the Reclamation Ditch near Castroville. The existing storm drain system with inlets along Boronda Road at the east side of the plan area currently receive runoff from the plan area and will receive some of the future project runoff, conveying it to Carr Lake and the Reclamation Ditch at Carr Lake.

Multiple agencies have water quality monitoring sites along Gabilan Creek, Natividad Creek and in the Carr Lake Basin. CSU Monterey Bay (Casagrande and Watson 2007) summarized water quality conditions at these monitoring sites in their evaluation of the potential benefits of conversion Carr Lake into a multiple-use park. Their comments on the trends in water quality at Carr Lake include the following:

- Water quality conditions are variable, but generally are degraded by intensive agriculture and urban land uses[1];
- During summer and when water is present, dissolved oxygen, nutrients, suspended sediment, and fecal coliform concentrations commonly exceed established water quality objectives; and

[1] Impact of agricultural and urban land uses on groundwater quality is heavily dependent on the management of those activities, including farming practices and use of Best Management Practices in urban settings to limit the addition of nitrates and other compounds to the infiltrating water.

- During winter, high suspended sediment and nutrient concentrations are common.

CSU Monterey Bay (Inman, et al 2014) measured streamflow and water quality in the Reclamation Ditch as part of their Central Coast Watershed Studies program. The sampling data for points along the Reclamation Ditch closest to Carr Lake were taken at the Boronda Road and Davis Road sites. Measurements were taken between November 11 and December 2, 2014. Table 3 summarizes the measurements taken during that period. Low dissolved oxygen levels (DO) were not found, nor were high salinity or TDS measurements. High turbidity appeared to be correlated, as expected, to rainfall related runoff.

Table 3 Summary of Reclamation Ditch Water Quality Measurements

Reclamation Ditch
Water Quality Measurements - Mean of Samples on Dates

Location / Date	TDS (mg/L)	Salinity (ppt)	DO (mg/L)	Turbidity (NTU)
Boronda Road				
11/11/2014	1130	0.4	7.8	n/a
11/13/2014	452	0.1	9.1	n/a
11/18/2014	376	0.3	10.7	33
11/25/2014	357	0.3	11.7	90
12/2/2014	41	0	12.1	700
Davis Road				
11/11/2014	1082	0.4	9.4	n/a
11/13/2014	336	0.1	8.9	n/a
11/18/2014	909	0.3	10.6	27
11/25/2014	882	0.3	11.7	90
12/2/2014	32	0	12.5	130

Taken by CSU Monterey Bay Watershed Institute

3 PROPOSED PROJECT DESCRIPTION

3.1 Project Plan

The land use plan and proposed alignments of roads, developments, parks, schools, and runoff retention basins are summarized in Plate 1 at the back of this report. The WASP area contains approximately 797 acres of land, which is proposed to be utilized for 482 acres of residential development, 25 acres of mixed use commercial development, and 177 acres of public facilities. Playing fields, linear parks, and other open space are also included as shown. Major streets run roughly north-south and along the prevailing land slope. Stormwater detention/retention basins are located to store water and reduce peak flows in the storm drain system. Additional details regarding the project plan are provided in the Notice of Preparation for this EIR.

3.2 Drainage Infrastructure

The proposed drainage infrastructure (conceptual level), as shown in Plate 2, includes primary storm drain piping along Natividad Road, East Boronda Road, San Juan Grade Road, parallel to El Dorado Drive through the WASP area, and an east-west line along new Road C. Altogether, these pipelines total roughly 25,000 feet in length. Five combination detention/water quality basins and water retention basins are planned for the southwest, northwest, central and southeast parts of the area. Following treatment in a water quality treatment/detention basin, storm water which is not retained in a retention basin will discharge to the four existing storm drain inlets: Natividad Road at East Boronda Road, Santa Rita Creek at San Juan Grade Road, Dartmouth Way at East Boronda Road, and McKinnon Street at East Boronda Road.

Low runoff flows will be retained in local Low Impact Development features and/or water quality management features. During periods when there are no significant rainfall events, little or no flows to the external storm drains will occur. Runoff which is retained in these features will be used by plantings, evaporate, or percolate into the ground.

3.3 Runoff and Infiltration Management

Low Impact Development (LID) principles will be applied throughout the plan area to help manage the existing site hydrology to maximum extent practicable by storing, infiltrating, and detaining runoff. The proposed LID features include pervious strips concentrated along residential streets and at driveways to disconnect developed lots from the drainage system, bio-swales, on-site bio-retention, and porous pavement. Underdrains may be installed where soils have low permeability, to prevent extended ponding of trapped water. These features will be associated with certain impervious areas within the plan area, as shown on Plate 2.

3.4 Water Quality Treatment

Plate 2 shows the approximate locations and sizes (areas shaded green) of proposed water quality management features, referred to as Best Management Practice features (BMPs). These features will include: vegetated linear swales (bio-swales) and extended detention depressions as well as the water quality basins associated with the retention/detention basins previously described. Extended detention depressions will be located in pocket parks distributed across the plan area.

A previous storm drain preliminary design for the WASP area (Wood Rogers, 2007) states that each water quality basin will detain/retain the water quality design storm and that the retention basin will store the additional volume of runoff caused by the development above the pre-development runoff during the design event[2]. Plate 2 shows the locations of supplemental water quality treatment basins in the current plan. In each of the water quality basin locations storm drain flows enter a water quality basin where the water is detained and treated and then is discharged at a limited rate into an external storm drain. When inflows to the water quality basin exceed allowable discharge rates, the excess water flows to a retention basin where the water evaporates or percolates into the ground. If retention basin capacity is reached, overflows will be directed to the external storm drain. The size of the proposed supplemental basins has not been determined.

The water quality treatment approach which is proposed for the area is intended to fully comply with local and state requirements and to meet the LID guidelines. A combination of LID features and stormwater treatment BMPs has been shown to substantially reduce the concentrations of a wide range of contaminants in both surface runoff and in water that percolates into the ground. The addition of supplemental water quality treatment basins further reduces the potential transport of contaminants from the WASP area to the storm drain system and receiving waters.

[2] The City of Salinas stormwater design standards, defined in “Stormwater Standards for New and Redevelopment Projects” (City of Salinas, December 2013), are itemized in Table 4 below.

4 REGULATORY SETTING

4.1 State Laws and Regulations

The California Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). Under phase I of the MS4 permit program, the California Regional Water Quality Control Board issued an NPDES permit to the City of Salinas which regulates development within city limits (Central Coast Regional Water Quality Control Board, May 2012). This permit imposes multiple regulations on the City of Salinas in operating its storm sewer system (MS4), including the following key requirements.

1) Listed impairments to receiving waters from the project area (Santa Rita Creek, Gabilan Creek, Reclamation Ditch) include: nitrate, ammonia, fecal coliforms, E. Coli, Turbidity, priority organics, pesticides, copper, and low pH.
2) Discharges which contribute to exceedances of water quality standards and are not reduced to the maximum extent practicable are prohibited.
3) Projects in future growth areas (including WASP) are required to manage rainfall at the source using uniformly distributed decentralized controls, natural treatment, and volume reduction BMPs (e.g. bio-retention, vegetated swales, filter strips) as the first means of meeting stormwater management criteria.
4) Erosion and sediment control BMPs shall be installed to reduce pollutant discharges from construction areas and to control ongoing sediment production from slopes and channels.
5) Soil stabilization shall be implemented on disturbed areas immediately following the completion of earth disturbing activities.
6) Source control BMPs shall be implemented in projects to minimize the discharge of pollutants.

The NPDES permit also identifies one Total Maximum Daily Load limitation – fecal coliform concentrations in receiving waters must not exceed 200 MPN/100 mL. Discharges to the receiving waters which cause an exceedance of this criterion must be prevented.

4.2 Local Regulations and Policies

Local stormwater management regulations are provided in the “Stormwater Standards for New and Redevelopment Projects” (City of Salinas, December 2013), referred to as the Salinas SWDS. This update of the SWDS was made in part to incorporate the requirements of the updated NPDES permit issued to the City (as discussed above). The regulations pertinent to this ADEIR, given the project size, are summarized below in Table 4.

Table 4 Summary of applicable City of Salinas requirements

SWDS Section	Applicable Project Impact	Limitation or specification
2.1.1	Runoff generated by all portions of the specific plan	Include in treatment design
2.2.1	Changes in ground surface	1) Minimize impervious area 2) Limit disturbances of natural drainage features 3) Minimize compaction of highly permeable soils 4) Minimize clearing grading of native vegetation
2.2.1	Pollution source control	BMPs must be applied to all impervious areas and incorporate landscaping that minimizes runoff and promotes infiltration
2.2.4	Retention of runoff from impervious areas	Discharges from all rainfall events up to 0.98 inches of rainfall in 24 hours (95th percentile storm event) shall be prevented using retention and infiltration
2.2.5	Control of peak storm flows	Post development peak storm flows shall not exceed pre-project peak flows for the 2- through 100-year events. A calibrated continuous simulation hydrologic model must be used to evaluate stormwater control measures.

3.3.2.1	Proximity of BMPs to potable water wells	Minimum of 100 feet separation
3.3.2.3	Depth from infiltration BMPs to groundwater	Minimum of 5 feet for indirect infiltration features and 10 for direct infiltration features
4.5.1 and 4.6	Attenuation of peak flows to pre-project conditions	Reduction of the 100-year peak post project flow to the 10-year peak pre-project flow is not required. "Peak matching" (section 2.2.5) is sufficient. Adequate mitigation of the 2-year peak flow is assumed if the 10-year peak project flow is reduced to pre-project discharge.
5.9	Detention of discharges flowing to Carr Lake	Monterey County Water Resources Agency criteria will be met (see below).
5.9	Detention/retention facility sizing calculations	24-hour duration storms shall be used for detention facility sizing.
6.1.4	Control of potential groundwater contamination	Only indirect infiltration (infiltration after treatment in a BMP) is allowed when there is potential for contaminant spills or transportation of contaminants from contributing areas.

The Monterey County Water Resource Agency has imposed regulations for floodplains in the County (Monterey County Board of Supervisors, October 2009). Pertinent regulations applying to the WASP include those listed below.

1) Lands within the FEMA FIRM identified 100-year floodplain (Special Hazards Areas) and areas within 200 feet of a river or with 50 feet of a watercourse are subject to these regulations.

2) No construction is allowed within regulatory floodways or Zones AE.

3) Any encroachment into a regulatory floodway shall not result in any increase of base flood elevations.

4) New construction shall have the lowest floor, including basement, elevated to at least one foot above the base flood elevation.

5 STANDARDS OF SIGNIFICANCE

Under accepted criteria for assessing impacts under the California Environmental Quality Act (CEQA), the Salinas WASP project would have a significant impact with regard to hydrology and water quality if it would:

1. Violate any water quality standards or waste discharge requirements.
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
5. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
6. Otherwise substantially degrade water quality.
7. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
10. Inundation by seiche, tsunami, or mudflow.

6 PROJECT INDUCED CHANGES IN HYDROLOGY AND WATER QUALITY

6.1 Runoff and Infiltration

The WASP proposed development, including water quality BMPs, detention basins, and retention basins is designed to minimize or eliminate increases in runoff entering surface water courses and storm drains. The calculations by Wood Rogers (June 2007), summarized below in Section 6.3, indicate that peak runoff and total volume of runoff will be reduced by the proposed development. Consequently, infiltration into the ground water aquifers will be maintained or potentially increased by the project.

6.2 Flooding

As discussed in Section 2.3, a small portion of the plan area is delineated by FEMA as Zone X. The delineated area is a small low lying area east of San Juan Grade Road where it is immediately adjacent to Santa Rita Creek. The Zone X designation means that FEMA has determined that the identified area is outside of the 100-year flood zone and is not subject to flood insurance requirements. The Zone X designation also indicates that identified area is susceptible to inundation of less than one-foot depth during the 100-year event and, typically, may be subject to inundation greater than one-foot depth during flood events with return periods between 100 years and 500 years. The plan calls for this area to be occupied by retention and detention basins.

No other parts of the plan area are designated as flood prone, and there are no impacts to regulatory floodways or Special Flood Hazard Areas (Zone A or AE) as defined by FEMA. Provided that the storm drain system and detention/retention facilities to be installed as part of the proposed development are adequately sized and properly installed and maintained, additional flooding will not be induced by the proposed project.

6.3 Discharge to Existing Waterways and Storm Drains

The proposed storm drain alignments, LID features, water quality BMPs, and detention/ retention basins are designed to prevent any increases in storm related peak discharge to the existing storm drain system and to minimize any degradation of the quality of stormwater exiting the plan area. Calculations of changes in storm related peak discharge and total storm runoff volume made by Wood Rogers (Wood Rogers, 2007) for a development plan similar to the current plan are summarized in Table 5. For that study, simulations using the XP-SWMM and HEC-HMS modeling packages were developed for the plan area under both existing and proposed conditions. Proposed conditions included the previously discussed LID features, BMPs, and detention/retention basins. Simulations were produced for three predicted storm events as well as the historic storm event producing the highest peak runoff (based on the HEC-HMS modeling results) during 1998 (the wettest year available in the rainfall records).

As can be seen in Table 5, the development proposed in the 2007 study, including storm water management features, reduces both peak discharges and total event discharge volume from the existing conditions. As can be expected, total event discharge volume reductions are greatest for the more frequent and shorter storm events, varying from a 57-percent reduction in the 10-year, 24-hour event to a 2-percent reduction in the largest volume event during 1998. Total peak discharge reductions are predicted to be in the range of 43percent to 58percent.

Reductions in discharges to storm drains across a range of storm events indicate that stormwater runoff is predicted to be retained within the plan area under this prior plan relative to existing conditions during those events. While analyses of discharges during smaller, more frequent rainfall events have not been reported, it should be possible to design the combination of LID/BMP features and retention basins to meet the requirement that the 95th percentile rainfall event not produce discharges to the external storm drain system. Some of the retained water will be lost to evapotranspiration, but significant amounts are likely to percolate into the ground, replenishing the underlying groundwater.

The drainage plan proposed in the ADEIR incorporates similar LID/BMP features, supplementary water quality detention basins, and supplementary storm water retention basins. This plan will need to be designed to achieve the required runoff management and water quality management standards.

Table 5 Changes in flows to existing drainage paths

	Peak Flow (cu ft per second)			Total Flow Volume (acre-feet)		
Discharge location	Existing	Proposed	% Change	Existing	Proposed	% Change
10-year, 24-hour Event						
Santa Rita Creek @ San Juan Grade Road	50	40	-20%	20	13	-35%
Dartmouth Way & McKinnon Street Inlets (combined)	57	22	-61%	24	2	-92%
Natividad Road at East Boronda Road	105	52	-50%	43	22	-49%
TOTAL	212	114	-46%	87	37	-57%
100-year, 24-hour Event						
Santa Rita Creek @ San Juan Grade Road	105	83	-21%	40	24	-40%
Dartmouth Way & McKinnon Street Inlets (combined)	115	64	-44%	46	19	-59%
Natividad Road at East Boronda Road	210	100	-52%	81	53	-35%
TOTAL	430	247	-43%	167	96	-43%
100-year, 72-hour Event						
Santa Rita Creek @ San Juan Grade Road	187	115	-39%	88	46	-48%
Dartmouth Way & McKinnon Street Inlets (combined)	195	102	-48%	99	85	-14%
Natividad Road at East Boronda Road	346	105	-70%	172	126	-27%
TOTAL	728	322	-56%	359	257	-28%
1998 Continuous Simulation (Hourly)						
Santa Rita Creek @ San Juan Grade Road	114	46	-60%	71	69	-3%
Dartmouth Way & McKinnon Street Inlets (combined)	155	35	-77%	81	80	-1%
Natividad Road at East Boronda Road	178	105	-41%	132	129	-2%
TOTAL	447	186	-58%	284	278	-2%

6.4 Surface Water Quality

Important water quality concerns for the Carr Lake, Santa Rita Creek, and Gabilan Creek receiving waters include: turbidity, nutrients, and fecal coliforms. Urbanized areas also produce contaminants such as heavy metals, oils and greases, pesticides, nutrients from landscape fertilizers, and household chemicals. The water quality BMPs and water quality detention basins which are included in the proposed development are designed to capture and retain the urban-associated contaminants as well as reduce turbidity and nutrients which may be mobilized in the developed areas. The water quality detention basins will also trap suspended solids and nutrients which enter the plan area from the up slope properties which will continue to be farmed. The proposed development will, therefore, likely reduce loadings of contaminants, nutrients, and turbidity to the receiving waters relative to existing conditions.

6.5 Groundwater Quality and Quantity

As summarized in Section 2.4 the quality of the Salinas Valley ground water has been degrading for many decades, due to salinity intrusion and nitrate loading from agricultural activities. The quantity of ground water in the valley has also been declining for decades, as evidenced by the substantial lowering of water levels in the aquifers.

Impacts on groundwater in the Salinas area are an important consideration in any development plan.

The BMPs proposed as part of the development plan are designed to infiltrate as much storm water runoff as practicable into the ground. The predicted impact of the development, including retention basins and BMPs, is to decrease the volume of runoff from the plan area during large rainfall events and eliminate discharges completely for storms up to 0.98 inches in 24 hours. A portion of the retained runoff (and likely the vast majority) will infiltrate into the ground, helping to replenish the aquifers. The proposed BMPs are designed to trap contaminants and to beneficially make use of nutrients in the vegetated swales and planted areas. In addition, application rates of fertilizers on urbanized areas is less than that typically used in agriculture due to extensive impervious areas as well as open spaces. The aggregate effect of the proposed development will, therefore, be to decrease the loading of nutrients (in particular, nitrates) into the ground water.

7 IMPACT ANALYSIS

The Salinas WASP project could have a significant impact with regard to hydrology and water quality if changes in hydrologic conditions and production of water contaminants caused by the proposed project are not mitigated. The potential impacts are discussed in the same order as the Standards of Significance listed in Section 5.

1. Would the project violate any water quality standards or waste discharge requirements?

1.1. Surface Water:

The project will discharge storm water to Santa Rita creek and to the existing City storm drain system. The downstream storm drain system will convey these flows and discharge them without treatment to Markeley Swamp, Gabilan Creek and Carr Lake and then to the Reclamation Ditch. Listed impairments of these receiving waters (CCRWQCB, 2012) include: nitrate, ammonia, fecal coliforms, E. Coli, turbidity, priority organics, pesticides, copper, and low pH. If runoff from the project site were not treated, then increases in the listed water quality impairments for these receiving waters would be likely.

The NPDES permit granted to the City of Salinas by the Central Coast RWQCB (CCRWQCB, 2012) prohibits discharges which contribute to exceedances of water quality standards and requires that source control BMPs are implemented to minimize discharge of pollutants. The permit defines one Total Maximum Daily Load limitation for these receiving waters: fecal coliform concentrations must not exceed 200 MPN/100 Ml. Untreated stormwater discharges have the potential to contribute fecal coliforms to receiving waters, due to the presence animal wastes in impervious and landscaped areas.

The City of Salinas Stormwater Standards for New and Redevelopment Projects (City of Salinas, 2013) require the following water quality practices (see Section 4.3 of Table 4):

i) Pollution source control for all impervious areas using BMPs; and

ii) Retention of all rainfall events up to 95th percentile 24-hour rainfall event.

Impact HYDRO-1: Stormwater discharges from the project area, if not treated, would violate the City of Salinas NPDES permit as well as the City of Salinas stormwater development standards, and would likely contribute to violations of the receiving water TMDL for fecal coliforms.

<u>Mitigation Measure HYDRO-1.1:</u> The project applicant will submit for approval detailed plans and calculations for water quality best management practices (BMPs) and water quality detention/retention basins designed to meet the prevailing regulatory requirements and to reduce contaminant loadings to receiving waters to the maximum extent practicable.

During construction activities, there is a substantial risk of mobilization of sediment and soils and transport of sediment into the receiving waters. The NPDES permit granted to the City of Salinas by the Central Coast RWQCB (CCRWQCB, 2012) requires the following:

i) Erosion and Sediment Control BMPs – Erosion control and sediment control BMPs shall be designed, installed, and maintained to reduce the discharge of pollutants from construction sites to the maximum extent practical (MEP) and protect water quality;

ii) Erosion and sediment from slopes and channels shall be controlled by implementing an effective combination of erosion control (source control) and other sediment control BMPs; and

iii) Soil Stabilization – Stabilization of disturbed areas shall, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased.

The City of Salinas Stormwater Standards for New and Redevelopment Projects (City of Salinas, 2013) require the following practices (see Section 2.2.1 in Table 4):

i) Limit disturbance of creeks and natural drainage features and provide setbacks according to Permit Provision L.1.d;

ii) Minimize compaction of highly permeable soils; and

iii) Limit clearing and grading of native vegetation to the minimum needed to build the project and provide fire protection.

Impact HYDRO-2: Runoff from construction sites and activities, if not intercepted and treated, would violate the City of Salinas NPDES permit as well as the City of Salinas stormwater development standards, and would likely contribute to increased sediment and contaminant loadings to receiving waters.

Mitigation Measure HYDRO-2.1: The project applicant will implement appropriate controls, as required by regulations, on runoff, erosion, and sediment mobilization during construction activities. All phases of construction within the Plan Area will be carried out under criteria established in a Storm Water Pollution Prevention Plan (SWPPP) conforming to the prevailing Construction General Storm Water Permit.

1.2. Groundwater:

The project will modify the movement across the land surface and the infiltration of rain water into the groundwater system. The aquifers underlying the plan area are impacted by nitrate contamination. Groundwater in the project vicinity is subject to increasing salinity due to seawater intrusion from Monterey Bay. Both of these impairments affect use of the groundwater for potable water supplies and use for irrigation. The project, if no means were provided to preserve infiltration of rainwater, would likely reduce net infiltration of rain water and runoff into the groundwater system and reduce the diluting effect of this fresh water supply. The net impact would be a further increase in salinity intrusion and build-up of contaminants in the groundwater in the Salinas basin. However, the project without mitigation would also likely decrease the amount of nitrates entering the groundwater from the plan area, due to elimination of agricultural fertilizer application. Surface water quality detention basins and BMPs also have the potential to add to groundwater contamination levels if they are not properly designed and sited.

The City of Salinas Stormwater Standards for New and Redevelopment Projects (City of Salinas, 2013) requires the following practices (see Sections 3.3.2 and 6.1.4 in Table 4):

i) No water wells can be located within 100 feet of BMPs;

ii) A minimum of 5 feet (10 feet for direct infiltration) of separation must be maintained between infiltration basins and seasonally high groundwater;

iii) Design infiltration rates shall be no more than half of the lowest infiltration test result;

iv) Direct infiltration is not allowed where there is potential for spills or transportation of contaminants; and

v) Indirect infiltration (bio-retention, vegetated swales, pervious pavements) are allowed in all locations except where highly concentration contaminants can be expected.

Impact HYDRO-3: Infiltration of rainwater and irrigation water from the proposed project, if not managed, could violate the City of Salinas stormwater development standards, and would likely contribute to increased contamination of the underlying groundwater.

Mitigation Measure HYDRO-3.1: The project applicant will design, site, and install stormwater detention basins and BMPs in accordance with City of Salinas stormwater development standards and maintenance procedures and funding mechanisms will be established for those facilities to assure adequate performance in treating the water and controlling infiltration into the groundwater.

2. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The proposed project, without mitigating features, would reduce infiltration of rainwater and runoff into the local groundwater system due to the increase in impermeable area. The total annual rainfall depth in an average year is approximately 16 inches and the WASP surface area is approximately 797 acres (de Novo 2015), producing an annual rainfall volume of approximately 1,060 acre-feet. Nearly all of this area is currently in agriculture, while the proposed project could convert as much as 60% of the area to impervious surfaces, resulting in a reduction in groundwater recharge in the range of 400-600 acre-feet. However, the proposed stormwater BMPs and retention basins are designed to reduce runoff below that which occurs currently during storm events and, therefore, increase groundwater recharge from the plan area.

Impact HYDRO-4: Without mitigation measures, the proposed project would decrease groundwater recharge.

Mitigation Measure HYDRO-4.1: The project applicant will design, site, and install stormwater retention/infiltration basins and infiltration promoting BMPs which are similar to published plans and sufficient to assure that there is no reduction in groundwater recharge.

3. **Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

   No impact. The proposed project will not alter drainage patterns in a manner which will cause erosion or siltation. Stormwater flows from off-site will be collected and routed through the site through storm drains to existing off-site City storm drains. Sediment in the off-site stormwater flows will be trapped in detention ponds to prevent siltation. Runoff from the project area will be collected, managed, and transported via drainage features and storm drains to existing storm drains without exposing ground surfaces to erosion or siltation.

4. **Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

   No impact. Surface runoff from the area will be managed via detention/retention basins and flow reducing BMPs to prevent local flooding within the site. These features will also reduce peak flows from the plan area to receiving creeks and storm drains to amounts less than such flows under existing conditions. Therefore, no increases in flooding either on- or off-site will be created by the proposed project.

5. **Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

   Impact HYDRO-5: Surface runoff from the area, if not managed via detention/ retention basins and flow reducing BMPs, would likely increase peak flows and total runoff volume from the plan area to receiving creeks and storm drains to amounts greater than such flows under existing conditions. Existing storm drain systems have no available excess capacity, so any increase in peak flows during major storm events would exceed existing storm drain capacity.

Mitigation Measure HYDRO-5.1: The project applicant will submit for approval detailed plans and calculations for detention/ retention basins and flow reducing BMPs designed to meet regulatory requirements and to reduce peak flows during storm events below peak flows under pre-project conditions.

Impact HYDRO-6: Stormwater discharges from the project area, if not treated, would likely create additional sources of polluted runoff, due to creation of impervious area and the production of contaminants that are common to urbanized areas.

Mitigation Measure HYDRO-6.1: The project applicant will submit for approval detailed plans and calculations for water quality best management practices (BMPs) and water quality detention basins designed to prevent to the maximum extent practicable the creation of new sources of polluted runoff.

6. **Would the project otherwise substantially degrade water quality?**

No impact. Potential degradations in water quality due to the proposed project were addressed in impact question number 1, above. The mitigation measures associated with impacts HYDRO-1, 2, and 3 will prevent any additional degradations to water quality.

7. **Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

No impact. A small flood hazard area is identified as Zone X and is located in a local depression adjacent to San Juan Grade Road where Santa Rita Creek flows next to the road, across from the plan area. The extent of this area is limited by topography. The project plan identifies the use of this area to be open space and detention/retention basins.

8. **Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?**

No Impact: No portion of the WASP plan area is located within a 100-year flood hazard zone.

9. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

__No impact.__ Portions of the Salinas Valley have been identified as subject to flood risk due to failure of the San Antonio or Nacimiento dams, which are located in the upper reaches of the Salinas River watershed. The elevation of the plan area and its distance from the Salinas River channel make it extremely unlikely that failure of either dam or failure of any of the levees located along the Salinas River channel would cause flooding of the plan area. No levees or dams exist in the vicinity of the plan area.

10. Would the project be exposed to a risk of inundation by seiche, tsunami, or mudflow?

__No impact.__ Tsunami inundation maps for the area (California Dept. of Conservation, 2009) show no risk of tsunami inundation for the plan area. No water bodies that could produce seiche-related inundation are in the vicinity of the plan area. No information regarding mud flow potential in the project area was found. However, the contributing watershed for the area is very small and the WASP area is not proximate to conditions (e.g., steep slopes, unstable soils, narrow canyons subject to flash flooding) which could produce mudflows. The site is also elevated sufficiently above sea level to preclude any risk of inundation due to sea level rise.

8 REFERENCES

AECOM, City of Salinas WASP Area Specific Plan, 2015

California Department of Water Resources, California Irrigation Management Information System (CIMIS), Salinas North Station ID #116, Data for February 2015 – January 2016

Casagrande, J. and F. Watson. 2006. Reclamation Ditch Watershed Assessment and Management Strategy: Part A - Watershed Assessment. Monterey County Water Resources Agency and The Watershed Institute, California State University Monterey Bay, 283 pp.

Casagrande and Watson, The Carr Lake Project: Potential Biophysical Benefits of Conversion to a Multiple-Use Park, CSU Monterey Bay, 2007

CDM, Salinas City Storm Water Master Plan, May 2004

Center for Watershed Sciences UC Davis, Technical Report 4: Groundwater Nitrate Occurrence with a focus on Tulare Lake Basin and Salinas Valley Groundwater, California Nitrate Project, July 2012

Central Coast Regional Water Quality Control Board, NPDES M4 Permit for City of Salinas, Order R3-2012-0005, May 2012

City of Salinas, General Plan, September 2002

City of Salinas, Stormwater Development Standards for New Development and Redevelopment Projects, RBF Consulting, December 2013

Cloverdale Management, Salinas Retail Project East Boronda Road & San Juan Grade Road – Stormwater Report, Wood Rogers, December 2010

Community and Economic Development, City of Salinas Sphere of Influence – Storm Drain Study, P&D Consultants, April 2005

Community and Economic Development, City of Salinas, Notice of Preparation for the West Area Specific Plan EIR, De Novo Planning Group, July 2015

Creekbridge Homes, Regional Watershed Analysis – Hydrologic Mitigation, Pacific Advanced Civil Engineering, March 2007

Federal Emergency Management Agency, Flood Insurance Rate Map Numbers 06053C0207G, 06053C0209G, 06053C0228G, and 0653C0226G, April 2009

Inman, et al, Spatial and Temporal Variations in Water Quality – the Reclamation Ditch and Tembladero Slough, CSU Monterey Bay, December 2014

Kasavan Architects, Stormwater Control Plan for Salinas Union High School District High School #5, RBF Consulting, March 2011

Kulongoski and Belitz, Ground-water quality data in the Monterey Bay and Salinas Valley Basins, California – Results, USGS Data Series Report 258, 2007

Monterey County Water Resources Agency, Floodplain Management Plan, November 2015

Monterey County Board of Supervisors, Ordinance 5139 – Regulations for Floodplains in Monterey County, October 2009

Monterey County Resource Management Agency, State of the Salinas River Groundwater Basin, Brown and Caldwell, January 2015

Moran, et al, California GAMA Special Study: Nitrate Fate and Transport in the Salinas Valley, Lawrence Livermore National Laboratory, March 2011

National Weather Service (NOAA), Atlas 14 Point Precipitation Frequency Estimates, Precipitation Frequency Data Server, 2016

Schaafe and Wheeler Consulting Civil Engineers, Carr Lake Multi-purpose Flood Control Study, Monterey County Water Resources Agency, 2002

U.S. Climate Data for Salinas CA, usclimatedata.com, 2016

U.S. Soil Conservation Service, Soil Survey of Monterey County, California, 1978

Wood Rogers, Salinas West Future Growth Area – Stormwater Facility Summary, May 2007

Woodward and Foster, Erosion and suspended sediment transfer in river catchments: environmental controls, processes and problems, Geography. Vol. 82, 1997

PLATES

Balance Hydrologics, Inc.®

Plate 1 - Proposed project development plan

Source: Notice of Preparation – West Area Specific Plan EIR, De Novo, 2015

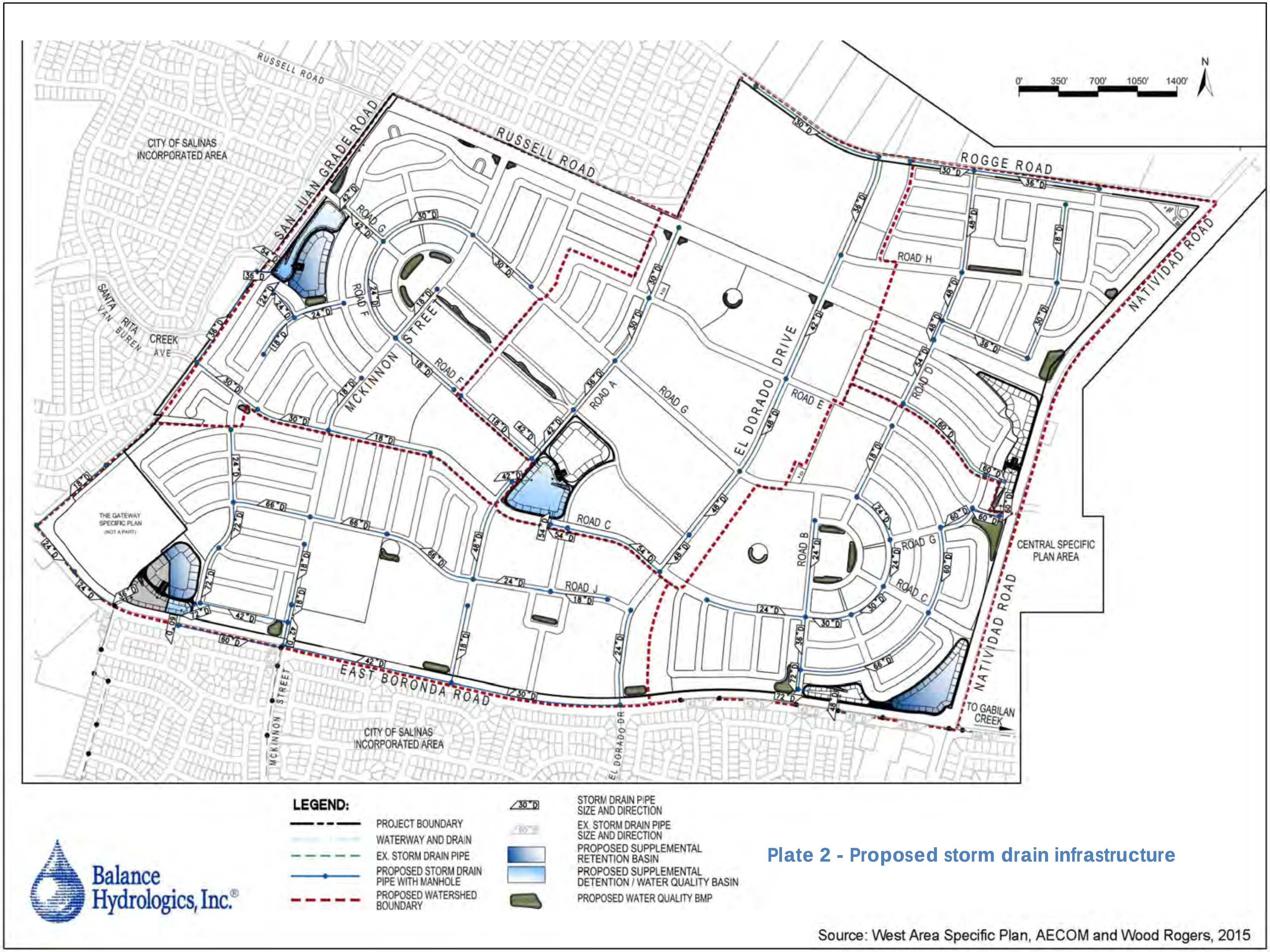


Plate 2 - Proposed storm drain infrastructure

Source: West Area Specific Plan, AECOM and Wood Rogers, 2015

Plate 3- Drainage path running south along the east side of San Juan Grade Road

Plate 4- Santa Rita Creek looking south towards the point of the culvert discharge

Plate 5 - Dartmouth Way storm drain inlet on the north side of Boronda Road

Plate 6 - McKinnon Road storm drain inlet on the north side of Boronda Road

APPENDIX G –WATER SUPPLY ASSESSMENT

WEST AREA SPECIFIC PLAN

SALINAS, CALIFORNIA

SB610 WATER SUPPLY ASSESSMENT

December 15, 2015

Prepared by:

Yarne & Associates, Inc.

For

California Water Service
Salinas District

254 Commission Street
Salinas, California 93901

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Introduction and West Area Specific Plan Summary

California Water Service (Cal Water) has prepared this California SB 610 Water Supply Assessment (WSA) for the proposed West Area Specific Plan (WASP). The Salinas District of Cal Water provides potable water service to most of the City of Salinas. Cal Water has an application pending with the California Public Utilities Commission (CPUC) to provide water service to the WASP and anticipates approval in 2016.

The WASP is part of the City of Salinas' proposed North of Boronda Future Growth Area (NFGA) located on the north and northeast boundary of the City of Salinas. The NFGA encompasses 2,488 acres (3.88 square miles) and is divided into three proposed Specific Plan areas: West, Central and East. The WASP area covers approximately 797 acres and is the western-most portion of the NFGA. It is bounded on the west by San Juan Grade Road, the south by Boronda Road and the east by Natividad Road and the north by Russell and Rogge Roads. See Attachment 1 for figures showing the location of the NFGA, the land use map for the three specific plan areas and the land use map for the WASP.

In a September 10, 2015 letter to Cal Water, the City of Salinas requested that Cal Water, as the designated water service provider for the WASP, prepare a WSA. In 2014, the City requested that Cal Water prepare a WSA for the western half of the Central Area Specific Plan (CASP), which will be served by both Cal Water and ALCO Water Company ("ALCO"). Cal Water prepared a Draft WSA for its half of the CASP on December 8, 2014.

ALCO Water Company is expected to provide water service to the eastern half of the CASP and all of the Eastern Area Specific Plan (EASP).

Information from this WSA regarding water demand and the adequacy of the Salinas District water supply to meet that demand will be incorporated into the WASP EIR.

Proposed Uses within the WASP:

Mixed Use: 571,000 ft^2 as follows:

Retail (market, food and beverage services, retail shops, professional services): 480,000 ft^2
Residential: 91,000 ft^2 for 91 multi-family dwelling units (DU). Additionally, the Specific Plan allows for up to 50% of the mixed use commercial floor area to be converted to residential use.

Single Family Residential: 3,255 DUs as follows:

Density of 6 – 8 DU/acre: 1,361 DUs
Density of 9 – 15 DU/acre: 946 DUs
Density of 9 – 15 DU/acre: 948 DUs

Multi-Family Residential: 1,085 DUs as follows:

Density of 16 - 30 DU/acre: 1,085 DUs

Note: Total residential dwelling units: 3,255 + 1085 = 4,340. The 4,340 units include the 91 dwelling units in the mixed use area and do not include the 20% density bonus allowed by State law.

Parks: 49.76 acres of which 80% will be landscaped with drought tolerant turf and 10% with drought tolerant plants.

Schools: five (5) of which, one, McKinnon Elementary School, (10.98 acres) is existing and is being served by Cal Water. Of the remaining four, a new high school (38.97 acres) was approved in 2013. High school construction will begin in 2016, so its water use is covered in this WSA along with the other three new schools. Acreage for the other three schools totals 40.78 acres. The City estimates that 50% of the school area will be landscaped. Landscape areas will be approximately 90% drought tolerant turf and 10% drought tolerant plants.

The City's Storm Water Management Program contains limits on landscaping that will affect water used for landscaping. Additionally, development within the City has to comply with the City's Conservation Ordinance, Zoning Code Landscaping and irrigation requirements. The City's General Plan EIR Mitigation Monitoring and Reporting Program references several water conservation measures. It requires that the City implement a 15 percent water conservation measure for development within the West Area Specific Plan project area. It requires that development apply xeriscape principles including such techniques and material as native or low water use plants and low precipitation sprinkler heads, bubbles, drip irrigation and timing devices. It also requires the development to utilize water budget to achieve a significant reduction over historic use and overages uses through the installation of low flow toilets, etc.)

The WASP was covered in Cal Water's Salinas 2010 Urban Water Management Plan (UWMP) and will be included in updated information being prepared for the 2015 Salinas UWMP; nonetheless, WASP water supply requirements are addressed in this WSA.

Senate Bill 610 (SB 610) (Chapter 643, Statutes of 2001) amended State law as of January 1, 2002, to include consideration of water supply availability when cities and counties are making land use development decisions. SB 610 requires detailed information on water supply availability be provided to local public agency decision-makers prior to approval of development projects that meet or exceed any of the following criteria:

1. A residential development of more than 500 dwelling units.
2. A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet.
3. A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
4. A hotel or motel with more than 500 rooms.
5. An industrial, manufacturing or processing plant or industrial park planned to house more than 1,000 persons occupying more than 40 acres of land or having more than 650,000 square feet of floor area.
6. A mixed-use project that includes one or more of the projects specified above.
7. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

Because the proposed WASP exceeds criteria 1 above, a WSA is required. The WSA assesses the adequacy of the water supply to meet the estimated demands of the proposed WASP over the next 20 years and those of Cal Water's Salinas District customers and projected new users under normal, single dry year and multiple dry year conditions. (Water Code §10911[a]). SB 610 requires that the information presented in a WSA be included in the administrative record that is the basis for an approval action by the local public agency.

SB 610 recognizes local control and decision-making regarding availability of water for projects and approval of projects. A WSA is to be provided to local governments for inclusion in environmental documentation for projects subject to the California Environmental Quality Act (CEQA) (as defined in Water Code 10912 [a]).

West Area Specific Plan Water Demand Forecast

Forecasting net new water demand for the WASP is based on the following method:

1. Multiplying the estimated per capita day water use rate (gallons per capita per day or gpcd) by the total population projected to live in the WASP.
2. Multiplying the estimated average gallons per square foot (gpd/ft^2) for various retail categories by the projected square footage for those categories.
3. Multiplying the estimated school building area by a representative water use rate (gpd/ft^2).
4. Multiplying the estimated landscaped park area by an estimated irrigation rate.
5. Totaling all four estimated water demands for the fully developed and occupied WASP.

Cal Water has developed water use data by user class to estimate water demand for various proposed developments. However, due to implementation of more aggressive water conservation practices and requirements, historic water use factors are higher than projected water use factors for new developments in 2015 and beyond. Accordingly, the method used here is to estimate water demand of new developments based on newer water conservation requirements for toilets, showers, dishwashers, washing machines, and changes in outdoor landscaping and irrigation systems and rates by applying a conservation factor to historic water use rates. All new buildings and irrigated areas systems in the WASP are to comply with current City of Salinas Codes, the City's General Plan EIR Mitigation Monitoring and Reporting Program for the WASP, and the California Plumbing and California Green Building Codes, which mandate installation of water conservation plumbing fixtures and fittings. Existing water use in the Salinas District is based on higher historic water use rate data (gpd/ft^2).

For example, water use rate for old toilets often exceed 2 gallons per flush. Later water efficient toilets used 1.6 gallons per flush, and the latest water efficient toilets use only 0.6 gallons per flush. Depending on the reference toilet, the latest water efficient toilets achieve 62.5% to 70% reduction in water use over older toilets. In residential dwelling units, new dishwashers which use between 4.5 and 7 gallons per wash load, will be installed. These dishwashers use less water than older conventional machines, which use between 7 and 14 gallons per wash load. Using an average of 10.5 gallons for conventional machines and 5.75 gallons for new water efficient machines results in an average savings of 4.75 gallons per load or a reduction of 45%. Installing shower heads with restricted flow will result in a 20% reduction over conventional shower heads. The average flow rate for shower heads with restricted flow is 2.0 gallons per minute (gpm) versus conventional shower heads with flows of 2.5 gpm. Washing machines 18 years or older used 40 gallons per standard load versus new machines which use only13 gallons per load, resulting in a reduction of 67.5%. It is expected that at a minimum, new WASP facilities will achieve a reduction in water use rates of 25%.

WASP Single Family and Multi Family Residential Demand:

Based on recent US Bureau of Census data for 2010, Cal Water determined that the average number of persons per dwelling unit in the Salinas District was 3.156. However, the Salinas District has a lower average number of persons per household than the City of Salinas, which based on US Bureau of Census data for 2010, is 3.66. The average water use in the Salinas District for residential only (single and multi-family dwelling units combined) for 2012 and 2013 was 74 gallons per capita per day (gpcd). Average per capita water use in 2014 dropped to 66 gpcd, reflecting increased conservation by Salinas District residents due to the 4th year of a statewide drought.

Since all new facilities in the WASP will have greater conservation savings "built in", a 20% reduction in the 2012 – 2013 residential water use rate would result in a 59.2 gpcd rate for WASP dwelling units.

Multiplying the total projected dwelling units of 4,340 by 3.66 persons/dwelling units yields a projected population of 15,884 persons. Multiplying the average residential per capita water use of 59.2 gpcd yields a total residential demand at build out of 940,333 gpd or 1,054.1 AFY.

Retail:

Following are retail water use factors by use categories historically experienced by Cal Water:

Retail Activities – Average Water Use Factors

Category	gpd/ft^2
Dry goods stores:	0.110
Commercial offices:	0.05
Restaurants (food service):	1.10
Food stores:	1.10

Of the total 480,000 ft^2 of retail activities proposed in the WASP, it is assumed that about 50% will consist of dry goods shops, 25% office, and 25% restaurants and food markets. This results in an estimated average water use rate of 0.3425 gpd/ft^2. For retail activities, a conservative 25% water conservation savings is used for the WASP area.

More accurate estimates of water usage by retail activities require square footage values for each type of activity. If there is a higher concentration of more intensive water using businesses such as supermarkets, restaurants, health clubs, etc., the average water use factor will be higher than what is estimated here for the WASP.

Estimated retail demand: 480,000 ft^2 x 0.75 x 0.3425 gpd/ft^2 = 123,300 gpd or 138.2 AFY

Schools**:**

For the proposed five schools, a representative water use factor was developed by using actual McKinnon Elementary School water use data. The school covers 10.98 acres. For a 3-year period (2011 – 2013), the average annual water use factor was 1,084 gallons/day/acre. In 2014, in the 4th year of statewide drought, the water use factor decreased to 892 gallons/day/acre or a 17.7%

reduction. The four new schools are expected to implement water savings fixtures and irrigation practices; therefore, an average of these two rates, or 988 gallons/day/acre is used here.

Estimated annual average daily school water demand: 90.73 acres x 988 gallons/day/acre = 89,641 gallons/day or 100.5 AFY.

Parks:

Total park area is 49.76 acres. The City estimates 80% of the area will be drought tolerant turf and 10% drought tolerant plants. The remaining 10% will not be landscaped. Therefore, approximately 44.8 acres will be irrigated. Typical irrigation rates for parks are 2.0 to 2.5 AFY/acre. Using an average of 2.25 AFY/acre and assuming a 20% reduction in irrigation rate in the WASP parks results in a rate of 1.8 AFY/acre. Using this rate yields an annual demand of 80.6 AFY.

Total Estimated Average Annual Daily Water Demand for the WASP at build out: 1,054.1 + 132.8 + 100.5 + 80.6 = 1,368 AFY or 1,220,256 gallons/day.

The estimated maximum day flow is approximately 1.5 times the average annual daily demand based on the Salinas District five-year average from 2009 to 2013 of 1.48.

Estimated maximum day demand for the WASP:
1.5 x 1,220,256 gallons/day = **1,830,384 gallons/day or 1,271 gpm**

California Water Code Section 10631, Paragraph (e) (2), requires a water use projection (average annual demand forecast) in five-year increments for a 20-year period. It is assumed that the time required for approval of the WASP and certification of the EIR is one year (2015 - 2016) and that preparation of developer subdivision plans and tentative maps will occur concurrently. It is assumed that City approval of the latter will require a half a year and will occur in the 3rd and 4th quarters or 2016 and that construction of WASP infrastructure and residential dwelling units will start in the first quarter of 2017. If it takes approximately 20 months for infrastructure to be completed and the first phase of homes and other facilities to be built, sold and initially occupied, then water demands will start in the latter part of 2018. The City estimates build out will occur over approximately 20 years. It is assumed here that all proposed facilities will be built and fully occupied in 2035 or 20 years from 2015. The City estimates that the build out rate will be at linear uniform rate.

Therefore, the water demand forecast for the WASP in five-year increments is estimated to be as follows:

Year	WASP Average Annual Water Demand (AFY)
2015	0
2020	342
2025	684
2030	1,026
2035	1,368

Existing Water Use in the WASP Area

An estimated 90% of the land in the WASP area or 720 acres is presently used to grow irrigated crops – lettuce and various vegetables (strawberries, broccoli, cauliflower, and alfalfa). Between two and three crops are grown annually. General cropping practice is to rotate crops. While as many as three crops can be produced in a year, normal practice is to grow two crops. Irrigation is by sprinkler or drip systems, which are supplied by groundwater pumped from agricultural wells in the area.

Groundwater recharge from irrigated agricultural land is a function of many variables including weather, hydrologic conditions, irrigation practices, crops, soil types, soil conditions, etc. One approach to determining recharge is to collect data and make estimates of monthly irrigation, monthly precipitation, runoff, plant evapo-transpiration, evaporation, initial soil moisture and the soil's available water holding capacity. (Recharge is the net of irrigation and precipitation minus water losses associated with other factors).

Since this data is not available and not obtainable, a general estimate of recharge to the groundwater is provided here. It is assumed that average recharge from agricultural irrigation over wet and dry years is 30% based on data in the "Geologic, Hydro-geologic and Geotechnical Report" Kleinfelder, Inc., March 12, 2003, for the nearby Rancho San Juan Specific Plan or Butterfly Village. The Kleinfelder report used information from the Monterey County Agricultural Extension and University of Davis irrigation rates for crops, which are as follows:

Strawberries: 1.9 ft./acre/crop
Lettuce: 2.1 ft./acre/crop
Broccoli, cauliflower, alfalfa: 4.04 ft./acre/crop

As previously mentioned, general farming practice is to rotate crops. If strawberries, broccoli and cauliflower are the crops being cultivated over the course of 1 ½ years of required irrigation water is for strawberries and the other ½ is for broccoli and cauliflower or alfalfa, the overall average irrigation rate for existing irrigated acres in the WASP area is estimated at:

0.5 (1.9) + 0.5(4.04) = 2.97 or 3.0 acre-feet/acre/year or 3.0 ft./year

Estimated groundwater pumping for existing irrigated agricultural use in the WASP area is:

2 x 3.0 ft./year x 720 acres = 4,320 AFY

The estimated 4,320 AFY ground water pumping for existing agricultural use in the WASP is 2,952 AFY more than the total build out estimated demand for the WASP, which is 1,368 AFY. Therefore, the total build out estimated water demand for the WASP is projected to use less water than required for current irrigated agricultural uses

The estimated amount of recharge from existing irrigated agriculture use is:

0.3 x 4,320 AFY = 1,296 AFY

Estimated net consumptive water use by existing irrigated agriculture use in the WASP area is 3,024 AFY.

Cal Water data for the period from 2010 through 2013 (4 years) shows that the average indoor water use in single family homes was 67% of total water use. It was 88% for 2014 due to the 4th

year of drought and increased water conservation by Salinas District residents. For multi-family dwelling units for 2010 – 2013, average indoor use was 78% of total use. It was 87% for 2014 for the reasons cited. For the WASP, 26.5% of the dwelling units will be multi-family. So the estimated average indoor water use of the WASP is: 0.265 x 78% + 0.735 x 67% = ~ 70%.

Assuming similar average percentages of indoor water use for the other use categories results in a total estimated outdoor annual water demand for the WASP area at build-out of 0.30 x 1,368 = 410 AFY.

If 20% of outdoor use infiltrates below the plant root zone and recharges groundwater, then 0.20 x 410 = 82 AFY or 6% of estimated average annual demand is estimated to recharge to the groundwater system.

The estimated amount of indoor water use that will become sanitary wastewater is 0.70 x 1,368 = 958 AFY.

City of Salinas sanitary wastewater is conveyed to the Monterey Regional Water Pollution Control Agency (MRWPCA) for tertiary treatment in compliance with California State Title 22 requirements. Approximately, 60% of treated effluent is used for agricultural crop irrigation through the Castroville Seawater Intrusion Project/purple pipe program

Based on October 2015 MRWPCA website information, annual average daily flow to the Salinas Valley Reclamation Plant (regional wastewater treatment plant) is about 18.5 mgd or 23,540 AFY. (Design capacity of the plant is 29.6 mgd.) The City of Salinas contributes approximately 60% of wastewater flows to the regional treatment plant. Average annual tertiary treated wastewater used for agricultural irrigation is 14,124 acre-ft./yr, or 60% of all treated water. Therefore, Salinas supplies approximately 36% of treated water used for crop irrigation.

The estimated amount of treated sanitary wastewater (recycled water) from the WASP area at build out that will be used for agricultural irrigation is: 0.36 x 958 = 345 AFY.

This amount of recycled water can be viewed as groundwater not pumped for agricultural irrigation if irrigators use a set amount of water annually for irrigation.

On the basis of this analysis, the estimated total amount of WASP consumptive water use at build out would be 1,368 - 82 – 345 = 941 AFY.

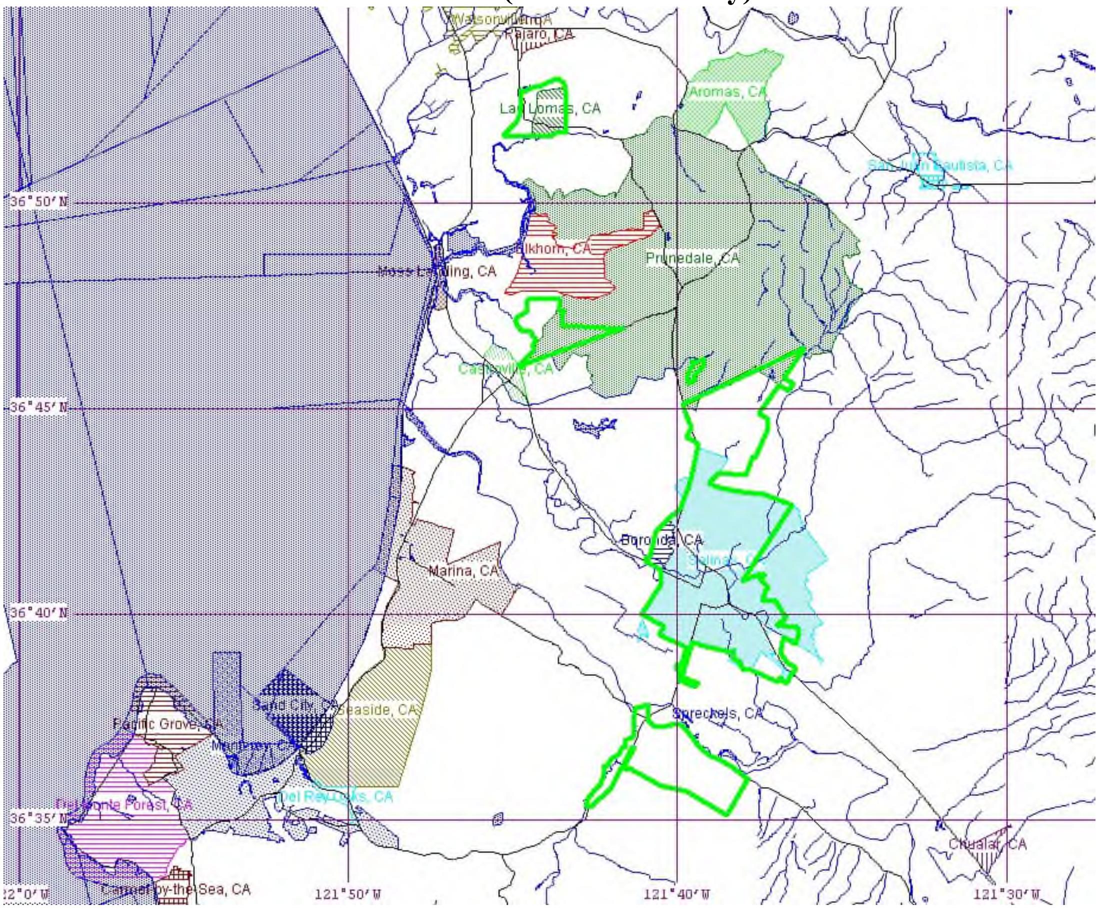
The estimated total amount of water consumptively used in the WASP area for irrigating crops is 3,024 AFY.

Therefore, conversion of the WASP area from agricultural to urban land use could result in an estimated reduction of consumptive groundwater use (or increase in groundwater storage) of 3,024 – 941 = 2,083 AFY. This is a significant contribution in reducing overdraft in the Salinas Valley Ground Water basin.

Salinas District Background Information

The Salinas District is comprised of several service areas shown in Figure 1.
The Salinas and Bolsa Knolls systems are linked hydraulically while the other smaller systems are separate. In the 2010 UWMP data on demand and services was combined.

Figure 1: Salinas District General Service Areas
(Green Boundary)

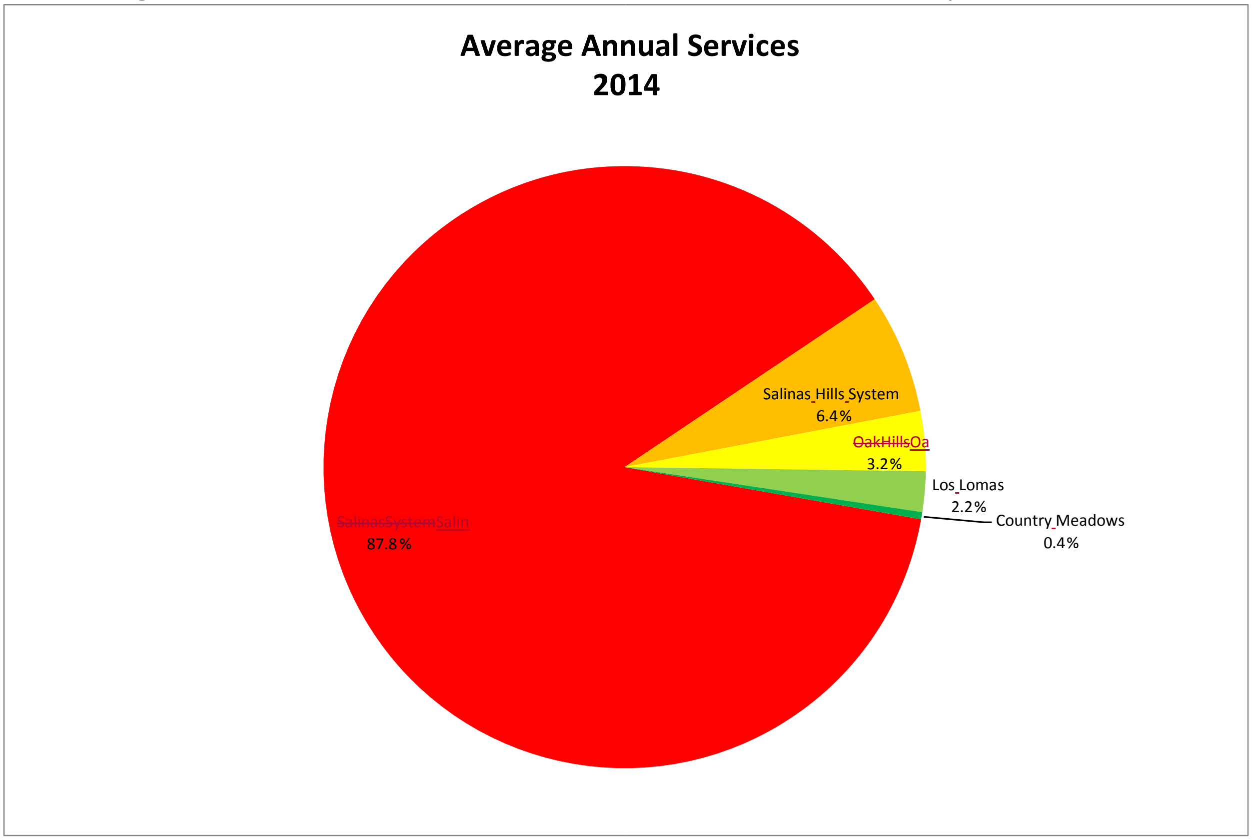


Cal Water's Salinas District encompasses most of the Salinas urban area, which is primarily a residential community supported by an agricultural economy. The major transportation route in the area is State Highway 101. The Southern Pacific Railroad also serves the area.

The Salinas District serves residents and businesses of the City of Salinas and those of the unincorporated communities of Bolsa Knolls, Las Lomas, Oak Hills, Country Meadows, Salinas Hills, Buena Vista and Indian Springs. A single distribution system provides service to the City of Salinas and Bolsa Knolls. Smaller hydraulically isolated distribution systems provide service to the other communities.

Figure 2 shows the percentage of customer services in the areas served. The City of Salinas has 81% of all customers within the Salinas District.

Figure 2: Salinas District Distribution of Customer Services by Areas Served

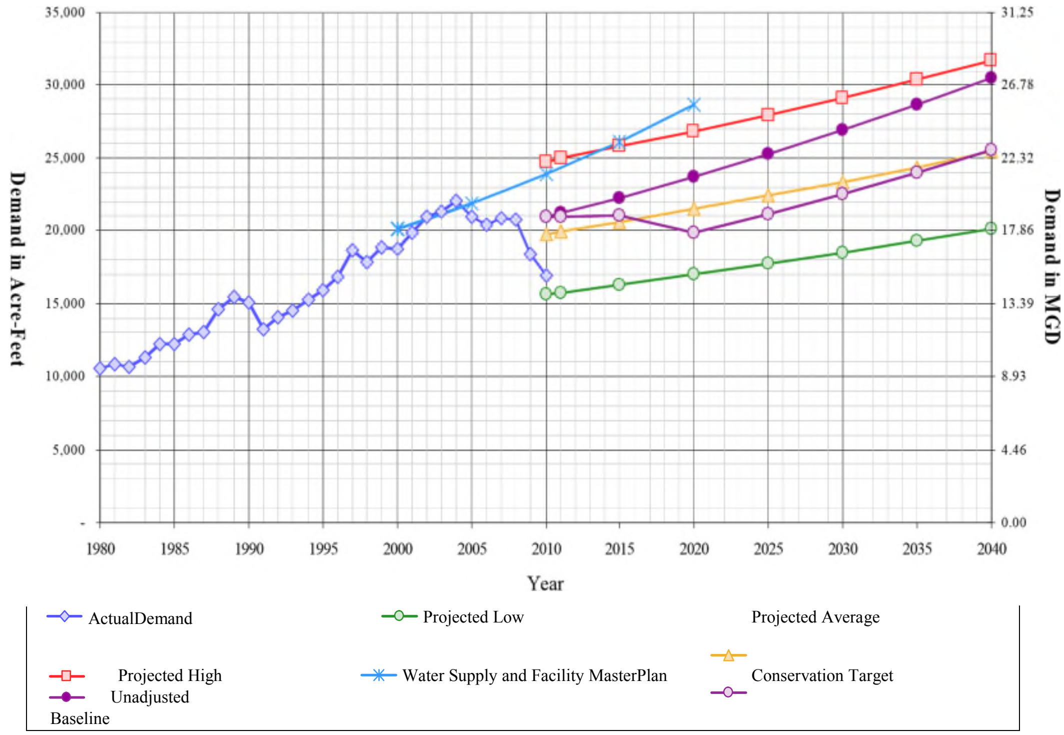


Cal Water uses U.S. Census data in estimating population in all of its districts in California. Its methodology for estimating existing and future population has been reviewed and accepted by the California Public Utilities Commission (CPUC), which provides regulatory oversight of privately owned water and wastewater utilities. Estimates of the population serviced by Cal Water in the Salinas district are based on overlaying the 2010 U.S. Census Tract Block data with the service area boundary as shown in Figure 1. Land View 5 and MARPLOT® software are used to generate data.

Senate Bill 7 (SBx7-7) requires two demand projections be made: 1) an unadjusted baseline demand, and 2) a target demand. The unadjusted baseline water demand projection is the total demand expected without reduction in water use due to an expanded water conservation program. It is equal to forecasted population multiplied by the 2005-09 average, or 139 gpcd.

The target water demand projection assumes achievement of water conservations savings and is calculated by multiplying SBx7-7 target gpcd values and projected population. These conservation savings are illustrated in the comparison of projected demands shown in Figure 3.

Figure 3: Salinas District Actual and Projected Demand



Cal Water has expanded its water conservation programs and developed new ones for the Salinas District as a result of state law and policies requiring further reductions in per capita daily water use. SBx7-7 mandates a 20 percent reduction in per capita urban water use by year 2020. The CPUC requires implementation of conservation programs and rate structures to achieve reductions in per capita water use. The *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU), of which Cal Water has been a signatory since 1991, requires implementation of conservation programs. The Salinas District Water Conservation Master Plan, which addresses these requirements, is included as Appendix G in the 2010 UWMP.

The 2015 and 2020 district-specific targets for Salinas District are 131 and 116 gpcd, respectively. For the past five years, average annual daily per capita water use has varied as follows:

Year	Ave gpcd
2010	129
2011	137
2012	141
2013	142
2014	129

The last five-year average is 135.6 gpcd – 3.5% over the target value for 2015. If the 2014 value of 129 gpcd is repeated in 2015, the Salinas District will meet its SBx7-7 2015 target. Per capita water use needs to decrease by 13 gpcd to meet the 2020 target.

The target water demand projection includes conservations savings from passive and active demand management, which are described in Section 6 of the UWMP.

When compared to the year 2000 US Census population estimate for the Salinas District of 120,376, the year 2010 US Census population declined to 117,349 or a decrease of 3,027 persons, reflecting the effects of the major economic downturn that occurred following the financial crises of 2008.

The 2010 UWMP is based on data up to 2010; however, updated Cal Water records data for 2011 – 2014 on population, customer services, water demand and well water supply were developed by Cal Water and are used in the WSA.

In the Salinas District 2010 UWMP, Cal Water projected an increase of 7,480 total services by 2040. Since 85% of all services are residential, it projected an increase of 6,358 new residential services. Cal Water assumed it would be the water service provider for the three developments listed in Table 1. As it turned out, Cal Water will provide water service to half of the CASP which includes 1,274 residential dwelling units or 2,338 DUs less than shown in Table 1.

Table 1: Proposed Developments in the Salinas District (2010 UWMP)

Residential	Dwelling Units
Central Area Specific Plan	2,338
Rancho San Juan	1,147 to 3,653
Rancho Los Robles sub-development	101
Total	3,586 to 6,092

This data was used as a baseline for estimating population starting in 2010. To calculate estimated population after 2010, the 2010 Census population was divided by the total number of dwelling units served by Cal Water in 2010 to produce a population density value. This value was then multiplied by the number of projected dwelling units in each future year.

The 20-year growth rate for customer service types was used by Cal Water to estimate the future number services to year 2040 and population in the Salinas District. Use of the 20-year growth rate correlated most closely with past growth and current growth trends.

Table 2 presents Cal Water's 2015 updated Salinas District population forecast in five-year increments to 2040. This updated forecast is used in the WSA.

Table 2: 2015 Updated Salinas District Population Projections

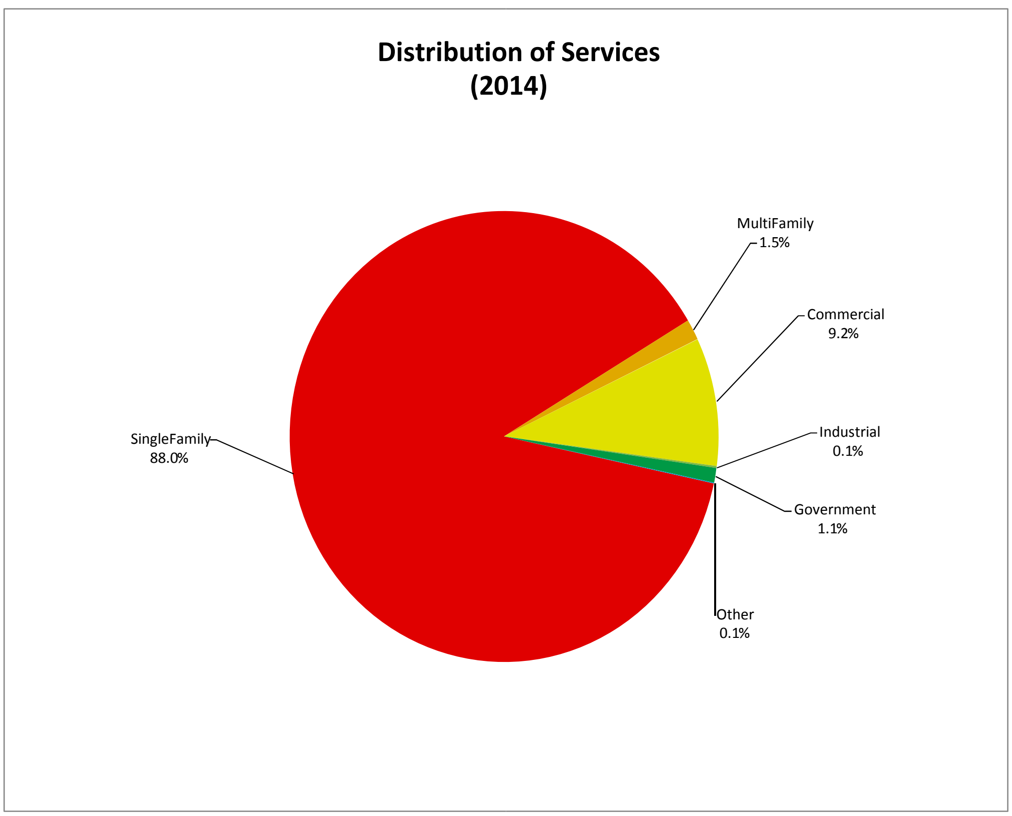
	2005	2010	2015	2020	2025	2030	2035	2040
Service Area Population	120,742	117,349	121,729	128,145	134,916	142,063	149,606	157,567

Salinas District Water Demand

Before the passage of SBx7-7, Cal Water projected water demand by multiplying the projected number of services for each of its user classes by one of three (high, average and low) historic water use rates for each user class. The three water use rates were derived from metered customer water records. Projected increases in the number of customers in each user class were based on historic growth rates for that user class unless a particular growth rate was determined to be non-representative, in which case the overall customer growth rate was used. The sum of projected demands for each user class equaled the total projected demand for the Salinas District. Three separate demand projections for the Salinas District were calculated in this manner: high, average and low.

After the passage of SBx7-7, the above method was no longer used for projecting Salinas District water demand. However, this method is still used for projecting growth in services by user class, population, and distribution of demand among user classes. Figure 4 shows total demand by user class for all applicable user classes in 2010. Note there are no other user classes in the Salinas District such as sales to other agencies, use of water to recharge the groundwater basin or use of water for agricultural purposes. The largest user class is single family residential where water use is 88.7% of total demand. The two categories that will comprise the water uses for the proposed WASP are multi-family residential (0.9% of total demand) and commercial (9.3% of total demand) for a combined total of 10.2%. Other water uses (industrial, government and other) total only 1.1% of demand.

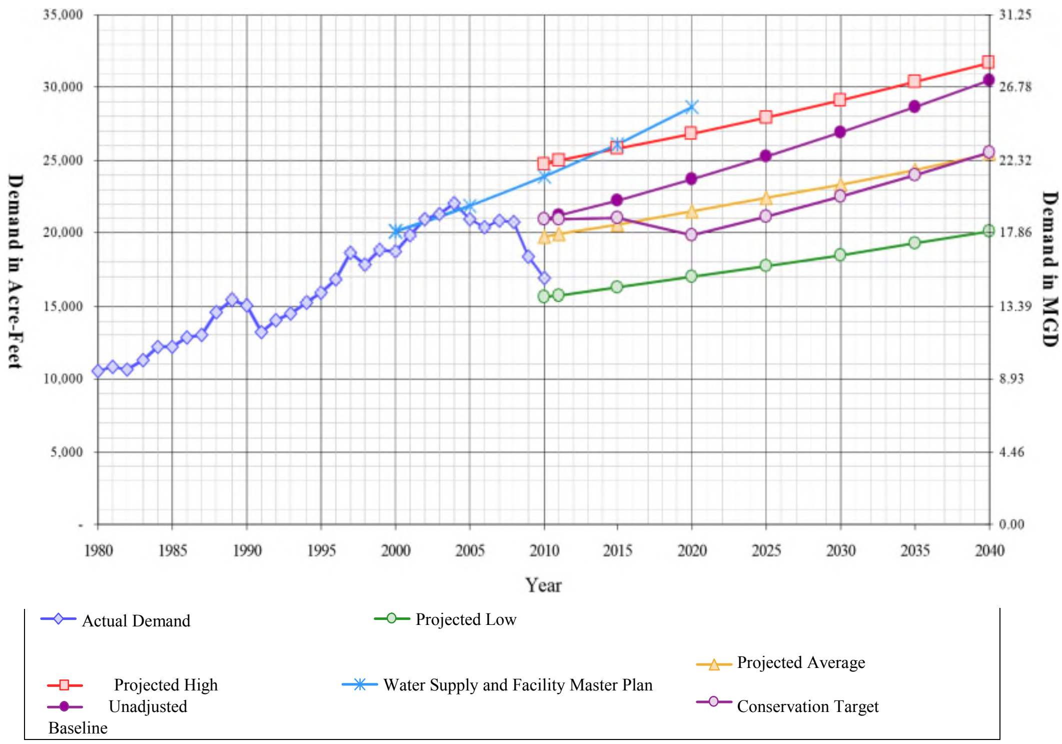
Figure 4: Salinas District Distribution of Services



Demand projections in the 2010 UWMP were developed to meet SBx7-7 requirements. Two demand projections were made: 1) an unadjusted baseline demand and 2) a target demand. The unadjusted baseline water demand projection is the total demand expected without any water conservation. It is equal to forecasted population multiplied by the base per capita water use, which is the average for the period from 2005 to 2009 or 139 gallons per capita per day (gpcd).

The target water demand projection includes conservation savings due to both passive and active demand management, which are described later in the WSA. The target demand is calculated by multiplying SBx7-7 target of 116 gpcd by the projected population. Figure 5 shows the difference in the two demand projections.

Figure 5: Salinas District Actual and Projected Demand



Cal Water has expanded its water conservation programs and developed new ones for the Salinas District as a result of increasing its response to State law and policies requiring further reductions in per capita daily water use. SBx7-7 mandates a 20 percent reduction in per capita urban water use by year 2020. The CPUC requires implementation of conservation programs and rate structures to achieve reductions in per capita water use. The *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU), of which Cal Water has been a signatory since 1991, requires implementation of conservation programs. The Salinas District Water Conservation Master Plan, which addresses these requirements, is included as Appendix G in the 2010 UWMP. Conservations savings from passive and active demand management are described in the of the 2010 UWMP.

The 2015 and 2020 district-specific targets for Salinas District are 131 and 116 gpcd, respectively. Over the last five years (2010 – 2014) District demand has averaged about 135.5 gpcd, but in 2014, it dropped to 129 gpcd – 2 gpcd below the 2015 SBx7-7 target value.

Actual and projected water demand through 2040 is shown in Table 3. The quantities are the target demand projection based on SBx7-7 gpcd targets and include unaccounted for water.

Table 3: Salinas District Water Demand with Conservation – Actual and Projected AFY

	2005 Actual	2010 Actual	2015	2020	2025	2030	2035	2040
Total	**20,752**	**16,941**	**17,862**	**16,651**	**17,531**	**18,459**	**19,439**	**20,474**

The projected demands in Table 3 for the Salinas District include the WASP demands.

The 2010 Salinas District UWMP can be referenced for more detailed information on historic water demand and supply.

Salinas District Water Demand Management

Cal Water is significantly expanding its water conservation programs. State law, CPUC directives and a State water conservation organization are focused on reducing urban water use and have provided much of the impetus for this emphasis. This includes:

1. Recent decisions by the CPUC directing regulated water utilities to reduce per capita urban water demand.
2. State legislation mandating urban water suppliers reduce per capita demand by 20 percent by year 2020.
3. Memorandum of Understanding Regarding Urban Water Conservation in California (MOU).

Following is a brief summary of each:

The CPUC's Decision 07-05-062 directed Class A and B water utilities to submit a plan to achieve a five percent (5%) reduction in average customer water use over each three-year rate cycle. This policy was refined under Decision 08-02-036, which established a water use reduction goal of three- to- six percent (3 – 6%) in per customer or service connection consumption every three years once a full conservation program, with price and non-price components, is in place. These decisions anticipated enactment of policies by the State legislature to reduce urban water use in California by 20 percent by year 2020.

SBx7-7 requires the State to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. The state is required to make incremental progress toward this goal by reducing per capita water use by at least 10 percent on or before December 31, 2015. SBx7-7 requires each urban retail water supplier to develop interim and 2020 urban water use targets. Urban retail water suppliers will not be eligible for State water grants or loans unless they comply with SBx7-7's requirements.

There are three ways in which a water supplier can comply with the MOU. The first way is to implement a set of water conservation best management practices (BMPs) according to the requirements and schedules set forth in Exhibit 1 of the MOU. The second way, called Flex Track compliance, is to implement conservation programs expected to save an equivalent or greater volume of water than the BMPs. The third way, similar to SBx7-7, is to reduce per capita water use. Each of these compliance options is briefly described below.

Originally, the MOU established a set of BMPs that signatories agreed to implement in good faith. For each BMP, the MOU established the actions required by the water supplier (e.g. site surveys, fixture and appliance rebates, water use budgets, volumetric pricing and conservation rate designs), the implementation schedule, and the required level of effort (in the MOU this is referred to as the coverage requirement). Additionally, the MOU established the terms by which a water supplier could opt out of implementing a BMP.

BMPs are grouped into five categories. Two categories, Utility Operations and Education, are “Foundational BMPs” because they are considered essential water conservation activities by any utility and are adopted for implementation by all signatories to the MOU as ongoing practices with no time limits. The remaining BMPs are “Programmatic BMPs” and are organized into Residential, Commercial, Industrial, and Institutional (CII), and Landscape categories. Table 4 lists the BMPs by category. The requirements and coverage levels of each BMP are set forth in Exhibit 1 of the MOU. Cal Water’s CUWCC annual reports, which detail BMP implementation, are included in the 2010 UWMP as Appendix G.

Under Flex Track, a water supplier can estimate the expected water savings over the 10-year period 2009-2018 if it were to implement the programmatic BMPs in accordance with the MOU’s schedule, coverage, and exemption requirements, and then achieve these water savings through any combination of programs it desires. Thus, through the Flex Track compliance option, a water supplier agrees to save a certain volume of water using whatever it determines to be the best combination of programs. Because the savings target depends on the programmatic BMP coverage requirements, which in turn are functions of service area size and composition of demand, the volume of water to be saved under this compliance option must be calculated separately for each supplier.

Table 4: MOU Best Management Practices	
BMP Group	**BMP Name**
1. Utility Operations Programs (F)	Conservation Coordinator
	Water Waste Prevention
	Wholesale Agency Assistance Programs
	Water Loss Control
	Metering & Volumetric Rates
	Retail Conservation Pricing
2. Education Programs (F)	Public Information Programs
	School Education Programs
3. Residential (P)	Residential Assistance Program
	Landscape Water Surveys
	High Efficiency Clothes Washer Program
	Watersense Toilet Program
	Watersense Specifications for Residential Development
4. Commercial, Industrial, Institutional (P)	Reduce baseline CII water use by 10% in 10 years
5. Landscape (P)	Large Landscape Water Budget Programs
	Large Landscape Water Surveys
F = Foundational BMP, P = Programmatic BMP	

Under the gpcd option, a water supplier can comply with the MOU by reducing its baseline gpcd by 18 percent by year 2018. The baseline is the 10-year period between 1997 and2006. The MOU establishes interim gpcd targets and the highest acceptable levels of water use deemed to be in compliance with this option. The MOU's gpcd option is similar to the method to set the SBx7-7 target, except that it uses a fixed baseline period and only runs through 2018.

Cal Water is using Flex Track to comply with the MOU because it provides the most flexibility in selecting conservation programs and allows for more streamlined reporting.

Water Conservation Master Plans

To comply with requirements for urban water use reduction, Cal Water developed Water Conservation Master Plans (WCMP) for each of its service districts or areas. WCMPs set forth a framework for compliance and describe Cal Water's specific conservation actions to be implemented. Major tasks in the WCMPs include:

1. A complete review of State policies and development of a compliance strategy
2. Calculating all appropriate per capita targets
3. Determining water savings required from new programs
4. Performing an analysis of conservation programs
5. Developing a portfolio of conservation program actions
6. Creating a plan for monitoring and updating the WCMP

The Water Conservation Master Plan for the Salinas District is in Appendix G of the 2010 UWMP. A discussion of baseline and target water use is provided in Section 3 of the UWMP. Details on water savings requirements and the programs to be implemented are also provided. Table 5 is a summary of water conservation programs selected.

Table 5: Cal Water Salinas District Conservation Programs		
Program Name	**Description**	**Target Market**
CORE PROGRAMS		
Rebate/Vouchers for toilets, urinals, and clothes washers	Provide customer rebates for high-efficiency toilets, urinals, and clothes washers	All customer segments
Residential Surveys	Provide residential surveys to low-income customers, high-bill customers, and upon customer request or as pre-screen for participation in direct install programs	All residential market segments
Residential Showerhead/Water Conservation Kit Distribution	Provide residential showerhead/water conservation kits to customers upon request, as part of residential surveys, and as part of school education curriculum	All residential market segments
Pop-Up Nozzle Irrigation System Distribution	Offer high-efficiency pop-up irrigation nozzles through customer vouchers or direct install.	All customer segments
Public Information/Education	Provide conservation messaging via radio, bill inserts, direct mail, and other appropriate methods. Provide schools with age appropriate educational materials and activities. Continue sponsorship of Disney Planet Challenge program.	All customer segments
NON-CORE PROGRAMS		
Toilet/Urinal Direct Install Program	Offer direct installation programs for replacement of non-HE toilets and urinals	All customer segments
Smart Irrigation Controller Contractor Incentives	Offer contractor incentives for installation of smart irrigation controllers	All customer segments
Large Landscape Water Use Reports	Expand existing Cal Water Large Landscape Water Use Report Program providing large landscape customers with monthly water use reports and budgets	Non-residential customers with significant landscape water use and potential savings
Large Landscape Surveys & Irrigation System Incentives	Provide surveys and irrigation system upgrade financial incentives to large landscape customers participating in the Large Landscape Water Use Reports programs and other targeted customers	Non-residential customers with significant landscape water use and potential savings
Food Industry Rebates/Vouchers	Offer customer/dealer/distributor rebates/vouchers for high-efficiency dishwashers, food steamers, ice machines, and pre-rinse spray valves	Food and drink establishments, institutional food service providers
Cooling Tower Retrofits	Offer customer/dealer/distributor rebates/vouchers of cooling tower retrofits	Non-residential market segments with significant HVAC water use
Industrial Process Audits and Retrofit Incentives	Offer engineering audits/surveys and financial incentives for process water efficiency improvement	Non-residential market segments with significant industrial process water uses

Table 6 shows additional projected water conservation savings by specific programs through 2015. These programs will be sustained in order to achieve further per capita water use reductions. The 2010 UWMP estimates that total annual water savings for the Core and Non-Core Programs will be 905.3 AFY in 2015 for the programs listed in Table 6. These projected water savings exceed the Salinas district's 2015 SBx7-7 and MOU Flex Track targets.

Table 6: Salinas District: Projected Water Conservation Savings by Program					
Program	**Annual Water Savings (AF)**				
	2011	**2012**	**2013**	**2014**	**2015**
CORE PROGRAMS					
Rebates/Vouchers					
Toilets	22.6	44.3	65.1	102.7	138.8
Clothes Washers	7.0	10.3	13.5	25.1	36.2
Urinals	0.0	0.0	0.0	0.0	0.0
Customer Surveys/Audits	15.4	33.5	49.8	87.2	120.8
Conservation Kit Distribution	12.8	24.0	33.9	45.2	55.1
Pop-Up Nozzle Distribution	39.0	78.0	117.0	163.7	210.5
Subtotal Core Programs	***96.7***	***190.1***	***279.3***	***424.0***	***561.5***
NON-CORE PROGRAMS					
Direct Install Toilets/Urinals	24.9	48.9	71.8	156.4	237.5
Smart Irr. Controller Vendor Incentives	0.1	0.1	0.2	15.6	31.1
Large Landscape Water Use Reports	6.2	6.2	6.2	13.5	13.5
Large Landscape Surveys/Incentives	9.6	19.3	28.9	40.5	52.0
Commercial Kitchen Rebates/Vouchers	0.0	0.0	0.0	4.8	9.6
Cooling Tower/Process Water Retrofit Incentives	0.0	0.0	0.0	0.0	0.0
Subtotal Non-Core Programs	***40.8***	***74.5***	***107.2***	***230.8***	***343.8***
Total Core & Non-Core Program Savings	**137.6**	**264.6**	**386.5**	**654.7**	**905.3**

Cal Water followed a detailed, multi-step process to identify the best mix of programs to achieve required savings. After a qualitative analysis of various program measures, those most appropriate for the Salinas District were quantitatively analyzed. From that analysis the above programs were selected. In addition to Cal Water's experiences, information developed by the California Urban Water Conservation Council (CUWCC) and the Alliance for Water Efficiency (AWE) was utilized to estimate water savings.

Water Shortage Allocation Plans

Cal Water has also developed Water Shortage Allocation Plans (WSAP), which are plans of action to reduce water demand should significant water supply shortages occur. These actions may be implemented for several months or several years depending on circumstances. The WSAP differs from the Water Conservation Master Plan (WCMP), which is focused on achieving permanent reductions in per capita water use by Cal Water's customers and is not driven by significant short or long reductions in supply. In the short-term, the WSAP assists Cal Water in further reducing demand so that it matches significant reductions in supply.

Implementation of Cal Water's WSAP for the Salinas District will depend on the availability of supply from Cal Water's wells within the district. Cal Water has a four-stage approach that corresponds to specific levels of projected water supply shortage. Depending on the supply reduction target, this approach becomes increasingly more aggressive in requiring customer water use reductions. The stage selected depends on such factors as wholesale supply reductions, availability of alternative supplies, time of year and coordinated regional actions among all affected water utilities and agencies.

In the unlikely event of a protracted or unexpected water shortage, Cal Water has developed a four-stage rationing plan, which includes both voluntary and mandatory water use restrictions. Table 7 is a summary of this program.

Table 7: Cal Water Demand Reduction Methods

Shortage	Stage	Demand Reduction Goal	Type Of Program
Minimum 5 - 10%	Stage 1	10% reduction	Voluntary
Moderate 10 - 20%	Stage 2	20% reduction	Voluntary or Mandatory*
Severe 20 - 35%	Stage 3	35% reduction	Mandatory*
Critical 35 - 50%	Stage 4	50% reduction	Mandatory*

* Mandatory = Allocations

The following lists the actions to be taken during periods when a reduction in consumption is required:

<u>Stage 1</u>

- California Water Service Company maintains an ongoing public information campaign consisting of distribution of literature, speaking engagements, monthly bill inserts, and conservation messages printed in local newspapers.
- Educational programs in area schools are also ongoing.

<u>Stage 2</u>

- California Water Service Company will aggressively continue its public information and education programs.
- Ask consumers for 10 to 20 percent voluntary or mandatory water use reductions.
- Prior to implementation of mandatory reductions, obtain approval from CPUC.
- Lobby for passage of drought ordinances by appropriate governmental agencies.

<u>Stage 3</u>

- Implement mandatory reductions after receiving approval from CPUC.
- Maintain rigorous public information campaign explaining water shortage conditions.
- Water use restrictions go into effect; prohibited uses can include watering resulting in gutter flooding, using a hose without shutoff device, filling of pools or fountains, etc.
- Limiting landscape irrigation by restricting the hours of the day and or days of the week during which water for irrigation can be used.
- Monitor production weekly for compliance with necessary reductions.

- Installation of a flow restrictor on the service line of customers who consistently violate water use restrictions.

Stage 4

- All of steps taken in prior stages intensified.
- Discontinuance of water service for customers consistently violating water use restrictions.
- Monitor production daily for compliance with necessary reductions.
- More restrictive conditions for, or a prohibition, of landscape irrigation

Implementation of Supply Plans and Conservation Programs

The Salinas District is supported by its engineering, water resources, water quality, water conservation and customer service staff in its general offices in San Jose. Together, Salinas District and general office staff are responsible for planning, designing, construction, operating, maintaining and managing all Salinas District water system facilities and programs.

Cal Water schedules preparation of plans, designs and construction of new wells and related distribution and storage facilities so as to increase supply capacity ahead of projected demand growth. This provides excess supply capacity to accommodate more rapid growth than anticipated and for dry weather periods that might result in temporary declines in the groundwater table level and possibly well yields. Typically, the goal for the supply capacity of the wells is to accommodate the maximum day demand (1.5 times the average day) with up to 10% of the supply sources being down or not operating.

The 2010 UWMP assumes that there will be a linear reduction in gpcd from 2015 to 2020 to achieve the district-specific 2020 SBx7-7 compliance target. Programs required to achieve 2020 SBx7-7 compliance will be presented in the next Conservation Master Plan for the district, which will be included in the 2015 UWMP.

As part of the Conservation Master Plan, one-page program summaries or fact sheets were developed for each recommended program. The fact sheets provide a brief summary of program design and marketing, expected level of customer participation, projected water savings, and proposed program expenditure for the period 2011 – 2015. Fact sheets for the Salinas District are included in Appendix G of the 2010 UWMP.

Salinas District Water Supply

Information from Cal Water's 2010 UWMP, the 2005 WSFMP and 2015 data on groundwater were used to develop the supply plan for the Salinas District to year 2035.

The Salinas District water supply comes from pumped groundwater within District boundaries. It is extracted from aquifer segments of the Salinas Valley groundwater basin known as the Pressure Area and Eastside Area. The Salinas Valley groundwater basin, which is overdrafted, is unadjudicated. The California Water Resources Control Board (CWRCB) has initiated adjudication proceedings in the event that Monterrey County Water Resources Agency (MCWRA) is not able to effectively reduce the overdraft.

The Pressure Area is a region of gradually declining groundwater elevations and is characterized by three confined aquifer systems, overlain and separated by thick clay layers that act as aquicludes. These aquifers named for their relative depths are known as the “180 Foot", the “400 Foot”, and “900 Foot” aquifers. Cal Water pumps from all three aquifers.

The groundwater level in the Eastside Area is declining more rapidly than any other area in the Salinas Valley groundwater basin. The Eastside Area is comprised of unconfined, randomly scattered water bearing strata.

Since the surface elevation in the Salinas District ranges from 40 to 70 feet above sea level, the three aquifers of the Pressure Area are all below sea level. There is hydrologic continuity with the ocean and the three aquifers.

MCWRA has estimated that the annual non-drought overdraft of the Salinas Basin is about 45,300 AFY. Because of the hydrologic continuity between the ocean and the aquifers of the Pressure Area, seawater has been intruding into these aquifers at an estimated rate of 28,800 AF per year.

Groundwater pumping throughout the Salinas Valley has contributed to the overdraft of the groundwater basin. MCWRA numbers indicate that water levels have declined in all four of the basin’s areas. However, the minor declines in the Upper Valley and Forebay areas appear to be in response to drought conditions. Recharge in these areas from releases from the San Antonio and Nacimiento Reservoirs have historically stabilized groundwater levels in these two areas. Declines since 1987 are believed to be the result of reduced recharge supplies.

Seawater has advanced into the 180 Foot aquifer to within one mile of Cal Water’s closest well. When possible, Cal Water shifts groundwater pumping from the 180 Foot and Eastside aquifers to wells further south and in the 400 Foot aquifer of the Pressure Area.

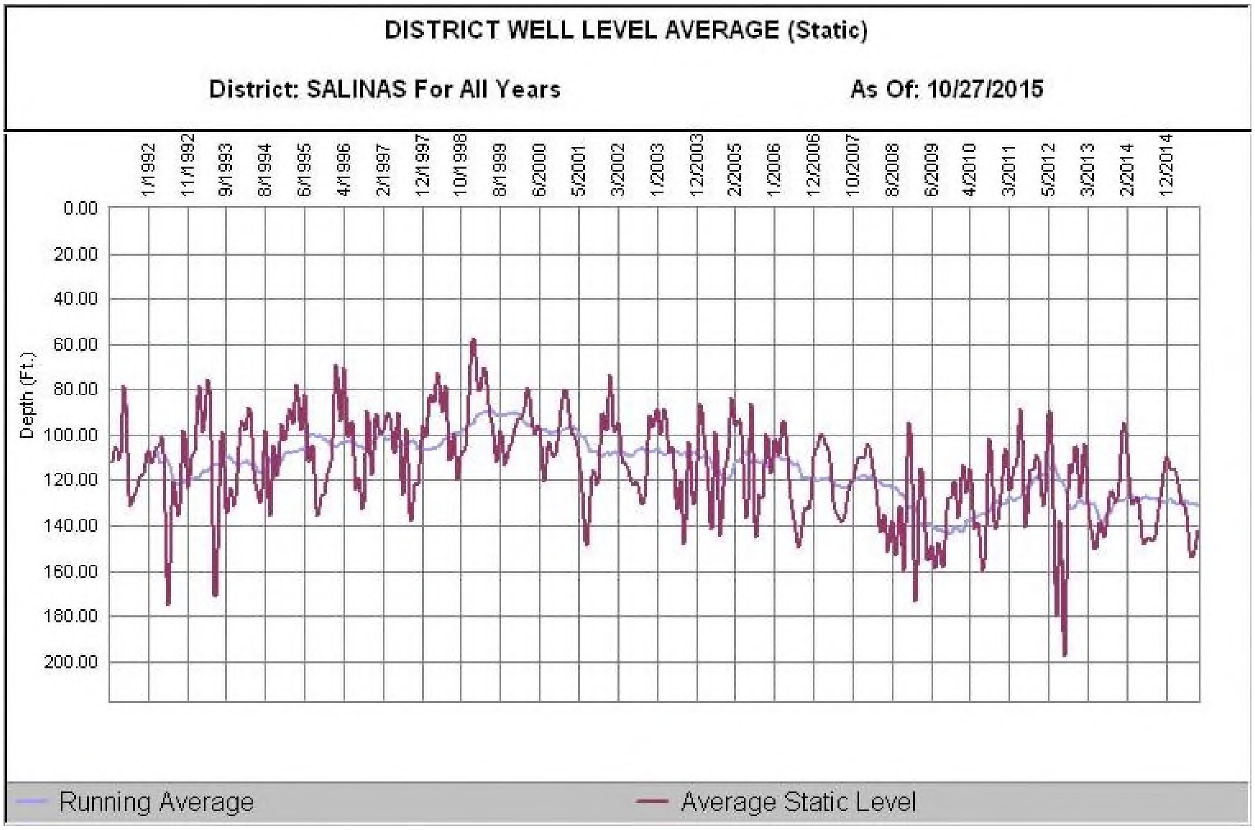
Except for an annual variance of approximately 35 feet, average static groundwater levels in District wells since 1961 changes elevation during drought years. In 1976 and 1977, the running average level declined by 20 feet. Recovery occurred in 1982 and 1983 when storm runoff refilled local reservoirs increasing groundwater recharge. With extended drought conditions commencing in 1984, the running average elevation again began declining and by the summer of 1992 had dropped by 35 feet. Well level averages from 1990 through 2015 are shown in Figure 6.

Recent well elevation data (ground surface to static water level) for 2011 – 2014 are as follows:

2011: 128 ft.
2012: 114 ft.
2013: 130 ft.
2014: 128 ft.

Despite the last 4 years of drought, average static groundwater levels have remained relatively constant.

Figure 6: Salinas District Average Well Levels



A total of 28 wells supply the City of Salinas service area. (Note: the City of Salinas service area is the largest service area in the Salinas District and is hydraulically separate from the service areas shown in Figure 1.) The design capacity of active operational wells is 27,880 gpm or 40 mgd or 44,843 AFY of water. In addition, Cal Water has three new wells being constructed and scheduled to become operational in 2017 and 2018. Well capacities range from 500 gallons per minute (gpm) to 2,000 gpm. It is assumed that the three new wells will have an average design capacity of 1,200 gpm for a total of 3,600 gpm or 5.18 mgd, which is equivalent to 5,812 AFY. In addition, the WASP provides for three new wells to be constructed as development progresses. The plan is to have the first well operational at the time initial development occurs. The assumption for the design capacity of the three new WASP area wells is 1,200 gpm each. So the first WASP well that would be online in 2020 would add 1,200 gpm capacity or 1,937 AFY. Thus in 2020, the total design capacity of wells serving the City of Salinas including the WASP area would be: 44,843 + 5,812 + 1,937 = 52,592 AFY.

The estimated 2015 average annual demand for the Salinas District as a whole is 15.9 mgd or 17,862 AFY (40% of design capacity) of wells within the City of Salinas service area. The WASP area distribution system will be interconnected with the existing City of Salinas system so that water can be supplied from wells within the WASP area and if needed during peak periods of demand from nearby wells within the existing service area.

In 2020, when initial development and occupancy in the WASP area has occurred, the estimated total design capacity of the City of Salinas well system including one new well in the WASP area is: 27,780 + 3,600 + 1,200 = 32,580 gpm or 46.9 mgd. Maximum day demand is estimated to be 1.5 times the average day demand. In year 2020, for the Salinas District including WASP demand, maximum day demand is 22.47 mgd or 48% of well design capacity. With the addition of two more wells in the WASP area in the period from year 2020 to year 2030 with a combined capacity of 2,400 gpm, the total City of Salinas plus WASP well design capacity would be 34,980 gpm or 50.37 mgd . The projected demand for year 2040 is 21,716 AFY or 19.4 mgd, which is 38.5% of design capacity. The estimated maximum day demand in year 2040 is 29.1 mgd. It is noted that a surplus of capacity is required for several reasons: maintenance requirements on older wells, break downs on wells requiring repairs that can take up to 6 months, changes in water quality such as nitrates, MTBE, uranium, iron and manganese, etc. that require a well to be taken out of operation until either a treatment system can be designed and constructed or a determination is made to retire it.

Cal Water has made and continues to make improvements to its distribution system by adding or upgrading its transmission pipelines, storage facilities and booster pump stations so that it is able to move water from wells that are operational to areas where demand may require water from supply sources outside a particular area in the event one or more wells are not operational. This provides supply assurance as well as operational flexibility.

Table 8 is the anticipated amount of groundwater to be pumped, which is the same as the projected demand in Table 3.

Table 8: Groundwater Pumping: City of Salinas AFY

Source	2015	2020	2025	2030	2035	2040
Salinas Valley Ground Water Basin	**17,862**	**16,651**	**17,531**	**18,459**	**19,439**	**20,474**

Salinas District Water Supply

All existing water supply for the City of Salinas is from groundwater extracted from the Salinas Valley Ground Water Basin (SVGWB) from two hydraulically connected sub-basins or areas known as the Eastside Area and the western fluvial or Pressure Zone.

Salinas Valley Groundwater Basin Geology and Hydrogeology

A description and characterization of the Salinas Valley Ground Water Basin is presented in Appendix D: DWR'S Groundwater Bulletin 118 in the 2010 Salinas District UWMP.

The following is from the Salinas District WSFMP April 2005 prepared by Luhdorff and Scalmanini (L&S):

The City of Salinas is situated at the northern end of the Salinas Valley, a relatively narrow, elongated, fault down-dropped, sedimentary basin in the California Central Coast Range. The uplifted mountainous boundary consists of older granitic, metamorphic and marine sedimentary rocks of the Salinian tectonic block. Beneath the valley, a thick sequence of Tertiary marine sedimentary rocks is overlain by late Tertiary to recent non-marine sedimentary deposits of fluvial and alluvial fan origin. The uppermost 1,000 feet, or more, of this non-marine sequence contains the fresh ground-water basin that is utilized for various water supply purposes.

Early studies of the Salinas Valley ground-water basin extend back to Hamlin (1904). Concerns over possible saline water intrusion caused by pumping arose in the early 1930s and resulted in the first detailed evaluation of the northern ground-water area by the California Department of Public Works, Division of Water Resources (1946 and 1949). This report noted the presence of a '180 foot' aquifer and a '400 foot' aquifer. The '180 foot' aquifer is overlain by a clay confining bed of probable marine or estuarine origin, and separated from the '400 foot' aquifer by a similar clay sequence. This report also delineated sub-areas such as the 'blue clay pressure zone' where the '180 foot' and '400 foot' aquifers occur, and the adjacent 'eastern' alluvial fan zone. No detailed subsurface geologic cross-sections were presented in this report.

Numerous subsequent hydro-geologic studies of the Salinas Valley up to the present have been concerned with saline water intrusion, water quality, basin yields, and other aspects of groundwater resources. Key reports include those by California State Water Resources Board (1956) and California Department of Water Resources (DWR, 1969, 1970, and 1973). A detailed geologic cross-section analysis was included in the 1969 and 1970 DWR reports showing the subsurface geologic configurations of the '180' foot' and '400 foot' aquifers in the northern Salinas Valley. Regional geologic relationships were developed by Jennings and Strand (1959), Hart (1966), and others, while more detailed surficial geologic maps covering the City of Salinas area were constructed by Tinsley (1975), Dupre and Tinsley (1980) and Dibblee, (1999);. Other references include Tinsley (1975) and Staal, Gardner & Dunne, Inc. (1993).

To go beyond well data compilation and statistical analysis, L&S collected all available water well drillers' reports and electric logs of Cal Water wells from internal files and from Monterey County Water Resources Agency. The initial review of the wells consisted of developing same scale profiles for each well showing lithology, well construction, age, and other well data. Lithologic determinations were made for wells with electric logs using electric log interpretation integrated with driller's logs.

Preliminary evaluation of the well and subsurface data consisted of correlation of well profiles to one another to develop tentative geologic configurations. This evaluation, as in previous studies, indicated that two separate areas could be distinguished geologically. To the west, a sequence of thick, well-defined beds of sands and gravels, separated by blue to gray clay layers exist, and appear to be of fluvial (stream/river and floodplain or estuarine) depositional origin. To the east, a poorly bedded sequence of thin sand and gravel beds within a thick sequence of brown sandy clay appears to be of alluvial fan depositional origin. These two areas roughly coincide with the 'Blue Clay Pressure Zone', or Pressure Zone, and the 'Eastern Zone', or Eastside Area, as described in previous investigations. From the preliminary evaluation, it was noted that correlation between the two separate areas appeared to be poor to locally non-existent. However, the preliminary evaluation served to provide a basis to construct detailed geologic cross-sections to further examine subsurface conditions and assess the occurrence of nitrate in the subject municipal wells.

Eight detailed geologic cross-sections were constructed using information from Cal Water's municipal wells. Five cross-sections were created in the west to east direction. Two cross sections extend from south to north to examine the western fluvial area and the eastern alluvial fan areas respectively. A final cross extends to the northeast to examine the setting of the most distant wells in the municipal service area. A number of other cross-sections were also constructed to examine local correlations between wells. However, some of the correlations from these work cross-sections were used in the interpretations on the eight main cross-sections presented in the master plan report.

The following subsections describe the key subsurface relationships in the study area based on L&S's cross-section analysis and from information in DWR's Groundwater Bulletin 118, 2003, Central Coast Hydrologic Region, Salinas Valley Ground Water Sub-basins 3-4.01 and 3-4.02.

The City of Salinas overlies both the 180/400-foot aquifer (Sub basin 3-4.01) (referred to as the Pressure zone or Westside aquifer by Monterey County Water Resources Agency (MCWRA) and the Eastside Aquifer (Sub basin 3-4.02). The 180/400-foot aquifer sub basin includes the lower reaches and mouth of the Salinas River. The Southwestern basin boundary is the Quaternary Alluvium or Terrace Deposits with the granitic basement of the Sierra de Salinas.

Further north along the western Salinas Valley margin the basin boundary is the Quaternary Paso Robles Formation, or Aromas Red Sands of the Corral de Tierra Area Sub basin. The extreme northwest boundary of the sub-basin is shared with the Salinas Valley-Seaside Area Sub-basin along the seaward projection of the King City Fault. This sub-basin is bounded by the Monterey Bay on the northwest. The northern sub-basin boundary is shared with the Pajaro Valley Groundwater Basin and coincides with the inland projection of a 400-foot deep, buried clay filled paleo drainage of the Salinas River. This acts as a barrier to groundwater flow between the Pressure Zone and Eastside sub-basins. The northeastern boundary is shared throughout most of its length by the adjacent Salinas Valley-Eastside Sub- basin, and to the north with a shorter length of the Langley area Sub-basin. The northeastern boundary generally coincides with the northeastern limit of confining conditions in the Pressure Zone or180/400-Foot aquifer sub-basin and the location of State Highway 101. The southeastern boundary is shared with the Lower Forebay sub-basin and is the approximate limit of confining conditions in an up-valley direction. As mentioned, the 180/400-Foot aquifer sub-basin boundaries coincide with those identified for the Pressure Zone area by MCWRA.

The Eastside Aquifer sub-basin extends from approximately five miles north of the city of Salinas to 25 miles south of the town of Gonzales along the eastern side of the lower Salinas Valley. The sub-basin is bounded to the north by the Pleistocene Aromas Red Sands of the Salinas Valley-Langley Area Sub-basin. To the south, the sub-basin shares a boundary with the Quaternary Alluvium deposits of the Salinas Valley-Lower Forebay Aquifer Sub-basin. The western sub-basin generally coincides with the northeastern limit of confining conditions in the adjacent 180/400-Foot Aquifer sub-basin and with State Highway 101. The eastern boundary is the contact of the Quaternary Terrace deposits with granitic rocks of the Gabilan Range. DWR's Eastside Aquifer sub-basin boundaries correlate with those of the Eastside Area of the MCWRA. Intermittent streams such as the Natividad, Alisal, Quail, Parsons, Muddy and Johnson Creeks drain the western slopes of the Gabilan Range and flow across the Sub-basin toward the Salinas River on the west side of the Valley.

In the Salinas District L&S WSFMP, a lithographic description of both sub-basins is provided and is summarized here.

Eastside Area: In general, this sub-basin is a region of unconfined, varied water bearing strata that is complex, varied and difficult to characterize without more borehole log data. In plan view, regions of sand and gravel beds can be outlined at roughly equivalent elevations of the aquifer units for the –500-foot, -400-foot and –300-foot sequences. In the –200-foot plan view, the first blue clays are encountered and clusters of sand and gravel are lacking. In the –100-foot plan view, there is an incised channel filled with sand and gravel with continued clay deposition in the tributary valley. In the above 100-foot sequences, thin sand beds occur on a more widespread basis and two thick clay locations occur as well. The alluvial processes in the Eastside Area resulted in a somewhat discontinuous deposition of coarse-grained aquifer materials and the fine-grained aquitards. As a result, wells may be lower yielding than those to the west in the pressure zone.

<u>Pressure Zone or Western Fluvial Area</u>: This sub-basin consists of roughly 100-foot packets with a basal sequence of sand and gravel in one to several beds capped by a thin, generally blue to gray, clay bed. Each sequence is underlain by a subsequent 100-foot packet of similar nature for a total of four fairly well defined sequences or aquifers between about -100 feet to -500 feet elevation. Below about the -500-foot elevation, there is insufficient data to characterize the stratigraphy. The 100-foot aquifers are believed to be the result of fluvial or stream/river deposition in channels as sand and gravel bars and layers as the stream migrated across the Salinas Valley floor. Locally, the sand and gravel beds may be thick (30 to 40 feet) to thinner (10 to 20 feet) with thin clay inter-beds.

Presently and for the near and mid-term future, these two sub basins are the only sources of supply for the Salinas District. Because of its characteristics, the Pressure Zone area has the greatest potential for high yielding wells. The presence of clay strata overlying the aquifer units provides protection of water quality in deeper wells from potential sources of surface contamination.

Salinas Valley Groundwater Basin Management

The SVGWB is an un-adjudicated ground water basin. Basin recharge programs are managed by the Monterey County Water Resources Agency (MCWRA). MCWRA has developed the Salinas Valley Integrated Regional Water Management Plan.

The following are elements of this plan. MCWRA:

1. Obtains annual groundwater extraction reports from all agricultural and municipal well operators;
2. Has researched, developed and/or constructed projects to reduce seawater intrusion;
3. Has researched, developed and/or constructed projects to reduce nitrate contamination of ground water;
4. Is developing plans to provide adequate water supplies to meet current and anticipated needs for all basin users and bring the ground water basin into hydrological balance.

To mitigate effects of over pumping of the SVGWB on a regional scale, MCWRA has and continues to support programs involving water exchange. Since April 1998, the Castroville Seawater Intrusion Project (CSIP) has been in operation. It supplies recycled water from the Monterey Regional Water Pollution Control Agency (MRWPCA) wastewater treatment plant for agricultural irrigation on selected lands between Salinas and Monterey Bay to reduce ground water pumping and seawater intrusion.

MCWRA's Phase 1 of the Salinas Valley Water Project (SVWP) is a multi-component project consisting of:

1) Modification of the Nacimiento Dam Spillway,
2) Modified operation and maintenance of the San Antonio and Nacimiento reservoirs,
3) Construction of the Salinas River diversion facility for diverting river water to the CSIP and delivery of blended river and recycled water for irrigation of 12,000 acres of land near the coast.

An anticipated effect of the integrated CSIP - SVWP Phase 1 work is to further reduce groundwater pumping by agricultural users and as a consequence landward advancement of seawater intrusion due to historic over pumping of the basin. When Phase 1 is completed, Salinas River flows will generally be lower during winter/early spring months and higher during summer months than current flows for those periods. This will make more water available during the irrigation season from April through October.

Total SVWP diversions are estimated to be 12,000 acre-ft./year on average and a maximum of 25,000 acre-ft./year. Surface water diversions are to comply with requirements established by the National Marine Fisheries and California Department of Fish and Game with respect to protecting fishery resources in the Salinas River.

The Salinas Valley Water Project, Phase 2 is intended to further offset effects of groundwater pumping by delivering additional surface water to the Pressure and East Side subareas of the Salinas River Groundwater Basin. Up to 135,000 acre-feet per year of water will be diverted from the Salinas River and supplied for municipal, industrial, and/or agricultural uses in the Pressure and East Side subareas, in accordance with the Technical Memorandum prepared by GEOSCIENCE Support Services, Inc. in November 2013.

The Salinas Valley Water Project, Phase 2 will encompass two surface water diversion points and their appurtenant facilities for capture, conveyance, and delivery of the water. Project facilities and related program information will be evaluated in a CEQA Environmental Impact Report (EIR) that is to be prepared.

Capture and diversion facilities will consist of either a surface water diversion facility, similar to the existing Salinas River Diversion Facility or Ranney Collector Wells. The conveyance facilities will be either above or below ground pipelines and pump stations. The EIR will evaluate the configuration, location, and physical layout of the conveyance facilities. Delivery facilities may include injection wells (as part of an aquifer storage and recovery system), percolation ponds, or turnouts for direct use of the water. The delivery facilities may incorporate treatment of the water or delivery of raw water to be treated by the end-user for its intended application (e.g., agricultural irrigation or urban water supply).

The Salinas Valley Water Project Phase 2 incorporates two surface water diversion points, one located near the City of Soledad (called the East Side Canal Intake in the permit) and the other located south of the City of Salinas (called the Castroville Canal Intake in the permit). Each diversion point will be accompanied by conveyance and delivery facilities, the locations and termini of which will be evaluated in the project EIR

Phase 2 of the SVWP includes increasing the amount of diverted surface water by 10,000 AFY for the benefit of municipal users. The proposed diversion facility is at Moro Cojo on the

Salinas River. Since that amount will be allocated among various users, Cal Water's share for the Salinas District is not likely to exceed 50% or 5,000 AFY.

Another option for Phase 2 is to divert 1,800 AFY of water from the Salinas River during winter months for groundwater recharge at a well field in the vicinity of the Salinas Hills/Spreckles area and recover it during the peak demand summer months. Diversions could also be used for agricultural irrigation to further reduce agricultural ground water pumping, thus making increased municipal pumping possible. Input on approaches to Phase 2 of the SVWP is being solicited from municipal water purveyors including Cal Water in the northern part of the Valley. Increased municipal ground water use based on the amount of surface water supplied to agricultural users (taking into account losses) would be expected to have no negative impacts on the regional ground-water system.

To support development of these supply alternatives, Cal Water is coordinating closely with the City of Salinas, MCWRA, other municipal and agricultural users of the SVGWB and the appropriate State agencies (DDW, DWR). This includes obtaining concurrence on Cal Water's long-term water supply plans as they relate to City planning and land use development and MCWRA water supply planning. Coordination includes review and approval of new well sites, and treatment, storage and conveyance facilities as well as sharing technical information on supply options and on water quantity and quality conditions and trends in the SVGWB.

MCWRA estimates that annual non-drought overdraft of the SVGWB is approximately 45,300 AF per year. Because of the hydrologic continuity between the ocean and the aquifers of the SVGWB, seawater has been intruding into the aquifers near the coast at a rate of approximately 28,800 AF per year. It is believed that groundwater pumping throughout the entire valley has contributed to overdraft of the SVGWB. MCWRA data indicate that water levels have declined in all four of the SVGWB's sub-basins. However, minor declines in the lower two sub-basins (Upper Valley and Forebay) appear to be in response to extended drought conditions.

While the SVGWB is not an adjudicated basin, the State Water Resources Control Board (SWRCB) initiated adjudication proceedings in 1996. In response to concerns about overdrafting, the SWRCB assembled a SVGB adjudication team to "... protect the groundwater and surface water supplies in the Salinas Valley" (SWRCB, 1996). It is to accomplish this by: "working with local stakeholders and decision-makers to reach consensus on a solution to the seawater intrusion and nitrate contamination problems in the Salinas Valley; and by performing a Salinas Valley Ground Water Basin adjudication, if necessary, under §§2100 et seq., 275, and 100 of the Water Code and Article X, Section 2 of the California Constitution." Adjudication would result in loss of local control and state oversight of water resources in the basin. While the SWRCB initiated the first phase of this process (administrative proceedings), it has indicated that it will not proceed with adjudication if an effective solution to stop seawater intrusion is implemented.

Intrusion of seawater into the Salinas Valley Groundwater Basin has been a problem for many years. A solution was identified as early as 1946 when the State of California proposed a three-part plan:

- Construct several large reservoirs to capture excess storm flow on the upper reaches of the Salinas River and its tributaries.

- Recharge groundwater in the upper valley and fore bay sub-areas of the Salinas Valley with captured runoff.
- Extract portions of the augmented groundwater and transmit it via a conveyance system to the eastside and pressure sub-areas of the basin so that the water users in this northern-most region of the valley can reduce their use of groundwater.

The first two elements of this plan have been constructed and are in operation. Nacimiento and San Antonio reservoirs were built and are operated by the MCWRA. Water from the reservoirs is released in a controlled manner to recharge aquifers in the upper and fore bay areas through the natural riverbed. The last element is being implemented in part through a municipal wastewater reuse program.

The Castroville Irrigation Project was constructed and put into operation to provide high quality treated wastewater from the Monterey Regional Water Pollution Control plant in Marina for agricultural use. Use of recycled water reduces agricultural groundwater pumping, which reduces seawater intrusion.

MCWRA has developed a groundwater model of the SVGWB (Mod Flow) and has used this calibrated model as a regional planning tool to help assess how the SVWP Phases 1 and 2 and other programs being considered for reducing basin overdraft will affect groundwater basin conditions. The model includes evaluation of sources of groundwater recharge including rainfall, runoff, infiltration, subsurface flow and irrigation return flow and major sources of discharge including groundwater pumping, evaporation, transpiration and surface and subsurface outflows. MCWRA has indicated to Cal Water that without further substantial work on the model, it cannot be used to assess localized effects of constructing new wells in specific areas within the City of Salinas or in nearby areas outside City boundaries.

MRWPCA is currently working on the proposed Pure Water Monterey Groundwater Replenishment Project: a water supply project to serve northern Monterey County. The project would provide: 1) recycled water for recharge of a groundwater basin that serves as drinking water supply and 2) additional recycled water to the existing Castroville Seawater Intrusion Project's agricultural irrigation supply.

<u>Recharge of the Seaside Groundwater Basin</u>. The project will enable California American Water Company to reduce its diversions from the Carmel River system by up to 3,500 acre-feet per year by injecting the same amount of recycled water into the Seaside Ground Water Basin. The recycled water would be produced at a new facility at the Regional Wastewater Treatment Plant and would be conveyed to and injected into the Seaside Groundwater Basin via a new pipeline and new well facilities.

<u>Additional recycled water treatment for agricultural irrigation in northern Salinas Valley.</u> A water recycling facility at the Salinas Valley Reclamation Plant is being planned to provide additional water supply for use in the Castroville Seawater Intrusion Project's agricultural irrigation system. In normal and wet years, approximately 4,500 to 4,750 AFY of additional recycled water supply will be produced for agricultural irrigation. In drought years, the project is to provide up to 5,900 AFY for crop irrigation. The proposed project would also include a drought reserve component to support use of the new supply for crop irrigation during dry years. Source waters that are not sent to the advanced treatment facility during dry years would be sent

to the Salinas Valley Reclamation Plant to increase supplies for the Castroville Seawater Intrusion Project. Project components include: conveyance facilities for five types of source water to the Regional Treatment Plant for treatment; a new Advanced Water Treatment (AWT) Facility and other improvements to the Regional Treatment Plant; treated water conveyance system consisting of pipelines and booster pump stations; groundwater injection wells; and potable water distribution system improvements. Construction and startup of the project is anticipated to take approximately 21 months. New source waters would supplement existing wastewater flows and would include: 1) water from the City of Salinas' agricultural wash water system, 2) storm water flows from the southern part of Salinas and the Lake El Estero facility in Monterey, 3) surface water and agricultural tile drain water that is captured in the Reclamation Ditch and Tembladero Slough, and 4) surface water and agricultural tile drain water that flows in the Blanco Drain. Most of these new source waters would be combined within the existing wastewater collection system before flowing into the Regional Treatment Plant; water from Blanco Drain would be conveyed directly to the Regional Treatment Plant. The Proposed Project would require modifications to existing facilities and construction of new physical facilities.

Salinas District Recycled Water

As indicated, the MRWPCA provides residential wastewater treatment for the Salinas urban area and recycles 100% of treated effluent for agricultural irrigation during the summer months. Of the treated water recycled by MRWPCA, approximately 33% comes from the City of Salinas, 70% of which is water from Cal Water wells.

The estimated volume of wastewater generated in the Salinas District to year 2040 is shown in Table 9. According to MRWPCA, 60 percent of all effluent it receives is recycled and used for agricultural irrigation outside Cal Water's service area. Use of this recycled water is intended to reduce groundwater pumping for agricultural irrigation by an equivalent amount. If this is true, the quantity of groundwater pumped by Cal Water for the Salinas District can be reduced by the quantity of recycled water used for crop irrigation. In 2040, the net demand of pumped groundwater in the Salinas District would be 21,716 AFY – 8,060 AFY = 13,656 AFY.

Table 9: Salinas District Recycled Water - AFY

Category		2010	2015	2020	2025	2030	2035	2040
Wastewater Collected and Treated		10,282	10,749	11,237	11,749	12,284	12,845	13,433
Recycled Water – Agricultural Irrigation		6,169	6,449	6,742	7,049	7,371	7,707	8,060

Other Supply Factors

Water Rights

Under State law, "the use of percolating groundwater in California is governed by the doctrine of correlative rights and reasonable use, which gives the overlying property owner a common right to reasonable, beneficial use of the basin supply on the overlying land." The exercise of Cal Water rights to percolating groundwater occurs after Cal Water acquires ownership of a property to be used as a production well site.

Water Supply Permits and Approvals

Cal Water is required to obtain the following permits:

1. Water system amendment permit from California Department of Drinking Water (DDW)
2. A Conditional Use Permit (CUP) from the City of Salinas
3. Well construction/building permit from the City of Salinas
4. Well drilling permit from Monterey County Health Department
5. An air quality permit from the Air Quality Management District

After a new well is constructed and before use, Cal Water demonstrates to DDW that water from the well complies with all drinking water standards. Cal Water also files the well logs obtained by the driller with the Department of Water Resources**.**

Design and Construction of a Water Supply System

A complete water system includes wells and pumps, transmission lines, storage facilities and booster pumps, distribution system, meters, etc. As planning and design proceed further on the WASP, Cal Water will work closely with the City of Salinas and its planning consultant, developers and their engineers, the CA Dept. of Drinking Water, the MCWRA and others involved with the planning, design, construction and operation of the proposed water system to….

Cal Water prepares all proposed design drawings and specifications for water systems for compliance with State and Cal Water standards with respect to supply and storage capacities, pipe sizes, booster pumps, fire flows, equipment, materials, communication and control systems and integration with the Salinas District system.

Capital costs for design and construction of the water distribution system, storage and booster pump stations are the responsibility of the developers of the WASP. Capital costs for new well stations will be recovered by Cal Water through a per lot assessment fee to developers in accordance with CPUC rules.

With respect to the Salinas District, Cal Water has an ongoing capital improvement program to upgrade and improve the distribution system, replace wells that have reached the end of their useful lives, and provide treatment of groundwater due to excessive nitrates, MTBE or other contaminants. Cal Water's Salinas District capital improvement program is separate from and will not include costs associated with the water system required for the WASP.

Supply Adequacy and Reliability Assessment

SB 610 requires an assessment as to whether the proposed water supply for the Salinas District including the WASP service area will meet projected water demand for the next 20 years during:

1) A normal water year
2) A single dry year
3) Multiple dry water years

Figure 7 compares annual rainfall since 1980 to the average annual rainfall as shown in the table below. Average annual rainfall for the Salinas District is 14.6 inches. One of the driest years occurred in 1999 when the rainfall was 79.5% of average (11.6 inches). This is taken as the single dry year. The three multiple dry-water years used in the 2010 UWMP were based on the consecutive lowest annual rainfall totals which occurred in 2002, 2003, and 2004. Reduced rainfall in Salinas during this period coincides with similar reductions experienced elsewhere in California.

Figure 7: Salinas Comparison of Annual Rainfall to Historical Average

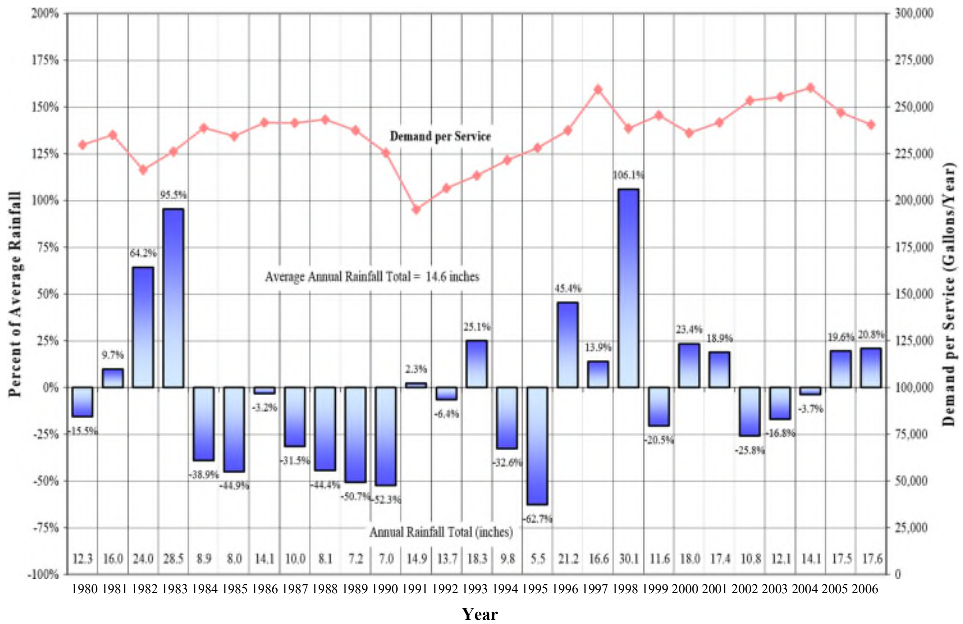


Table 10 provides a comparison of rainfall and water use records for all customer classes combined for the Salinas District. It shows a correlation between amount of annual rainfall and water use by all customer services.

Table 10: Salinas District Rainfall Vs Demand					
	Rainfall	Rainfall	Water Use	Classification of Year	
Year	(inches)	% of Ave*	gal/day	Amount of Precipitation	
1991	14.9	2.1	535	Normal	
1992	13.7	-6.2	566	Slightly below Normal	
1993	18.3	25.3	584	Above Normal	
1994	9.8	-32.9	607	Dry	
1995	5.5	-62.3	625	Very Dry	
1996	21.2	45.2	651	Well Above Normal	
1997	16.6	13.7	711	Slightly below Normal	
1998	30.1	106.2	654	Excessively Above Normal	
1999	11.6	-20.5	673	Dry	
2000	18	23.3	647	Above Normal	
2001	17.4	19.2	662	Above Normal	
2002	10.8	-26.0	694	Dry	
2003	12.1	-17.1	700	Dry	
2004	14.1	-3.4	713	Normal	
2005	17.5	19.9	677	Above Normal	
2006	17.6	20.5	664	Above Normal	

*Average Annual Rainfall: 14.6 inches

The following are some highlights from Table 11:

- In 1999, with rainfall 20.5% below normal, average consumption was 673 gallons/day/service;
- In 2000, with rainfall 23.3 % above normal, average consumption was 647 gallons/day/service;
- In 2001, with rainfall 19.2 % above normal, average consumption was 662 gallons/day/service;
- In 2002, with rainfall 26 % below normal, average consumption was 694 gallons/day/service;
- In 2003, with rainfall 17.1 % below normal, average consumption was 700 gallons/day/service;

- In 2004, with rainfall only 3.4 % below normal, average consumption was 713 gallons/day/service.

For single dry years (1999) and multiple dry years (2002, 2003, and 2004) there are changes in average water use with respect to what might be considered a "normal" hydrologic year. For example, the average water use for the two years with above normal rainfall (2000 and 2001), was 655 gpd/service. For the three dry years (2002, 2003 and 2004), average use was 702 gpd/service or an average of 7.1% increase in water use.

While multiple dry years would result in a decline in ground water levels, the effect historically has not reduced the capacity of Cal Water's wells to meet service area demands. Ground water, as previously shown has recovered in wet years resulting in a relatively stable groundwater supply over decades.

Normal Hydrologic Year

Table 11 presents the supply capacity versus demand for a normal hydrologic year.

Table 11: Normal Hydrologic Year: Supply Capacity Versus Demand (AFY)

Year	Supply	Demand	Difference
2015	44,843	17,862	26,981
2020	52,592	16,651	35,941
2025	52,592	17,531	35,061
2030	52,592	18,459	34,133
2035	52,592	19,439	33,153

Single Dry Year

Based on preceding data and analysis, Cal Water estimates that the availability of its groundwater supplies will not be affected by a single dry year. As the data shows, single dry year demand will very likely be the same as a normal hydrologic year demand. While some customers may increase landscape irrigation due to reduced precipitation, others based on conservation program information from Cal Water will reduce consumption.
Therefore, Table 12 is the same as Table 11.

Table 12: Single Dry Year: Supply Capacity Versus Demand (AFY)

Year	Supply	Demand	Difference
2015	44,843	17,862	26,981
2020	52,592	16,651	35,941
2025	52,592	17,531	35,061
2030	52,592	18,459	34,133
2035	52,592	19,439	33,153

Multiple Dry Years

Based on preceding data and analysis, Cal Water estimates that the availability of its groundwater supplies will not be significantly affected by a multiple dry year drought. The effect of pumping groundwater supplies that underlie the Salinas District at "normal" demand levels during multiple dry years is likely that some localized area sees a decline in groundwater levels. As groundwater level data have shown, during ensuing wet periods, groundwater levels usually recover to "normal" levels provided overall Salinas area pumping rates remain the same or do not significantly increase.

Since California is in the fourth year of a severe drought, Governor Brown issued an executive order on April 1, 2015 mandating urban water users achieve a 25% reduction in demand over at least the next year. A report in August 2015 by the CA Dept. of Water Resources indicates that the state wide average of water conservation savings by urban water utilities was over 35%.

Salinas District demand in year 2035 during a multiple dry year period might be expected to decrease by 15% of the 2035 normal demand or be equal to 0.85 x 19,439 = 16,523 AFY.

Nonetheless, it is conservatively assumed here that in the 3rd year of a multiple dry year period, demand will increase by 7% - not withstanding intensified water conservation efforts by Cal Water, MCWRA and other agencies. It is also conservatively assumed that a temporary decline in static groundwater levels will reduce overall yield of Cal Water's wells by 10%. Table 13 compares supply versus demand under these assumptions.

Table 14: 3rd Dry Year: Supply Capacity versus Demand (AFY)

Year	Supply	Demand	Difference
2015	40,359	19,112	21,247
2020	47,333	17,817	29,516
2025	47,333	18,758	28,575
2030	47,333	19,751	27,582
2035	47,333	20,800	26,533

Even with no change in the estimated design supply capacity in 2035 (not including the two additional wells with an estimated additional capacity of 3,874 AFY to be constructed in the WASP service area by 2030), projected demand is only 43.9% of the design capacity supply in the 3rd year of a multi-year dry period.

WSA Summary and Conclusion

Based on:

- The adequacy of existing groundwater well supply capacity within Cal Water's City of Salinas service area;
- The addition of groundwater well supply capacity within Cal Water's City of Salinas service area (3 new wells) and the WASP service area (1 new well within the next 5 years and 2 additional wells by 2030);
- Cal Water's plan to interconnect the distribution system of the WASP service area with that of its City of Salinas service area to provide supply reliability;
- Cal Water's ability to move water to where it is needed through its transmission pipelines, storage and pumping facilities;
- Cal Water's ongoing capital improvements program to maintain existing groundwater production capacity and provide additional supply capacity to ensure ample reserve capacity should there be maintenance or water quality issues;
- In-place, ongoing and expanding water conservation programs and best management practices for reducing demand to comply with SBx7-7 targets during normal years and single dry years and further during multiple dry years;
- A proven record in obtaining reductions in water use during critically dry years by implementing its four-stage water demand reduction program, and

- Over 90 years of experience in continuously providing an adequate supply to meet all customer demands irrespective of hydrologic conditions in the Salinas District,

Cal Water concludes that for the next 20 years (2015 – 2035), the Salinas District will have adequate water supplies to meet projected demands of the proposed WASP and those of all existing customers and other anticipated future customers for normal, single dry year and multiple dry year conditions.

References

California Water Service Company Urban Water Management Plan Salinas District, Adopted June 2011, 254 Commission Street, Salinas, CA 93901-3737
https://www.calwater.com/conservation/uwmp/rd/

California Water Service Company Salinas District Water Supply and Facilities Master Plan prepared by Luhdorff and Scalmanini April 2005

Monterey County Water Resources Agency Programs and Projects:
http://www.mcwra.co.monterey.ca.us/index.php

Monterey Regional Water Pollution Control Agency Programs and Projects:
http://www.mrwpca.org/

Geologic, Hydro-geologic and Geotechnical Report" Kleinfelder, Inc., March 12, 2003, for the Rancho San Juan Specific Plan or Butterfly Village

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APPENDIX H –NOISE TECHNICAL REPORT

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West Area Specific Plan

City of Salinas, California

October 22, 2018

jcb Project # 2015-153

Prepared for:

De Novo Planning Group

Attn:
Ben Ritchie
1020 Suncast Lane, Suite 106
El Dorado Hills, California 95762

Prepared by:

j.c. brennan & associates, Inc.

Jim Brennan.
President
Member, Institute of Noise Control Engineering (INCE)

This section provides a general description of the existing noise sources in the project vicinity, a discussion of the regulatory setting, and identifies potential noise impacts associated with the proposed project. Project impacts are evaluated relative to applicable noise level criteria and to the existing ambient noise environment. Mitigation measures have been identified for significant noise-related impacts. The noise analysis was completed by j.c. brennan & associates. Inc. (December 2016). The noise data and technical report are included as **Appendix G** of this Draft EIR.

No comments related to noise were received during the public review period for the Notice of Preparation.

3.7.1 ENVIRONMENTAL SETTING

KEY TERMS

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given area consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.
CNEL	Community noise equivalent level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 to 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic acoustic signal, expressed in cycles per second or Hertz.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
L_{dn}	Day/Night Average Sound Level. Like CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50 percent of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
SEL	Sound exposure levels. A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.

FUNDAMENTALS OF ACOUSTICS

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. CNEL is like L_{dn}, but includes a +5-dB penalty for evening noise. Table 3.7-1 lists several examples of the noise levels associated with common situations.

TABLE 3.7-1: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	*NOISE LEVEL (DBA)*	*COMMON INDOOR ACTIVITIES*
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

SOURCE: CALTRANS, TECHNICAL NOISE SUPPLEMENT, TRAFFIC NOISE ANALYSIS PROTOCOL. SEPTEMBER 2013.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual’s past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. The following relationships occur regarding increases in A-weighted noise level:

- Except in carefully controlled laboratory experiments, a 1 dBA change cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and

- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE LEVELS

Surrounding Land Uses

North: The Bolsa Knolls residential area is located to the north of the Plan Area on the northeastern corner of the intersection of Russell Road and San Juan Grade Road. Scattered residences and other non-residential uses are also located along Rogge Road to the north. Further to the north is a mix of agricultural land, rural residences, and the Club at Crazy Horse Ranch formerly known as the Salinas Golf and Country Club. These land uses are all located in the unincorporated area of Monterey County.

East: Land to the east of the Plan Area is currently used primarily for agricultural production and is zoned New Urbanism Interim (NI) with a Specific Plan Overlay District. This area is in the North of Boronda Future Growth Area (FGA) and a Specific Plan (referred to as the Central Area Specific Plan) has been submitted to the City and is currently being processed for this area. The Central Area Specific Plan proposes a mix of urban land uses, like those proposed for the West Area Specific Plan.

South: Across Boronda Road directly to the south is the Harden Ranch Specific Plan area. The portion of the Harden Ranch Specific Plan abutting the Plan Area is primarily residential. Most of the residences are of the type associated with low density residential uses, mainly single-family detached homes. However, some medium density and high density (multifamily) units are in this area as well. These residential uses are zoned R-L-5.5 (Residential Low Density), R-M-2.9 (Residential Medium Density) and R-H-1.8 (Residential High Density). Single-family detached homes (zoned R-L 5.5) are also located to the southeast of the Plan Area (east of Natividad Road). Other land uses in the Harden Ranch Specific Plan Area include a commercial shopping center (Shaker Square) located at the southwest corner of Natividad Road and Boronda Road (zoned Retail Commercial-CR) and the New Republic Elementary School (within the Santa Rita Union School District) (zoned Public/Semipublic-PS). Extensive commercial development is located generally west and southwest of the Plan Area, along both North Main Street and U.S. 101. This is the location of some of the major retail centers in Salinas, including the Northridge Shopping Center, Santa Rita Shopping Center, and Harden Ranch Plaza. These areas are zoned Commercial Retail (CR).

West: The area directly to the west of the Plan Area contains residential uses consisting of low, medium and high density residential uses. These uses are zoned R-L-5.5 (Residential Low Density), R-M-2.9 (Residential Medium Density) and R-H-2.1 (Residential High Density). Also, located farther to the west is Santa Rita Elementary School (within the Santa Rita Union School District) which is zoned PS.

The City and County General Plan land use designations for the above areas are illustrated on Figure 2-3.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the project vicinity, short-term and continuous (24-hour) noise level measurements were conducted in the Plan Area on January 19th and 20th, 2016. The noise measurement locations are shown on Figure 3.7-1. The noise level measurement survey results are provided in Table 3.7-2. Appendix A of **Appendix G** of this EIR shows the complete results of the noise monitoring survey.

The sound level meters were programmed to collect hourly noise level intervals at each site during the survey. The maximum value (L_{max}) represents the highest noise level measured during an interval. The average value (L_{eq}) represents the energy average of all the noise measured during an interval. The median value (L_{50}) represents the sound level exceeded 50 percent of the time during an interval.

TABLE 3.7-2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Site	*Location*	*Date/time*	L_{DN}	*Average Measured Hourly Noise Levels, dB*					
				Daytime (7am-10pm)			*Nighttime (10pm-7am)*		
				L_{EQ}	L_{50}	L_{MAX}	L_{EQ}	L_{50}	L_{MAX}
Continuous (24-hour) Noise Level Measurements									
A	150 ft. from centerline of San Juan Grade Road	1/19/16-1/20/16 24-hour	58	57	55	71	49	44	64
Short-Term Noise Level Measurements									
1	Southwest corner of site	1/19/16 – 3:40 p.m.	N/A	65	61	71	Traffic on Boronda is primary noise source		
		1/20/16 – 7:15 a.m.	N/A	65	61	72			
		1/20/16 12:30 p.m.	N/A	62	59	72			
2	North/central portion of site	1/19/16 – 4:25 p.m.	N/A	56	52	70	Distant traffic is primary noise source		
		1/20/16 – 7:40 a.m.	N/A	57	53	71			
		1/20/16 – 1:05 p.m.	N/A	56	52	69			

NOTE: N/A = NOT APPLICABLE.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC., 2016.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

EXISTING ROADWAY NOISE LEVELS

To predict existing noise levels due to traffic, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from the traffic data prepared for the proposed project by Fehr & Peers. Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each Plan Area roadway segment. Where traffic noise barriers are predominately along a roadway segment, a -5 dB offset was added to the noise prediction model to account for various noise barrier heights. A -5 dB offset was also applied where outdoor activity areas are shielded by intervening buildings. In some locations, sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of most sensitive receptors located closest to the Plan Area roadway segments analyzed in this section.

Table 3.7-3 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. A complete listing of the FHWA Model input data is contained in **Appendix G**.

TABLE 3.7-3: EXISTING TRAFFIC NOISE LEVELS

ROADWAY	*SEGMENT*	*EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}*
Constitution Blvd.	South of E. Boronda	61.9
E. Boronda Rd.	N. Main to San Juan Grade	67.5
E. Boronda Rd.	San Juan Grade to McKinnon	66.4
E. Boronda Rd.	McKinnon to El Dorado	65.9
E. Boronda Rd.	El Dorado to Natividad	65.1
E. Boronda Rd.	Natividad to Independence	67.2
E. Boronda Rd.	Independence to Hemmingway	65.8
E. Boronda Rd.	Hemmingway to Constitution	58.4
E. Boronda Rd.	Constitution to N. Sanborn	60.3
E. Boronda Rd.	N. Sanborn to Williams	58.5
El Dorado Dr.	South of E. Boronda	54.3
Hemmingway Dr.	South of E. Boronda	55.5
Independence Blvd.	South of E. Boronda	60.6
McKinnon St.	South of E. Boronda	64.0

ROADWAY	SEGMENT	EXTERIOR TRAFFIC NOISE LEVEL, DB L_{DN}
N. Main St.	North of E. Boronda	67.0
N. Main St.	South of E. Boronda	65.3
N. Sanborn Rd.	South of E. Boronda	56.3
Natividad Rd.	South of E. Boronda	65.7
Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	66.9
Natividad Rd.	Future Russell Rd. to Rogge	62.4
Natividad Rd.	North of Rogge	60.6
Old Stage Rd.	North of Future Constitution	57.9
Old Stage Rd.	Future Constitution to Williams	56.7
Old Stage Rd.	South of Williams	54.6
Rogge Rd.	San Juan Grade to Natividad	61.7
Russell Rd.	West of San Juan Grade	65.0
San Juan Grade Rd.	South of E. Boronda	65.2
San Juan Grade Rd.	E. Boronda to Van Buren	69.6
San Juan Grade Rd.	Van Buren to Russell	67.3
San Juan Grade Rd.	Russell to Rogge	66.0
San Juan Grade Rd.	North of Rogge	62.9
Van Buren Ave.	West of San Juan Grade	57.1
Williams Rd.	West of E. Boronda	62.1
Williams Rd.	East of E. Boronda	46.6

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS, AND J.C. BRENNAN & ASSOCIATES, INC. 2016.

3.7.2 REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the proposed project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels more than local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

California State Building Codes

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

Building codes are updated periodically and each individual building within the Plan Area would be subject to the Building Code in effect at that time.

City of Salinas General Plan

The City of Salinas General Plan Noise Element includes the following goals, policies, and actions regarding noise that are applicable to the proposed project:

NOISE ELEMENT

Policy N-1-1: Ensure that new development be made compatible with the noise environment by using noise/land use compatibility standards and the Noise Contours Map as a guide for future planning and development decisions.

Policy N-1-2: Require the inclusion of noise-reducing design features in development and reuse/revitalization projects to address the impact of noise on residential development.

Policy N-1-3: Locate only urban development within the Salinas Municipal Airport “area of influence” that is compatible with the airport noise environment and meets the guidelines of the Caltrans Handbook.

Policy N-1-4: Ensure proposed development meets Title 24 Noise Insulation Standards for construction.

Policy N-2-1: Ensure that noise impacts generated by vehicular sources are minimized through the use of noise control measures (i.e. earthen berms, landscaped walls, lowered streets).

Policy N-2-2: Control truck traffic routing to reduce transportation related noise impacts on sensitive uses.

Policy N-3-1: Enforce the City of Salinas Noise Ordinance to ensure stationary noise sources and noise emanating from construction activities, private developments/residents and special events are minimized.

NOISE COMPATIBILITY STANDARDS

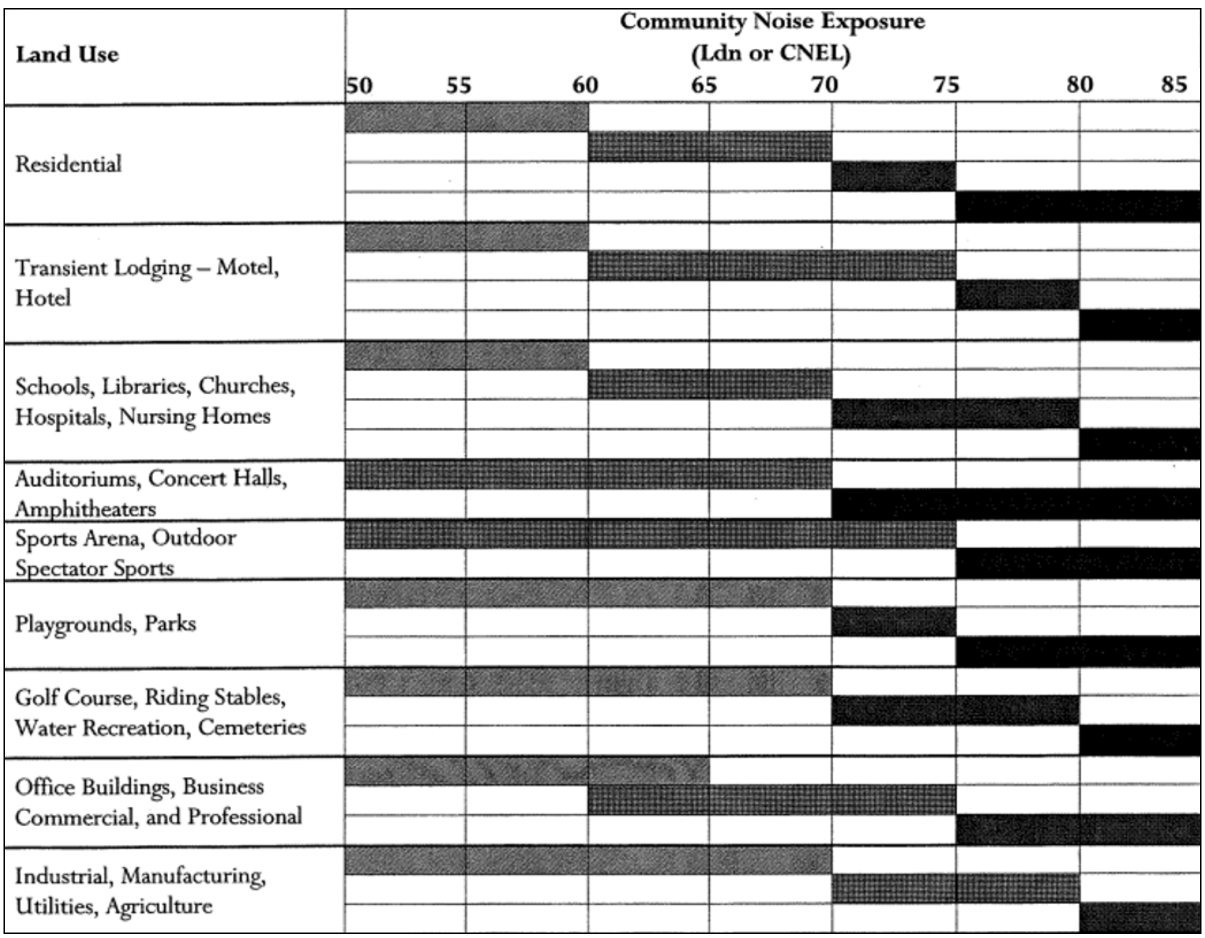
Table N-2 (reprinted as Table 3.7-4 below) of the General Plan shows a simplified view of the maximum noise level of several land use categories. Table N-3 (reprinted as Table 3.7-5 below) gives a detailed overview of the acceptable and unacceptable community noise exposure for all the land use categories that are applied throughout the City. Several of the land use categories are of relevance to the proposed project, namely Residential, Schools, Parks, and Agriculture. However, the Residential land use category is the most sensitive and as such it will be used as the bench mark for Acceptable and Unacceptable noise levels.

TABLE 3.7-4: EXTERIOR NOISE STANDARDS

DESIGNATION/DISTRICT OF PROPERTY RECEIVING NOISE	*MAXIMUM NOISE LEVEL, L_{DN} OR CNEL, DBA*
Agricultural	70
Residential	60
Commercial	65
Industrial	70
Public and Semipublic	60

SOURCE: CITY OF SALINAS GENERAL PLAN, TABLE N-2. SEPTEMBER 2002.

TABLE 3.7-5: NOISE/LAND USE COMPATIBILITY MATRIX



	ZONE A - NORMALLY ACCEPTABLE: *Specified land use is satisfactory, based upon the assumption that any buildings involved meet conventional Title 24 construction standards. No special noise insulation requirements.*
	ZONE B - CONDITIONALLY ACCEPTABLE: *New construction or development shall be undertaken only after a detailed noise analysis is made and noise reduction measure are identified and included in the project design.*
	ZONE C - NORMALLY UNACCEPTABLE: *New construction or development is discouraged. If new construction is proposed, a detailed analysis is required, noise reduction measures must be identified, and noise insulation features included in the design.*
	ZONE D - CLEARLY UNACCEPTABLE: *New construction or development clearly should not be undertaken.*

SOURCE: CITY OF SALINAS GENERAL PLAN, TABLE N-3. SEPTEMBER 2002.

Noise levels of up to 70 dBA are considered conditionally acceptable; new development exposed to such noise levels may only be undertaken after a detailed noise analysis is conducted and noise reduction measures are included in the project design. Noise exposure levels above 70 dBA are considered unacceptable. New development in such areas will likely need substantial mitigation to meet City standards.

City of Salinas Zoning Code and Noise Ordinance

Section 37-50.180 of the Zoning Code identifies performance standards for noise. The maximum noise level for Residential Districts, the most sensitive zone in the Plan Area, is set at 60 dBA. This standard is 5.0 dBA lower between 9:00 p.m. and 7:00 a.m. It is noted that there is a slight reprieve in that noise that is produced for no more than a cumulative period of five minutes in any hour may exceed the standard by 5.0 dBA. Furthermore, interior noise level in any residential dwelling unit located in a mixed-use building or development shall not exceed a maximum of 45 dBA from exterior ambient noise. Again, there is a slight reprieve in that noise that is produced for no more than a cumulative period of one minute in any hour may exceed the standards above by 10.0 dBA.

The City's Noise Ordinance, Chapter 21A of the Municipal Code, defines the following classes of noise (A through D) and defines noise regulations that pertain to each class:

- Class A Noise is defined as noise created by equipment operated in the public interest or for emergency or safety purposes. Such equipment includes sirens, street sweepers, garbage trucks, chipper machines, etc. Class A noise is allowed at any time.
- Class B Noise is defined as noise created or generated within or adjacent to residential property which is normally associated with residential living. Class B noise includes lawn mowers, trimmers, home appliances, vehicle repairs, home construction projects, etc. Class B noise is not allowed between 9:00 p.m. and 7:00 a.m.
- Class C Noise is defined as noise made by motorized or mechanical equipment or devices used in sporting, recreational and hobby activities. Class C noise includes go-carts, mini-bikes, model planes and cars, etc. Class C noise is not allowed between 9:00 p.m. and 7:00 a.m. Class C noise must be made at such a distance away from a residential area so that residents will not be unreasonably disturbed by the noise of the equipment or devices.

- Class D Noise is defined as noise that is unnecessary, unnatural or unusual noises created by a human voice or animal outcry, or by any other means which is so annoying, or which is so harsh or prolonged, as to be injurious to the health, peace or comfort of any reasonable person residing in the area. Class D noise is not permitted at any time.

VIBRATION STANDARDS

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The City of Salinas does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and railroad operations are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by several factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.7-6 indicates that the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). One-half this minimum threshold or 0.1 in/sec p.p.v. is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 3.7-6: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

PEAK PARTICLE VELOCITY		HUMAN REACTION	EFFECT ON BUILDINGS
MM/SEC.	IN./SEC.		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.

SOURCE: CALTRANS. TRANSPORTATION RELATED EARTHBORN VIBRATIONS. TAV-02-01-R9601 FEBRUARY 20, 2002.

3.7.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the project will have a significant impact related to noise if it will result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

The Plan Area is not located within two miles of a public or private airport or airstrip. Therefore, airplane and airport noise are not discussed further in this analysis.

Determination of a Significant Increase in Noise Levels

The noise standards applicable to the proposed project include the relevant portions of the City of Salinas General Plan, the City of Salinas Zoning Ordinance and Noise Ordinance described in the Regulatory Framework section above, and the following standards. Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the proposed project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible;
- A 5-dB change is clearly perceptible; and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. Table 3.7-7 is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 3.7-7: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

AMBIENT NOISE LEVEL WITHOUT PROJECT, LDN	*INCREASE REQUIRED FOR SIGNIFICANT IMPACT*
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

SOURCE: FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON)

Based on the Table 3.7-7 data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB Ldn. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the Table 3.7-7 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: The proposed project has the potential to increase traffic noise levels at existing receptors (Significant and Unavoidable)

PROPOSED PROJECT ANALYSIS

Tables 3.7-8 through 3.7-11 show the predicted traffic noise level increases on the local roadway network for Existing No Project, Existing + Project, Existing + Project + Central Area Specific Plan (CASP), Cumulative, Cumulative + Project, and Cumulative + Project + CASP conditions. **Appendix G** of this EIR provides the complete inputs and results of the FHWA traffic noise modeling.

TABLE 3.7-8: EXISTING AND EXISTING PLUS PROJECT TRAFFIC NOISE LEVELS

		NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
ROADWAY	*SEGMENT*	*EXISTING*	*EXISTING + PROJECT*	*CHANGE*	*CRITERIA*[1]	*SIGNIFICANT?*
Constitution Blvd.	South of E. Boronda	61.9	63.4	1.5	+3 dB	No
E. Boronda Rd.	N. Main to San Juan Grade	67.5	68.0	0.4	+1.5 dB	No
E. Boronda Rd.	San Juan Grade to McKinnon	66.4	66.9	0.5	+1.5 dB	No
E. Boronda Rd.	McKinnon to El Dorado	65.9	66.5	0.6	+1.5 dB	No
E. Boronda Rd.	El Dorado to Natividad	65.1	66.0	0.9	+1.5 dB	No
E. Boronda Rd.	Natividad to Independence	67.2	68.2	1.0	+1.5 dB	No
E. Boronda Rd.	Independence to Hemmingway	65.8	66.7	0.9	+1.5 dB	No
E. Boronda Rd.	Hemmingway to Constitution	58.4	59.7	1.2	+5 dB or > 60 dB	No
E. Boronda Rd.	Constitution to N. Sanborn	60.3	62.1	1.8	+3 dB	No
E. Boronda Rd.	N. Sanborn to Williams	58.5	59.7	1.2	+5 dB or > 60 dB	No
El Dorado Dr.	South of E. Boronda	54.3	54.7	0.5	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	55.5	56.6	1.1	+5 dB or > 60 dB	No
Independence Blvd.	South of E. Boronda	60.6	62.6	2.0	+3 dB	No
McKinnon St.	South of E. Boronda	64.0	64.2	0.2	+3 dB	No
N. Main	North of E. Boronda	67.0	67.1	0.2	+1.5 dB	No
N. Main	South of E. Boronda	65.3	65.3	0.0	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	56.3	58.3	2.0	+5 dB or > 60 dB	No
Natividad Rd.	**South of E. Boronda**	**65.7**	**67.3**	**1.6**	**+1.5 dB**	**Yes**
Natividad Rd.	E. Boronda to Future Russell Rd.	66.9	68.1	1.2	+1.5 dB	No
Natividad Rd.	Future Russell Rd. to Rogge	62.4	63.7	1.4	+3 dB	No
Natividad Rd.	North of Rogge	60.6	61.0	0.5	+3 dB	No
Old Stage Rd.	North of Future Constitution	57.9	59.4	1.5	+5 dB or > 60 dB	No
Old Stage Rd.	Future Constitution to Williams	56.7	58.3	1.5	+5 dB or > 60 dB	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT	CHANGE	CRITERIA[1]	SIGNIFICANT?
Old Stage Rd.	South of Williams	54.6	55.2	0.6	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	61.7	63.4	1.6	+3 dB	No
Russell Rd.	West of San Juan Grade	65.0	65.8	0.8	+1.5 dB	No
San Juan Grade Rd.	South of E. Boronda	65.2	65.2	0.0	+1.5 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	69.6	69.8	0.2	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	67.3	67.3	0.0	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	66.0	66.9	0.9	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	62.9	62.9	0.0	+3 dB	No
Van Buren Ave.	West of San Juan Grade	57.1	57.8	0.7	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	62.1	63.6	1.5	+3 dB	No
Williams Rd.	East of E. Boronda	46.6	48.0	1.4	+5 dB or > 60 dB	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. **BOLD** TEXT INDICATES UNACCEPTABLE NOISE INCREASE.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

TABLE 3.7-9: EXISTING AND EXISTING PLUS PROJECT + CASP TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT + CASP	CHANGE	CRITERIA[1]	SIGNIFICANT?
Constitution Blvd.	South of E. Boronda	61.9	63.4	1.5	+3 dB	No
E. Boronda Rd.	N. Main to San Juan Grade	67.5	68.0	0.4	+1.5 dB	No
E. Boronda Rd.	San Juan Grade to McKinnon	66.4	66.9	0.5	+1.5 dB	No
E. Boronda Rd.	McKinnon to El Dorado	65.9	66.5	0.6	+1.5 dB	No
E. Boronda Rd.	El Dorado to Natividad	65.1	66.0	0.9	+1.5 dB	No
E. Boronda Rd.	Natividad to Independence	67.2	68.2	1.0	+1.5 dB	No
E. Boronda Rd.	Independence to Hemmingway	65.8	66.7	0.9	+1.5 dB	No
E. Boronda Rd.	Hemmingway to Constitution	58.4	59.7	1.2	+5 dB or > 60 dB	No
E. Boronda Rd.	Constitution to N. Sanborn	60.3	62.1	1.8	+3 dB	No
E. Boronda Rd.	N. Sanborn to Williams	58.5	59.7	1.2	+5 dB or > 60 dB	No
El Dorado Dr.	South of E. Boronda	54.3	54.7	0.5	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	55.5	56.6	1.1	+5 dB or > 60 dB	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		EXISTING	EXISTING + PROJECT + CASP	CHANGE	CRITERIA[1]	SIGNIFICANT?
Independence Blvd.	South of E. Boronda	60.6	62.6	2.0	+3 dB	No
McKinnon St.	South of E. Boronda	64.0	64.2	0.2	+3 dB	No
N. Main	North of E. Boronda	67.0	67.1	0.2	+1.5 dB	No
N. Main	South of E. Boronda	65.3	65.3	0.0	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	56.3	58.3	2.0	+5 dB or > 60 dB	No
Natividad Rd.	**South of E. Boronda**	**65.7**	**67.3**	**1.6**	**+1.5 dB**	**Yes**
Natividad Rd.	E. Boronda to Future Russell Rd.	66.9	68.1	1.2	+1.5 dB	No
Natividad Rd.	Future Russell Rd. to Rogge	62.4	63.7	1.4	+3 dB	No
Natividad Rd.	North of Rogge	60.6	61.0	0.5	+3 dB	No
Old Stage Rd.	North of Future Constitution	57.9	59.4	1.5	+5 dB or > 60 dB	No
Old Stage Rd.	Future Constitution to Williams	56.7	58.3	1.5	+5 dB or > 60 dB	No
Old Stage Rd.	South of Williams	54.6	55.2	0.6	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	61.7	63.4	1.6	+3 dB	No
Russell Rd.	West of San Juan Grade	65.0	65.8	0.8	+1.5 dB	No
San Juan Grade Rd.	South of E. Boronda	65.2	65.2	0.0	+1.5 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	69.6	69.8	0.2	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	67.3	67.3	0.0	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	66.0	66.9	0.9	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	62.9	62.9	0.0	+3 dB	No
Van Buren Ave.	West of San Juan Grade	57.1	57.8	0.7	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	62.1	63.6	1.5	+3 dB	No
Williams Rd.	East of E. Boronda	46.6	48.0	1.4	+5 dB or > 60 dB	No

NOTE: [1] EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. **BOLD** TEXT INDICATES UNACCEPTABLE NOISE INCREASE.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

TABLE 3.7-10: CUMULATIVE AND CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	CRITERIA[1]	SIGNIFICANT ?
Constitution Blvd.	South of E. Boronda	62.2	64.7	2.5	+3 dB	No
E. Boronda Rd.	N. Main to San Juan Grade	66.5	67.9	1.3	+1.5 dB	No
E. Boronda Rd.	**San Juan Grade to McKinnon**	**65.3**	**67.7**	**2.4**	**+1.5 dB**	**Yes**

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	CRITERIA[1]	SIGNIFICANT ?
E. Boronda Rd.	McKinnon to El Dorado	64.4	65.9	1.4	+3 dB	No
E. Boronda Rd.	El Dorado to Natividad	64.1	67.0	2.9	+3 dB	No
E. Boronda Rd.	Natividad to Independence	66.6	68.0	1.4	+1.5 dB	No
E. Boronda Rd.	**Independence to Hemmingway**	**65.1**	**66.9**	**1.8**	**+1.5 dB**	**Yes**
E. Boronda Rd.	Hemmingway to Constitution	58.2	59.9	1.7	+5 dB or > 60 dB	No
E. Boronda Rd.	Constitution to N. Sanborn	60.6	63.0	2.4	+3 dB	No
E. Boronda Rd.	**N. Sanborn to Williams**	**59.6**	**62.0**	**2.4**	**+5 dB or > 60 dB**	**Yes**
El Dorado Dr.	South of E. Boronda	54.1	54.9	0.8	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	54.8	54.8	0.0	+5 dB or > 60 dB	No
Independence Blvd.	South of E. Boronda	60.5	60.8	0.3	+3 dB	No
McKinnon St.	South of E. Boronda	63.6	65.2	1.6	+3 dB	No
N. Main	North of E. Boronda	69.7	69.7	0.0	+1.5 dB	No
N. Main	South of E. Boronda	66.8	66.9	0.0	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	56.3	58.4	2.1	+5 dB or > 60 dB	No
Natividad Rd.	**South of E. Boronda**	**63.0**	**66.8**	**3.7**	**+3 dB**	**Yes**
Natividad Rd.	**E. Boronda to Future Russell Rd.**	**64.1**	**67.1**	**3.0**	**+3 dB**	**Yes**
Natividad Rd.	Future Russell Rd. to Rogge	64.1	64.3	0.2	+3 dB	No
Natividad Rd.	North of Rogge	62.0	62.3	0.3	+3 dB	No
Old Stage Rd.	North of Future Constitution	59.1	59.1	0.0	+5 dB or > 60 dB	No
Old Stage Rd.	Future Constitution to Williams	58.0	58.0	0.0	+5 dB or > 60 dB	No
Old Stage Rd.	South of Williams	56.2	56.2	0.0	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	61.7	61.7	0.0	+3 dB	No
Russell Rd.	West of San Juan Grade	67.5	68.7	1.2	+1.5 dB	No
San Juan Grade Rd.	South of E. Boronda	65.8	66.7	0.8	+1.5 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	69.3	69.5	0.2	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	69.0	69.3	0.3	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	66.0	66.5	0.5	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	63.1	63.8	0.7	+3 dB	No
Van Buren Ave.	West of San Juan Grade	57.3	57.3	0.0	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	64.6	66.2	1.6	+3 dB	No
Williams Rd.	East of E. Boronda	51.7	51.7	0.0	+5 dB or > 60 dB	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE

LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. **BOLD** TEXT INDICATES UNACCEPTABLE NOISE INCREASE.
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

TABLE 3.7-11: CUMULATIVE AND CUMULATIVE PLUS PROJECT + CASP TRAFFIC NOISE LEVELS

		Noise Levels (L_{DN}, dB) at Nearest Sensitive Receptors				
Roadway	Segment	Cumulative	Cumulative + Project + CASP	Change	Criteria[1]	Significant?
Constitution Blvd.	**South of E. Boronda**	**62.2**	**65.7**	**3.5**	**+3 dB**	**Yes**
E. Boronda Rd.	**N. Main to San Juan Grade**	**66.5**	**68.1**	**1.5**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**San Juan Grade to McKinnon**	**65.3**	**67.9**	**2.6**	**+1.5 dB**	**Yes**
E. Boronda Rd.	McKinnon to El Dorado	64.4	66.1	1.7	+3 dB	No
E. Boronda Rd.	**El Dorado to Natividad**	**64.1**	**67.4**	**3.3**	**+3 dB**	**Yes**
E. Boronda Rd.	**Natividad to Independence**	**66.6**	**69.3**	**2.6**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**Independence to Hemmingway**	**65.1**	**68.6**	**3.5**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**Hemmingway to Constitution**	**58.2**	**61.3**	**3.0**	**+5 dB or > 60 dB**	**Yes**
E. Boronda Rd.	Constitution to N. Sanborn	60.6	63.8	3.2	+3 dB	No
E. Boronda Rd.	**N. Sanborn to Williams**	**59.6**	**62.7**	**3.1**	**+5 dB or > 60 dB**	**Yes**
El Dorado Dr.	South of E. Boronda	54.1	54.9	0.8	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	54.8	58.8	4.0	+5 dB or > 60 dB	No
Independence Blvd.	South of E. Boronda	60.5	62.1	1.6	+3 dB	No
McKinnon St.	South of E. Boronda	63.6	65.3	1.7	+3 dB	No
N. Main	North of E. Boronda	69.7	69.7	0.0	+1.5 dB	No
N. Main	South of E. Boronda	66.8	67.0	0.2	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	56.3	58.9	2.6	+5 dB or > 60 dB	No
Natividad Rd.	**South of E. Boronda**	**63.0**	**67.5**	**4.5**	**+3 dB**	**Yes**
Natividad Rd.	**E. Boronda to Future Russell Rd.**	**64.1**	**67.9**	**3.8**	**+3 dB**	**Yes**
Natividad Rd.	Future Russell Rd. to Rogge	64.1	64.9	0.8	+3 dB	No
Natividad Rd.	North of Rogge	62.0	63.0	1.1	+3 dB	No
Old Stage Rd.	North of Future Constitution	59.1	59.8	0.7	+5 dB or > 60 dB	No
Old Stage Rd.	Future Constitution to Williams	58.0	58.7	0.7	+5 dB or > 60 dB	No
Old Stage Rd.	South of Williams	56.2	57.2	1.0	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	61.7	61.7	0.0	+3 dB	No
Russell Rd.	**West of San Juan Grade**	**67.5**	**69.4**	**1.9**	**+1.5 dB**	**Yes**
San Juan Grade Rd.	South of E. Boronda	65.8	66.9	1.1	+1.5 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	69.3	69.5	0.2	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	69.0	69.3	0.3	+1.5 dB	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT + CASP	CHANGE	CRITERIA[1]	SIGNIFICANT?
San Juan Grade Rd.	Russell to Rogge	66.0	66.5	0.5	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	63.1	63.8	0.7	+3 dB	No
Van Buren Ave.	West of San Juan Grade	57.3	57.3	0.0	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	64.6	66.8	2.2	+3 dB	No
Williams Rd.	East of E. Boronda	51.7	51.8	0.1	+5 dB or > 60 dB	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. ***BOLD*** *TEXT INDICATES UNACCEPTABLE NOISE INCREASE.*

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

As shown in Tables 3.7-8 through 3.7-11, some noise-sensitive receptors located along the Plan Area roadways are currently exposed to exterior traffic noise levels exceeding the City of Salinas 60 dB L_{dn} exterior noise level standard for residential uses. These receptors would continue to experience elevated exterior noise levels with implementation of the proposed project. For example, under Existing conditions sensitive receptors located adjacent to E. Boronda Road between N. Main and San Juan Grade currently experience an exterior noise level of approximately 67.5 dB L_{dn}. This exceeds the City's Normally Acceptable exterior noise level standard of 60 dB L_{dn}. Under Existing Plus Project conditions, exterior traffic noise levels are predicted to be approximately 68.0 dB L_{dn}. This would still exceed the City's Normally Acceptable exterior noise level standard of 60 dB L_{dn}. However, the proposed project's contribution of 0.4 dB would not exceed the FICON criteria of 1.5 dB where existing noise levels exceed 65 dB. Therefore, the project's contribution to noise in this location would be a less than significant impact at this location.

Overall, in some locations, the proposed project is predicted to cause increases in traffic noise levels which would trigger a new exceedance of the City of Salinas' 60 dB L_{dn} exterior noise level standard at sensitive receptor locations, or exceed the FICON allowable increase criteria outlined in Table 3.7-7. The greatest number of significant traffic noise increases would occur under the Cumulative + Project + CASP traffic condition. However, all analyzed plus project traffic scenarios would result in significant increases in traffic noise.

As shown in Table 3.7-8, the segment of Natividad Road south of E. Boronda Road would experience unacceptable noise levels under Existing Plus Project conditions. The project would cause noise levels along this segment to increase by 1.6 dB.

As shown in Table 3.7-9, the segment of Natividad Road south of E. Boronda Road would experience unacceptable noise levels under Existing Plus Project Plus CASP conditions.

As shown in Table 3.7-10, the following roadway segments would experience unacceptable noise levels under Cumulative Plus Project conditions:

- E. Boronda Road from San Juan Grade to McKinnon (2.4 dB increase);
- E. Boronda Road from Independence to Hemmingway (1.8 dB increase);
- E. Boronda Road from N. Sanborn to Williams (2.4 dB increase);
- Natividad Road south of E. Boronda (3.7 dB increase); and
- Natividad Road from E. Boronda to Future Russell Road (3.0 dB increase).

As shown in Table 3.7-11, significant traffic noise increases under the Cumulative Plus Project Plus CASP traffic condition include the following:

- Constitution Blvd., South of E. Boronda – noise levels are predicted to increase by 3.5 dB from 62.2 dB to 65.7 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Main to San Juan Grade – noise levels are predicted to increase by 1.5 dB from 66.5 dB to 68.1 dB L_{dn}. This would equal the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, San Juan Grade to McKinnon – noise levels are predicted to increase by 2.6 dB from 65.3 dB to 67.9 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, El Dorado to Natividad – noise levels are predicted to increase by 3.3 dB from 64.1 dB to 66.1 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Natividad to Independence – noise levels are predicted to increase by 2.6 dB from 66.6 dB to 69.3 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Independence to Hemmingway – noise levels are predicted to increase by 3.5 dB from 65.1 dB to 68.6 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Hemmingway to Constitution – noise levels are predicted to increase by 3.0 dB from 58.2 dB to 61.3 dB L_{dn}. This would not exceed the FICON criteria of 5 dB where existing noise levels are less than 60 dB, as outlined in Table 3.7-7, but would cause a new exceedance of the City's 60 dB L_{dn} exterior noise level standard at outdoor activity areas of the nearest residential receptors.
- E. Boronda Road, N. Sanborn to Williams – noise levels are predicted to increase by 3.1 dB from 59.6 dB to 62.7dB L_{dn}. This would not exceed the FICON criteria of 5 dB where existing noise levels are less than 60 dB, as outlined in Table 3.7-7, but would cause a new exceedance of the City's 60 dB L_{dn} exterior noise level standard at outdoor activity areas of the nearest residential receptors.
- Natividad Road., South of E. Boronda – noise levels are predicted to increase by 4.5 dB from 63.0 dB to 67.5 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.

- Natividad Road., E. Boronda to Future Russell Road – noise levels are predicted to increase by 3.8 dB from 63.0 dB to 67.5 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7. However, it should be noted that this roadway segment is located between the West Area Specific Plan and Central Area Specific Plan projects and future sensitive receptors along this roadway would be constructed with noise control measures designed to achieve compliance with the City of Salinas exterior and interior noise level standards.
- Russell Road, West of San Juan Grade – noise levels are predicted to increase by 1.9 dB from 67.5 dB to 69.4 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.

CONCLUSION

The proposed project would cause increased noise levels exceeding the City of Salinas 60 dB L_{dn} exterior noise level standard at existing residential receptors. Therefore, this would be a **potentially significant** impact. Additionally, traffic noise level increases would exceed the FICON CEQA substantial increase criteria of 1.5 to 5 dB, as outlined in Table 3.7-7. Therefore, this would be a **potentially significant** impact.

The Specific Plan Area was assumed for urban development as part of the City's General Plan and General Plan EIR. As such development of Specific Plan Area for urban uses was analyzed in the City's General Plan EIR. Build-out of the City's General Plan land use map, including the Specific Plan Area, will inherently result in an increase in traffic-related noise levels. The City of Salinas certified the Final Environmental Impact Report, Salinas General Plan (Cotton Bridges Associates 2002), adopted a statement of overriding considerations relative to this significant and unavoidable impact, and approved the Salinas General Plan.

Increasing the height of existing sound walls could be a potential mitigation measure in some locations; however, in some locations it may prove to not be practical or feasible for a variety of reasons. The footings for the walls would need to be reengineered and resized, which may result in encroachment into private property. Such encroachment would require private property owners to allow permission to enter their property. There is a possibility that private property owners have pools or other structures proximate to the existing walls that could inhibit the reconstruction of the sound wall. Also, the height of a sounds wall could result in aesthetic impacts that are unwanted in the community.

The use of quieter pavement technologies could be a potential mitigation measure. Research shows that a minimum of 3 dBA can be achieved by using alternative pavements, such as rubberized asphalt or open gap materials. Costs for these pavement technologies vary, but they have been proven to be comparable to traditional pavements. The alternative pavement would wear down as trucks and automobiles travel over these roadway segments, decreasing its noise reduction effectiveness and increasing its replacement cost. As such, rubberized asphalt is not highly desirable in most communities in California and may prove to be infeasible and not practicable in the long term. Therefore, even with implementation of the following mitigation, this would be a ***significant and unavoidable*** impact.

MITIGATION MEASURES

Mitigation Measure 3.7-1: *The project applicant shall utilize alternative pavements with noise reducing properties to repave roadway segments which result in significant increases in traffic noise. These repaving projects shall only occur where existing residential uses are adjacent to the roadways, when they are located inside of the 60 dB L_{dn} contours shown in Tables 3.7-8 through 3.7-11, or when they exceed the FICON criteria. Sixty dB L_{dn} is considered an acceptable exterior noise level standard. The use of alternative pavements is subject to the design and construction approval by the City of Salinas.*

Under the Existing and Existing Plus Project scenario (Table 3.7-8), the following roadway segment would experience a significant increase in traffic noise levels:

- *Natividad Road, south of East Boronda.*

The project applicant would be required to fund the entire share of this improvement, unless the improvements are already or will already be covered by a larger and/or citywide funding program.)

Under the Existing and Existing Plus Project Plus CASP scenario (Table 3.7-9), the following roadway segments would experience a significant increase in traffic noise levels:

- *Natividad Road, south of East Boronda*

The project applicant would be required to fund the project's proportionate fair share of this improvement.)

Under the Cumulative and Cumulative Plus Project scenario (Table 3.7-10), the following roadway segments would experience a significant increase in traffic noise levels:

- *East Boronda Road (San Juan Grade to McKinnon);*
- *East Boronda Road (Independence to Hemmingway);*
- *East Boronda Road (N. Sanborn to Williams); and*
- *Natividad Road (South of East Boronda).*

The project applicant would be required to fund the project's proportionate fair share of these improvements.

Under the Cumulative and Cumulative Plus Project Plus CASP scenario (Table 3.7-11), the following roadways experience a significant increase in traffic noise levels:

- *Constitution Boulevard (South of E. Boronda);*
- *East Boronda Road (N. Main to San Juan Grade);*
- *East Boronda Road (El Dorado to Natividad);*

- *East Boronda Road (Natividad to Independence);*
- *East Boronda Road (Independence to Hemmingway);*
- *East Boronda Road (Hemmingway to Constitution);*
- *East Boronda Road (N. Sanborn to Williams);*
- *Natividad Road (South of E. Boronda);*
- *Natividad Road (E. Boronda to Future Russel Road); and*
- *Russel Road (West of San Juan Grade).*

The project applicant would be required to fund the project's proportionate fair share of these improvements.

Impact 3.7-2: The proposed project has the potential to increase noise levels associated with construction activities (Less than Significant with Mitigation)

During the construction of the project, including roads, water, and sewer lines, and related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. Existing sensitive receptors are located in the nearby residences, some of which are as close as 50 feet from the proposed construction activities. As indicated in Table 3.7-12, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours which are the least sensitive hours. Additionally, the majority of construction activities would occur at distances of 300 to 500 feet from the nearest residences. At these further distances, the maximum noise levels due to construction at the interior of the site would range from 60 to 70 dBA.

TABLE 3.7-12: CONSTRUCTION EQUIPMENT NOISE

TYPE OF EQUIPMENT	*MAXIMUM LEVEL, DB AT 50 FEET*
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

SOURCE: ROADWAY CONSTRUCTION NOISE MODEL USER'S GUIDE. FEDERAL HIGHWAY ADMINISTRATION. FHWA-HEP-05-054. JANUARY 2006.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A significant project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration and would likely occur primarily during daytime hours.

Construction activities would be temporary in nature and are exempt from noise regulation during the hours of 7:00 a.m. to 9:00 p.m., as outlined in the City's Municipal Code for Type B noise. Additionally, the project site was assumed for urban development as part of the City's General Plan and General Plan EIR. Build-out of the City's General Plan land use map, including the proposed project site, will inherently result in construction and construction-related noise levels. Implementation of the following mitigation measures will ensure that these potential impacts are reduced to a ***less than significant*** level.

MITIGATION MEASURES

Mitigation Measure 3.7-2: *Construction activities shall adhere to the requirements of the City of Salinas Municipal Code with respect to hours of operation. This requirement shall be noted in the improvement plans prior to approval by the City's Building Department.*

Mitigation Measure 3.7-3: *All equipment shall be fitted with factory equipped mufflers and in good working order. This requirement shall be noted in the improvement plans prior to approval by the City's Building Department. All stationary noise generating equipment (i.e. generators) shall be located at least 300 feet from a sensitive receptor. All construction staging areas shall be located at least 300 feet from a sensitive receptor.*

Impact 3.7-3: The proposed project has the potential to increase noise vibration association with construction activities (Less than Significant)

The primary vibration-generating activities associated with the proposed project would happen during construction when activities such as grading, utilities placement, and road construction occur. Sensitive receptors which could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 100 feet or further from the Plan Area. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 3.7-13 shows the typical vibration levels produced by construction equipment.

TABLE 3.7-13: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

TYPE OF EQUIPMENT	*PEAK PARTICLE VELOCITY @ 25 FEET (INCHES/SECOND)*	*PEAK PARTICLE VELOCITY @ 100 FEET (INCHES/SECOND)*
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

SOURCE: FEDERAL TRANSIT ADMINISTRATION, TRANSIT NOISE AND VIBRATION IMPACT ASSESSMENT GUIDELINES, MAY 2006

Table 3.7-13 data indicate that construction vibration levels anticipated for the proposed project are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the proposed project would have a ***less than significant*** impact relative to this environmental topic.

Impact 3.7-4: The proposed project has the potential to expose new sensitive receptors to excessive transportation noise (Less than Significant with Mitigation)

EXTERIOR NOISE IMPACTS

The FHWA traffic noise prediction model was used to predict Cumulative + Project + CASP traffic noise levels at the proposed residential land uses associated with the proposed project. Table 3.7-14 shows the predicted traffic noise levels at the proposed residential uses adjacent to the major Plan Area arterial roadways. Table 3.7-14 also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

The complete inputs and results to the FHWA traffic noise prediction model and barrier calculations are contained in Appendix C of the Noise Study (see **Appendix G** of this EIR). The modeled noise barriers assume flat site conditions where roadway elevations, base of wall elevations, and building pad elevations are approximately equivalent.

To describe future noise levels due to traffic, FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included traffic volumes provided by Fehr & Peers. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict L_{dn}/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

TABLE 3.7-14: CUMULATIVE + PROJECT TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

ROADWAY	*APPROXIMATE RESIDENTIAL SETBACK, FEET*[1]	*ADT*	*PREDICTED TRAFFIC NOISE LEVELS, DB L_{DN}*[2]					
			NO WALL	*6' WALL*	*7' WALL*	*8' WALL*	*9' WALL*	*10' WALL*
E. Boronda - Nearest Residential	85	46,700	71	65	64	62	61	60
San Juan Grade Road - Nearest Residential	85	19,500	67	61	60	59	57	56
Russell Road - Nearest Residential	85	13,000	65	59	57	56	55	54
Rogge Road - Nearest Residential	45	5,200	62	55	54	53	52	50
Natividad Road - Nearest Residential	65	30,400	71	64	63	62	61	60

NOTES: ADT = AVERAGE DAILY TRIPS

[1] SETBACK DISTANCES ARE MEASURED IN FEET FROM THE CENTERLINES OF THE ROADWAYS TO THE CENTER OF RESIDENTIAL BACKYARDS.

[2] THE MODELED NOISE BARRIERS ASSUME FLAT SITE CONDITIONS WHERE ROADWAY ELEVATIONS, BASE OF WALL ELEVATIONS, AND BUILDING PAD ELEVATIONS ARE APPROXIMATELY EQUIVALENT. SOUND WALL HEIGHT MAY BE ACHIEVE D THROUGH THE USE A WALL AND EARTHEN BERM TO ACHIEVE THE TOTAL HEIGHT (I.E. 6-FOOT WALL ON 2-FOOT BERM IS EQUIVALENT TO AN 8-FOOT TALL WALL).

SOURCE: FHWA-RD-77-108 WITH INPUTS FROM FEHR & PEERS, AND J.C. BRENNAN & ASSOCIATES, INC. 2016.

Table 3.7-14 data indicate that noise barriers 6- to 8-feet in height would generally be sufficient to achieve compliance with the City of Salinas 60 dB L_{dn} exterior noise level standard for the proposed residential uses. However, for the residential uses located along E. Boronda Road and Natividad Road, sound walls of 6- to 8-feet in height would only reduce exterior noise levels to 62 to 65 dB L_{dn}. While these noise level do not meet the City's preferred 60 dB L_{dn} noise standards, they would comply with the City's conditionally acceptable standard of 60 to 70 dB L_{dn}. Final wall heights should be determined at the discretion of the City. With implementation of the following exterior noise mitigation measures, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-4: *Six- to eight-foot tall sound walls and/or landscaped berm combinations shall be constructed along the primary Plan Area roadways, adjacent to proposed residential uses, in order to achieve the City's exterior noise standards. At the City's discretion, wall heights which achieve the City's conditionally acceptable 60-70 dB L_{dn} noise standard may be allowed. See the Draft EIR Table 3.7-14 for specific noise barrier heights along each roadway. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, stucco or manufactured materials (with a density of four pounds per square foot or greater), earthen landscaped berms, or any combination of these materials as determined appropriate by the City of Salinas. The design/appearance of the wall is subject to the design approval by the City of Salinas to ensure that it is visually pleasing. Wood is not recommended due to eventual warping and degradation of acoustical performance. The walls shall not have gaps or penetrations which allow sound to flank through or around the walls. Small gaps which may occur using materials such as* *"keystone" blocks shall be avoided. Additionally, in accordance with Section 5-03.19 of the City's Municipal Code, best management practices shall be incorporated into the sound wall design in order to control graffiti and/or mitigate the potential impacts of graffiti. These graffiti prevention best management practices may include, without limitation:*

(1) The use or the installation and maintenance of ant-graffiti materials approved by the city on likely graffiti-attracting surfaces.

(2) Installation and maintenance of landscaping to discourage defacement of and/or protect likely graffiti-attracting surfaces.

(3) Installation and maintenance of lighting to protect likely graffiti-attracting surfaces.

(4) Immediate removal of graffiti by appropriate means within seventy-two hours.

(5) Incorporation of architectural or design elements or features to discourage graffiti defacement in accordance with the principles of Crime Prevention Through Environmental Design (CPTED).

(6) Authorizing right of access by city employees or contract agents to remove graffiti if not removed within specified time periods.

(7) Supplying the city at its request with paint (of the appropriate color and type), cleaning agents, and/or other materials acceptable to the city to abate or to deter graffiti.

(8) Other requirements, as deemed reasonably feasible by the city planner, to deter, to protect or to reduce the potential for graffiti defacement.

These requirements shall be included in the improvement plans prior to their approval by the City's Building Department.

INTERIOR NOISE IMPACTS

Modern construction typically provides a 25-dB exterior-to-interior noise level reduction with windows closed. Therefore, sensitive receptors exposed to exterior noise of 70 dB L_{dn}, or less, will typically comply with the City of Salinas 45 dB L_{dn} interior noise level standard. Additional noise reduction measures, such as acoustically-rated windows, are generally required for exterior noise levels exceeding 70 dB L_{dn}.

It should be noted that exterior noise levels are typically 2 to 3 dB higher at second floor locations. Additionally, noise barriers do not reduce exterior noise levels at second floor locations. The proposed residential uses are predicted to be exposed to unmitigated first floor exterior transportation noise levels ranging between 62 to 71 dB L_{dn}. Therefore, second floor facades are predicted to be exposed to exterior noise levels of up to 65 to 74 dB L_{dn}.

Based upon a 25-dB exterior-to-interior noise level reduction, interior noise levels are predicted to range between 40 to 49 dB L_{dn}. Predicted interior noise levels would exceed the City's 45 dB L_{dn} interior noise level standard at the first row of residential uses located closest to Boronda Road and Natividad Road. Therefore, additional interior noise control measures would be required for these residential uses. To reduce interior noise levels to 45 dB L_{dn}, or less, it is likely that second floor facades would require windows having a Sound Transmission Class (STC) 35 rating, or higher. Exterior walls would also likely require 3-coat stucco and RC-channels. This would specifically apply to the first row of homes along E. Boronda Road and Natividad Road and would not apply to facades facing away from the roadway.

This analysis assumes that mechanical ventilation will be provided to allow residents to keep doors and windows closed, as desired for acoustical isolation. With implementation of the following interior noise mitigation measures, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-5: *The first row of residential uses located along E. Boronda Road and Natividad Road shall include windows having a Sound Transmission Class (STC) 35, or higher, rating installed in second floor facades which face the either or both roadways. Exterior walls shall also require 3-coat stucco and RC-channels. The exterior wall specifications would specifically apply to the first row of homes and does not apply to facades facing away from the roadway. A detailed analysis of any additional interior mitigation measures shall be conducted when building plans are available to verify these requirements. These requirements shall be included in the improvement plans prior to approval by the City's Building Department.*

Mitigation Measure 3.7-6: *Mechanical ventilation shall be installed in all residential uses which face E. Boronda Road and/or Natividad Road sufficient to allow residents, as desired for acoustical isolation, to keep their doors and windows closed and still maintain acceptable interior temperature and noise levels. This requirement shall be included in the improvement plans prior to approval by the City's Building Department.*

Impact 3.7-5: The proposed project has the potential to expose sensitive receptors to substantial noise from proposed park and school uses (Less than Significant with Mitigation)

Children playing at neighborhood parks or outdoor recreational fields (softball, soccer, basketball, tennis) are often considered potentially significant noise sources which could adversely affect adjacent noise-sensitive land uses. Typical noise levels associated with groups of approximately 50 children playing at 50 feet generally range from 55 to 60 dB L_{eq} and 70 to 75 dB L_{max}. It is expected that park activities would occur during daytime hours. Therefore, noise levels from the playgrounds would need to comply with the City of Salinas exterior noise level standards of 60 dB L_{eq} and 70 dB L_{max} at the nearest residential uses.

Based upon the reference noise level data discussed above, the 60 dB L_{eq} noise contour would be located approximately 50 feet from the center of playgrounds or recreational fields. The 70 dB L_{max} noise contour would extend approximately 90 feet from the center of playground or recreational fields. For residential backyards located less than 90 feet from the center of a playground or recreational field, noise levels may exceed the City of Salinas 70 dB L_{max} exterior noise level standard. In this case, construction of a 6-foot tall masonry sound wall would provide an approximate noise level reduction of 5 dB and would typically reduce noise levels to 60 dB L_{eq} and 70 dB L_{max}, or less.

With implementation of the following exterior mitigation measure, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-7: *When parks or play areas are located near residential uses, the center of active play areas, such as football fields, soccer fields or other athletic fields, shall be located at a minimum distance of 90-feet from the nearest residential property lines. Large active play areas shall comply with the 60 dB L_{eq} and 70 dB L_{max} standards, and shall include these further noise level evaluations during the design phases of future park areas.*

Parks shall be designed such that residences front to the park. Minimum 6-foot tall sound walls and/or landscaped berms shall be constructed where school site abuts a residential property line in instances where site design (i.e., minimum distances, siting of activity areas, etc.) cannot achieve the 60 dB L_{eq} and 70 dB L_{max} noise standards. No wall shall be required where residential uses are fronted towards a park or school site and separated by a roadway or a walkway.

Noise barrier walls shall be constructed of concrete panels, concrete masonry units, stucco or manufactured materials (with a density of four pounds per square foot or greater), earthen landscaped berms, or any combination of these materials as determined appropriate by the City of Salinas. The design/appearance of the wall is subject to the design approval by the City of Salinas to ensure that it is visually pleasing. Wood is not recommended due to eventual warping and degradation of acoustical performance. The walls shall not have gaps or penetrations which allow sound to flank through or around the walls. Small gaps which may occur using materials such as "keystone" blocks shall be avoided. This requirement shall be included in the improvement plans prior to approval by the City's Building Department.

Impact 3.7-6: The proposed project has the potential to expose sensitive receptors to substantial noise from proposed commercial mixed-uses (Less than Significant with Mitigation)

COMMERCIAL AND OFFICE LAND USES

Commercial and office land use activities can produce noise levels which affect adjacent sensitive land uses. These noise sources can be continuous and may contain tonal components which may be annoying to individuals who live in the vicinity. In addition, noise generation from fixed noise sources may vary based upon climatic conditions, time of day, and existing ambient noise levels. The primary noise sources generally include truck deliveries, trash pickup, parking lot use, and heating, ventilation, and air conditioning (HVAC) equipment operation. These sources may result in noise levels more than the City's standards at nearby receptors.

MECHANICAL EQUIPMENT

HVAC equipment can be a primary noise source associated with commercial mixed uses. These types of equipment are often mounted on roof tops, located on the ground, or located within mechanical rooms. The noise sources can take the form of fans, pumps, air compressors, chillers, or cooling towers. Noise levels from these types of equipment can vary significantly. Noise levels from these types of sources generally range between 45 dB to 70 dB at 50 feet and could exceed City standards at nearby receptors.

MEASURES TO REDUCE NOISE EXPOSURE FROM COMMERCIAL MIXED USES

Use of Setbacks: Noise exposure may be reduced by increasing the distance between the noise source and the noise-receiving use. Setbacks can take the form of open space, frontage roads, recreational areas, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally 3 to 6 dB per doubling of distance from the source. The rule-of-thumb is that most traffic and railroad noise levels will decrease or increase by approximately 4.5 dB per doubling, or halving of distance, respectively. Noise from point sources, such as HVAC equipment, will generally attenuate at 6 dB per doubling of distance.

Use of Barriers: Noise reduction can be accomplished by placing walls, berms or other structures, such as buildings, between the noise source and the receiver. In addition, intervening topography can be an effective barrier for noise control. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increases in distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver. The difference between the distance over a barrier and a straight line between source and receiver is called the "path length difference," and is the basis for calculating barrier noise reduction.

In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller path length difference for a given increase in barrier height than does a location closer to either source or receiver.

Site Design, Building Locations, and Building Orientations: Buildings can be placed on a project site to shield other structures or areas, to remove them from noise-impacted areas, and to prevent an increase in noise levels caused by reflections. As an example, carports or garages can be used to form or complement a barrier, or shield an outdoor activity area. Placement of outdoor activity areas on the opposite side of the building facades from the noise source, or within the shielded portion of a building complex, such as a central courtyard, can also be an effective method of providing a quiet retreat in an otherwise noisy environment.

CONCLUSION

With implementation of the following exterior mitigation measure, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

Mitigation Measure 3.7-8: *Where commercial, business professional, office, or similar uses abut residential uses or where loading docks or truck circulation routes face residential areas, the following measures shall be included in the project design:*

- *All HVAC equipment shall be located within mechanical rooms where possible or shielded from view with solid or grated barriers;*
- *Emergency generators shall comply with the City's noise criteria at the nearest noise-sensitive receivers;*
- *Delivery/loading activities shall comply with the City of Salinas Zoning Ordinance standards; and*
- *The applicant shall submit a noise study to verify that the appropriate noise control measures have been incorporated into the project design and will achieve compliance with the City's noise level standards.*

These requirements shall be included in the improvement plans prior to their approval by the City's Building Department.

Impact 3.7-7: The proposed project has the potential to expose sensitive receptors to substantial noise from proposed well sites (Less than Significant with Mitigation)

Typical noise levels for well sites at 50 feet are expected to be 60 dB L_{eq}. If a backup generator is present and running, a noise level of 70 dB L_{eq} at 50 feet would be expected. It is expected that wells could operate during daytime or nighttime hours. Long-term operation of the backup generator would only occur under emergency conditions and would therefore not be subject to the City of Salinas exterior noise level standards for Class A noise. However, weekly exercising of the generator may be subject to the City's 60 dB L_{eq} daytime exterior noise level standard at the nearest noise-sensitive residential receptors.

The specific design features of the well sites are not currently known and the associated noise levels cannot be precisely determined at the nearest proposed residential units. Therefore, the well sites should be limited to generating a noise level not exceeding the City's nighttime noise standard of 55 dB L_{eq} at the nearest on-site residential property lines under normal operations. Generators should not exceed the City's daytime noise standard of 60 dB L_{eq}. This will ensure compliance with the City's noise ordinance standards at both on-site and off-site receptors. With implementation of the following exterior mitigation measure, the proposed project would have a ***less than significant*** impact relative to this environmental topic.

MITIGATION MEASURES

***Mitigation Measure 3.7-9:** The well sites shall be designed and built to not exceed a noise level of 55 dB L_{eq} at the nearest residential property line during normal operation of the stations. Generators shall not exceed the City's daytime noise standard of 60 dB L_{eq}. Generators shall be tested only during daytime hours. This requirement shall be included in the improvement plans prior to approval by the City's Building Department.*

Impact 3.7-8: Cumulative exposure of existing and future noise-sensitive land uses to increased noise resulting from cumulative development (Cumulatively Considerable and Significant and Unavoidable)

The cumulative context for a cumulative analysis can be defined by region, by political subdivision or by the geography. The cumulative setting for noise includes the study roadway segments as identified in the traffic analysis in this EIR. This area was chosen because it represents the area that is reasonably expected to be affected by changes to the ambient noise levels as the project buildouts out. The following tables show the predicted traffic noise level increases on the local roadway network for Cumulative, Cumulative + Project, and Cumulative + Project + CASP conditions. **Appendix G** of this EIR provides the complete inputs and results of the FHWA traffic noise modeling.

TABLE 3.7-15: CUMULATIVE AND CUMULATIVE PLUS PROJECT TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	CRITERIA[1]	SIGNIFICANT ?
Constitution Blvd.	South of E. Boronda	62.2	64.7	2.5	+3 dB	No
E. Boronda Rd.	N. Main to San Juan Grade	66.5	67.9	1.3	+1.5 dB	No
E. Boronda Rd.	**San Juan Grade to McKinnon**	**65.3**	**67.7**	**2.4**	**+1.5 dB**	**Yes**
E. Boronda Rd.	McKinnon to El Dorado	64.4	65.9	1.4	+3 dB	No
E. Boronda Rd.	El Dorado to Natividad	64.1	67.0	2.9	+3 dB	No
E. Boronda Rd.	Natividad to Independence	66.6	68.0	1.4	+1.5 dB	No
E. Boronda Rd.	**Independence to Hemmingway**	**65.1**	**66.9**	**1.8**	**+1.5 dB**	**Yes**
E. Boronda Rd.	Hemmingway to Constitution	58.2	59.9	1.7	+5 dB or > 60 dB	No
E. Boronda Rd.	Constitution to N. Sanborn	60.6	63.0	2.4	+3 dB	No
E. Boronda Rd.	**N. Sanborn to Williams**	**59.6**	**62.0**	**2.4**	**+5 dB or > 60 dB**	**Yes**
El Dorado Dr.	South of E. Boronda	54.1	54.9	0.8	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	54.8	54.8	0.0	+5 dB or > 60 dB	No
Independence Blvd.	South of E. Boronda	60.5	60.8	0.3	+3 dB	No
McKinnon St.	South of E. Boronda	63.6	65.2	1.6	+3 dB	No
N. Main	North of E. Boronda	69.7	69.7	0.0	+1.5 dB	No

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT	CHANGE	CRITERIA[1]	SIGNIFICANT ?
N. Main	South of E. Boronda	66.8	66.9	0.0	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	56.3	58.4	2.1	+5 dB or > 60 dB	No
Natividad Rd.	**South of E. Boronda**	**63.0**	**66.8**	**3.7**	**+3 dB**	**Yes**
Natividad Rd.	**E. Boronda to Future Russell Rd.**	**64.1**	**67.1**	**3.0**	**+3 dB**	**Yes**
Natividad Rd.	Future Russell Rd. to Rogge	64.1	64.3	0.2	+3 dB	No
Natividad Rd.	North of Rogge	62.0	62.3	0.3	+3 dB	No
Old Stage Rd.	North of Future Constitution	59.1	59.1	0.0	+5 dB or > 60 dB	No
Old Stage Rd.	Future Constitution to Williams	58.0	58.0	0.0	+5 dB or > 60 dB	No
Old Stage Rd.	South of Williams	56.2	56.2	0.0	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	61.7	61.7	0.0	+3 dB	No
Russell Rd.	West of San Juan Grade	67.5	68.7	1.2	+1.5 dB	No
San Juan Grade Rd.	South of E. Boronda	65.8	66.7	0.8	+1.5 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	69.3	69.5	0.2	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	69.0	69.3	0.3	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	66.0	66.5	0.5	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	63.1	63.8	0.7	+3 dB	No
Van Buren Ave.	West of San Juan Grade	57.3	57.3	0.0	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	64.6	66.2	1.6	+3 dB	No
Williams Rd.	East of E. Boronda	51.7	51.7	0.0	+5 dB or > 60 dB	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. **BOLD** TEXT INDICATES UNACCEPTABLE NOISE INCREASE.

SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

TABLE 3.7-16: CUMULATIVE AND CUMULATIVE PLUS PROJECT + CASP TRAFFIC NOISE LEVELS

ROADWAY	SEGMENT	NOISE LEVELS (L_{DN}, DB) AT NEAREST SENSITIVE RECEPTORS				
		CUMULATIVE	CUMULATIVE + PROJECT + CASP	CHANGE	CRITERIA[1]	SIGNIFICANT?
Constitution Blvd.	**South of E. Boronda**	**62.2**	**65.7**	**3.5**	**+3 dB**	**Yes**
E. Boronda Rd.	**N. Main to San Juan Grade**	**66.5**	**68.1**	**1.5**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**San Juan Grade to McKinnon**	**65.3**	**67.9**	**2.6**	**+1.5 dB**	**Yes**
E. Boronda Rd.	McKinnon to El Dorado	64.4	66.1	1.7	+3 dB	No
E. Boronda Rd.	**El Dorado to Natividad**	**64.1**	**67.4**	**3.3**	**+3 dB**	**Yes**

Roadway	Segment	Noise Levels (L_{DN}, dB) at Nearest Sensitive Receptors				
		Cumulative	Cumulative + Project + CASP	Change	Criteria[1]	Significant?
E. Boronda Rd.	**Natividad to Independence**	**66.6**	**69.3**	**2.6**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**Independence to Hemmingway**	**65.1**	**68.6**	**3.5**	**+1.5 dB**	**Yes**
E. Boronda Rd.	**Hemmingway to Constitution**	**58.2**	**61.3**	**3.0**	**+5 dB or > 60 dB**	**Yes**
E. Boronda Rd.	Constitution to N. Sanborn	60.6	63.8	3.2	+3 dB	No
E. Boronda Rd.	**N. Sanborn to Williams**	**59.6**	**62.7**	**3.1**	**+5 dB or > 60 dB**	**Yes**
El Dorado Dr.	South of E. Boronda	54.1	54.9	0.8	+5 dB or > 60 dB	No
Hemmingway Dr.	South of E. Boronda	54.8	58.8	4.0	+5 dB or > 60 dB	No
Independence Blvd.	South of E. Boronda	60.5	62.1	1.6	+3 dB	No
McKinnon St.	South of E. Boronda	63.6	65.3	1.7	+3 dB	No
N. Main	North of E. Boronda	69.7	69.7	0.0	+1.5 dB	No
N. Main	South of E. Boronda	66.8	67.0	0.2	+1.5 dB	No
N. Sanborn Rd.	South of E. Boronda	56.3	58.9	2.6	+5 dB or > 60 dB	No
Natividad Rd.	**South of E. Boronda**	**63.0**	**67.5**	**4.5**	**+3 dB**	**Yes**
Natividad Rd.	**E. Boronda to Future Russell Rd.**	**64.1**	**67.9**	**3.8**	**+3 dB**	**Yes**
Natividad Rd.	Future Russell Rd. to Rogge	64.1	64.9	0.8	+3 dB	No
Natividad Rd.	North of Rogge	62.0	63.0	1.1	+3 dB	No
Old Stage Rd.	North of Future Constitution	59.1	59.8	0.7	+5 dB or > 60 dB	No
Old Stage Rd.	Future Constitution to Williams	58.0	58.7	0.7	+5 dB or > 60 dB	No
Old Stage Rd.	South of Williams	56.2	57.2	1.0	+5 dB or > 60 dB	No
Rogge Rd.	San Juan Grade to Natividad	61.7	61.7	0.0	+3 dB	No
Russell Rd.	**West of San Juan Grade**	**67.5**	**69.4**	**1.9**	**+1.5 dB**	**Yes**
San Juan Grade Rd.	South of E. Boronda	65.8	66.9	1.1	+1.5 dB	No
San Juan Grade Rd.	E. Boronda to Van Buren	69.3	69.5	0.2	+1.5 dB	No
San Juan Grade Rd.	Van Buren to Russell	69.0	69.3	0.3	+1.5 dB	No
San Juan Grade Rd.	Russell to Rogge	66.0	66.5	0.5	+1.5 dB	No
San Juan Grade Rd.	North of Rogge	63.1	63.8	0.7	+3 dB	No
Van Buren Ave.	West of San Juan Grade	57.3	57.3	0.0	+5 dB or > 60 dB	No
Williams Rd.	West of E. Boronda	64.6	66.8	2.2	+3 dB	No
Williams Rd.	East of E. Boronda	51.7	51.8	0.1	+5 dB or > 60 dB	No

NOTE: [1] WHERE EXISTING NOISE LEVELS ARE LESS THAN 60 DB AN INCREASE OF 5 DB WOULD BE A SIGNIFICANT INCREASE. ADDITIONALLY, ANY INCREASE CAUSING NOISE LEVELS TO EXCEED THE CITY'S NORMALLY ACCEPTABLE 60 DB LDN NOISE LEVEL STANDARD AT AN EXISTING OUTDOOR ACTIVITY AREA OF A RESIDENTIAL USE WOULD ALSO BE SIGNIFICANT. WHERE EXISTING NOISE LEVELS EXCEED 60 DB BUT ARE LESS THAN 65 DB, AN INCREASE OF 3 DB OR MORE WOULD BE SIGNIFICANT. WHERE EXISTING NOISE

LEVELS EXCEED 65 DB, AN INCREASE OF 1.5 DB OR MORE WOULD BE SIGNIFICANT. ***BOLD*** *TEXT INDICATES UNACCEPTABLE NOISE INCREASE.*
SOURCE: J.C. BRENNAN & ASSOCIATES, INC. 2016.

As shown in the above tables, some noise-sensitive receptors located along the Plan Area roadways are currently exposed to exterior traffic noise levels exceeding the City of Salinas 60 dB L_{dn} exterior noise level standard for residential uses. These receptors would continue to experience elevated exterior noise levels with implementation of the proposed project.

In some locations, the proposed project is predicted to cause increases in traffic noise levels which would trigger a new exceedance of the City of Salinas' 60 dB L_{dn} exterior noise level standard at sensitive receptor locations, or exceed the FICON allowable increase criteria outlined in Table 3.7-7. The greatest number of significant traffic noise increases would occur under the Cumulative Plus Project Plus CASP traffic condition.

Significant traffic noise increases under the Cumulative Plus Project Plus CASP traffic condition include the following:

- Constitution Blvd., South of E. Boronda – noise levels are predicted to increase by 3.5 dB from 62.2 dB to 65.7 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Main to San Juan Grade – noise levels are predicted to increase by 1.5 dB from 66.5 dB to 68.1 dB L_{dn}. This would equal the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, San Juan Grade to McKinnon – noise levels are predicted to increase by 2.6 dB from 65.3 dB to 67.9 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, El Dorado to Natividad – noise levels are predicted to increase by 3.3 dB from 64.1 dB to 66.1 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Natividad to Independence – noise levels are predicted to increase by 2.6 dB from 66.6 dB to 69.3 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Independence to Hemmingway – noise levels are predicted to increase by 3.5 dB from 65.1 dB to 68.6 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.
- E. Boronda Road, Hemmingway to Constitution – noise levels are predicted to increase by 3.0 dB from 58.2 dB to 61.3 dB L_{dn}. This would not exceed the FICON criteria of 5 dB where existing noise levels are less than 60 dB, as outlined in Table 3.7-7, but would cause a new exceedance of the City's 60 dB L_{dn} exterior noise level standard at outdoor activity areas of the nearest residential receptors.
- E. Boronda Road, N. Sanborn to Williams – noise levels are predicted to increase by 3.1 dB from 59.6 dB to 62.7dB L_{dn}. This would not exceed the FICON criteria of 5 dB where existing noise levels are less than 60 dB, as outlined in Table 3.7-7, but would cause a new

exceedance of the City's 60 dB L_{dn} exterior noise level standard at outdoor activity areas of the nearest residential receptors.

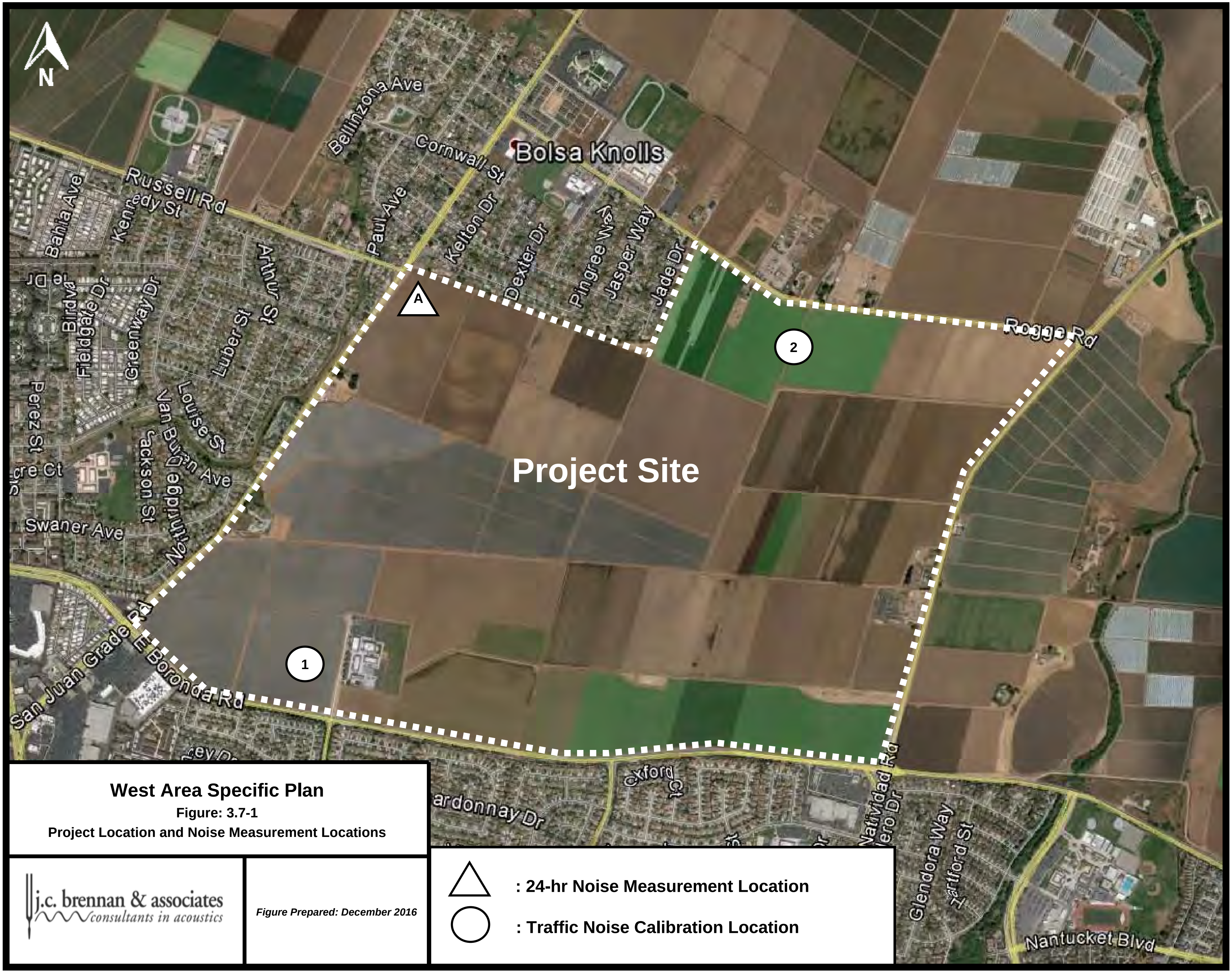
- Natividad Road., South of E. Boronda – noise levels are predicted to increase by 4.5 dB from 63.0 dB to 67.5 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7.
- Natividad Road., E. Boronda to Future Russell Road – noise levels are predicted to increase by 3.8 dB from 63.0 dB to 67.5 dB L_{dn}. This would exceed the FICON criteria of +3 dB where no project noise levels are between 60 to 65 dB, as outlined in Table 3.7-7. However, it should be noted that this roadway segment is located between the West Area Specific Plan and Central Area Specific Plan projects and future sensitive receptors along this roadway would be constructed with noise control measures designed to achieve compliance with the City of Salinas exterior and interior noise level standards.
- Russell Road, West of San Juan Grade – noise levels are predicted to increase by 1.9 dB from 67.5 dB to 69.4 dB L_{dn}. This would exceed the FICON criteria of +1.5 dB where no project noise levels are greater than 65 dB, as outlined in Table 3.7-7.

The proposed project would cause increased noise levels exceeding the City of Salinas 60 dB L_{dn} exterior noise level standard at existing residential receptors. Therefore, there would be a cumulative exposure of existing and future noise-sensitive land uses to increased noise resulting from cumulative development.

The proposed project, when considered alongside all past, present, and probable future projects (inclusive of buildout of the General Plan), would result in a significant cumulative impact related to traffic noise. The proposed project's incremental contribution toward this significant cumulative impact would be cumulatively considerable due to the large amount of vehicle trips that would be generated at buildout of the Plan Area.

It is noted that the City's General Plan and General Plan EIR assumes development of the Plan Area for urban uses as part of the FGA buildout. As buildout occurs it will inherently result in an increase in traffic-related noise levels. The City of Salinas certified the Final Environmental Impact Report, Salinas General Plan (Cotton Bridges Associates 2002), adopted a statement of overriding considerations relative to this significant and unavoidable impact, and approved the Salinas General Plan.

Implementation of the West Area Specific Plan would have a ***significant cumulative impact*** and a ***cumulatively considerable contribution*** to noise.



West Area Specific Plan

Figure: 3.7-1

Project Location and Noise Measurement Locations

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Figure Prepared: December 2016

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Appendix A
West Area Specific Plan
24hr Continuous Noise Monitoring - Site A
Wednesday January 20th - Thursday January 21st, 2016

Hour	Leq	Lmax	L50	L90
10:00:00	54	65	52	48
11:00:00	53	69	50	46
12:00:00	53	66	51	47
13:00:00	56	70	55	50
14:00:00	60	73	58	55
15:00:00	60	72	59	56
16:00:00	60	70	59	56
17:00:00	60	78	59	56
18:00:00	59	71	58	55
19:00:00	58	70	57	53
20:00:00	56	66	55	49
21:00:00	53	72	51	42
22:00:00	50	67	46	39
23:00:00	48	65	44	36
0:00:00	45	61	39	35
1:00:00	46	65	41	37
2:00:00	45	63	39	35
3:00:00	45	62	40	37
4:00:00	47	62	43	38
5:00:00	51	64	50	46
6:00:00	55	67	53	49
7:00:00	58	79	56	53
8:00:00	56	67	55	52
9:00:00	56	73	55	53

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	60	53	57	55	45	49
Lmax (Maximum)	79	65	71	67	61	64
L50 (Median)	59	50	55	53	39	44
L90 (Background)	56	42	51	49	35	39

Computed Ldn, dB	58
% Daytime Energy	92%
% Nighttime Energy	8%

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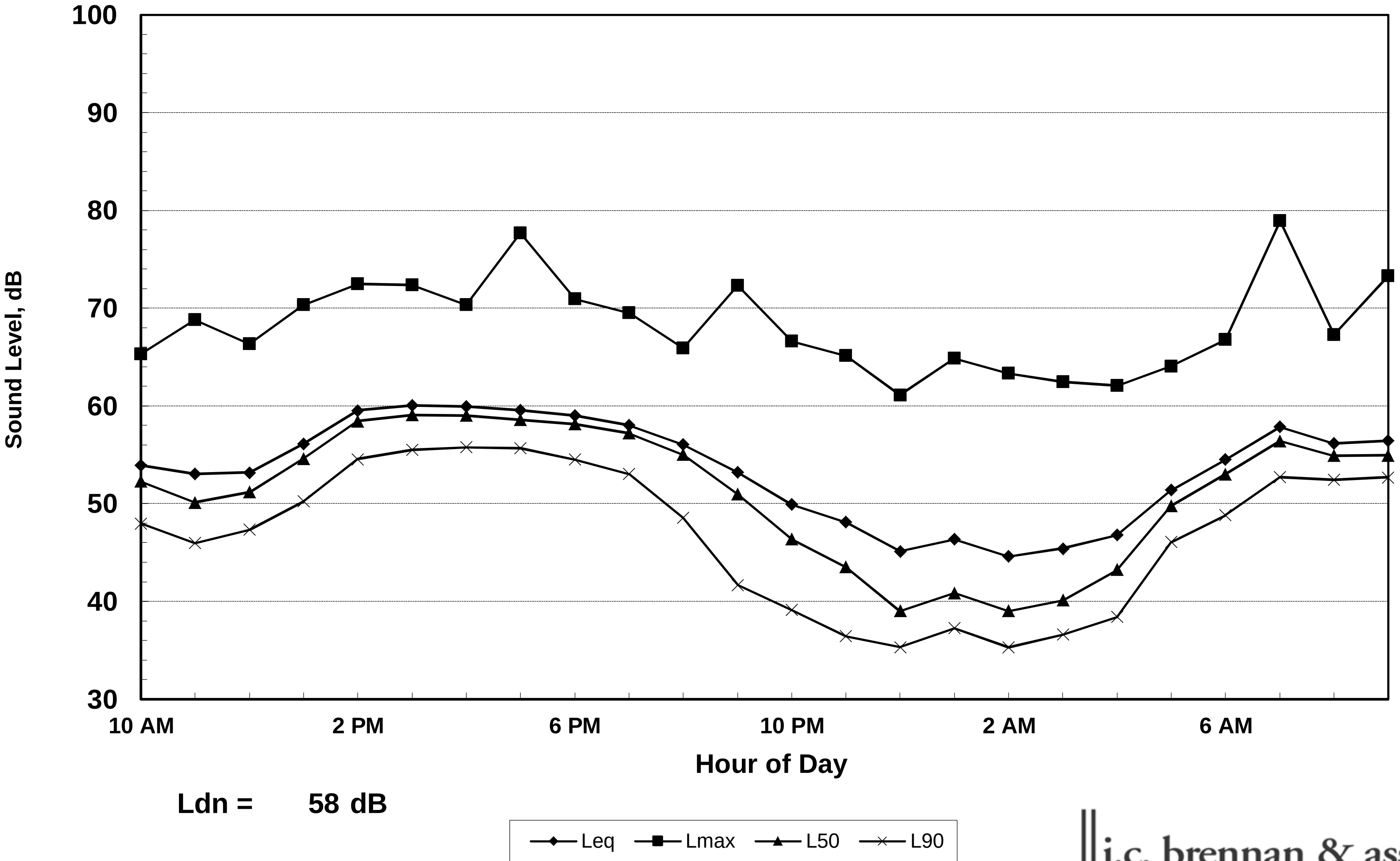
Appendix A

West Area Specific Plan

24hr Continuous Noise Monitoring - Site A

Wednesday January 20th - Thursday January 21st, 2016



Ldn = 58 dB

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 West Area Specific Plan
Description: Base Year Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	13,720	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	31,270	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	31,960	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	28,070	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	23,770	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	29,250	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	21,170	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	7,090	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	10,980	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	7,240	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	6,150	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	3,990	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	9,030	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	9,000	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	19,470	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	20,030	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	5,630	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	27,060	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	24,130	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	8,530	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	6,430	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	3,470	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	3,470	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	2,130	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	5,300	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	11,240	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	10,760	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	16,030	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	12,280	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	9,170	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	6,270	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,720	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	8,460	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	4,160	83		17	2.0	0.5	50	800	0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 West Area Specific Plan

Description: Base Year Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	61.0	52.4	50.8	61.9
2	E. Boronda Rd.	N. Main to San Juan Grade	66.3	57.7	59.1	67.5
3	E. Boronda Rd.	San Juan Grade to McKinnon	65.2	56.6	58.1	66.4
4	E. Boronda Rd.	McKinnon to El Dorado	64.6	56.0	57.5	65.9
5	E. Boronda Rd.	El Dorado to Natividad	63.9	55.3	56.8	65.1
6	E. Boronda Rd.	Natividad to Independence	66.0	57.4	58.9	67.2
7	E. Boronda Rd.	Independence to Hemmingway	64.6	56.0	57.5	65.8
8	E. Boronda Rd.	Hemmingway to Constitution	57.2	48.6	50.1	58.4
9	E. Boronda Rd.	Constitution to N. Sanborn	59.1	50.5	52.0	60.3
10	E. Boronda Rd.	N. Sanborn to Williams	57.3	48.7	50.2	58.5
11	El Dorado Dr.	South of E. Boronda	51.9	46.6	48.2	54.3
12	Hemmingway Dr.	South of E. Boronda	54.2	47.0	46.2	55.5
13	Independence Blvd.	South of E. Boronda	59.7	51.1	49.6	60.6
14	McKinnon St.	South of E. Boronda	62.7	55.5	54.7	64.0
15	N. Main	North of E. Boronda	64.3	57.2	62.4	67.0
16	N. Main	South of E. Boronda	62.7	55.6	60.8	65.3
17	N. Sanborn Rd.	South of E. Boronda	55.4	46.8	45.2	56.3
18	Natividad Rd.	South of E. Boronda	64.5	55.8	57.3	65.7
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	65.6	57.0	58.5	66.9
20	Natividad Rd.	Future Russell Rd. to Rogge	61.1	52.5	54.0	62.4
21	Natividad Rd.	North of Rogge	59.5	50.3	51.5	60.6
22	Old Stage Rd.	North of Future Constitution	56.8	47.6	48.8	57.9
23	Old Stage Rd.	Future Constitution to Williams	55.5	46.9	48.4	56.7
24	Old Stage Rd.	South of Williams	53.4	44.8	46.3	54.6
25	Rogge Rd.	San Juan Grade to Natividad	60.4	53.2	52.4	61.7
26	Russell Rd.	West of San Juan Grade	63.7	56.5	55.7	65.0
27	San Juan Grade Rd.	South of E. Boronda	64.0	55.4	56.9	65.2
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.4	59.8	61.2	69.6
29	San Juan Grade Rd.	Van Buren to Russell	66.0	57.4	58.9	67.3
30	San Juan Grade Rd.	Russell to Rogge	64.8	56.1	57.6	66.0
31	San Juan Grade Rd.	North of Rogge	61.1	54.0	56.2	62.9
32	Van Buren Ave.	West of San Juan Grade	54.7	49.4	51.0	57.1
33	Williams Rd.	West of E. Boronda	60.8	53.6	52.7	62.1
34	Williams Rd.		45.8	36.6	34.7	46.6

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 West Area Specific Plan

Description: Base Year Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	9	19	40	87	188
2	E. Boronda Rd.	N. Main to San Juan Grade	16	34	74	158	341
3	E. Boronda Rd.	San Juan Grade to McKinnon	16	35	75	161	346
4	E. Boronda Rd.	McKinnon to El Dorado	15	32	68	147	318
5	E. Boronda Rd.	El Dorado to Natividad	13	28	61	132	284
6	E. Boronda Rd.	Natividad to Independence	15	33	70	152	326
7	E. Boronda Rd.	Independence to Hemmingway	12	26	57	122	263
8	E. Boronda Rd.	Hemmingway to Constitution	6	13	27	59	127
9	E. Boronda Rd.	Constitution to N. Sanborn	8	17	37	79	170
10	E. Boronda Rd.	N. Sanborn to Williams	6	13	28	60	129
11	El Dorado Dr.	South of E. Boronda	2	4	10	21	45
12	Hemmingway Dr.	South of E. Boronda	3	5	12	25	54
13	Independence Blvd.	South of E. Boronda	7	14	31	66	142
14	McKinnon St.	South of E. Boronda	9	20	43	93	200
15	N. Main	North of E. Boronda	19	41	88	189	407
16	N. Main	South of E. Boronda	19	41	89	193	415
17	N. Sanborn Rd.	South of E. Boronda	5	10	22	48	104
18	Natividad Rd.	South of E. Boronda	14	31	67	144	310
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	29	62	133	287	619
20	Natividad Rd.	Future Russell Rd. to Rogge	14	31	67	144	309
21	Natividad Rd.	North of Rogge	14	31	66	142	305
22	Old Stage Rd.	North of Future Constitution	9	20	44	94	202
23	Old Stage Rd.	Future Constitution to Williams	8	17	37	79	170
24	Old Stage Rd.	South of Williams	6	12	26	57	123
25	Rogge Rd.	San Juan Grade to Natividad	7	14	30	65	141
26	Russell Rd.	West of San Juan Grade	11	23	50	108	232
27	San Juan Grade Rd.	South of E. Boronda	17	36	78	168	361
28	San Juan Grade Rd.	E. Boronda to Van Buren	22	47	101	219	471
29	San Juan Grade Rd.	Van Buren to Russell	18	39	85	183	394
30	San Juan Grade Rd.	Russell to Rogge	15	32	70	151	325
31	San Juan Grade Rd.	North of Rogge	8	17	36	78	169
32	Van Buren Ave.	West of San Juan Grade	3	7	15	32	69
33	Williams Rd.	West of E. Boronda	9	19	41	89	192
34	Williams Rd.		10	22	47	102	219

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2015-153 West Area Specific Plan

Description: Base Year + WASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	19,300	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	34,630	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	36,030	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	32,580	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	29,000	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	36,660	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	26,100	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	9,430	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	16,560	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	9,570	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	6,870	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	5,150	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	14,200	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	9,440	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	20,170	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	20,030	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	8,880	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	39,290	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	31,940	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	11,690	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	7,200	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	4,930	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	4,930	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	2,420	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	7,690	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	13,390	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	10,760	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	16,730	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	12,280	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	11,320	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	6,270	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	4,420	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	11,960	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	5,770	83		17	2.0	0.5	50	800	0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 West Area Specific Plan

Description: Base Year + WASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	62.5	53.9	52.3	63.4
2	E. Boronda Rd.	N. Main to San Juan Grade	66.7	58.1	59.6	68.0
3	E. Boronda Rd.	San Juan Grade to McKinnon	65.7	57.1	58.6	66.9
4	E. Boronda Rd.	McKinnon to El Dorado	65.3	56.7	58.1	66.5
5	E. Boronda Rd.	El Dorado to Natividad	64.8	56.1	57.6	66.0
6	E. Boronda Rd.	Natividad to Independence	67.0	58.4	59.8	68.2
7	E. Boronda Rd.	Independence to Hemmingway	65.5	56.9	58.4	66.7
8	E. Boronda Rd.	Hemmingway to Constitution	58.4	49.8	51.3	59.7
9	E. Boronda Rd.	Constitution to N. Sanborn	60.9	52.3	53.7	62.1
10	E. Boronda Rd.	N. Sanborn to Williams	58.5	49.9	51.4	59.7
11	El Dorado Dr.	South of E. Boronda	52.4	47.1	48.7	54.7
12	Hemmingway Dr.	South of E. Boronda	55.3	48.1	47.3	56.6
13	Independence Blvd.	South of E. Boronda	61.7	53.0	51.5	62.6
14	McKinnon St.	South of E. Boronda	62.9	55.8	54.9	64.2
15	N. Main	North of E. Boronda	64.5	57.3	62.5	67.1
16	N. Main	South of E. Boronda	62.7	55.6	60.8	65.3
17	N. Sanborn Rd.	South of E. Boronda	57.4	48.7	47.2	58.3
18	Natividad Rd.	South of E. Boronda	66.1	57.5	59.0	67.3
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	66.8	58.2	59.7	68.1
20	Natividad Rd.	Future Russell Rd. to Rogge	62.5	53.9	55.4	63.7
21	Natividad Rd.	North of Rogge	60.0	50.8	52.0	61.0
22	Old Stage Rd.	North of Future Constitution	58.3	49.1	50.3	59.4
23	Old Stage Rd.	Future Constitution to Williams	57.0	48.4	49.9	58.3
24	Old Stage Rd.	South of Williams	53.9	45.3	46.8	55.2
25	Rogge Rd.	San Juan Grade to Natividad	62.1	54.9	54.0	63.4
26	Russell Rd.	West of San Juan Grade	64.5	57.3	56.4	65.8
27	San Juan Grade Rd.	South of E. Boronda	64.0	55.4	56.9	65.2
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.6	59.9	61.4	69.8
29	San Juan Grade Rd.	Van Buren to Russell	66.0	57.4	58.9	67.3
30	San Juan Grade Rd.	Russell to Rogge	65.7	57.1	58.5	66.9
31	San Juan Grade Rd.	North of Rogge	61.1	54.0	56.2	62.9
32	Van Buren Ave.	West of San Juan Grade	55.4	50.2	51.8	57.8
33	Williams Rd.	West of E. Boronda	62.3	55.1	54.2	63.6
34	Williams Rd.		47.2	38.0	36.2	48.0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 West Area Specific Plan

Description: Base Year + WASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	11	24	51	109	236
2	E. Boronda Rd.	N. Main to San Juan Grade	17	37	79	170	365
3	E. Boronda Rd.	San Juan Grade to McKinnon	17	38	81	174	375
4	E. Boronda Rd.	McKinnon to El Dorado	16	35	76	163	351
5	E. Boronda Rd.	El Dorado to Natividad	15	32	70	151	325
6	E. Boronda Rd.	Natividad to Independence	18	38	82	176	379
7	E. Boronda Rd.	Independence to Hemmingway	14	30	65	140	303
8	E. Boronda Rd.	Hemmingway to Constitution	7	15	33	71	153
9	E. Boronda Rd.	Constitution to N. Sanborn	10	22	48	104	223
10	E. Boronda Rd.	N. Sanborn to Williams	7	15	33	72	155
11	El Dorado Dr.	South of E. Boronda	2	5	10	22	48
12	Hemmingway Dr.	South of E. Boronda	3	6	14	30	64
13	Independence Blvd.	South of E. Boronda	9	19	41	89	192
14	McKinnon St.	South of E. Boronda	10	21	45	96	207
15	N. Main	North of E. Boronda	19	42	90	193	417
16	N. Main	South of E. Boronda	19	41	89	193	415
17	N. Sanborn Rd.	South of E. Boronda	7	14	30	65	141
18	Natividad Rd.	South of E. Boronda	18	40	86	184	397
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	35	75	161	346	746
20	Natividad Rd.	Future Russell Rd. to Rogge	18	38	82	177	382
21	Natividad Rd.	North of Rogge	15	33	71	153	329
22	Old Stage Rd.	North of Future Constitution	12	26	55	119	256
23	Old Stage Rd.	Future Constitution to Williams	10	21	46	100	215
24	Old Stage Rd.	South of Williams	6	13	29	62	134
25	Rogge Rd.	San Juan Grade to Natividad	8	18	39	84	180
26	Russell Rd.	West of San Juan Grade	12	26	56	121	261
27	San Juan Grade Rd.	South of E. Boronda	17	36	78	168	361
28	San Juan Grade Rd.	E. Boronda to Van Buren	22	48	104	225	485
29	San Juan Grade Rd.	Van Buren to Russell	18	39	85	183	394
30	San Juan Grade Rd.	Russell to Rogge	17	37	80	173	373
31	San Juan Grade Rd.	North of Rogge	8	17	36	78	169
32	Van Buren Ave.	West of San Juan Grade	4	8	17	36	77
33	Williams Rd.	West of E. Boronda	11	24	52	112	242
34	Williams Rd.		13	27	59	127	273

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 West Area Specific Plan
Description: Base Yeat + WASP + CASP Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	19,300	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	34,630	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	36,030	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	32,580	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	29,000	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	36,660	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	26,100	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	9,430	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	16,560	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	9,570	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	6,870	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	5,150	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	14,200	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	9,440	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	20,170	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	20,030	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	8,880	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	39,290	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	31,940	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	11,690	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	7,200	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	4,930	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	4,930	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	2,420	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	7,690	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	13,390	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	10,760	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	16,730	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	12,280	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	11,320	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	6,270	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	4,420	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	11,960	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	5,770	83		17	2.0	0.5	50	800	0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 West Area Specific Plan

Description: Base Yeat + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	62.5	53.9	52.3	63.4
2	E. Boronda Rd.	N. Main to San Juan Grade	66.7	58.1	59.6	68.0
3	E. Boronda Rd.	San Juan Grade to McKinnon	65.7	57.1	58.6	66.9
4	E. Boronda Rd.	McKinnon to El Dorado	65.3	56.7	58.1	66.5
5	E. Boronda Rd.	El Dorado to Natividad	64.8	56.1	57.6	66.0
6	E. Boronda Rd.	Natividad to Independence	67.0	58.4	59.8	68.2
7	E. Boronda Rd.	Independence to Hemmingway	65.5	56.9	58.4	66.7
8	E. Boronda Rd.	Hemmingway to Constitution	58.4	49.8	51.3	59.7
9	E. Boronda Rd.	Constitution to N. Sanborn	60.9	52.3	53.7	62.1
10	E. Boronda Rd.	N. Sanborn to Williams	58.5	49.9	51.4	59.7
11	El Dorado Dr.	South of E. Boronda	52.4	47.1	48.7	54.7
12	Hemmingway Dr.	South of E. Boronda	55.3	48.1	47.3	56.6
13	Independence Blvd.	South of E. Boronda	61.7	53.0	51.5	62.6
14	McKinnon St.	South of E. Boronda	62.9	55.8	54.9	64.2
15	N. Main	North of E. Boronda	64.5	57.3	62.5	67.1
16	N. Main	South of E. Boronda	62.7	55.6	60.8	65.3
17	N. Sanborn Rd.	South of E. Boronda	57.4	48.7	47.2	58.3
18	Natividad Rd.	South of E. Boronda	66.1	57.5	59.0	67.3
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	66.8	58.2	59.7	68.1
20	Natividad Rd.	Future Russell Rd. to Rogge	62.5	53.9	55.4	63.7
21	Natividad Rd.	North of Rogge	60.0	50.8	52.0	61.0
22	Old Stage Rd.	North of Future Constitution	58.3	49.1	50.3	59.4
23	Old Stage Rd.	Future Constitution to Williams	57.0	48.4	49.9	58.3
24	Old Stage Rd.	South of Williams	53.9	45.3	46.8	55.2
25	Rogge Rd.	San Juan Grade to Natividad	62.1	54.9	54.0	63.4
26	Russell Rd.	West of San Juan Grade	64.5	57.3	56.4	65.8
27	San Juan Grade Rd.	South of E. Boronda	64.0	55.4	56.9	65.2
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.6	59.9	61.4	69.8
29	San Juan Grade Rd.	Van Buren to Russell	66.0	57.4	58.9	67.3
30	San Juan Grade Rd.	Russell to Rogge	65.7	57.1	58.5	66.9
31	San Juan Grade Rd.	North of Rogge	61.1	54.0	56.2	62.9
32	Van Buren Ave.	West of San Juan Grade	55.4	50.2	51.8	57.8
33	Williams Rd.	West of E. Boronda	62.3	55.1	54.2	63.6
34	Williams Rd.		47.2	38.0	36.2	48.0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 West Area Specific Plan

Description: Base Yeat + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours --------				
			75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	11	24	51	109	236
2	E. Boronda Rd.	N. Main to San Juan Grade	17	37	79	170	365
3	E. Boronda Rd.	San Juan Grade to McKinnon	17	38	81	174	375
4	E. Boronda Rd.	McKinnon to El Dorado	16	35	76	163	351
5	E. Boronda Rd.	El Dorado to Natividad	15	32	70	151	325
6	E. Boronda Rd.	Natividad to Independence	18	38	82	176	379
7	E. Boronda Rd.	Independence to Hemmingway	14	30	65	140	303
8	E. Boronda Rd.	Hemmingway to Constitution	7	15	33	71	153
9	E. Boronda Rd.	Constitution to N. Sanborn	10	22	48	104	223
10	E. Boronda Rd.	N. Sanborn to Williams	7	15	33	72	155
11	El Dorado Dr.	South of E. Boronda	2	5	10	22	48
12	Hemmingway Dr.	South of E. Boronda	3	6	14	30	64
13	Independence Blvd.	South of E. Boronda	9	19	41	89	192
14	McKinnon St.	South of E. Boronda	10	21	45	96	207
15	N. Main	North of E. Boronda	19	42	90	193	417
16	N. Main	South of E. Boronda	19	41	89	193	415
17	N. Sanborn Rd.	South of E. Boronda	7	14	30	65	141
18	Natividad Rd.	South of E. Boronda	18	40	86	184	397
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	35	75	161	346	746
20	Natividad Rd.	Future Russell Rd. to Rogge	18	38	82	177	382
21	Natividad Rd.	North of Rogge	15	33	71	153	329
22	Old Stage Rd.	North of Future Constitution	12	26	55	119	256
23	Old Stage Rd.	Future Constitution to Williams	10	21	46	100	215
24	Old Stage Rd.	South of Williams	6	13	29	62	134
25	Rogge Rd.	San Juan Grade to Natividad	8	18	39	84	180
26	Russell Rd.	West of San Juan Grade	12	26	56	121	261
27	San Juan Grade Rd.	South of E. Boronda	17	36	78	168	361
28	San Juan Grade Rd.	E. Boronda to Van Buren	22	48	104	225	485
29	San Juan Grade Rd.	Van Buren to Russell	18	39	85	183	394
30	San Juan Grade Rd.	Russell to Rogge	17	37	80	173	373
31	San Juan Grade Rd.	North of Rogge	8	17	36	78	169
32	Van Buren Ave.	West of San Juan Grade	4	8	17	36	77
33	Williams Rd.	West of E. Boronda	11	24	52	112	242
34	Williams Rd.		13	27	59	127	273

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 West Area Specific Plan
Description: Cumulative No Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	14,600	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	25,000	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	24,600	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	20,300	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	18,700	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	25,500	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	18,100	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	6,800	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	11,800	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	9,200	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	5,900	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	3,400	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	8,800	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	8,100	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	36,600	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	28,400	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	5,600	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	14,600	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	12,700	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	12,700	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	8,900	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	4,600	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	4,600	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	3,100	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	5,200	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	19,900	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	12,300	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	15,000	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	18,200	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	9,100	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	6,500	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,900	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	15,300	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	13,700	83		17	2.0	0.5	50	800	0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2015-153 West Area Specific Plan
Description: Cumulative No Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	61.3	52.6	51.1	62.2
2	E. Boronda Rd.	N. Main to San Juan Grade	65.3	56.7	58.2	66.5
3	E. Boronda Rd.	San Juan Grade to McKinnon	64.0	55.4	56.9	65.3
4	E. Boronda Rd.	McKinnon to El Dorado	63.2	54.6	56.1	64.4
5	E. Boronda Rd.	El Dorado to Natividad	62.8	54.2	55.7	64.1
6	E. Boronda Rd.	Natividad to Independence	65.4	56.8	58.3	66.6
7	E. Boronda Rd.	Independence to Hemmingway	63.9	55.3	56.8	65.1
8	E. Boronda Rd.	Hemmingway to Constitution	57.0	48.4	49.9	58.2
9	E. Boronda Rd.	Constitution to N. Sanborn	59.4	50.8	52.3	60.6
10	E. Boronda Rd.	N. Sanborn to Williams	58.3	49.7	51.2	59.6
11	El Dorado Dr.	South of E. Boronda	51.7	46.4	48.0	54.1
12	Hemmingway Dr.	South of E. Boronda	53.5	46.3	45.5	54.8
13	Independence Blvd.	South of E. Boronda	59.6	51.0	49.4	60.5
14	McKinnon St.	South of E. Boronda	62.3	55.1	54.3	63.6
15	N. Main	North of E. Boronda	67.1	59.9	65.1	69.7
16	N. Main	South of E. Boronda	64.2	57.1	62.3	66.8
17	N. Sanborn Rd.	South of E. Boronda	55.4	46.7	45.2	56.3
18	Natividad Rd.	South of E. Boronda	61.8	53.2	54.7	63.0
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	62.8	54.2	55.7	64.1
20	Natividad Rd.	Future Russell Rd. to Rogge	62.8	54.2	55.7	64.1
21	Natividad Rd.	North of Rogge	60.9	51.7	52.9	62.0
22	Old Stage Rd.	North of Future Constitution	58.0	48.8	50.0	59.1
23	Old Stage Rd.	Future Constitution to Williams	56.7	48.1	49.6	58.0
24	Old Stage Rd.	South of Williams	55.0	46.4	47.9	56.2
25	Rogge Rd.	San Juan Grade to Natividad	60.4	53.2	52.3	61.7
26	Russell Rd.	West of San Juan Grade	66.2	59.0	58.2	67.5
27	San Juan Grade Rd.	South of E. Boronda	64.6	56.0	57.5	65.8
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.1	59.5	61.0	69.3
29	San Juan Grade Rd.	Van Buren to Russell	67.7	59.1	60.6	69.0
30	San Juan Grade Rd.	Russell to Rogge	64.7	56.1	57.6	66.0
31	San Juan Grade Rd.	North of Rogge	61.3	54.1	56.3	63.1
32	Van Buren Ave.	West of San Juan Grade	54.9	49.6	51.2	57.3
33	Williams Rd.	West of E. Boronda	63.3	56.1	55.3	64.6
34	Williams Rd.		51.0	41.7	39.9	51.7

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 West Area Specific Plan

Description: Cumulative No Project Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	9	20	42	91	196
2	E. Boronda Rd.	N. Main to San Juan Grade	14	29	63	136	294
3	E. Boronda Rd.	San Juan Grade to McKinnon	13	29	63	135	291
4	E. Boronda Rd.	McKinnon to El Dorado	12	26	55	119	256
5	E. Boronda Rd.	El Dorado to Natividad	11	24	52	112	242
6	E. Boronda Rd.	Natividad to Independence	14	30	64	138	298
7	E. Boronda Rd.	Independence to Hemmingway	11	24	51	110	237
8	E. Boronda Rd.	Hemmingway to Constitution	6	12	27	57	123
9	E. Boronda Rd.	Constitution to N. Sanborn	8	18	38	83	178
10	E. Boronda Rd.	N. Sanborn to Williams	7	15	33	70	151
11	El Dorado Dr.	South of E. Boronda	2	4	9	20	43
12	Hemmingway Dr.	South of E. Boronda	2	5	10	23	49
13	Independence Blvd.	South of E. Boronda	6	14	30	65	140
14	McKinnon St.	South of E. Boronda	9	19	40	87	187
15	N. Main	North of E. Boronda	29	62	134	288	620
16	N. Main	South of E. Boronda	24	52	113	243	523
17	N. Sanborn Rd.	South of E. Boronda	5	10	22	48	103
18	Natividad Rd.	South of E. Boronda	10	21	44	95	205
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	19	40	87	187	403
20	Natividad Rd.	Future Russell Rd. to Rogge	19	40	87	187	403
21	Natividad Rd.	North of Rogge	18	38	82	176	379
22	Old Stage Rd.	North of Future Constitution	11	24	53	113	244
23	Old Stage Rd.	Future Constitution to Williams	10	20	44	95	205
24	Old Stage Rd.	South of Williams	7	16	34	73	157
25	Rogge Rd.	San Juan Grade to Natividad	6	14	30	64	139
26	Russell Rd.	West of San Juan Grade	16	34	73	158	340
27	San Juan Grade Rd.	South of E. Boronda	18	39	85	183	395
28	San Juan Grade Rd.	E. Boronda to Van Buren	21	45	97	209	451
29	San Juan Grade Rd.	Van Buren to Russell	24	51	110	238	513
30	San Juan Grade Rd.	Russell to Rogge	15	32	70	150	323
31	San Juan Grade Rd.	North of Rogge	8	17	37	80	173
32	Van Buren Ave.	West of San Juan Grade	3	7	15	33	71
33	Williams Rd.	West of E. Boronda	13	29	61	132	285
34	Williams Rd.		23	49	105	225	485

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 West Area Specific Plan
Description: Cumulative + WASP Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	26,200	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	33,900	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	42,700	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	28,100	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	36,400	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	35,200	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	27,200	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	10,000	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	20,400	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	16,100	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	7,100	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	3,400	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	9,400	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	11,700	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	36,600	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	28,700	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	9,100	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	34,600	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	25,500	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	13,300	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	9,500	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	4,600	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	4,600	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	3,100	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	5,200	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	26,100	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	14,900	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	15,800	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	19,500	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	10,200	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	7,600	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,900	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	22,200	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	13,700	83		17	2.0	0.5	50	800	0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 West Area Specific Plan

Description: Cumulative + WASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	63.8	55.2	53.7	64.7
2	E. Boronda Rd.	N. Main to San Juan Grade	66.6	58.0	59.5	67.9
3	E. Boronda Rd.	San Juan Grade to McKinnon	66.4	57.8	59.3	67.7
4	E. Boronda Rd.	McKinnon to El Dorado	64.6	56.0	57.5	65.9
5	E. Boronda Rd.	El Dorado to Natividad	65.7	57.1	58.6	67.0
6	E. Boronda Rd.	Natividad to Independence	66.8	58.2	59.7	68.0
7	E. Boronda Rd.	Independence to Hemmingway	65.7	57.1	58.5	66.9
8	E. Boronda Rd.	Hemmingway to Constitution	58.7	50.1	51.6	59.9
9	E. Boronda Rd.	Constitution to N. Sanborn	61.8	53.2	54.6	63.0
10	E. Boronda Rd.	N. Sanborn to Williams	60.7	52.1	53.6	62.0
11	El Dorado Dr.	South of E. Boronda	52.5	47.2	48.8	54.9
12	Hemmingway Dr.	South of E. Boronda	53.5	46.3	45.5	54.8
13	Independence Blvd.	South of E. Boronda	59.9	51.3	49.7	60.8
14	McKinnon St.	South of E. Boronda	63.9	56.7	55.9	65.2
15	N. Main	North of E. Boronda	67.1	59.9	65.1	69.7
16	N. Main	South of E. Boronda	64.2	57.1	62.3	66.9
17	N. Sanborn Rd.	South of E. Boronda	57.5	48.8	47.3	58.4
18	Natividad Rd.	South of E. Boronda	65.5	56.9	58.4	66.8
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	65.9	57.3	58.7	67.1
20	Natividad Rd.	Future Russell Rd. to Rogge	63.0	54.4	55.9	64.3
21	Natividad Rd.	North of Rogge	61.2	52.0	53.2	62.3
22	Old Stage Rd.	North of Future Constitution	58.0	48.8	50.0	59.1
23	Old Stage Rd.	Future Constitution to Williams	56.7	48.1	49.6	58.0
24	Old Stage Rd.	South of Williams	55.0	46.4	47.9	56.2
25	Rogge Rd.	San Juan Grade to Natividad	60.4	53.2	52.3	61.7
26	Russell Rd.	West of San Juan Grade	67.4	60.2	59.3	68.7
27	San Juan Grade Rd.	South of E. Boronda	65.4	56.8	58.3	66.7
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.3	59.7	61.2	69.5
29	San Juan Grade Rd.	Van Buren to Russell	68.0	59.4	60.9	69.3
30	San Juan Grade Rd.	Russell to Rogge	65.2	56.6	58.1	66.5
31	San Juan Grade Rd.	North of Rogge	62.0	54.8	57.0	63.8
32	Van Buren Ave.	West of San Juan Grade	54.9	49.6	51.2	57.3
33	Williams Rd.	West of E. Boronda	64.9	57.8	56.9	66.2
34	Williams Rd.		51.0	41.7	39.9	51.7

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2015-153 West Area Specific Plan
Description: Cumulative + WASP Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	13	29	62	134	289
2	E. Boronda Rd.	N. Main to San Juan Grade	17	36	78	167	360
3	E. Boronda Rd.	San Juan Grade to McKinnon	19	42	90	195	420
4	E. Boronda Rd.	McKinnon to El Dorado	15	32	68	148	318
5	E. Boronda Rd.	El Dorado to Natividad	18	38	81	175	378
6	E. Boronda Rd.	Natividad to Independence	17	37	80	171	369
7	E. Boronda Rd.	Independence to Hemmingway	14	31	67	144	311
8	E. Boronda Rd.	Hemmingway to Constitution	7	16	34	74	160
9	E. Boronda Rd.	Constitution to N. Sanborn	12	26	55	119	257
10	E. Boronda Rd.	N. Sanborn to Williams	10	22	47	102	219
11	El Dorado Dr.	South of E. Boronda	2	5	11	23	49
12	Hemmingway Dr.	South of E. Boronda	2	5	10	23	49
13	Independence Blvd.	South of E. Boronda	7	15	31	68	146
14	McKinnon St.	South of E. Boronda	11	24	51	111	238
15	N. Main	North of E. Boronda	29	62	134	288	620
16	N. Main	South of E. Boronda	24	53	114	245	527
17	N. Sanborn Rd.	South of E. Boronda	7	14	31	66	143
18	Natividad Rd.	South of E. Boronda	17	37	79	169	365
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	30	64	138	298	642
20	Natividad Rd.	Future Russell Rd. to Rogge	19	42	90	193	416
21	Natividad Rd.	North of Rogge	18	40	85	184	396
22	Old Stage Rd.	North of Future Constitution	11	24	53	113	244
23	Old Stage Rd.	Future Constitution to Williams	10	20	44	95	205
24	Old Stage Rd.	South of Williams	7	16	34	73	157
25	Rogge Rd.	San Juan Grade to Natividad	6	14	30	64	139
26	Russell Rd.	West of San Juan Grade	19	41	88	189	407
27	San Juan Grade Rd.	South of E. Boronda	21	45	97	208	449
28	San Juan Grade Rd.	E. Boronda to Van Buren	22	47	100	216	466
29	San Juan Grade Rd.	Van Buren to Russell	25	54	116	249	537
30	San Juan Grade Rd.	Russell to Rogge	16	35	75	162	348
31	San Juan Grade Rd.	North of Rogge	9	19	41	89	192
32	Van Buren Ave.	West of San Juan Grade	3	7	15	33	71
33	Williams Rd.	West of E. Boronda	17	37	79	170	365
34	Williams Rd.		23	49	105	225	485

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Appendix B
FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-153 West Area Specific Plan
Description: Cumulative + WASP + CASP Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Constitution Blvd.	South of E. Boronda	32,500	83		17	2.0	0.5	45	65	-5
2	E. Boronda Rd.	N. Main to San Juan Grade	35,400	83		17	2.0	1	45	50	-5
3	E. Boronda Rd.	San Juan Grade to McKinnon	45,200	83		17	2.0	1	45	60	-5
4	E. Boronda Rd.	McKinnon to El Dorado	30,000	83		17	2.0	1	45	60	-5
5	E. Boronda Rd.	El Dorado to Natividad	40,400	83		17	2.0	1	45	60	-5
6	E. Boronda Rd.	Natividad to Independence	46,700	83		17	2.0	1	45	50	-5
7	E. Boronda Rd.	Independence to Hemmingway	40,100	83		17	2.0	1	45	50	-5
8	E. Boronda Rd.	Hemmingway to Constitution	13,600	83		17	2.0	1	45	75	-5
9	E. Boronda Rd.	Constitution to N. Sanborn	24,600	83		17	2.0	1	45	75	-5
10	E. Boronda Rd.	N. Sanborn to Williams	19,000	83		17	2.0	1	45	75	-5
11	El Dorado Dr.	South of E. Boronda	7,100	83		17	2.0	0.5	25	50	-5
12	Hemmingway Dr.	South of E. Boronda	8,600	83		17	2.0	0.5	35	50	-5
13	Independence Blvd.	South of E. Boronda	12,800	83		17	2.0	0.5	45	60	-5
14	McKinnon St.	South of E. Boronda	12,100	83		17	2.0	0.5	35	50	0
15	N. Main	North of E. Boronda	36,800	83		17	2.0	2	35	65	0
16	N. Main	South of E. Boronda	29,700	83		17	2.0	2	35	85	0
17	N. Sanborn Rd.	South of E. Boronda	10,300	83		17	2.0	0.5	45	85	-5
18	Natividad Rd.	South of E. Boronda	41,300	83		17	2.0	1	45	60	-5
19	Natividad Rd.	E. Boronda to Future Russell Rd. I	30,400	83		17	2.0	1	45	100	0
20	Natividad Rd.	Future Russell Rd. to Rogge	15,200	83		17	2.0	1	45	100	0
21	Natividad Rd.	North of Rogge	11,400	83		17	2.0	1	50	130	0
22	Old Stage Rd.	North of Future Constitution	5,400	83		17	2.0	1	50	130	0
23	Old Stage Rd.	Future Constitution to Williams	5,400	83		17	2.0	1	45	130	0
24	Old Stage Rd.	South of Williams	3,900	83		17	2.0	1	45	130	0
25	Rogge Rd.	San Juan Grade to Natividad	5,200	83		17	2.0	0.5	35	50	0
26	Russell Rd.	West of San Juan Grade	30,700	83		17	2.0	0.5	35	50	0
27	San Juan Grade Rd.	South of E. Boronda	15,700	83		17	2.0	1	45	75	0
28	San Juan Grade Rd.	E. Boronda to Van Buren	15,800	83		17	2.0	1	45	50	0
29	San Juan Grade Rd.	Van Buren to Russell	19,500	83		17	2.0	1	45	60	0
30	San Juan Grade Rd.	Russell to Rogge	10,200	83		17	2.0	1	45	60	0
31	San Juan Grade Rd.	North of Rogge	7,600	83		17	2.0	1	35	50	0
32	Van Buren Ave.	West of San Juan Grade	3,900	83		17	2.0	0.5	25	50	0
33	Williams Rd.	West of E. Boronda	25,300	83		17	2.0	0.5	35	65	0
34	Williams Rd.	East of E. Boronda	13,900	83		17	2.0	0.5	50	800	0

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Predicted Levels

Project #: 2015-153 West Area Specific Plan

Description: Cumulative + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	Constitution Blvd.	South of E. Boronda	64.7	56.1	54.6	65.7
2	E. Boronda Rd.	N. Main to San Juan Grade	66.8	58.2	59.7	68.1
3	E. Boronda Rd.	San Juan Grade to McKinnon	66.7	58.1	59.6	67.9
4	E. Boronda Rd.	McKinnon to El Dorado	64.9	56.3	57.8	66.1
5	E. Boronda Rd.	El Dorado to Natividad	66.2	57.6	59.1	67.4
6	E. Boronda Rd.	Natividad to Independence	68.0	59.4	60.9	69.3
7	E. Boronda Rd.	Independence to Hemmingway	67.3	58.7	60.2	68.6
8	E. Boronda Rd.	Hemmingway to Constitution	60.0	51.4	52.9	61.3
9	E. Boronda Rd.	Constitution to N. Sanborn	62.6	54.0	55.5	63.8
10	E. Boronda Rd.	N. Sanborn to Williams	61.5	52.9	54.3	62.7
11	El Dorado Dr.	South of E. Boronda	52.5	47.2	48.8	54.9
12	Hemmingway Dr.	South of E. Boronda	57.5	50.4	49.5	58.8
13	Independence Blvd.	South of E. Boronda	61.2	52.6	51.1	62.1
14	McKinnon St.	South of E. Boronda	64.0	56.8	56.0	65.3
15	N. Main	North of E. Boronda	67.1	60.0	65.2	69.7
16	N. Main	South of E. Boronda	64.4	57.3	62.5	67.0
17	N. Sanborn Rd.	South of E. Boronda	58.0	49.4	47.9	58.9
18	Natividad Rd.	South of E. Boronda	66.3	57.7	59.2	67.5
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	66.6	58.0	59.5	67.9
20	Natividad Rd.	Future Russell Rd. to Rogge	63.6	55.0	56.5	64.9
21	Natividad Rd.	North of Rogge	62.0	52.8	54.0	63.0
22	Old Stage Rd.	North of Future Constitution	58.7	49.5	50.7	59.8
23	Old Stage Rd.	Future Constitution to Williams	57.4	48.8	50.3	58.7
24	Old Stage Rd.	South of Williams	56.0	47.4	48.9	57.2
25	Rogge Rd.	San Juan Grade to Natividad	60.4	53.2	52.3	61.7
26	Russell Rd.	West of San Juan Grade	68.1	60.9	60.1	69.4
27	San Juan Grade Rd.	South of E. Boronda	65.6	57.0	58.5	66.9
28	San Juan Grade Rd.	E. Boronda to Van Buren	68.3	59.7	61.2	69.5
29	San Juan Grade Rd.	Van Buren to Russell	68.0	59.4	60.9	69.3
30	San Juan Grade Rd.	Russell to Rogge	65.2	56.6	58.1	66.5
31	San Juan Grade Rd.	North of Rogge	62.0	54.8	57.0	63.8
32	Van Buren Ave.	West of San Juan Grade	54.9	49.6	51.2	57.3
33	Williams Rd.	West of E. Boronda	65.5	58.3	57.5	66.8
34	Williams Rd.		51.0	41.8	40.0	51.8

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2015-153 West Area Specific Plan

Description: Cumulative + WASP + CASP Traffic

Ldn/CNEL: Ldn

Hard/Soft: Soft

Segment	Roadway Name	Segment Description	-------- Distances to Traffic Noise Contours -------- 75	70	65	60	55
1	Constitution Blvd.	South of E. Boronda	15	33	72	155	334
2	E. Boronda Rd.	N. Main to San Juan Grade	17	37	80	172	371
3	E. Boronda Rd.	San Juan Grade to McKinnon	20	44	94	203	436
4	E. Boronda Rd.	McKinnon to El Dorado	15	33	72	154	332
5	E. Boronda Rd.	El Dorado to Natividad	19	40	87	188	405
6	E. Boronda Rd.	Natividad to Independence	21	45	96	207	446
7	E. Boronda Rd.	Independence to Hemmingway	19	40	87	187	403
8	E. Boronda Rd.	Hemmingway to Constitution	9	20	42	91	196
9	E. Boronda Rd.	Constitution to N. Sanborn	13	29	63	135	291
10	E. Boronda Rd.	N. Sanborn to Williams	11	24	53	114	245
11	El Dorado Dr.	South of E. Boronda	2	5	11	23	49
12	Hemmingway Dr.	South of E. Boronda	4	9	19	42	90
13	Independence Blvd.	South of E. Boronda	8	18	39	83	179
14	McKinnon St.	South of E. Boronda	11	24	53	113	244
15	N. Main	North of E. Boronda	29	62	134	289	622
16	N. Main	South of E. Boronda	25	54	116	250	539
17	N. Sanborn Rd.	South of E. Boronda	7	16	33	72	155
18	Natividad Rd.	South of E. Boronda	19	41	89	191	411
19	Natividad Rd.	E. Boronda to Future Russell Rd. Ext.	33	72	155	335	722
20	Natividad Rd.	Future Russell Rd. to Rogge	21	45	98	211	455
21	Natividad Rd.	North of Rogge	21	45	96	207	447
22	Old Stage Rd.	North of Future Constitution	13	27	58	126	272
23	Old Stage Rd.	Future Constitution to Williams	11	23	49	106	228
24	Old Stage Rd.	South of Williams	9	18	40	85	184
25	Rogge Rd.	San Juan Grade to Natividad	6	14	30	64	139
26	Russell Rd.	West of San Juan Grade	21	45	98	211	454
27	San Juan Grade Rd.	South of E. Boronda	22	46	100	216	464
28	San Juan Grade Rd.	E. Boronda to Van Buren	22	47	100	216	466
29	San Juan Grade Rd.	Van Buren to Russell	25	54	116	249	537
30	San Juan Grade Rd.	Russell to Rogge	16	35	75	162	348
31	San Juan Grade Rd.	North of Rogge	9	19	41	89	192
32	Van Buren Ave.	West of San Juan Grade	3	7	15	33	71
33	Williams Rd.	West of E. Boronda	19	40	86	185	399
34	Williams Rd.		23	49	106	228	490

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2015-153 West Area Specific Plan
Description: Cumulative + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name - Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	E. Borando - Nearest Residential Uses	46,700	83		17	2	1	45	85	
2	San Juan Grade Road - Nearest Residential Uses	19,500	83		17	2	1	45	85	
3	Russell Road - Nearest Residential Uses	13,000	83		17	2	1	45	85	
4	Rogge Road - Nearest Residential Uses	5,200	83		17	2	0.5	35	45	
5	Natividad Road - Nearest Residential Uses	30,400	83		17	2	1	45	65	

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2015-153 West Area Specific Plan
Description: Cumulative + Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name - Segment	Autos	Medium Trucks	Heavy Trucks	Total
1	E. Borando - Nearest Residential Uses	70	61	62	71
2	San Juan Grade Road - Nearest Residential Uses	66	57	59	67
3	Russell Road - Nearest Residential Uses	64	55	57	65
4	Rogge Road - Nearest Residential Uses	61	54	53	62
5	Natividad Road - Nearest Residential Uses	69	61	62	71

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FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-153 West Area Specific Plan
Description Cumulative + Project Traffic
Roadway Name: E. Borando - Nearest Residential Uses
Location(s): 1

Noise Level Data:

Year: Cumulative + Project Traffic
Auto L_{dn}, dB: 70
Medium Truck L_{dn}, dB: 61
Heavy Truck L_{dn}, dB: 62

Site Geometry:

Receiver Description: E. Borando - Nearest Residential Uses
Centerline to Barrier Distance (C_1): 70
Barrier to Receiver Distance (C_2): 15
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB				Barrier Breaks Line of Sight to…		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	63	55	57	**65**	Yes	Yes	Yes
7	7	62	54	57	**64**	Yes	Yes	Yes
8	8	61	53	56	**62**	Yes	Yes	Yes
9	9	59	51	54	**61**	Yes	Yes	Yes
10	10	59	50	53	**60**	Yes	Yes	Yes
11	11	58	49	52	**59**	Yes	Yes	Yes
12	12	57	48	51	**58**	Yes	Yes	Yes
13	13	56	48	50	**58**	Yes	Yes	Yes
14	14	55	47	49	**57**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-153 West Area Specific Plan
Description Cumulative + Project Traffic
Roadway Name: San Juan Grade Road - Nearest Residential Uses
Location(s): 2

Noise Level Data:

Year: Cumulative + Project Traffic
Auto L_{dn}, dB: 66
Medium Truck L_{dn}, dB: 57
Heavy Truck L_{dn}, dB: 59

Site Geometry:

Receiver Description: San Juan Grade Road - Nearest Resi
Centerline to Barrier Distance (C_1): 70
Barrier to Receiver Distance (C_2): 15
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	6	60	51	54	**61**	Yes	Yes	Yes
7	7	58	50	53	**60**	Yes	Yes	Yes
8	8	57	49	52	**59**	Yes	Yes	Yes
9	9	56	47	50	**57**	Yes	Yes	Yes
10	10	55	47	49	**56**	Yes	Yes	Yes
11	11	54	46	48	**55**	Yes	Yes	Yes
12	12	53	45	47	**54**	Yes	Yes	Yes
13	13	52	44	46	**54**	Yes	Yes	Yes
14	14	52	43	45	**53**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-153 West Area Specific Plan
Description Cumulative + Project Traffic
Roadway Name: Russell Road - Nearest Residential Uses
Location(s): 3

Noise Level Data:

Year: Cumulative + Project Traffic
Auto L_{dn}, dB: 64
Medium Truck L_{dn}, dB: 55
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: Russell Road - Nearest Residential Uses
Centerline to Barrier Distance (C_1): 70
Barrier to Receiver Distance (C_2): 15
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	-------------------- L_{dn}, dB --------------------				Barrier Breaks Line of Sight to…		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	58	49	48	**59**	Yes	Yes	Yes
7	7	56	48	47	**57**	Yes	Yes	Yes
8	8	55	47	46	**56**	Yes	Yes	Yes
9	9	54	46	45	**55**	Yes	Yes	Yes
10	10	53	45	44	**54**	Yes	Yes	Yes
11	11	52	44	43	**53**	Yes	Yes	Yes
12	12	51	43	42	**52**	Yes	Yes	Yes
13	13	50	42	41	**51**	Yes	Yes	Yes
14	14	50	41	40	**51**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-153 West Area Specific Plan
Description Cumulative + Project Traffic
Roadway Name: Rogge Road - Nearest Residential Uses
Location(s): 4

Noise Level Data:

Year: Cumulative + Project Traffic
Auto L_{dn}, dB: 61
Medium Truck L_{dn}, dB: 54
Heavy Truck L_{dn}, dB: 53

Site Geometry:

Receiver Description: Rogge Road - Nearest Residential Uses
Centerline to Barrier Distance (C_1): 30
Barrier to Receiver Distance (C_2): 15
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	-------------------- L_{dn}, dB --------------------				Barrier Breaks Line of Sight to…		
		Autos	Medium Trucks	Heavy Trucks	Total	Autos?	Medium Trucks?	Heavy Trucks?
6	6	53	47	48	**55**	Yes	Yes	No
7	7	52	46	48	**54**	Yes	Yes	Yes
8	8	51	44	46	**53**	Yes	Yes	Yes
9	9	50	43	45	**52**	Yes	Yes	Yes
10	10	49	42	44	**50**	Yes	Yes	Yes
11	11	48	41	43	**50**	Yes	Yes	Yes
12	12	47	40	42	**49**	Yes	Yes	Yes
13	13	46	40	40	**48**	Yes	Yes	Yes
14	14	46	39	40	**47**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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Appendix C

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Barrier Effectiveness Prediction Worksheet

Project Information:

Job Number: 2015-153 West Area Specific Plan
Description Cumulative + Project Traffic
Roadway Name: Natividad Road - Nearest Residential Uses
Location(s): 5

Noise Level Data:

Year: Cumulative + Project Traffic
Auto L_{dn}, dB: 69
Medium Truck L_{dn}, dB: 61
Heavy Truck L_{dn}, dB: 62

Site Geometry:

Receiver Description: Natividad Road - Nearest Residential Uses
Centerline to Barrier Distance (C_1): 50
Barrier to Receiver Distance (C_2): 15
Automobile Elevation: 0
Medium Truck Elevation: 2
Heavy Truck Elevation: 8
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 0
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	-------------------- L_{dn}, dB -------------------- Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
6	6	63	55	57	**64**	Yes	Yes	Yes
7	7	61	53	57	**63**	Yes	Yes	Yes
8	8	60	52	55	**62**	Yes	Yes	Yes
9	9	59	51	54	**61**	Yes	Yes	Yes
10	10	58	50	53	**60**	Yes	Yes	Yes
11	11	57	49	52	**59**	Yes	Yes	Yes
12	12	56	48	51	**58**	Yes	Yes	Yes
13	13	56	47	50	**57**	Yes	Yes	Yes
14	14	55	47	49	**56**	Yes	Yes	Yes

Notes: 1.Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

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APPENDIX I –TRANSPORTATION IMPACT ANALYSIS

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The Draft West Area Specific Plan

Transportation Impact Analysis

Prepared for:
The City of Salinas
and De Novo Planning Group

October 2018

WC16-3296

FEHR PEERS

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1.0 EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis (TIA) for the Draft West Area Specific Plan Environmental Impact Report (EIR). The Specific Plan proposes mixed use residential and commercial development that encompasses 797 acres in the northwest area of the City of Salinas. It includes four residential neighborhoods with approximately 4,340 housing units, 571,500 square feet of mixed use village center with residential and commercial development, 11 parks, three elementary schools, a middle school, and a high school.

Pursuant to regulations in the California Environmental Quality Act (CEQA), the purpose of this TIA is to determine whether and to what extent the Specific Plan would have significant impacts on the transportation network in the City of Salinas - including public transportation service and active transportation facilities. A performance baseline was established through traffic volume data collection and field observations of 56 study intersections in Salinas and nearby areas of unincorporated Monterey County. Freeway mainline and ramp junction volumes along US 101 were also collected. A level of service analysis (LOS) was then conducted using the observed volumes and compared against standards of significance derived from relevant local and state policy documents. An existing conditions operational analysis of the study intersections, US 101 segments, and US 101 ramp junctions found that four intersections function at LOS scores below Salinas minimum thresholds. All of the US 101 mainline sections and ramp junctions evaluated function within the standards set by the Monterey County Congestion Management Plan (CMP).

Project trip generation – the amount of traffic expected to be generated by the proposed project – was estimated based on the proposed project land uses and distributed across the existing transportation network based on observed traffic volumes. After accounting for the impact of project-related traffic on existing conditions, an operational analysis found that eight intersections would experience below-standard LOS scores in the morning and/or evening peak period under the Existing plus Project Conditions scenario. The Northbound Off-Ramps at East Boronda Road and East Laurel Drive would operate at LOS E, which is below the minimum standards set by the County CMP. No significant impacts were found on the US 101 study segments in the Existing plus Project scenario.

For this TIA, 2045 is the horizon year for cumulative condition impact analyses. Based on observed volumes in the existing condition, travel behavior forecasting software was used to estimate and distribute future vehicle traffic onto the roadway network in order to test how the proposed project would impact the transportation network. The roadway network improvements included in the City's General Plan, including the eastside and westside bypasses, are reflected in the cumulative analyses.

Under the Cumulative with No Project Conditions scenario, fourteen intersections and three segments of US 101 would operate below local standards. For the Cumulative with Project Scenario, project trip generation for was distributed over the forecasted cumulative volumes. Under this Cumulative with Project Conditions scenario, seventeen intersections would function below local level of service standards during the morning and/or evening peak period. One segment of US 101 was found to operate below the minimum standards in the morning peak period, and three segments failed in the evening peak period. All ramp junctions were found to operate within CMP standards for all cumulative scenarios.

Significant impacts were found as a result of the addition of project traffic in both the existing and cumulative condition scenarios. In the Existing with Project Conditions scenario, significant adverse impacts were identified at nine intersections and two ramp junctions; under the Cumulative with Project Conditions scenario, there were impacts at fifteen intersections and three freeway mainline segments. These impacts are largely mitigated through the addition of signal installation and/or optimization, as well as the addition of extra lanes and/or turn pockets. Highway mainline and ramp junction impacts are mitigated with contributions to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee Program. No impacts were found with regards to bicycle/pedestrian facilities and public transportation service.

2.0 INTRODUCTION

The City of Salinas (hereafter, "the City") 2002 General Plan establishes policies and goals for future growth. In the past, large tracts of land in the northern part of Salinas (referred to as the North of Boronda Future Growth Area or "FGA") had been set aside for development. The General Plan mandated that the City must adopt specific plans before any development could occur in this area. Thus, the City has prepared the Draft West Area Specific Plan (hereafter referred to as the "proposed project" or West Area Specific Plan) to establish the land use planning and regulatory guidance, which will govern the development of the western portion of the North of Boronda FGA. Concurrently, the City is also preparing the Central Area Specific Plan (Central Area Specific Plan) for the area which adjoins and is located directly east of the proposed project. Although the Central Area Specific Plan is not part of the proposed project it is considered in some scenarios, discussed later. In sum the purpose of these plans is to leverage and encourage potential development as well as establish policies, development regulations and design standards that promote walkable communities where a variety of neighborhood amenities can be accessed via walking, biking, or public transit. These specific plan areas are shown in the context of Salinas with **Figure 1.**

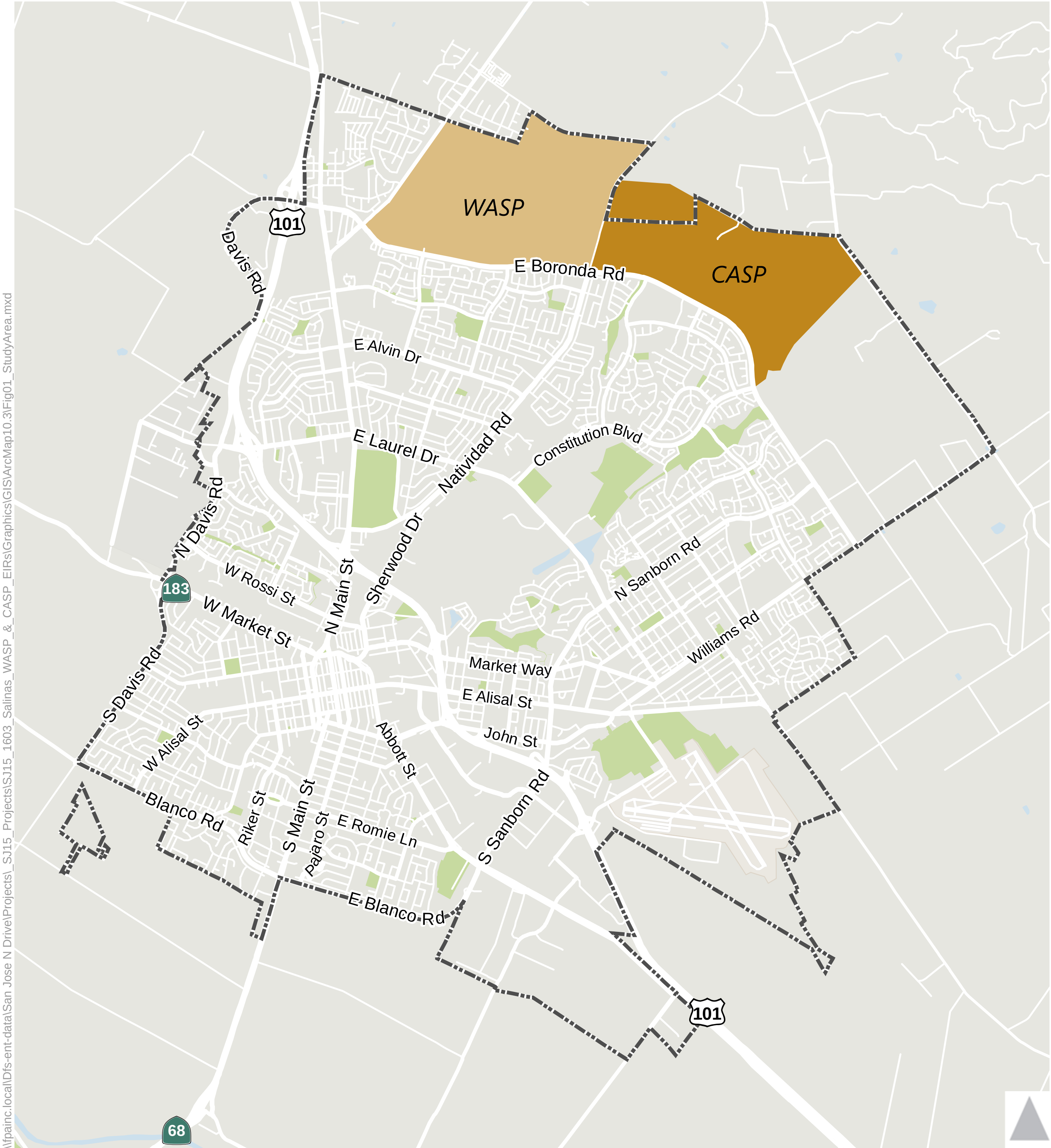
In total, the proposed project encompasses nearly 797 acres of land. There are approximately 4,340 residential units planned in four neighborhoods and a minimum of 91 residential units within the Village Center. Approximately 571,500 square feet of mixed use residential and commercial development is also proposed within the Village Center area, and a maximum of 250,000 square feet of the mixed use commercial square footage could be converted to residential units. Also proposed (all acreages are approximate) is a 30-acre community park, four neighborhood parks totaling 12 acres, six small parks totaling six acres, 35 acres of open space/supplemental detention and retention basins, a 1.5 acres of water well/treatment facilities, three elementary schools on a combined 31 acres, a middle school on a 21 acres, and a high school on 39 acres. The mixed used development in the Village Center could include a grocery store, shops, restaurants, offices and residential units. **Figure 2** shows the West Area Specific Plan local circulation network, provided by De Novo Planning Group.

The proposed project includes many future land use changes and transportation improvements in the City and may have significant impacts on the transportation network as defined under the California Environmental Quality Act (CEQA). As such, the purpose of this Transportation Impact Analysis (TIA) is to identify and propose mitigations for any potentially significant impacts of the proposed project on the transportation network. The impacts will be evaluated following guidelines established by the City of Salinas General Plan, relevant Caltrans Policy, and the Monterey County Congestion Management Program (CMP).

Field observations were conducted in order to establish a performance baseline against which to compare the influence of the proposed project. Local roadway and freeway segment volumes, transit service, and bicycle/pedestrian facilities were documented. Travel behavior modelling software was then utilized to forecast traffic patterns for five different scenarios based on the expected land uses of the proposed project, the Salinas General Plan (including the Economic Development Element Target Areas), and observed volumes. The scenarios were chosen to assess how the project would affect the transportation network in isolation and in conjunction with the planned Central Area Specific Plan development. These were tested with existing traffic volumes and the forecasted volumes for 2045, as shown below:

1. *Existing Conditions:* Existing volumes collected from field observations.
2. *Existing Plus Project Conditions:* Existing volumes plus traffic generated by the proposed project.
3. *Existing Plus Project and Central Area Specific Plan Conditions:* Existing volumes plus traffic generated by the proposed project and the Central Area Specific Plan.
4. *Cumulative Conditions:* Projected traffic volumes and planned transportation infrastructure projects for 2045 including traffic generated by pending developments extraneous to the proposed project. All cumulative scenarios include the development contemplated under the Economic Development Element's Target Areas).
5. *Cumulative Plus Project Conditions:* Volumes generated under the *Cumulative Conditions* scenario, plus net traffic generated by implementation of the proposed project.
6. *Cumulative Plus Project and Central Area Specific Plan:* Volumes generated under the *Cumulative Conditions* scenario, plus net traffic generated by implementation of the proposed project and the Central Area Specific Plan.

Using guidelines set forth by the City, impacts to the transportation network are then identified based on forecasted volumes; mitigations are proposed for facilities where significant impacts are found.



\\fpainc.local\Dfs-ent-data\San Jose N Drive\Projects_SJ15_Projects\SJ15_1603_Salinas_WASP_&_CASP_EIRs\Graphics\GIS\ArcMap10.3\Fig01_StudyArea.mxd

Source: City of Salinas

Legend

West Area Specific Plan (WASP)

Central Area Specific Plan (CASP)

City Limits

Figure 1

West Area Specific Plan Location

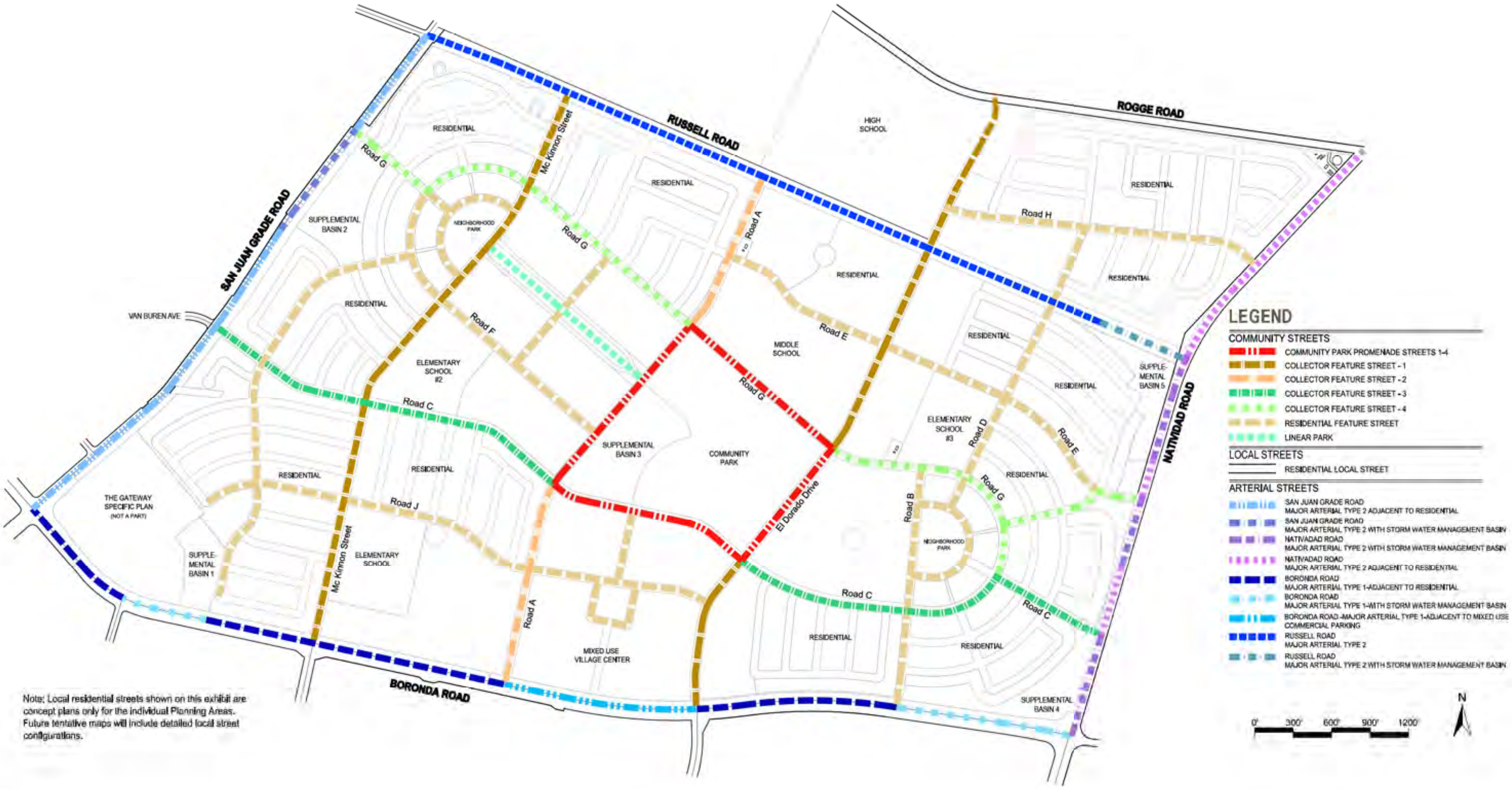


Figure 2

WASP Vehicular Circulation Plan

Source: De Novo Planning Group

3.0 ANALYSIS METHODOLOGIES AND SIGNIFICANCE STANDARDS

This section documents the methodologies used to determine the level of service scores for selected intersections, ramp junctions, and freeway segments that may be impacted by changes in traffic volume related to the proposed project in the existing and cumulative conditions. Significance standards used to determine impacts are also derived from relevant policy documents and discussed.

3.1 INTERSECTION ANALYSIS METHODS

Intersection operations for vehicles is described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (i.e., free flow conditions) to LOS F (over capacity conditions). Typically, LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F. The minimum LOS standard for Salinas, as defined by the current General Plan, is LOS D or better; therefore, intersections operating at LOS E or LOS F are considered to be below the minimum threshold. Caltrans and Monterey CMP facilities use the same standard.

There are two primary methodologies used in determining LOS that are derived from the Transportation Research Board's *Highway Capacity Manual* (HCM), published in 2000 and again in 2010. The 2010 HCM methodology was used for the study intersections. If an intersection could not be analyzed using HCM 2010 due to its limitations[1], HCM 2000 was used instead. There are four intersections in the analysis where HCM 2000 was used: US 101 Northbound Ramps and Boronda Road; US 101 Northbound Ramps and West Laurel Drive; West Laurel Drive and Adams Street; East Market Street and East Front Street. The most recent version of the *Synchro* transportation analysis software was used for all intersections, regardless of methodology.

The intersections of East Boronda Road and Main Street, East Boronda Road and US 101 Southbound Ramps, and East Boronda Road and US 101 Northbound Ramps were evaluated using *SimTraffic* to study congested conditions. *SimTraffic* is a microsimulation traffic evaluation tool that captures the random nature of driver behavior and models the interaction between vehicles in a study network. Traffic simulation better accounts for delays under congested conditions including pedestrian crossings, queue blocking, and queue

[1] The 2010 HCM methodology does not analyze intersections with certain configurations including but not limited to: more than four approaches, U-turns, and clustered intersections.

interactions between adjacent intersections when compared to traditional analysis methods, particularly when analyzing closely-spaced intersections.

3.1.1 SIGNALIZED INTERSECTIONS

The operation of signalized intersections is based on various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay experienced by motorists traveling through an intersection. Control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 1** summarizes the relationship between average delay per vehicle and LOS for signalized intersections.

TABLE 1: SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with long delays indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0

Source: Highway Capacity Manual (Transportation Research Board)

3.1.2 UNSIGNALIZED INTERSECTIONS

Traffic conditions at unsignalized intersections were evaluated using the method from Chapters 19 (two-way stop control), 20 (all-way stop control) and 21 (roundabouts) of the 2010 *Highway Capacity Manual*. With this method, operations are defined by the average control delay per vehicle (measured in seconds) for each movement that must yield to the right-of-way. At all-way stop-controlled intersections and roundabouts, the weighted average control delay for all movements that must yield to the right-of-way is reported. Roundabouts were evaluated using *Sidra* software. At two-way or side street-controlled intersections, the control delay (and LOS) is calculated for each controlled movement, as well as the left-turn movement from the major street, and the entire intersection. For controlled approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The delays for the entire intersection and for the movement or approach with the highest delay are reported. **Table 2** summarizes the relationship between delay and LOS for unsignalized intersections.

TABLE 2: UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delays	$\leq$ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: Highway Capacity Manual (Transportation Research Board).

3.1.3 INTERSECTION ANALYSIS ASSUMPTIONS

Assumptions for certain parameters such as heavy vehicle percentages and a network-wide peak hour were made as the intersection analysis is conducted. A heavy vehicle percentage of 2% was used throughout the entire network, except for designated truck routes where a value of 5% was used. Existing levels of bicycle and pedestrian activity were counted at each study intersection and included in the analysis. Traffic signal timing information was acquired from both the City and Caltrans, and verified in the field.

Peak-hour factors were calculated for each individual study intersection; a singular peak hour was used for all study intersections. Although a different peak hour could be observed at each intersection, one peak hour was used for the entire network since the difference in the occurrence of the peak hour and its effect on the results should be minimal. This allows for analysis of intersections in the network during one peak hour opposed to each intersection operating during its individual peak hour.

In the cumulative scenarios, bicycle and pedestrian volumes were scaled up by 40% at intersections adjacent to the project site in order to account for growth in those modes. A minimum threshold of five conflicting bicycles and ten conflicting pedestrians was used to determine the application of scaling. At all other locations, bicycle and pedestrian volumes were scaled up by 15%.

3.2 FREEWAY MAINLINE AND RAMP JUNCTION ANALYSIS METHODS

Freeway mainline segments were analyzed using an internal spreadsheet tool based on the methodology described in Chapter 11 of HCM 2010. This method takes into consideration peak hour traffic volumes, free-flow speeds, percentage of heavy vehicles, and number of travel lanes. These factors are used to determine the vehicle density, measured in passenger cars per mile per lane. The operational performance of ramp junctions at certain locations on the freeway were also analyzed according to a methodology based on the Highway Capacity Manual.

Based on the methodology described in the Transportation Research Board's *Highway Capacity Manual*, ramp merge and diverge analysis determines level of service (LOS) scores for freeway ramp junctions based on the density of entering and exiting traffic along the highway mainline. In this case, LOS describes the traffic and delay experienced by people driving as a result of traffic density on the ramps. It is important to note that the US 101 northbound on-ramp and southbound off-ramp at East Boronda Road were not analyzed because they add or remove an entire lane, thus creating a weaving segment; only ramp diverge or merge segments were analyzed.

3.3 VEHICLE MILES TRAVELLED

The Salinas Travel Demand Model was used to estimate Vehicle Miles Travelled (VMT) for the study area. This was done by multiplying the number of vehicle trips taken by trip length.

3.4 STANDARDS OF SIGNIFICANCE

Local governments and transportation agencies may set minimum Level of Service (LOS) standards for roads based on their classification, importance in the regional network, or other factors. Relevant policy documents and the resultant significance standards are described in this section.

When local ordinance is unclear about impacts at locations that are already failing, significance standards are taken from recent transportation impact analyses conducted in the same area. As such, the City of Salinas General Plan does not include a policy regarding the analysis of an intersection or roadway that is already operating below standard. However, in recent transportation impact studies prepared for the City, the thresholds used state that the addition of any new trips to a facility already exceeding the operating standard is considered a significant impact. A similar criterion is applied to County and Caltrans facilities that are already below operating standards. The impacts of the project were evaluated by comparing the results of the level of service calculations under Project Conditions to the results under Existing Conditions.

3.4.1 THE CITY OF SALINAS

The City of Salinas General Plan (2002) defines city policies regarding future growth and development. The Circulation Element of the General Plan establishes a framework for the transportation system, including the minimum Level of Service scores for City roads. To that end, Policy C-1.2 states that the City shall "strive to maintain traffic Level of Service (LOS) D or better for all intersections and roadways." Furthermore, Policy C-1.3 states that these standards must be maintained with the addition of new development. The standards and goals reflected in these policies will be accounted for in the existing and future operations analysis of this report.

The City of Salinas Bikeways Plan (2002) and City of Salinas Pedestrian Plan (2004) elaborate city policy with regards to the bicycle and pedestrian network. They also establish a prioritized list of projects as well as their cost for implementation. These plans illustrate the ideal bicycle and pedestrian network for the City.

The West Area Specific Plan establishes land use designations, policies, development regulations and design standards for the Specific Plan area. With regards to transportation, the Plan defines a typology for local streets and the arterial roadways that bound the West Area Specific Plan project area (shown earlier in **Figure 2**).

For the purposes of this TIA, impacts to bicycle, pedestrian, or transit service would occur if the implementation of the proposed project results in inadequate service and access for people using these modes, or if it would conflict with adopted polices, plans, or programs that support such modes.

Therefore, standards of significance for local intersections, pedestrian and bicycle facilities, and transit service is defined as follows:

3.4.1.1 Local Intersections

Significant impacts at signalized intersections are defined to occur when:

- The addition of project traffic causes intersection operations to degrade from an acceptable level (LOS D or better) to an unacceptable level (LOS E or worse); or
- Project traffic is added to an intersection operating at an unacceptable level (LOS E or worse).

Significant impacts at unsignalized intersections are defined to occur when:

- The addition of project traffic causes intersection operations (either the intersection as a whole or the worst movement for a two-way stop-controlled intersection) to degrade to an unacceptable level and satisfy the peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD); or

- The project's access to a major street causes a potentially unsafe situation or requires a new traffic signal or roundabout based on standard warrant criteria.

3.4.1.2 Pedestrian and Bicycle Facilities

Significant impacts to pedestrian and bicycle facilities are defined to occur when:

- The project conflicts with existing or planned pedestrian or bicycle facilities; or
- The project creates pedestrian and bicycle demand without providing adequate facilities.

3.4.1.3 Public Transportation

Significant impacts to public transportation services are defined to occur when:

- The project conflicts with existing or planned transit facilities; or
- The project generates potential transit trips without providing adequate transit service or facilities, such as stops or shelters.

3.4.2 CALTRANS FACILITIES

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway facilities (*Guide for the Preparation of Traffic Studies*, Caltrans, December 2002); however, Caltrans has acknowledged that such a goal may not always be feasible. A standard of LOS D or better was used as the planning objective for the evaluation of potential impacts of this development on Caltrans facilities as that is the standard set for Caltrans facilities in the study area by the Monterey CMP.

3.4.3 MONTEREY COUNTY

Some roadway segments in this report fall within the unincorporated areas of Monterey County. As such, the applicable level of service standards from the Monterey County General Plan Circulation Element will be applied. In this case, Policy C-1.1 of the plan states that "the acceptable level of service for County roads and intersections shall be Level of Service (LOS) D."

Therefore, significant impacts at mainline freeway segments and ramp junctions are defined to occur when:

- The addition of project traffic causes freeway mainlines or ramp junction operations to degrade from an acceptable level (LOS D or better) to an unacceptable level (LOS E or worse), or
- Project traffic is added to a freeway mainline or ramp junction operating at an unacceptable level (LOS E or worse).

4.0 EXISTING CONDITIONS ANALYSIS

This chapter describes the transportation network around the study area as it exists today. The results of an existing conditions analysis using methods, assumptions, and significance standards are discussed.

4.1 EXISTING ROADWAY NETWORK

This section describes these existing roadway facilities relevant to the proposed project, which are shown in **Figure 3** below.

4.1.1 NORTH/SOUTH ROADWAYS

U.S. Route 101 (US 101) is a north-south, four-lane freeway extending through the City of Salinas. The highway becomes a six-lane freeway between Boronda Road and Russell Road, through the north City limits of Salinas. The intersection of US 101 and major roadways in Salinas are either an interchange or grade separated overpass.

San Juan Grade Road is a four-lane roadway south of Boronda Road that intersects at North Main Street and continues as two-lane roadway north of Boronda Road. The posted speed limit is 45 mph. Major intersections are controlled by traffic signals and minor intersections are controlled by side street stop control, with San Juan Grade Road as a free flow roadway. Sidewalks and striped Class II bicycle lanes are provided on San Juan Grade Road between Northridge Way and Main Street. Intermittent sidewalks are provided on some portions of the roadway between Russell Road and Rogge Village Way.

McKinnon Street is two-lane collector with bicycle lanes and sidewalks that connects with Boronda Road and Alvin Drive. The posted speed limit is 35 mph.

El Dorado Drive is a two-lane collector with bicycle lanes and sidewalks that connects with Boronda Road and Alvin Drive, with a two-way left turn lane between Harden Parkway and Alvin Drive. The posted speed limit is 25 mph.

Natividad Road is a six-lane divided major arterial from East Laurel to East Boronda Road with a posted speed limit of 45 mph. A portion of Natividad Road, between East Boronda Road and Los Coches Drive, has sound walls on each side of the roadway. Natividad Road is a two-lane rural roadway north of East Boronda Road. South of East Bernal Drive, this road is known as Sherwood Drive, a 4-lane arterial.

North Main Street is a six-lane divided major arterial between US 101 in the south and East Boranda Road in the north with a posted speed limit of 35 miles per hour in this section. South of US 101 to East Market Street, North Main is a four-lane undivided arterial with a two-way left turn lane. At the terminus it transitions into a couplet with Salinas Street continuing southbound, while Monterey Street provides northbound access.

Alisal Road is a two-lane rural road with a posted speed limit of 55 miles per hour. It runs from Spence Road in the east to East Alisal Street/Bardin Road at the Salinas City Limit. Alisal Road borders the Salinas Municipal Airport to the north but does not provide direct access to it.

Independence Boulevard is a divided collector roadway extending from Boronda Road to Constitution Boulevard. It provides Class II bicycle lanes along with a continuous sidewalk on the eastern side of the roadway for its entire length. Independence Boulevard is four lanes wide from Boronda Road to Nantucket Boulevard and two lanes wide south of Nantucket Boulevard.

Sanborn Road is a four-lane major arterial roadway connecting Boronda Road in the north with Abbott Street in the south. Traffic signals are provided at all major intersections and a full interchange with US 101 provides access to regional destinations. Continuous sidewalks are provided on both sides of Sanborn Road for its entire length. Striped Class II bicycle lanes have been installed on the segment of Sanborn Road north of Del Monte Avenue (to Boronda Road).

4.1.2 EAST/WEST ROADWAYS

Russell Road begins at the Espinosa Road/Russell Road interchange with US 101 and extends east to San Juan Grade Road. Russell Roadway provides two through lanes of travel (one in each direction), widening to provide additional turn lanes at intersections. The posted speed limit ranges from 35 to 45 mph. Intermittent sidewalks are provided along some sections of the facility.

Boronda Road begins at the Boronda Road interchange with US 101 as a six-lane major arterial to North Main Street. East of North Main Street, Boronda Road transitions to two lanes eastbound and three lanes westbound to San Juan Grade Road. East Boronda Road then narrows to a two-lane arterial east of Dartmouth Way until it terminates at Williams Road. Traffic signals control the intersections of Boronda Road and all major arterials.

Rogge Road is a two-lane collector connecting San Juan Grade Road and Natividad Road. The speed limit ranges from 55 mph to 25 mph (school zone). Sidewalks and a striped Class II bicycle lane are provided on the section of Rogge Road between Natividad Road and La Joya Elementary School. Intermittent facilities are provided west of La Joya Elementary.

Williams Road is a four-lane divided arterial with left-turn lanes between Del Monte Avenue and Freedom Parkway. Between Del Monte Avenue and East Alisal Street, Williams Road is a four-lane arterial with a center turn lane and left turn lanes. There is a painted bicycle lane between Freedom Parkway and Bardin Way.

Constitution Boulevard is a divided four-lane minor arterial roadway extending from Laurel Drive to Boronda Road. The facility provides striped Class II bicycle lanes and sidewalks on both sides of the roadway.

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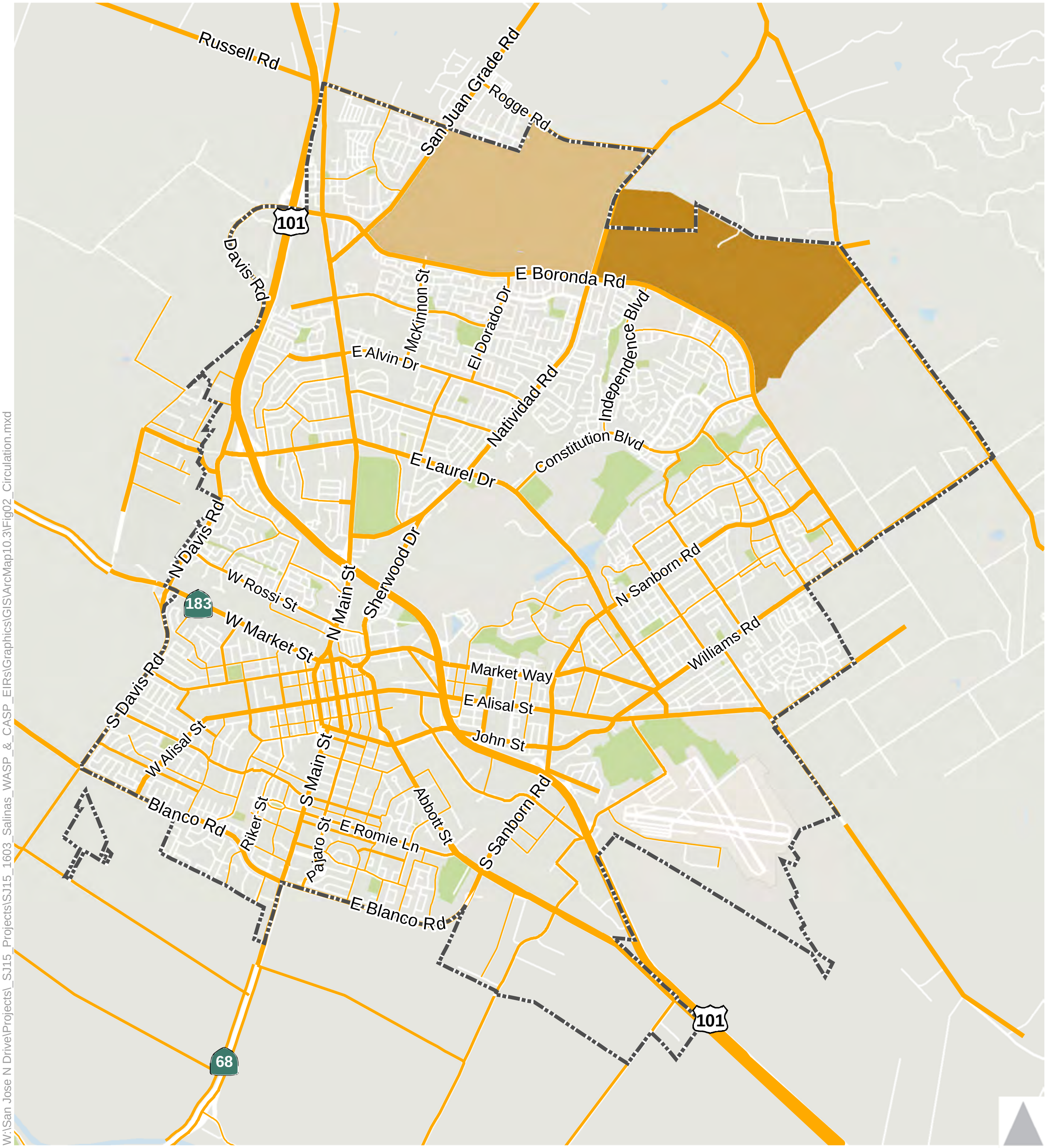


Source: City of Salinas

Circulation System

Freeway/New Interchange
Major Arterial
Collector
City Limits
West Area Specific Plan (WASP)
At-Grade Rural Highway
Minor Arterial
Central Area Specific Plan (CASP)

Figure 3

Salinas Circulation Network

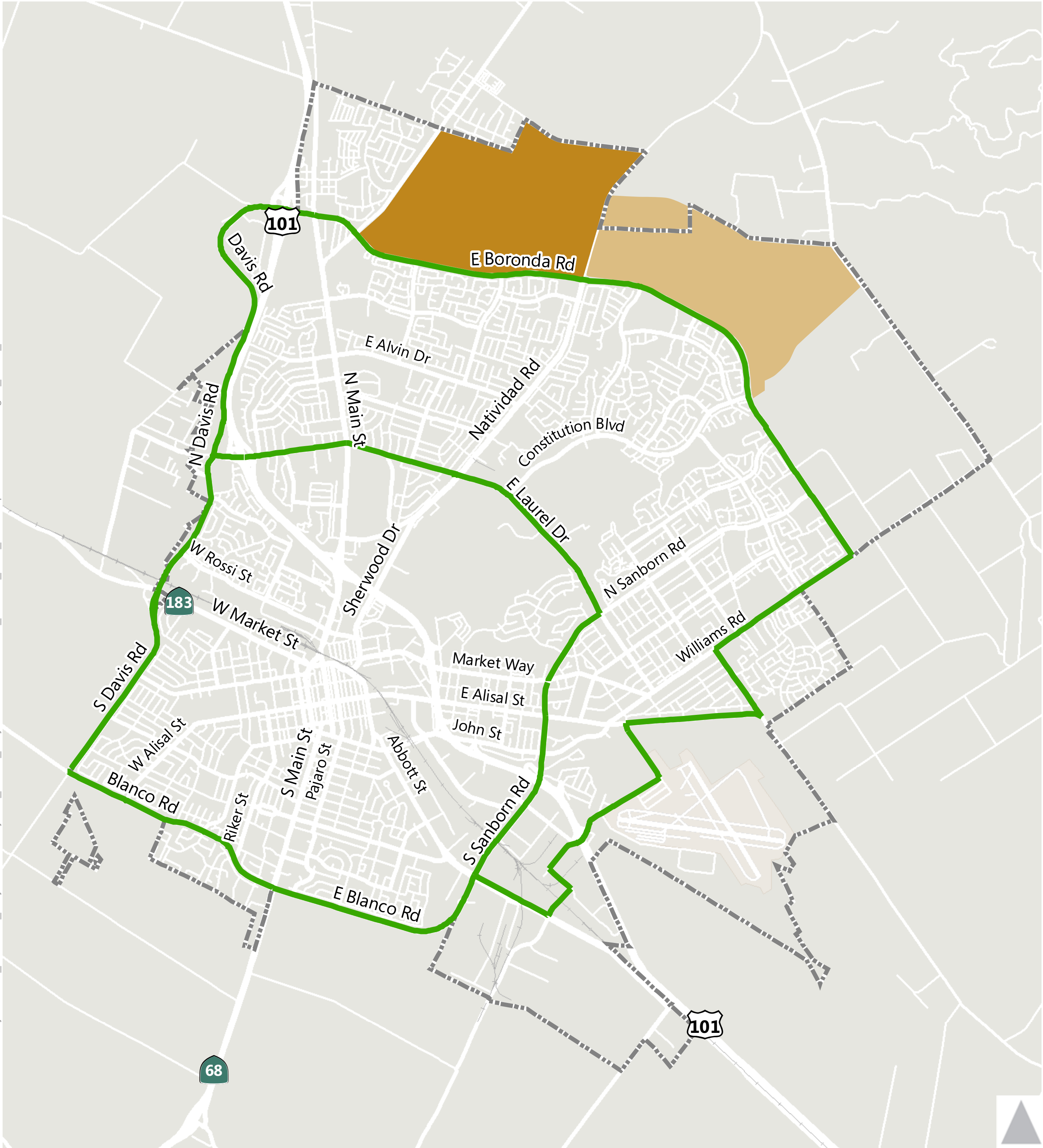
4.2 TRUCK ROUTES

US 101 and city-designated truck routes serve the primary industrial areas of the community. These roads are intended to move goods efficiently within the City, between outlying agricultural uses, and packing/distribution centers. Additionally, they serve to separate truck traffic from local streets where the larger vehicles may conflict with other uses.

Aside from US 101, the following roads in part or in whole serve as truck routes on City streets:

- Blanco Road
- Davis Road
- Boronda Road
- Williams Road
- Alisal Street
- Skyway Boulevard
- Airport Boulevard
- Sanborn Road
- Laurel Drive

As shown in **Figure 4**, these roads combine to form concentric rings that provide access to existing industrial uses and shipping centers throughout the City.



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Source: City of Salinas

Truck Routes

Existing Truck Routes | City Limits

West Area Specific Plan (WASP) | Central Area Specific Plan (CASP)

Figure 4

City of Salinas Truck Routes

4.3 EXISTING PEDESTRIAN FACILITIES

Pedestrian facilities consist of sidewalks, curb ramps, crosswalks, and off-street paths, among other things. These facilities should provide safe and convenient routes for people walking to traverse the City. Pedestrian facilities are typically identified in the jurisdiction's General Plan as part of the transportation or circulation element, along with any proposed improvements or extensions to the existing pedestrian network. Policies and programs relating to walking in Salinas are defined in the City of Salinas Circulation Element Goal C-5 and the 2004 Salinas Pedestrian plan.

Pedestrian facilities exist in Salinas to varying degrees of comprehensiveness. Improved pedestrian facilities typically correspond to recent development, while roads adjacent to agricultural uses or undeveloped lots typically do not provide pedestrian facilities, which is common in urbanizing communities. Near the project area, wider sidewalks were more common in the presence of schools.

Pedestrian facilities relevant to the proposed project areas are listed below:

- **San Juan Grade Road** has intermittent facilities on the east and west sides of the street between Boronda Road and Rogge Road.
- **East Boronda Road** has a continuous southerly sidewalk for its entire length of approximately four miles from Williams Road and San Juan Grade Road, in the form of a curvilinear path – sometimes with landscaped vegetation – that parallels the roadway. The path is approximately 9 feet wide from Williams Road to San Juan Grade Road. Sidewalk switches to the north side of the road between San Juan Grade and North Main Street.
- **McKinnon Street** is equipped with approximately 9-foot sidewalks on the western side between Boronda Road and East Alvin Drive. Western side has an approximately 9-foot sidewalk between East Alvin Drive that narrows into approximately five feet approximately 400 feet south of Westminster Drive. McKinnon Street does not have sidewalks for 1,000 feet north of Boronda in the proximity of McKinnon Elementary School.
- **Natividad Road** has sidewalks are present on at least one side of the street between East Laurel Drive and Boronda Road. There are no sidewalks present north of Boronda Road.
- **Rogge Road** has been recently improved between San Juan Grade Road and Jasper Way. On this section, the sidewalk on the north and south side of the street. The sidewalk is approximately ten feet wide; the southern sidewalk narrows to approximately five feet west of Rogge Village Loop. No sidewalks are present east of Jasper Way.
- **Williams Road** has continuous sidewalks present between Alisal Street and Freedom Parkway, where it passes through entirely urban land uses. In the proximity of Alisal High School, the sidewalk widens and parallels the road in a curvilinear fashion similar to the facility on Boronda Road.

Between Freedom Parkway and Boronda Road, the sidewalk is only present on the north side of the street, in correlation with the residential land use present there; the south side of the street is agricultural use. North of Boronda Road, the adjacent land use is entirely agricultural, and no sidewalks are present.

- **Old Stage Road** is a rural road serving mostly agricultural uses. It does not have any sidewalks.

Existing pedestrian facilities may have barriers in the form of signposts, utility poles, or overgrown vegetation. Such barriers can also provide challenges to the access requirements for those with disabilities, as mandated in Americans with Disabilities Act (ADA). As parcels are developed and required to install sidewalks, there can also be gaps in the sidewalk system when adjacent parcels are not redeveloped or vacant.

4.4 EXISTING BICYCLE FACILITIES

Bicycle facilities consist of paths (Class I), lanes (Class II), and routes (Class III). Bicycle paths are paved trails that are separate from roadways. Bicycle lanes are separate areas on roadways designated for bicycle use by striping, pavement legends, and signs. Bicycle routes are roadways designated for bicycle use by signs only, but may not include substantial width for bicycle travel. Like pedestrian facilities, bicycle networks are typically included in the General Plan, along with any proposed improvements or extensions. The list of existing bicycle facilities is summarized below and shown on **Figure 5** based on the 2002 Salinas Bicycle Plan and cross-checked against field observations.

4.4.1 CLASS I SHARED-USE PATHS

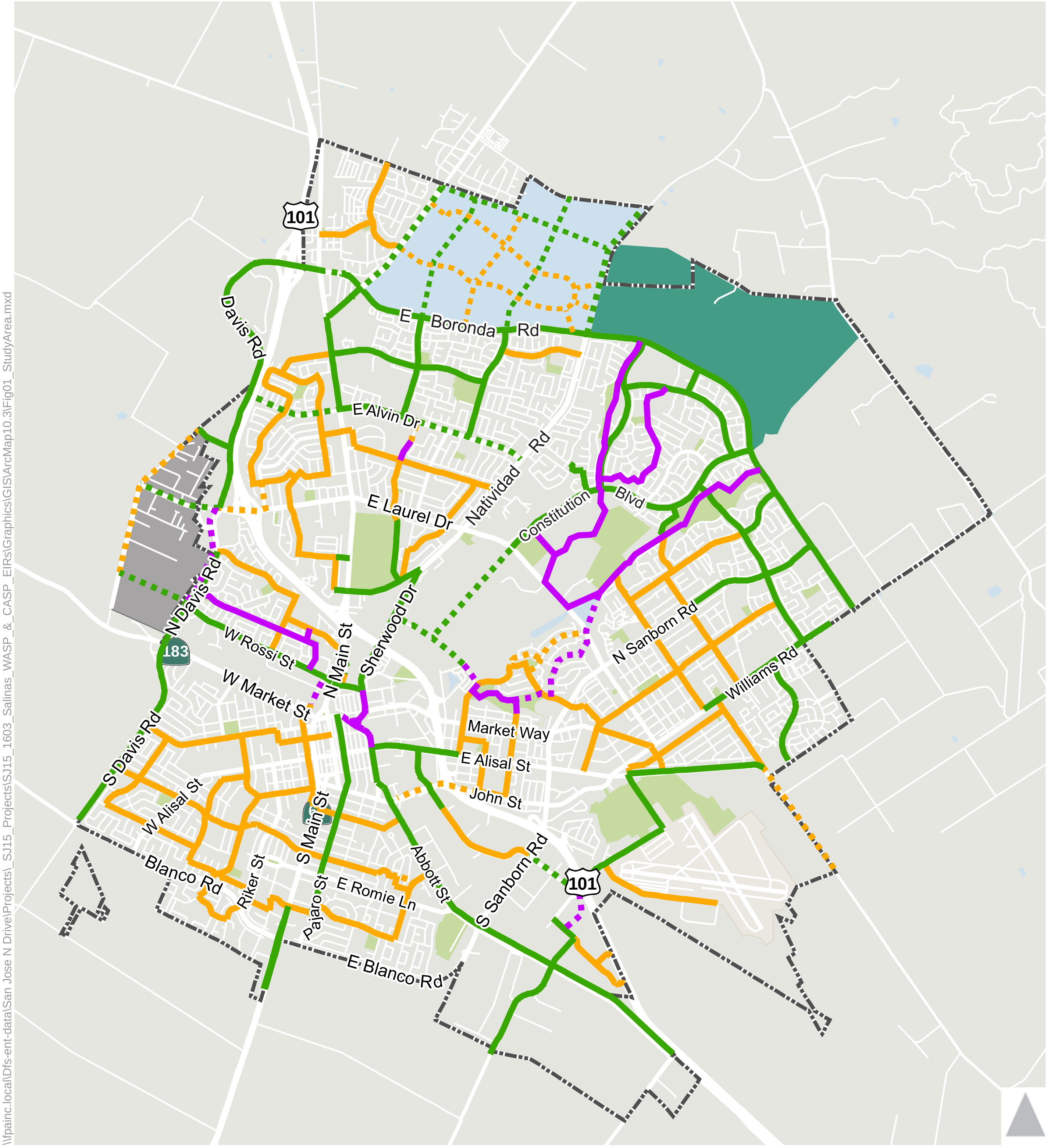
- Rossi Rico Parkway
- Natividad Creek Park Trail
- Gabilan Creek Bike Path
- Front-Sherwood Underpass

4.4.2 CLASS II BICYCLE LANES

- Williams Road
- Freedom Parkway
- North Sanborn Road between Del Monte Ave and East Boronda Road
- Constitution Boulevard
- Independence Boulevard
- East Boronda Road between Williams Road and North Davis Road
- North Davis Road between Boronda Road and SR 183
- South Davis Road between SR 183 to Blanco Road
- Nantucket Boulevard
- Rider Avenue
- Hemingway Drive
- El Dorado Drive
- Harden Parkway
- McKinnon Street
- East Alvin Drive between Kip Drive and North Main Street
- North Main Street between East Alvin Drive and San Juan Grade Road
- San Juan Grade Road between East Boronda Road and North Main Street
- Harden Parkway
- East and West Rossi Street
- Pajaro Street Between East Market Street and East San Joaquin Street
- South Main Street between East San Joaquin Street and Stephanie Drive
- East Alisal Street between Front Street and North Madeira Avenue
- Work Street between East Alisal Street and John Street
- Abbott Street between John Street and Harkins Road
- Front Street between East Alisal Street and John Street
- Laurel Drive between Constitution Boulevard and Saint Edwards
- Sherwood Drive

4.4.3 CLASS III ROUTES

These facilities are ubiquitous throughout Salinas neighborhoods and are typically located on low-volume local streets.



Source: City of Salinas

Bike Plan

- Class I: Path (Existing)
- Class II: Lane (Existing)
- Class III: Route (Existing)
- City Limits
- Class I: Path (Proposed)
- Class II: Lane (Proposed)
- Class III: Route (Proposed)
- West Area Specific Plan (WASP)
- Central Area Specific Plan (CASP)

Figure 5

Existing and Planned Bicycle Facilities

4.5 EXISTING TRANSIT SERVICE

Monterey-Salinas Transit (MST) provides fixed-route bus service in Monterey County and in the City of Salinas. Most routes in Salinas follow a hub-and-spoke service pattern, originating and returning to the Salinas Transit Center in downtown Salinas. Express and commuter busses are also provided to regional destinations in Monterey and Santa Cruz counties. As of 2014, MST experiences about 14,000 passenger trips on an average weekday.[2] **Figure 6** shows a map of transit bus service in Salinas.

The proposed project is served by MST routes 41, 45, 49, 72 and 95. Many of these routes start at the Downtown Salinas Transit Center and end at the Northridge Mall, in the northwest corner of the city. **Table 3** below summarizes the hours of operation and service frequencies of these routes. Routes 45, 72 and 95 have stops on East Boronda Road near San Juan Grade Road, McKinnon Street, El Dorado Drive, Shaker Square (a retail shopping center), Natividad Road, and Independence Road.

TABLE 3: EXISTING TRANSIT SERVICE

Route #	Route Name/Destination	Weekday	Saturday	Sunday	Commute Headway (peak hour)
41	Northridge via East Alisal	5:17 AM – 10:16 PM	5:55 AM -10:14 PM		30 Minutes
45	Northridge via East Market	Daily: 7:00 AM – 7:00 PM			75 minutes
49	Santa Rita via Northridge	Daily: 6:15 AM – 10:00 PM			60 Minutes
72	Presidio – North Salinas Express	6:00 AM – 6:15 PM	n/a		1 AM Trip/1 PM Trip
95	Northridge – Williams Ranch	Daily: 7:02 AM – 5:20 PM			120 Minutes

Source: Monterey-Salinas Transit, 2018

[2] Monterey-Salinas Transit 2014 Annual Agency Profile, National Transit Database, 2014.

Source: Monterey-Salinas Transit

Legend

- 20 Salinas - Monterey *via Marina*
- 21 Pebble Beach - Salinas Express
- 23 Salinas - King City
- 25 CSUMB - Salinas
- 28 Watsonville - Salinas *via Castroville*
- 29 Watsonville - Salinas *via Prunedale*
- 41 Northridge - Salinas *via East Alisal*
- 42 Westridge - Sprecklės *via East Salinas*
- 43 South Salinas - Salinas *via SVMH*
- 44 Northridge - Salinas *via Westridge*
- 45 Northridge - Salinas *via East Market*
- 46 Natividad - Salinas
- 47 Hartnell - Alisal Campus
- 48 Salinas - Salinas Airport Business Center
- 49 Salinas - Santa Rita *via Northridge*
- 56 Monterey - Salinas *via Hwy 68*
- 61 Salinas - VA - DOD Clinic
- 72 Presidio - N. Salinas Express
- 82 Fort Hunter Liggett - Salinas Express
- 85 Fort Hunter Liggett - Templeton
- 86 King City - San Jose *via San Jose Airport*
- 95 Northridge - Williams Ranch

- Transit Center
- Select Trips (See Riders Guide)
- Direction of Route
- Route Terminus — 41 Northridge
- Multiple routes serve this section
- Place of Interest
- School
- Public Place
- Airport

- Shopping Mall
- Park or Golf Course
- Major Terminus — Salinas Transit Center: 20 21 23 25 28 29 41 43 44 45 46 47 48 49 56 61 82 86

Figure 6

Existing Transit Service

4.6 STUDY LOCATIONS

Study intersections, highway segments, and highway ramp junctions were selected based on the proposed project location, expected directions of travel to/from the site, and the amount of traffic that will be added to the transportation network.

4.6.1 INTERSECTIONS

1. US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road
2. US 101 Northbound Ramps/Crazy Horse Canyon Road
3. US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road
4. Harrison Road/Sala Road/Driveway
5. Crazy Horse Canyon Road/San Juan Grade Road
6. Hebert Road/San Juan Grade Road
7. Old Stage Road/Hebert Road
8. North Main Street/Harrison Road/Russell Road
9. Van Buren Avenue/Russell Road
10. San Juan Grade Road/Rogge Road
11. San Juan Grade Road/Russell Road
12. Natividad Road/Rogge Road
13. Natividad Road/Russell Road *(future extension)*
14. San Juan Grade Road/Van Buren Avenue
15. US 101 Southbound Ramps/Boronda Road
16. US 101 Northbound Ramps/Boronda Road
17. North Main Street/Boronda Road
18. North Main Street/San Juan Grade Road
19. San Juan Grade Road/Boronda Road
20. McKinnon Street/Boronda Road
21. El Dorado Drive/Boronda Road
22. Natividad Road/Boronda Road
23. Independence Boulevard/Boronda Road
24. Hemingway Drive/Boronda Road
25. Old Stage Road/Constitution Boulevard *(future extension)*
26. North Main Street/East Alvin Drive
27. Natividad Road/East Alvin Drive
28. Independence Boulevard/Constitution Boulevard
29. Boronda Road/Constitution Boulevard
30. US 101 Southbound Ramps/West Laurel Drive
31. US 101 Northbound Ramps/West Laurel Drive
32. North Main Street/West Laurel Drive
33. Natividad Road/East Laurel Drive
34. Constitution Boulevard/East Laurel Drive
35. North Sanborn Road/Boronda Road

36. Old Stage Road/Williams Road/Private Road
37. North Main Street/East Bernal Drive
38. Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way
39. East Laurel Drive/North Sanborn Road
40. Williams Road/Boronda Road
41. Freedom Pkwy/Williams Road
42. Bardin Road/Bardin Way/Williams Road
43. East Market Street/Williams Road
44. John Street/Williams Road/E Alisal Street
45. South Sanborn Road/North Sanborn Road/John Street
46. Bardin Road/East Alisal Street/Driveway
47. Skyway Boulevard/Airport Boulevard
48. South Sanborn Road/North Sanborn Road/East Alisal Street
49. West Laurel Drive/Adams Street
50. North Davis Road/West Laurel Drive
51. East Front Street/Sherwood Drive/Market Street
52. East Market Street/East Front Street
53. South Davis Road/Blanco Road
54. Monterey Street/Monterey Street/East Market Street
55. Salinas Street/North Main Street/West Market Street/East Market Street
56. South Main Street/West Blanco Road/East Blanco Road

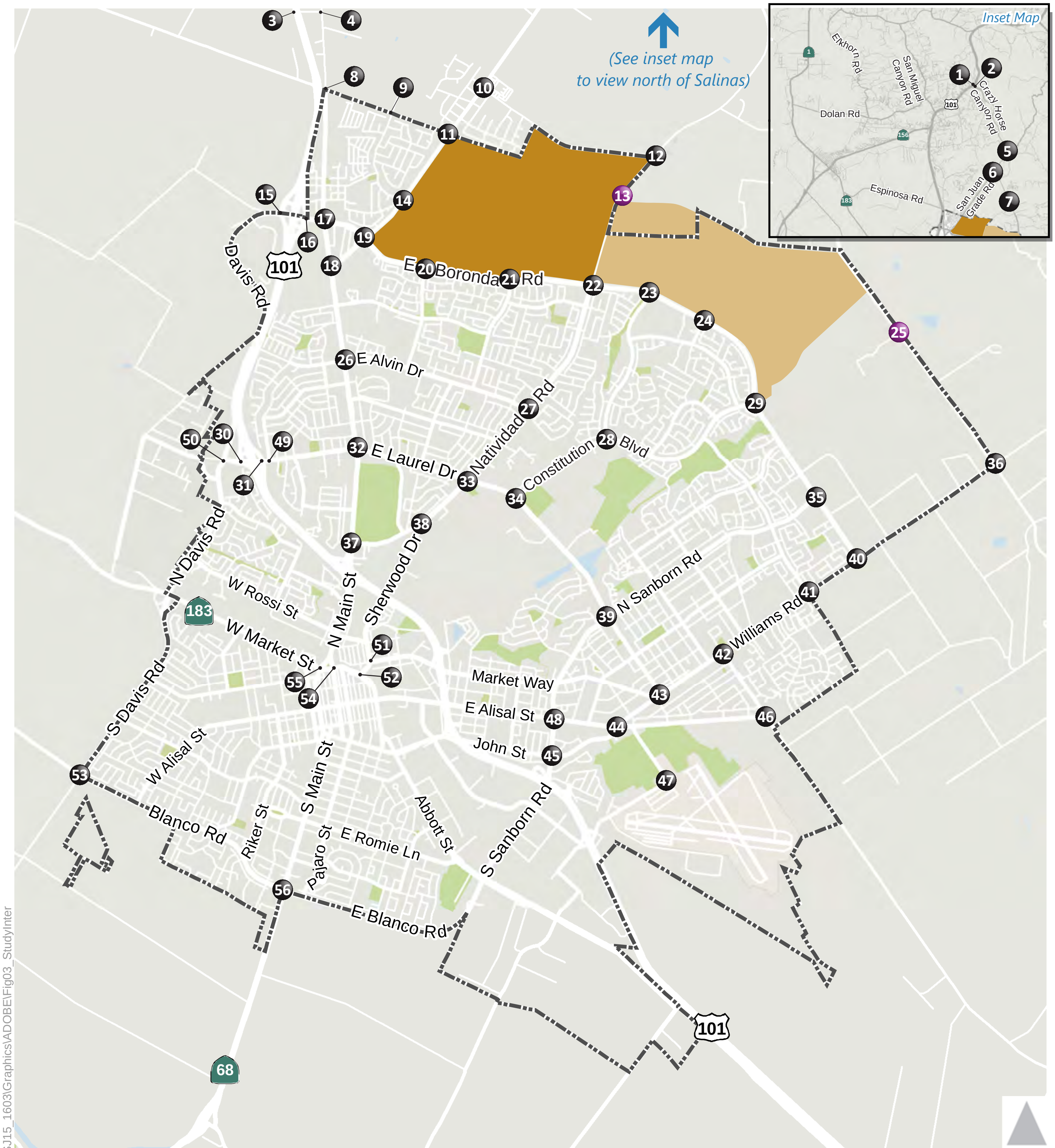
4.6.2 FREEWAY SEGMENTS

1. US 101 from San Juan Road to Crazy Horse Canyon Road
2. US 101 from Crazy Horse Canyon Road to San Miguel Canyon Road
3. US 101 from San Miguel Canyon Road to SR 156
4. US 101 from SR 156 to Sala Road
5. US 101 from Sala Road to Boronda Road
6. US 101 from Boronda Road to W. Laurel Drive
7. US 101 from W. Laurel Drive to N. Main Street/SR 183
8. US 101 from N. Main Street/ SR 183 to E. Market Street
9. US 101 from SR 68/John Street to S. Sanborn Road
10. US 101 from S. Sanborn Road to Abbott Street

4.6.3 FREEWAY RAMP JUNCTIONS

1. US 101 and East Boronda Road Southbound Loop On-Ramp
2. US 101 and East Boronda Road Southbound On-Ramp
3. US 101 and East Boronda Road Northbound Loop On-Ramp
4. US 101 and East Boronda Road Northbound Off-Ramp
5. US 101 and West Laurel Drive Southbound Off-Ramp

6. US 101 and West Laurel Drive Southbound On-Ramp
7. US 101 and West Laurel Drive Southbound Loop On-Ramp
8. US 101 and West Laurel Drive Northbound On-Ramp
9. US 101 and West Laurel Drive Northbound Loop On-Ramp
10. US 101 and West Laurel Drive Northbound Off-Ramp



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Source: City of Salinas

Legend

Study Intersection | Future Study Intersection

West Area Specific Plan (WASP) | Central Area Specific Plan (CASP) | City Limits

Figure 7

Study Intersections

4.7 EXISTING WITH NO PROJECT ANALYSES

Intersection turning movement and US 101 segment volumes were collected on midweek days in January, February, and April of 2016. **Figure 8** illustrates the existing turning movement volumes at the study intersections. Volumes were collected in January and February to capture school-related travel. However, in order to account for possible seasonal variances in traffic volume due the local context of Salinas, a volume adjustment factor for these winter counts was considered. Using prior data collected by the City from the summer of 2015, winter counts were found to be larger than summer counts by about 2 percent. Such a variance is likely due to simple day-to-day fluctuations in travel behavior, and as such an adjustment factor for winter volumes was ultimately not used.

4.7.1 EXISTING WITH NO PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS

Existing level of service levels were evaluated at 54 intersections in Salinas, presented in **Table 4**, below. Intersections that function below the minimum threshold (LOS D) in either the morning or evening peak period are shown in bold.

TABLE 4: EXISTING WITH NO PROJECT INTERSECTION LEVEL OF SERVICE

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road	SSSC	6.9 (15.2)	A (C)	11.2 (17.6)	B (C)
2	US 101 Northbound Ramps/Crazy Horse Canyon Road	SSSC	3.4 (12)	A (B)	2.9 (13.3)	A (B)
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	8.6	A	10.1	B
4	Harrison Road/Sala Road	Signal	8.7	A	9.2	A
5	Crazy Horse Canyon Road/San Juan Grade Road	AWSC	9.2	A	11.1	B
6	Hebert Road/San Juan Grade Road	SSSC	5.9 (11.3)	A (B)	7.1 (21.6)	A (C)
7	Old Stage Road/Hebert Road	SSSC	0.6 (11.7)	A (B)	0.6 (13.5)	A (B)
8	North Main Street/Harrison Road/Russell Road	Signal	16.9	B	21.5	C

TABLE 4: EXISTING WITH NO PROJECT INTERSECTION LEVEL OF SERVICE

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
9	Van Buren Ave/Russell Road	Signal	17.5	B	18.8	B
10	San Juan Grade Road/Rogge Road	AWSC	17.4	C	13.4	B
11	San Juan Grade Road/Russell Road	Signal	14.9	B	13.1	B
12	Natividad Road/Rogge Road	SSSC	5.7 (10.4)	A (B)	5.2 (12.4)	A (B)
14	San Juan Grade Road/Van Buren Avenue	SSSC	4.6 (29.8)	A (D)	3.1 (19.4)	A (C)
15	US 101 Southbound Ramps/Boronda Road	Signal	6	A	7.1	A
16	US 101 Northbound Ramps/Boronda Road	Signal	7.9	A	18.1	B
17	North Main Street/Boronda Road	Signal	47.3	D	46.2	D
18	North Main Street/San Juan Grade Road	Signal	11.3	B	22.5	C
19	San Juan Grade Road/Boronda Road	Signal	39.5	D	42.7	D
20	McKinnon Street/Boronda Road	Signal	26.5	C	24.8	C
21	El Dorado Drive/Boronda Road	Signal	12.7	B	8.9	A
22	Natividad Road/Boronda Road	Signal	36.1	D	54.9	D
23	Independence Boulevard/Boronda Road	Signal	14.3	B	10.7	B
24	**Hemingway Drive/Boronda Road**	**SSSC**	**17.9 (114.3)**	**C (F)**	**5.6 (99.4)**	**A (F)**
26	North Main Street/East Alvin Drive	Signal	41.2	D	40.9	D
27	Natividad Road/East Alvin Drive	Signal	14.4	B	12.7	B
28	Independence Boulevard/Constitution Boulevard	Signal	21.4	C	20.4	C
29	Boronda Road/Constitution Boulevard	Signal	8.5	A	10.4	B

TABLE 4: EXISTING WITH NO PROJECT INTERSECTION LEVEL OF SERVICE

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
30	US 101 Southbound Ramps/West Laurel Drive	Signal	9.5	A	11.7	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	6.6	A	12.2	B
32	**North Main Street/West Laurel Drive**	**Signal**	38.6	D	**56.7**	**E**
33	Natividad Road/East Laurel Drive	Signal	54.9	D	48.9	D
34	East Laurel Drive/Constitution Boulevard	Signal	17.5	B	22.9	C
35	**North Sanborn Road/Boronda Road**	**SSSC**	**19.3 (123.6)**	**B (F)**	**7.3 (38.4)**	**A (E)**
36	Old Stage Road/Williams Road/Private Road	SSSC	5.1 (10.2)	A (B)	4.0 (11.6)	A (B)
37	North Main Street/East Bernal Drive	Signal	45.4	D	40.1	D
38	**Sherwood Drive/Natividad Road/E Bernal Drive/La Posada Way**	**Signal**	41.9	D	**60**	**E**
39	East Laurel Drive/North Sanborn Road	Signal	20.1	C	26.5	C
40	Williams Road/Boronda Road	SSSC	7.2 (15.4)	A (C)	6.8 (25.9)	A (D)
41	Freedom Parkway/Williams Road	Signal	19.3	B	20.4	C
42	Bardin Road/Bardin Way/Williams Road	Signal	16.8	B	19.5	B
43	East Market Street/Williams Road	Signal	19.7	B	29.1	C
44	John Street/Williams Road/East Alisal Street	Signal	12.3	B	13	B
45	South Sanborn Road/North Sanborn Road/John Street	Signal	44.6	D	25.5	C
46	Bardin Road/East Alisal Street/Driveway	AWSC	9.9	A	9.8	A
47	Skyway Boulevard/Airport Boulevard	SSSC	2.6 (9.5)	A (A)	10.9 (14.9)	B (B)

TABLE 4: EXISTING WITH NO PROJECT INTERSECTION LEVEL OF SERVICE

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	25.6	C	31.5	C
49	West Laurel Drive/Adams Street	Signal	12.7	B	17	B
50	North Davis Road/West Laurel Drive	Signal	25.9	C	43.7	D
51	East Front Street/Sherwood Drive/Market Street	Signal	11.6	B	13.9	B
52	East Market Street/East Front Street	Signal	8.8	A	9.1	A
53	South Davis Road/Blanco Road	Signal	38.3	D	45.5	D
54	Monterey Street/Monterey Street/East Market Street	Signal	17.1	B	25.2	C
55	Salinas Street/North Main Street/West Market Street/East Market Street	Signal	28.4	C	29.5	C
56	South Main Street/West Blanco Road/East Blanco Road	Signal	37	D	40.9	D

Source: Fehr & Peers, 2018
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Currently, four intersections operate at a level of service below the City threshold of LOS D or better during the morning and/or evening peak period. Of these, only two intersections function at LOS F in either peak period: Hemingway Drive & Boronda Road, and North Sanborn Road & Boronda Road.

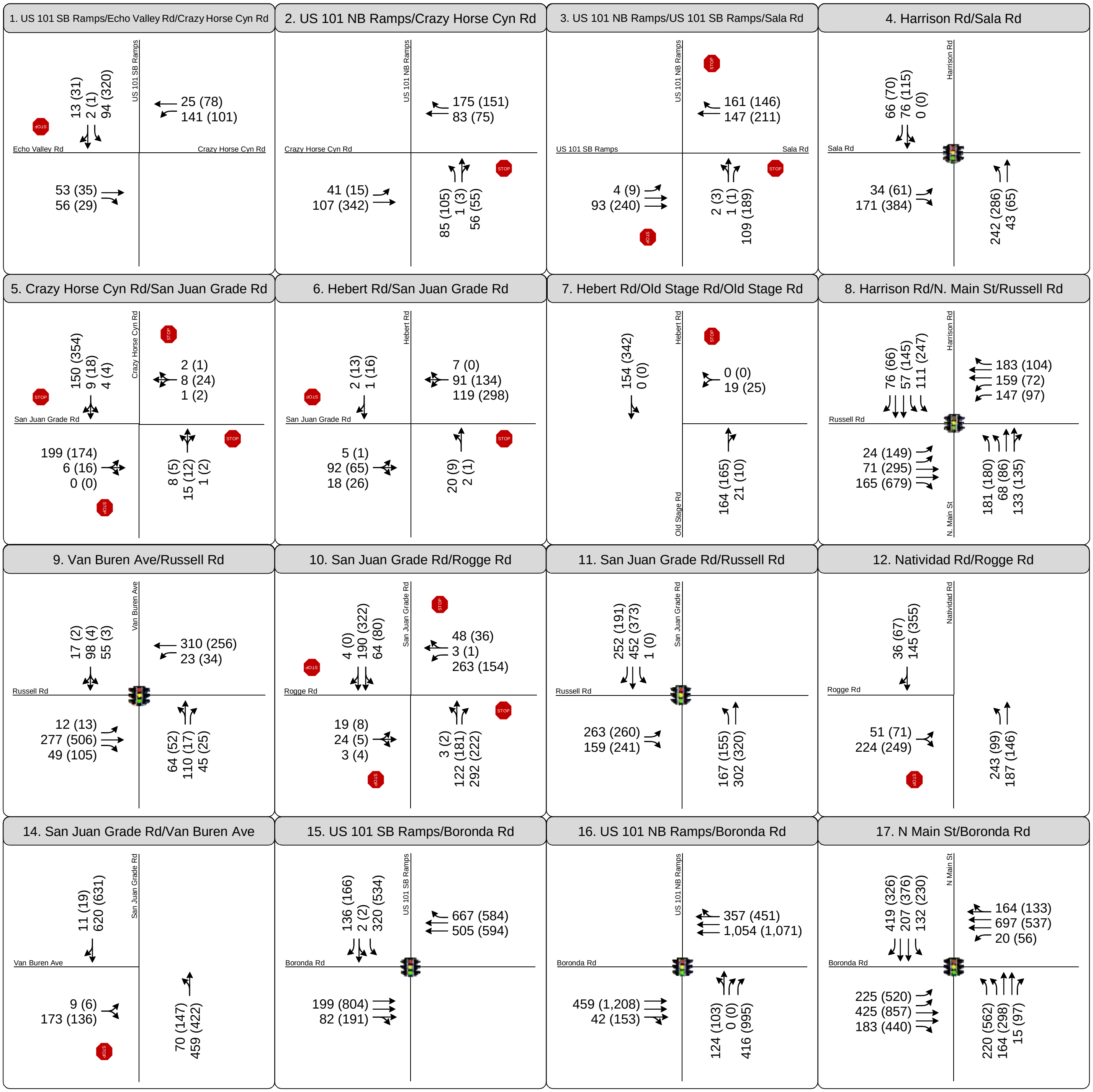


Figure 8a

Existing Peak Hour Traffic Volumes

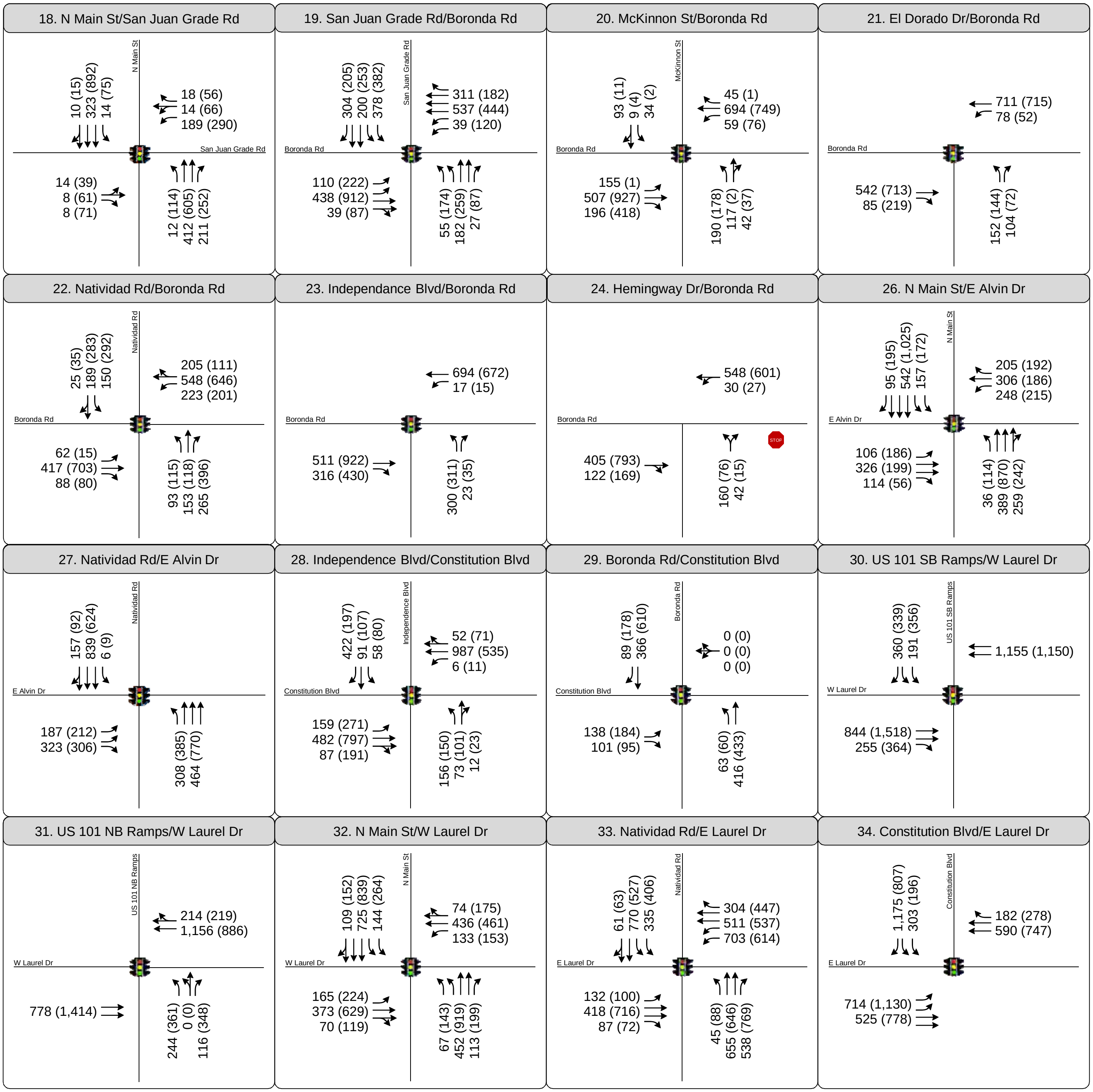


Figure 8b

Existing Peak Hour Traffic Volumes

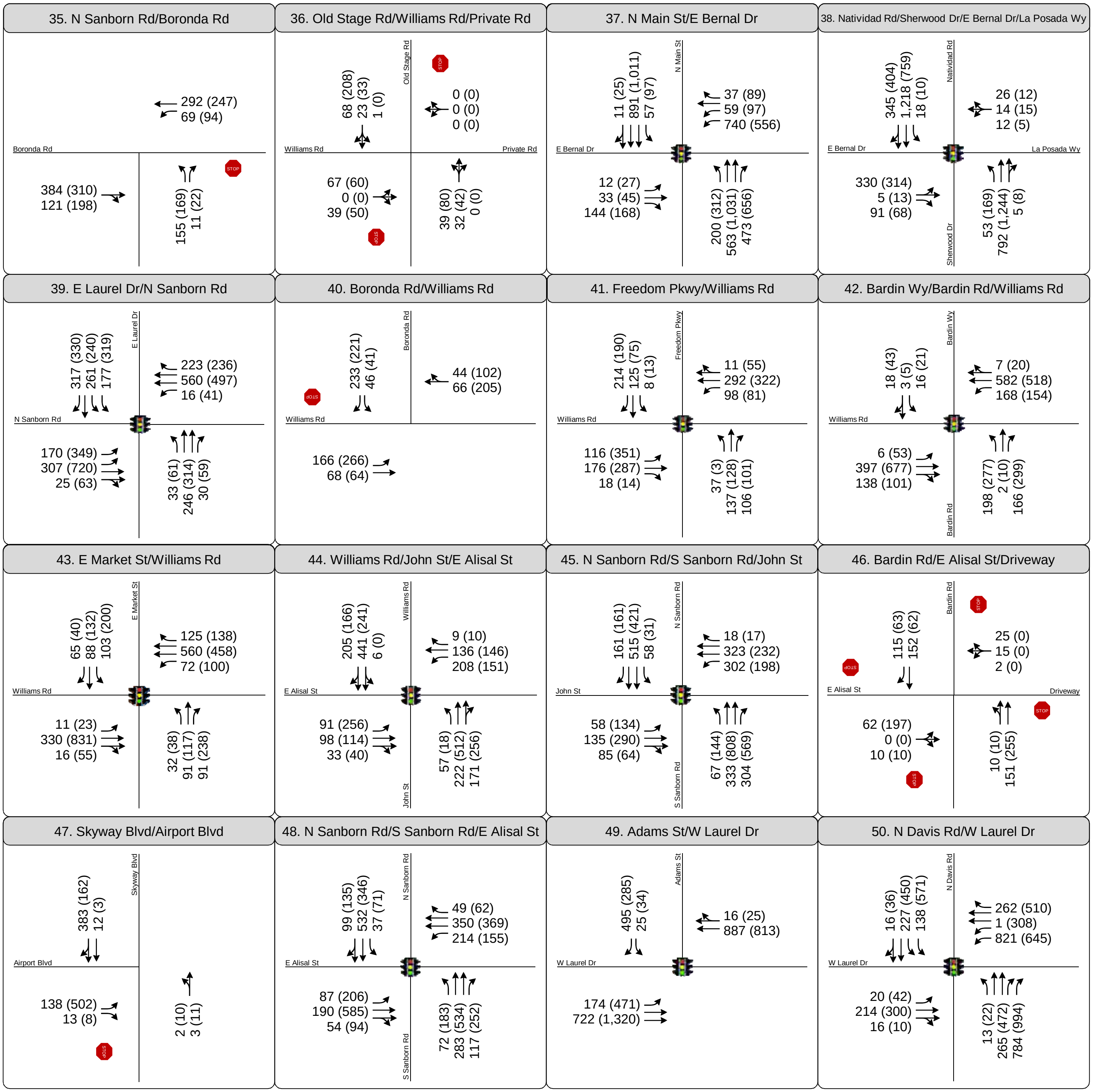


Figure 8c

Existing Peak Hour Traffic Volumes

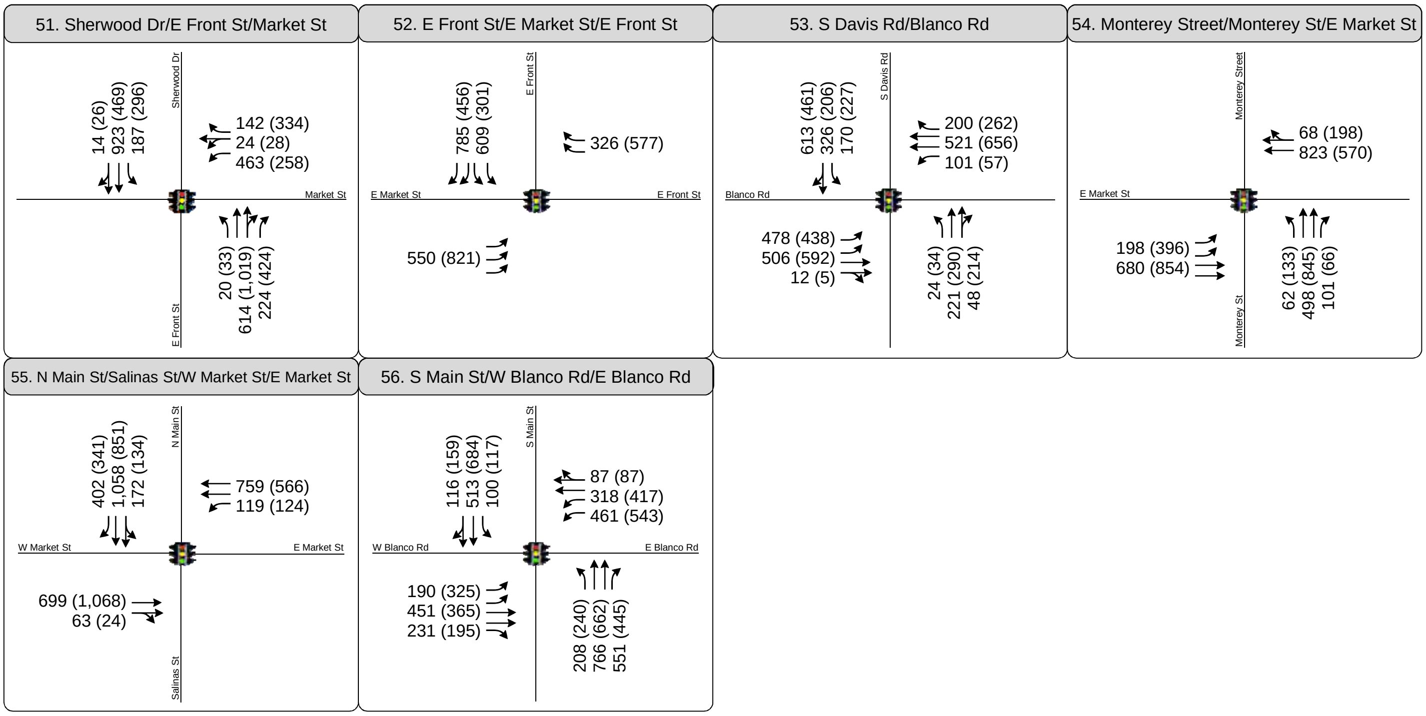


Figure 8d

Existing Peak Hour Traffic Volumes

4.7.2 EXISTING WITH NO PROJECT CONDITIONS FREEWAY MAINLINE CAPACITY ANALYSIS

Traffic volume observations were recorded at ten locations along US 101 by Fehr & Peers in the spring of 2016, during the same period as the intersection turning movement counts. For freeway mainline segments, level of service (LOS) is a function of traffic density and describes the resulting delay experienced by people driving. LOS scores are compared to the minimum operating standards defined by the Monterey County CMP in **Table 5** and **Table 6** below.

TABLE 5: AM EXISTING WITH NO PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	1,949	16.4	B	1,894	15.9	B
Crazy Horse Canyon Road to San Miguel Canyon Road	2,013	16.9	B	1,882	15.8	B
San Miguel Canyon Road to SR 156	2,953	16.5	B	2,406	20.2	C
SR 156 to Sala Road	2,065	17.3	B	1,824	15.3	B
Sala Road to Boronda Road	2,613	14.6	B	1,659	9.3	A
Boronda Road to Laurel Drive	2,924	24.7	C	1,831	15.4	B
Laurel Drive to N. Main Street/SR 183	2,843	24	C	1,726	14.5	B
N. Main Street/SR 183 to E. Market Street	2,858	24.1	C	1,811	15.2	B
SR 68 John Street to S. Sanborn Road	1,934	16.2	B	1,508	12.6	B
S. Sanborn Road to Abbott Street	1,668	14	B	1,526	12.8	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

TABLE 6: PM EXISTING WITH NO PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	2,624	22	C	2,188	18.4	C
Crazy Horse Canyon Road to San Miguel Canyon Road	2,278	19.1	C	2,208	18.5	C
San Miguel Canyon Road to SR 156	3,061	17.1	B	3,120	26.7	D
SR 156 to Sala Road	2,404	20.2	C	2,456	20.6	C
Sala Road to Boronda Road	2,562	14.3	B	2,453	13.7	B
Boronda Road to Laurel Drive	2,696	24.7	C	3,124	26.7	D
Laurel Drive to N. Main Street/SR 183	2,553	21.4	C	3,300	28.7	D
N. Main Street/SR 183 to E. Market Street	2,638	22.1	C	3,465	30.7	D
SR 68 John Street to S. Sanborn Road	2,039	17.1	B	2,370	19.9	C
S. Sanborn Road to Abbott Street	1,777	14.9	B	2,327	19.5	C

[1] *Density Reported in Passenger Cars per Mile Per Lane*
Source: Fehr & Peers, 2018

All of the analysis segments operate at or above the minimum level of service standards for highway facilities as set by the CMP, LOS D or better.

4.7.3 EXISTING WITH NO PROJECT CONDITIONS FREEWAY RAMP JUNCTIONS CAPACITY ANALYSIS

The existing operational performance of merging and diverging ramp junctions was analyzed at the Boronda Road and Laurel Street interchanges of US 101. Ramp junction merge and diverge movement level of service results for the northbound and southbound segments, in the morning and evening peak periods, are shown and compared to minimum operational standards in **Table 7** and **Table 8,** below.

TABLE 7: AM EXISTING WITH NO PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	25.4	C	Loop On-Ramp	12	B
	On-Ramp	26.4	C	Off-Ramp	20.8	C
West Laurel Drive	Off-Ramp	31.1	D	On-Ramp	18.5	B
	On-Ramp	24.6	C	Loop On-Ramp	15	B
				Off-Ramp	19.5	B

Source: Fehr & Peers, 2018

TABLE 8: PM EXISTING WITH NO PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	23.1	C	Loop On-Ramp	19.4	B
	On-Ramp	24.3	C	Off-Ramp	33.5	D
West Laurel Drive	Off-Ramp	28.9	D	On-Ramp	30	D
	On-Ramp	21	C	Loop On-Ramp	26.3	C
				Off-Ramp	34	D

Source: Fehr & Peers, 2018

Currently, all ramp junction merge and diverge movements operate at acceptable levels of service during the morning and evening peak periods.

5.0 PROJECT CONDITIONS

This chapter documents the results of an existing plus project analysis which examines the impact of the West Area Specific Plan on the transportation network, assuming that full buildout of the plan would occur absent of other growth assumptions that are included in the cumulative scenarios. Additionally, an adjacent project – the Central Area Specific Plan – is also described and considered for some scenarios. Project descriptions and trip generation assumptions for both are discussed. The results of this analysis are also presented.

5.1 PROJECT DESCRIPTIONS

In this Transportation Impact Analysis, the West Area Specific Plan is considered to be the proposed project. However, the Central Area Specific Plan (currently under consideration) is considered simultaneously in some existing and future growth scenarios in order to evaluate the impact of the West Area Specific Plan together with the Central Area Specific Plan, as well as the baseline growth assumptions. The next two sections describe each plan in more detail.

5.1.1 WEST AREA SPECIFIC PLAN

The West Area Specific Plan encompasses approximately 797 acres. It is relatively flat land bounded by the future Russell Road and Rogge Road extensions to the north, Natividad Road to the east, Boronda Road to the south, and San Juan Grade Road to the west. Regional access to the site is provided by State Route 101, located 0.5 mile west of the project site, and by Boronda Road, which connects to State Route 101 and forms the south boundary of the West Area Specific Plan. In the southwest portion of the site is the existing McKinnon Elementary School, which is surrounded by agricultural fields and is not a part of the project. Two small clusters of buildings supporting the agricultural operations are located on the project site. A new high school is under construction in the northwest portion of the site.

The West Area Specific Plan will guide the development of a master-planned community consisting of approximately 4,340 residential units in four residential neighborhoods and a minimum of 91 residential units within the Village Center. The overall average residential density within the Specific Plan area must equal or exceed 9 dwelling units per net residential developable acre (4,340 units). In addition, approximately 571,500 square feet of mixed use residential and commercial development is also proposed within the Village Center area, and a maximum of 250,000 square feet of the mixed use commercial square footage could be converted to residential units. Also proposed (all acreages are approximate) is a 30-acre community park, four neighborhood parks totaling 12 acres, six small parks totaling six acres, 35 acres of open space/supplemental detention and retention basins, a 1.5 acres of water well/treatment facilities, three elementary schools on a combined 31 acres, a middle school on 21 acres, and a high school on 39 acres. The mixed used development in the Village Center could include a grocery store, shops, restaurants, offices and residential units.

For the purposes of this analysis, the following assumptions were made regarding school enrollment in the West Area Specific Plan:

- There will be 600 students enrolled in each of the three elementary schools, totaling 1,800 students.
- The middle school will contain the average California enrollment of 803 students.
- The High School is projected to have 1,534 students and a commensurate number of staff

The new schools are expected to primarily serve students living in the project area and/or areas immediately surrounding.

5.1.1.1 Internal Circulation Network

According to the *West Area Specific Plan,* the locations of collector and local streets, shown before in **Figure 2,** are approximate and the local streets are shown for illustrative purposes only. Arterial streets may be constructed in advance of residential subdivision development, as needed for access and public safety.

Local streets within residential subdivisions will be designed to emphasize internal circulation and to discourage unsafe speeds through the incorporation of traffic calming features. The overall street pattern in the residential areas is intended to be simple in design and form an interconnected multi-modal network that includes automobile, bicycle, and pedestrian routes that provide direct connections to local destinations. Residential streets will provide for both intra-neighborhood and inter-neighborhood connections and thus will knit neighborhoods together and not form barriers between them.

All residential developments will be designed to provide convenient pedestrian and bicycle access to schools, parks, and open space areas. Sidewalks or pedestrian pathways will be provided on both sides of all streets, except for the linear park streets. In locations where pathways bisect blocks or clusters of homes, the intrusion upon the privacy of residential property shall be minimized. Bicycle facilities will be located within designated arterial and collector street rights-of-way as well as on the southerly greenway shared-use path. Safe and convenient crossings of all major roads should be provided for pedestrians and bicyclists. Pedestrian trails and pathways are encouraged within and adjacent to open space areas designated for detention and retention basins, to the extent possible.

Bus shelters and turnouts, designed in accordance with Monterey Salinas Transit improvement standards, will be located along arterial streets at key residential neighborhood entrances and adjacent to the Village

Center as shown on the West Area Specific Plan public transit plan. All transit routes and stops/shelters in the Specific Plan area will be subject to approval by Monterey Salinas Transit and the City. Transit stop locations to serve the project area will be coordinated with Monterey Salinas Transit as it develops interim and ultimate transit routing plans.

The streets that are proposed as part of the West Area Specific Plan circulation system vary in design, depending on the land use the streets will serve and the desired design character. Some of the proposed streets and their designs are described below.

5.1.1.2 Community Park Promenade Street 1: El Dorado Drive

El Dorado Drive includes bicycle lanes extending the existing bicycle lanes on El Dorado Drive south of Boronda into the Specific Plan area and north to Rogge Road. On-street parking is planned on the Westerly (community park) side of the street for a total of 41 feet curb to curb. The 13 feet of parkway on the west side of the roadway may include portions of the meandering 10-foot shared-use pathway located within the community park.

5.1.1.3 Community Park Promenade Street 2: Road A

Road A is a bicycle route connecting bike lanes on Boronda and Russell Roads. On-street parking is provided on both sides of the roadway for a total of 38 feet curb to curb. This relatively narrower roadway section combined with bulb-outs at the key intersections is to function as a traffic calming feature to make this a lower speed street adjacent to the community park.

5.1.1.4 Community Park Promenade Street 3: Road G

Road G is part of the northerly greenway street (connector) that extends east-west through the project area. It is also a bicycle route that connects bicycle lanes on San Juan Grade Road easterly to bicycle lanes on McKinnon Street, El Dorado Drive, Natividad Road, Independence Boulevard, Constitution Boulevard, Sanborn Road, and Williams Road. On-street parking is provided on both sides of the roadway for a total of 38 feet curb to curb. This relatively narrower roadway section combined with bulb-outs at the key intersections is to function as a traffic calming feature to make this a lower speed street adjacent to the community park.

5.1.1.5 Community Park Promenade Street 4: Road C

Road C is part of the southerly greenway street (connector) that extends through the Specific Plan area. It is a bicycle route and, similar to Road G, connects bicycle lanes from San Juan Grade to Williams Road. This is also the location of the greenway, which is a shared-use pathway within an approximate 18-foot minimum parkway on the north side of the street. On-street parking is provided on both sides of the roadway for a total of 38 feet curb to curb. As with the other street sections around the community park, this is to function as a traffic calming feature.

5.1.1.6 Collector Feature Street Section 1: McKinnon Street and El Dorado Drive

McKinnon Street and the portion of El Dorado Drive north and south of the community park include bicycle lanes that extend existing bicycle lanes on McKinnon Street and El Dorado Drive south of Boronda Road into the Specific Plan area and north to Russell and Rogge Roads. No on-street parking is provided on these roadways.

5.1.1.7 Collector Feature Street Section 2: Road A

Road A north and south of the community park is part of a bicycle route connecting bicycle lanes on Boronda and Russell Roads. On-street parking is provided on both sides of the roadway for a total of 38 feet curb to curb. Widening of the curb-to-curb dimension to allow for turns is expected in the vicinity of the Mixed Use Village Center.

5.1.1.8 Collector Feature Street Section 3: Street C

Street C is part of the southerly greenway street (connector) that extends east and west through the entire project area. It is a bicycle route that connects bicycle lanes on San Juan Grade Road easterly to bicycle lanes on McKinnon Street, El Dorado Drive, Natividad Road, Independence Boulevard, Constitution Boulevard, Sanborn Road, and Williams Road. This is also the location of the southerly greenway, a shared-use pathway within an approximate 18-foot minimum parkway on the north side of the street. On-street parking is provided on both sides of the roadway for a total 38 feet curb to curb.

5.1.1.9 Collector Feature Street Section 4: Road G

Road G is part of the northerly greenway street (connector) that extends east-west through the entire project area. It is a bicycle route and, like Street C, connects bicycle lanes from San Juan Grade Road to Williams Road. The 15-foot parkway on the south side of Road G and the 8-foot landscape easement includes a 7-foot community trail. On-street parking is provided on both sides of the roadway for a total of 38 feet curb to curb.

5.1.1.10 Russell Road

The extension of Russell Road into the Specific Plan area will be improved as a major arterial. Russell Road will have four 12-foot lanes, two in each direction, separated by a median 22 feet wide. Trees and other landscaping will be planted on this median. The two traffic lanes in each direction will be located on pavement 30 feet wide from curb to curb, for a total of 60 feet of pavement width. Both sides of Russell

Road will have a parkway 8 feet wide, a trail 8 feet in width, and an 8-foot wide landscaped area between the trail and a perimeter wall on the adjacent property line.

5.1.1.11 Rogge Road

Rogge Road will be improved as a two-lane roadway featuring a 34 foot wide cross section within a 84 foot wide right-of-way along the Specific Plan's frontage. Shared bicycle-pedestrian trails would be provided along both sides of the roadway.

5.1.2 CENTRAL AREA SPECIFIC PLAN

The Central Area Specific Plan is approximately 820 acres and shares the boundary of Natividad Road with the West Area Specific Plan. The Central Area Specific Plan is generally bounded by Boronda Road, the future extension of Constitution Boulevard, Old Stage Road, the future Russell Road extension, and Natividad Road.

Like the West Area Specific Plan, the Central Area Specific Plan is also a master-planned community based on New Urbanism principles. The new community proposes a minimum of 3,419 and a maximum of 3,983 new homes and apartments. In addition to the residential uses, approximately 250,000 square feet of retail and office uses may also be built within the Village Center Mixed Use Zone and a portion of the Neighborhood General-2 (NG-2) Zones. Approximately 100,000 square feet of retail or office square footage could be converted to an additional 100 residential units. These residential and commercial uses will be built within the Plan's Residential/Mixed Use Zoning Districts. Approximately 183 net acres of public streets are included in the plan.

Three school sites are proposed within the Central Area Specific Plan on three parcels for a combined 48 acres. They include a middle school (7th grade through 8th grade) on 18 acres, an elementary school (kindergarten through 6th grade) on 12 acres, and another elementary/middle school (kindergarten through 8th grade) on 18 acres. Also proposed are an approximately 22,000 square foot library on 2 acres and a fire station on 1.5 acres.

For the purposes of analysis, the following land use assumptions have been made:

- Residential: full buildout of 3,983 dwelling units
- Mixed Use Commercial: 125,000 square feet of office, 125,000 square feet of retail
- Schools: two elementary schools with 600 students enrolled in each and one middle school with 803 students enrolled
- Other: 50 acres of parks, 30 acres of utilities, 22,000 square feet of libraries

5.1.3 TRIP GENERATION

Trip generation refers to the process of estimating the amount of vehicular traffic a project might add to the local roadway network. Using available data, the expected level of vehicle trip generation during the peak one-hour periods during the morning (AM) and evening (PM) peak hours, when traffic volumes on adjacent streets are typically at their highest, was calculated.

Fehr & Peers' trip generation tool, MainStreet, was used to estimate trip generation for this project. The MainStreet application combines Institute of Transportation Engineers (ITE) methods and Big Data to provide a more robust analysis platform as an alternative to using only the ITE Trip Generation Manual, a more traditional analysis method. The Trip Generation manual contains data primarily collected at suburban, single-use, freestanding sites, which can overestimate vehicle trip generation. This is due to an inability of traditional tools to accurately reflect the amount of internal trip linking or the level of trips made by transit, biking, and/or walking. This can result in increased development costs due to oversized infrastructure and skewed perceptions of likely impacts. MainStreet begins with ITE trip generation estimates, but then adjusts those estimates to account for internal trips. MainStreet also recognizes that traffic generation relates closely to the density, diversity, design, destination accessibility, transit proximity, and scale of development, providing a more accurate and realistic trip generation estimate. Because the proposed project intends to use new urbanist design principles that include mixed use development, the MainStreet tool is more appropriate than trip generation rates which strictly rely on the ITE methodology.

Trip generation estimates for the West Area Specific Plan are presented below in **Table 9**. Trip generation estimates for the Central Area Specific Plan are presented in **Table 10**.

TABLE 9: WEST AREA SPECIFIC PLAN TRIP GENERATION

Land Use	Units	Quantity	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
Elementary School	Students	1,800	2,322	446	365	810	132	138	270
Middle School	Students	803	1,301	239	195	434	63	65	128
High School	Students	1,534	2,623	449	211	660	94	105	199
General Office Building	1000 sq ft gross floor area	143	1,576	224	31	255	40	198	238
Supermarket	1000 sq ft gross floor area	57	5,828	120	74	194	275	265	540
Shopping Center	1000 sq ft gross floor area	371	15,862	221	136	357	661	717	1,378
Single-Family Detached Housing	Dwelling Units	1,361	12,957	241	722	962	857	504	1,361
Condominium/ Townhouse	Dwelling Units	2,888	16,779	129	632	761	635	313	948
Apartment	Dwelling Units	91	605	9	37	46	44	24	68
City Park	Acres	50	94	125	99	224	99	75	174
Utilities	Acres	37		57	34	91	22	26	48
Net Raw Project Trips			*59,947*	*2,260*	*2,536*	*4,794*	*2,922*	*2,430*	*5,352*
Internal Capture			*-5,455*	*-348*	*-391*	*-738*	*-593*	*-493*	*-1,086*
External Walk, Bike, and Transit			*-2,398*	*-136*	*-152*	*-288*	*-143*	*-119*	*-262*
Total Reductions			*-7,853*	*-484*	*-543*	*-1,026*	*-736*	*-612*	*-1,349*
Net New Project Trips			**52,094**	**1,776**	**1,993**	**3,768**	**2,186**	**1,818**	**4,003**

Source: Fehr & Peers, 2018, ITE Trip Generation Manual, Ninth Edition
Notes: See Appendix A for West Area Specific Plan trip generation rate assumptions.

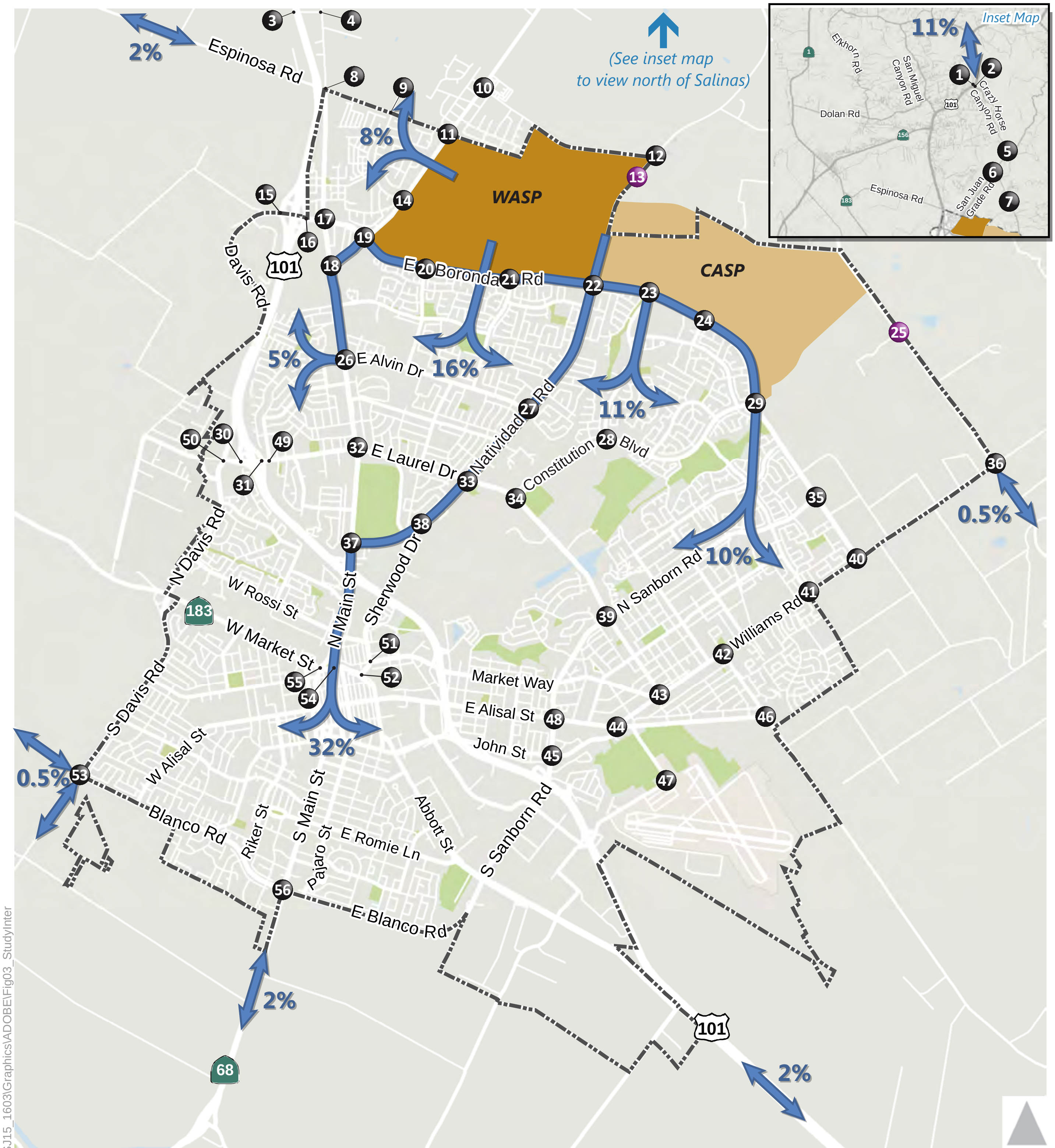
TABLE 10: CENTRAL AREA SPECIFIC PLAN TRIP GENERATION

Land Use	Units	Quantity	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				In	Out	Total	In	Out	Total
Elementary School	Students	1,200	1,548	297	243	540	88	92	180
Middle School	Students	803	1301	239	195	434	63	65	128
High School	Students	1481	2533	433	204	637	91	102	193
General Office Building	1000 sq ft gross floor area	125	1379	172	23	195	32	154	186
Supermarket	1000 sq ft gross floor area	25	2556	53	32	85	121	116	237
Shopping Center	1000 sq ft gross floor area	200	8,540	119	73	192	356	386	742
Single-Family Detached Housing	Dwelling Units	1,200	11,424	225	675	900	756	444	1,200
Condominium	Dwelling Units	2,700	15,687	202	986	1,188	941	463	1,404
Apartment	Dwelling Units	83	552	8	34	42	33	18	51
Library	1000 sq ft gross floor area	22	1237	16	7	23	77	84	161
City Park	Acres	50	76	101	79	180	80	60	140
Utilities	Acres	30	N/A	47	28	75	18	22	40
Net Raw Project Trips			46,833	1,912	2,579	4,491	2,656	2,006	4,662
Internal Capture			-4,028	-329	-444	-772	-494	-373	-867
External Walk, Bike, and Transit			-983	-69	-93	-162	-93	-70	-163
Total Reductions			-5,011	-398	-536	-934	-587	-443	-1,030
Net New Project Trips			**41,822**	**1,514**	**2,043**	**3,557**	**2,069**	**1,563**	**3,632**

Source: Fehr & Peers, 2018, ITE Trip Generation Manual, Ninth Edition
Notes: See Appendix B for trip generation rate assumptions.

5.1.4 TRIP DISTRIBUTION

New traffic generated by the West Area Specific Plan and the Central Area Specific Plan was distributed through the roadway network using a trip distribution pattern developed using the City of Salinas Travel Demand Model. The distribution used for West Area Specific Plan-related traffic is shown on **Figure 9. Figure 10** illustrates the assignment of project generated trips to the study intersections.



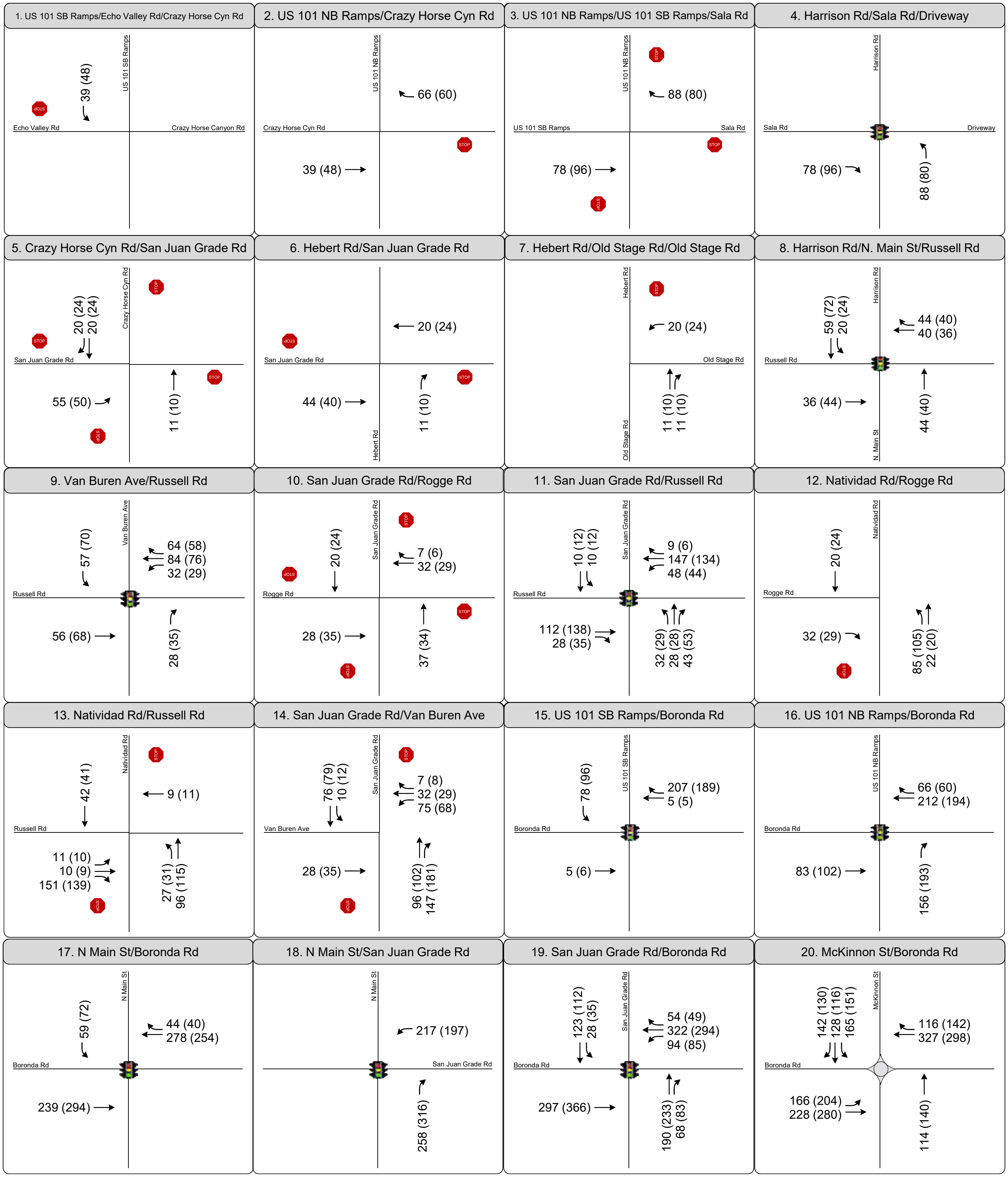
Legend

Study Intersection | Future Study Intersection | XX% Trip Distribution Percentage

West Area Specific Plan (WASP) | Central Area Specific Plan (CASP) | City Limits

Figure 9

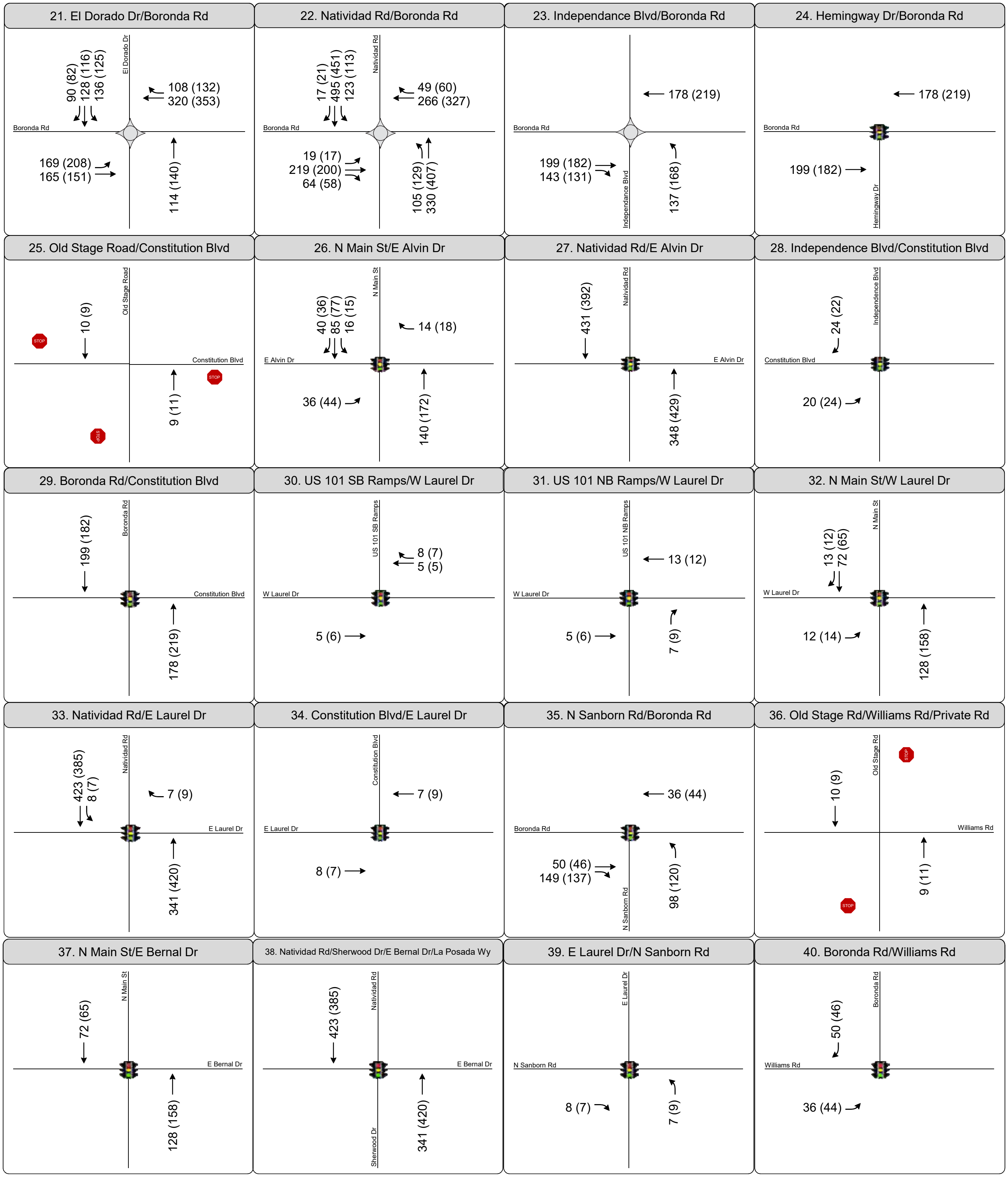
Project Trip Distribution



LEGEND XX (YY) AM (PM) Peak Hour Traffic Volumes · Signalized Intersection · Stop Sign · Roundabout

Figure 10a

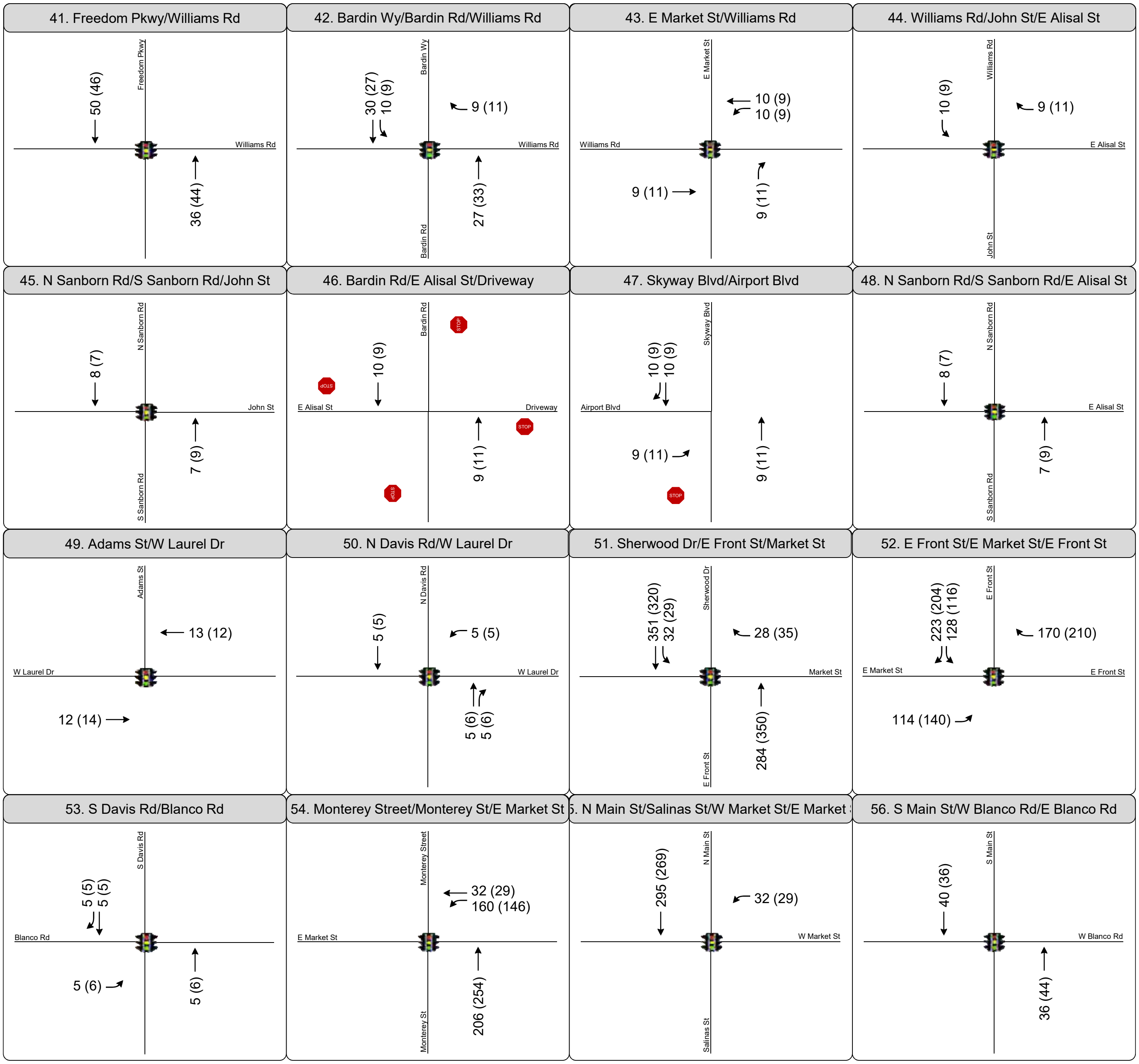
Project Trip Assignment (WASP)



LEGEND XX (YY) AM (PM) Peak Hour Traffic Volumes | Signalized Intersection | Stop Sign | Roundabout

Figure 10b

Project Trip Assignment (WASP)



LEGEND XX (YY) AM (PM) Peak Hour Traffic Volumes · Signalized Intersection · Stop Sign

Figure 10c

Project Trip Assignment (WASP)

5.2 PROJECT CONDITIONS NETWORK CHANGES

A number of changes to the network under the project conditions scenarios were assumed. Changes to the network in the Existing plus West Area Specific Plan scenario are also included in the Existing Plus Project and Central Area Specific Plan scenario. The assumptions are detailed below.

5.2.1 EXISTING PLUS PROJECT NETWORK ASSUMPTIONS

- Widen Boronda Road to 4 lanes from San Juan Grade to Natividad Road
    - Boronda Road & McKinnon Street – 2 lane roundabout
    - Boronda Road & El Dorado Drive – 2 lane roundabout
    - Boronda Road & Natividad Road – 3 lane roundabout
- Widen Russell Road to 4 lanes from San Juan Grade to Natividad Road (new road)
- Widen Natividad Road to 4 lanes from Boronda to Rogge Road
- Widen San Juan Grade Road to 4 lanes from Boronda to Rogge Road
- Add north leg at the intersection of El Dorado Drive and East Boronda Road; El Dorado Drive extends north of East Boronda Road to Rogge Road (new road).

5.2.2 EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN NETWORK ASSUMPTIONS

- Widen Boronda Road to 4 lanes from San Juan Grade Road to Constitution Boulevard
    - Boronda Road & Independence Boulevard – 2 lane roundabout
- Widen Russell to 4 lanes from San Juan Grade Road to Natividad Road (new road)
- Widen Natividad to 4 lanes from Boronda Road to Rogge Road
- Widen San Juan Grade to 4 lanes from East Boronda Road to Rogge Road
- Widen Old Stage Road to 4 lanes from Russell Road to Constitution Boulevard
- Extend the following roadways north of East Boronda Road: El Dorado Drive, Independence Boulevard, and Hemingway Drive (new road)
- Extend Constitution Boulevard as 4-lane arterial to Old Stage Road (new road)

It should be noted that the City of Salinas is considering the potential installation of roundabouts at additional locations on Boronda Road between Hemingway Drive and Williams Road. While this analysis assumes the widening and installation of traffic signal improvement at these locations, the installation of properly designed and sized roundabouts would offer similar levels of roadway capacity and would not change the overall conclusions of this analysis.

5.3 EXISTING PLUS PROJECT CONDITIONS ANALYSIS

5.3.1 EXISTING PLUS PROJECT CONDITIONS INTERSECTION OPERATION ANALYSIS

Vehicle volumes associated with the proposed project were distributed across the existing transportation network, resulting in the volumes shown in **Table 11** below. These volumes reflect the anticipated impacts that the proposed project would have today, all other things being equal. Intersections that experience significant impacts in either the morning or evening peak period are shown in bold.

TABLE 11: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road	SSSC	8.1 (16.9)	A (C)	13.1 (20.1)	B (C)
2	US 101 Northbound Ramps/Crazy Horse Canyon Road	SSSC	2.9 (12.6)	A (B)	2.6 (14.0)	A (B)
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	9.4	A	11.1	B
4	Harrison Road/Sala Road/Driveway	Signal	8.9	A	9.9	A
5	Crazy Horse Canyon Road/San Juan Grade Road	AWSC	10.5	B	13.4	B
6	Hebert Road/San Juan Grade Road	SSSC	5.6 (12.1)	A (B)	7.0 (24.3)	A (C)
7	Old Stage/Hebert Road	SSSC	1.2 (12.3)	A (B)	1.2 (14.4)	A (B)
8	North Main Street/Harrison Road/Russell Road	Signal	17.1	B	22.9	C
9	Van Buren Avenue/Russell Road	Signal	19.5	B	19.5	B
10	San Juan Grade Road/Rogge Road	AWSC	19	C	15.5	C
11	San Juan Grade Road/Russell Road	Signal	29.7	C	25	C
12	Natividad Road/Rogge Road	SSSC	7.2 (14.3)	A (B)	6 (13.8)	A (B)

TABLE 11: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
13	Natividad Road/Russell Road	SSSC	4.2 (9.6)	A (A)	3.9 (9.9)	A (A)
14	**San Juan Grade Road/Van Buren Avenue**	**SSSC**	**80.7 (>150)**	**F (F)**	**129.3 (>150)**	**F (F)**
15	US 101 Southbound Ramps/Boronda Road	Signal	6.4	A	7.7	A
16	US 101 Northbound Ramps/Boronda Road	Signal	9.7	A	22.1	C
17	North Main Street/Boronda Road	Signal	46.8	D	54.7	D
18	North Main Street/San Juan Grade Road	Signal	14	B	27.1	C
19	**San Juan Grade Road/Boronda Road**	Signal	42.0	D	**67**	**E**
20	McKinnon Street/Boronda Road	Roundabout	7.4	A	7.5	A
21	El Dorado Drive/Boronda Road	Roundabout	10.8	A	10.0	A
22	Natividad Road/Boronda Road	Roundabout	8.1	A	9.1	A
23	Independence Boulevard/Boronda Road	Signal	32.1	C	52.4	D
24	**Hemingway Drive/Boronda Road**	**SSSC**	**61.2 (>150)**	**F (F)**	**17.1 (>150)**	**C (F)**
26	North Main Street/East Alvin Drive	Signal	42	D	43.9	D
27	Natividad Road/East Alvin Drive	Signal	16.5	B	12.9	B
28	Independence Boulevard/Constitution Boulevard	Signal	22.5	C	21	C
29	Boronda Road/Constitution Boulevard	Signal	9.1	A	13.5	B
30	US 101 Southbound Ramps/West Laurel Drive	Signal	9.5	A	11.7	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	6.6	A	12.6	B
32	**North Main Street/West Laurel Drive**	**Signal**	38.2	D	**72**	**E**
33	**Natividad Road/East Laurel Drive**	**Signal**	**74.6**	**E**	**63.6**	**E**

TABLE 11: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
34	Constitution Boulevard/East Laurel Drive	Signal	17.6	B	23	C
35	**North Sanborn Road/Boronda Road**	**SSSC**	**123.5 (>150)**	**F (F)**	**52.4 (>150)**	**D (F)**
36	Old Stage Road/Williams Road/Private Road	SSSC	5.5 (10.4)	A (B)	4.3 (11.8)	A (B)
37	North Main Street/East Bernal Drive	Signal	46.2	D	41.5	D
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**82.8**	**F**	**76.1**	**E**
39	East Laurel Drive/North Sanborn Road	Signal	20.3	C	26.6	C
40	Williams Road/Boronda Road	SSSC	8.0 (18.1)	A (C)	8.0 (34.4)	A (D)
41	Freedom Pkwy/Williams Road	Signal	20	C	22.2	C
42	Bardin Road/Bardin Way/Williams Road	Signal	17.7	B	20.5	C
43	East Market Street/Williams Road	Signal	20	C	29.6	C
44	John Street/Williams Road/E Alisal Street	Signal	12.3	B	12.9	B
45	South Sanborn Road/North Sanborn Road/John Street	Signal	45.6	D	25.6	C
46	Bardin Road/East Alisal Street/Driveway	AWSC	10.1	B	10	A
47	Skyway Boulevard/Airport Boulevard	SSSC	2.7 (9.8)	A (A)	11.5 (16.2)	B (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	25.7	C	31.6	C
49	West Laurel Drive/Adams Street	Signal	12.8	B	17.7	B
50	North Davis Road/West Laurel Drive	Signal	26.1	C	44	D
51	East Front Street/Sherwood Drive/Market Street	Signal	14.1	B	19.9	B
52	East Market Street/East Front Street	Signal	9.6	A	11.1	B
53	South Davis Road/Blanco Road	Signal	38.8	D	46.3	D

TABLE 11: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
54	Monterey Street/Monterey Street/East Market Street	Signal	21.6	C	28.5	C
55	**Salinas Street/North Main Street/West Market Street/East Market Street**	**Signal**	**84.2**	**F**	**59.7**	**E**
56	South Main Street/West Blanco Road/East Blanco Road	Signal	38	D	41.9	D

Source: Fehr & Peers, 2018
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Overall, eight intersections experience failing LOS scores in the morning and/or peak period in the Existing Plus Project conditions scenario.

These constitute significant impacts, mitigations for which are discussed in depth in the Impacts and Mitigations chapter at the end of this report.

5.3.2 EXISTING PLUS PROJECT CONDITIONS FREEWAY CAPACITY ANALYSIS

Table 12 and **Table 13** show the results of the freeway mainline capacity analysis for US 101 in the Existing Plus Project Condition in the morning and evening peak hour, respectively.

TABLE 12: AM EXISTING PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	2,149	18.0	C	2,114	17.7	B
Crazy Horse Canyon Road to San Miguel Canyon Road	2,213	18.6	C	2,102	17.6	B
San Miguel Canyon Road to SR 156	3,153	17.6	B	2,626	22.0	C
SR 156 to Sala Road	2,265	19.0	C	2,044	17.1	B

Sala Road to Boronda Road	2,693	15.1	B	1,951	10.9	A
Boronda Road to Laurel Drive	3,004	25.5	C	1,991	16.7	B
Laurel Drive to N. Main Street/SR 183	2,983	25.3	C	1,886	15.8	B
N. Main Street/SR 183 to E. Market Street	2,898	24.5	C	1,851	15.5	B
SR 68 John Street to S. Sanborn Road	1,974	16.6	B	1,548	13.0	B
S. Sanborn Road to Abbott Street	1,708	14.3	B	1,566	13.1	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

TABLE 13: PM EXISTING PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	2,864	24.2	C	2,388	20.0	C
Crazy Horse Canyon Road to San Miguel Canyon Road	2,518	21.1	C	2,408	20.2	C
San Miguel Canyon Road to SR 156	3,301	18.5	C	3,320	28.9	D
SR 156 to Sala Road	2,644	22.2	C	2,656	22.3	C
Sala Road to Boronda Road	2,581	14.4	B	3,244	18.1	C
Boronda Road to Laurel Drive	2,776	23.4	C	3,284	28.5	D
Laurel Drive to N. Main Street/SR 183	2,693	22.6	C	3,460	30.6	D
N. Main Street/SR 183 to E. Market Street	2,678	22.5	C	3,505	31.2	D
SR 68 John Street to S. Sanborn Road	2,079	17.4	B	2,410	20.2	C
S. Sanborn Road to Abbott Street	1,817	15.2	B	2,367	19.9	C

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

All study segments of US 101 analyzed perform within the County CMP standards.

5.3.3 EXISTING PLUS PROJECT CONDITIONS RAMP JUNCTION CAPACITY ANALYSIS

Two interchanges on US 101 in Salinas were analyzed to identify the performance of ramp junctions. The results of this analysis for the Existing Plus Project scenario during the morning and evening peak periods are shown in **Table 14** and **Table 15,** respectively.

TABLE 14: AM EXISTING PLUS PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	26	C	Loop On-Ramp	11.7	B
	On-Ramp	27.1	C	Off-Ramp	22.4	C
West Laurel Drive	Off-Ramp	31.9	D	On-Ramp	19.9	B
	On-Ramp	25.2	C	Loop On-Ramp	16.4	B
				Off-Ramp	16.4	B

Source: Fehr & Peers, 2018

TABLE 15: PM EXISTING PLUS PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	23	C	Loop On-Ramp	18.8	B
	On-Ramp	25	C	**Off-Ramp**	**35.1**	**E**
West Laurel Drive	Off-Ramp	29.6	D	On-Ramp	31.4	D
	On-Ramp	21.6	C	Loop On-Ramp	27.8	C
				Off-Ramp	**35.4**	**E**

Source: Fehr & Peers, 2018

The US 101 Northbound Off-ramp at East Boronda Road and East Laurel Avenue perform at LOS E in the evening peak period, which is below standards set by the County CMP.

5.4 EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN CONDITIONS

The Existing Plus Project and Central Area Specific Plan Conditions Scenario incorporates the combined effect of the West Area Specific Plan and the Central Area Specific Plan on the local transportation network. Because the projects are adjacent to each other, it can be assumed that they will have a combined influence on the nearby transportation network once they are both complete. As such, that impact is analyzed in this section.

5.4.1 EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN CONDITIONS INTERSECTION LEVEL OF SERVICE

The expected trip generation for the West Area Specific Plan and the Central Area Specific Plan were overlaid on the existing conditions on the local transportation network. The magnitude of this effect on study intersections is documented by **Table 16** below.

TABLE 16: EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road	SSSC	8.8 (17.8)	A (C)	14.3 (21.7)	B (C)
2	US 101 Northbound Ramps/Crazy Horse Canyon Road	SSSC	2.8 (12.9)	A (B)	2.6 (14.4)	A (B)
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	11.3	B	12.9	B
4	Harrison Road/Sala Road/Driveway	Signal	9.5	A	10.7	B
5	Crazy Horse Canyon Road/San Juan Grade Road	AWSC	11	B	14.6	B
6	Hebert Road/San Juan Grade Road	SSSC	5.9 (12.5)	A (B)	7.4 (26.8)	A (D)

TABLE 16: EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
7	Old Stage Road/Hebert Road	SSSC	1.1 (12.9)	A (B)	1.2 (15.1)	A (C)
8	North Main Street/Harrison Road/Russell Road	Signal	17.5	B	24.9	C
9	Van Buren Avenue/Russell Road	Signal	36.7	D	15.4	B
10	San Juan Grade Road/Rogge Road	AWSC	19	C	15.5	C
11	San Juan Grade Road/Russell Road	Signal	44.1	D	35.4	D
12	Natividad Road/Rogge Road	SSSC	8.2 (18.0)	A (C)	6.0 (14.0)	A (B)
13	Natividad Road/Russell Road	SSSC	10.6 (16.3)	B (C)	12.2 (24.4)	B (C)
14	**San Juan Grade Road/Van Buren Avenue**	**SSSC**	**80.7 (>150)**	**F (F)**	**129.3 (>150)**	**F (F)**
15	US 101 Southbound Ramps/Boronda Road	Signal	6.6	A	8	A
16	US 101 Northbound Ramps/Boronda Road	Signal	10.9	B	26	C
17	**North Main Street/Boronda Road**	Signal	46.2	D	**62.9**	**E**
18	North Main Street/San Juan Grade Road	Signal	14.8	B	28.3	C
19	**San Juan Grade Road/Boronda Road**	**Signal**	44.4	D	**88.1**	**F**
20	McKinnon Street/Boronda Road	Roundabout	9.8	A	9.5	A
21	El Dorado Drive/Boronda Road	Roundabout	21.8	C	15.4	C
22	Natividad Road/Boronda Road	Roundabout	20.2	C	22.6	C
23	Independence Boulevard/Boronda Road	Roundabout	8.4	A	9.8	A
24	Hemingway Drive/Boronda Road	Signal	37.8	D	29.4	C
25	Old Stage Road/Constitution Boulevard	AWSC	7.8	A	7.8	A
26	North Main Street/East Alvin Drive	Signal	42	D	43.9	D

TABLE 16: EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
27	Natividad Road/East Alvin Drive	Signal	23.5	C	19.2	B
28	Independence Boulevard/Constitution Boulevard	Signal	36.9	D	28.5	C
29	Boronda Road/Constitution Boulevard	Signal	36.2	D	39.4	D
30	US 101 Southbound Ramps/West Laurel Drive	Signal	9.6	A	12	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	6.7	A	12.9	B
32	**North Main Street/West Laurel Drive**	**Signal**	39.8	D	**72.1**	**E**
33	**Natividad Road/East Laurel Drive**	**Signal**	**106.7**	**F**	**90.1**	**F**
34	Constitution Boulevard/East Laurel Drive	Signal	21.2	C	28.6	C
35	**North Sanborn Road/Boronda Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
36	Old Stage Road/Williams Road/Private Road	SSSC	6.4 (13.7)	A (B)	7.7 (19.4)	A (C)
37	North Main Street/East Bernal Drive	Signal	46.7	D	41.7	D
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**116**	**F**	**93**	**F**
39	East Laurel Drive/North Sanborn Road	Signal	26.7	C	32.7	C
40	**Williams Road/Boronda Road**	**SSSC**	**15.8 (64.2)**	**B (F)**	**21.0 (>150)**	**C (F)**
41	Freedom Pkwy/Williams Road	Signal	26.4	C	34.9	C
42	Bardin Road/Bardin Way/Williams Road	Signal	22.6	C	26.6	C
43	East Market Street/Williams Road	Signal	20.7	C	31.6	C
44	John Street/Williams Road/E Alisal Street	Signal	13	B	14.8	B
45	South Sanborn Road/North Sanborn Road/John Street	Signal	73.5	E	45	D

TABLE 16: EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN INTERSECTION LEVEL OF SERVICE ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
46	Bardin Road/East Alisal Street/Driveway	AWSC	11	B	10.6	B
47	Skyway Boulevard/Airport Boulevard	SSSC	2.8 (10.0)	A (B)	12.3 (17.6)	B (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	33.8	C	39.6	D
49	West Laurel Drive/Adams Street	Signal	13.3	B	18.2	B
50	North Davis Road/West Laurel Drive	Signal	26.2	C	44	D
51	East Front Street/Sherwood Drive/Market Street	Signal	16.6	B	32.7	C
52	East Market Street/East Front Street	Signal	10	B	12.5	B
53	South Davis Road/Blanco Road	Signal	39.1	D	46.9	D
54	Monterey Street/Monterey Street/East Market Street	Signal	22.6	C	29.3	C
55	**Salinas Street/North Main Street/West Market Street/East Market Street**	**Signal**	**95**	**F**	**62.7**	**E**
56	South Main Street/West Blanco Road/East Blanco Road	Signal	40.1	D	43.3	D

Source: Fehr & Peers, 2018
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Nine intersections were found to operate below local minimum service standards in either the morning or evening peak period. More intersections fail in the Existing plus Project and Central Area Specific Plan Scenario due to the increased volumes of trips associated with the Central Area Specific Plan.

5.4.2 EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN CONDITIONS FREEWAY CAPACITY ANALYSIS

Table 17 and **Table 18** document the findings of a capacity analysis focused on the US 101 study segments through Salinas in the Existing Plus Project and Central Area Specific Plan Conditions scenario for the morning and evening peak periods, respectively.

TABLE 17: AM EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	2,319	19.4	C	2,334	19.6	C
Crazy Horse Canyon Road to San Miguel Canyon Road	2,383	20.0	C	2,322	19.5	C
San Miguel Canyon Road to SR 156	3,323	18.6	C	2,864	24.0	C
SR 156 to Sala Road	2,435	20.4	C	2,264	19.0	C
Sala Road to Boronda Road	2,713	15.2	B	2,101	11.8	B
Boronda Road to Laurel Drive	3,024	25.7	C	2,141	18.0	B
Laurel Drive to N. Main Street/SR 183	3,123	26.7	D	2,036	17.1	B
N. Main Street/SR 183 to E. Market Street	2,938	24.9	C	1,881	15.8	B
SR 68 John Street to S. Sanborn Road	2,014	16.9	B	1,578	13.2	B
S. Sanborn Road to Abbott Street	1,748	14.7	B	1,596	13.4	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

TABLE 18: PM EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	3,094	26.4	D	2,558	21.6	C
Crazy Horse Canyon Road to San Miguel Canyon Road	2,748	23.1	C	2,578	21.6	C
San Miguel Canyon Road to SR 156	3,531	19.7	C	3,490	31.0	D
SR 156 to Sala Road	2,874	24.3	C	2,826	23.8	C
Sala Road to Boronda Road	2,602	14.6	B	3,404	19.0	C
Boronda Road to Laurel Drive	2,796	23.5	C	3,444	30.4	D
Laurel Drive to N. Main Street/SR 183	2,823	23.8	C	3,620	32.7	D
N. Main Street/SR 183 to E. Market Street	2,708	22.7	C	3,545	31.7	D
SR 68 John Street to S. Sanborn Road	2,109	17.7	B	2,450	20.6	C
S. Sanborn Road to Abbott Street	1,847	15.5	B	2,407	20.2	C

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

All study segments perform within the minimum standards set by the County CMP.

5.4.3 EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN FREEWAY RAMP JUNCTION CAPACITY ANALYSIS

Table 19 and **Table 20** document the findings of a capacity analysis for US 101 ramp junctions at two interchanges in Salinas under the Existing Plus Project and Central Area Specific Plan scenario, during the morning and evening peak periods, respectively.

TABLE 19: AM EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	26.1	C	Loop On-Ramp	13	B
	On-Ramp	27.3	C	Off-Ramp	23.9	C
West Laurel Drive	Off-Ramp	32.1	D	On-Ramp	21.6	C
	On-Ramp	25.3	C	Loop On-Ramp	17.7	B
				Off-Ramp	17.4	B

Source: Fehr & Peers, 2018

TABLE 20: PM EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	23.2	C	Loop On-Ramp	20.1	C
	On-Ramp	25.2	C	**Off-Ramp**	**36.6**	**E**
West Laurel Drive	Off-Ramp	29.8	D	On-Ramp	33.1	D
	On-Ramp	21.8	C	Loop On-Ramp	29.2	D
				Off-Ramp	**37.0**	**E**

Source: Fehr & Peers, 2018

The Northbound Off-Ramps at East Boronda Road and East Laurel Street perform at LOS E, which is below the minimum standards set by the County CMP.

6.0 CUMULATIVE VOLUMES AND LEVEL OF SERVICE

The future effects of the West Area Specific Plan and the Central Area Specific Plan were evaluated against the projected volumes and operations of the transportation network assuming growth as a result of partial implementation of the adopted general plan as of the year 2045. The roadway network improvements included in the City's General Plan, including the eastside and westside bypasses, are reflected in the cumulative analyses. The following sections detail the forecasting methods and results of this analysis.

6.1 TRAVEL DEMAND FORECASTING METHODS AND ASSUMPTIONS

The Salinas Travel Demand model (the model) includes all of Monterey County, California, including the City of Salinas. It is a four-step model, using trip generation, trip distribution, mode choice and trip assignment as well as localized land use and roadway network attributes in order to create estimates for travel behavior and patterns.

The model was used to forecast travel to and from a specific area, or zone, based on the land use information for that zone. Land use information includes the number and size of households and the number and type of jobs.

6.1.1.1 Linear Interpolation of the Cumulative Horizon Year Forecast

The model was initially developed with a horizon year of 2063 in order to reflect the conditions anticipated to prevail with buildout of the City's General Plan. As such, it includes all of the land use changes and transportation network improvements included in the General Plan. The land use changes from the proposed Economic Development Element are also included.

By contrast, 2045 is the cumulative horizon year used in this Transportation Impact Analysis. In order to produce traffic forecasts based on changes in land use for 2045 (instead of 2063; General Plan transportation network changes are assumed to have occurred by 2045), land use conditions were interpolated by assuming growth in a linear manner between the base and horizon years. While actual land use growth may follow economic cycles and not an exact linear trend, this assumption is relatively consistent with recent and historical trends in the City.

6.1.1.2 Adjusting Model Outputs

Travel demand models such as the one used in this report provide volume outputs that need to be adjusted in order to develop volume forecasts for the scenario being tested. In principle, raw volume outputs from a travel demand model should rarely be applied directly in analysis, only being used after adjustments are made. Adjustments to forecasted volumes are usually based on the difference between or ratio of volumes observed in the field and the model's own prediction of existing volumes.

The rationale for adjusting raw model volume outputs is that observed travel behavior is the result of a highly complex mixture of variables, only some of which are included in any given travel demand model, and so an adjustment is needed to account for variables not captured by the model itself. The adjustment takes the form of changing the model outputs to correct for discrepancies between the base year field counts and the base year model volumes identified during the local calibration process, as it is assumed that the discrepancy will likely affect all scenarios in the same order of magnitude. This can be done several ways, as defined in the *National Cooperative Highway Research Program Report 255: Highway Traffic Data for Urbanized Area Project Planning and Design*, Transportation Research Board, December 1982[3]. The three most common industry-standard procedures for adjusting model traffic forecasts for both link and turning movement volumes are described below.

6.1.1.3 Difference Method

The difference between the base year field count and the base year model volume is added to the output model volume to develop the forecasted volume for the scenario being tested. For example, if the base year model volume for a roadway segment was 650 ADT while the field count was 700 ADT, then the difference method would suggest the output model volume on that roadway segment should be increased by 50 ADT to develop the forecasted volume for the scenario being tested. The difference method adjustment is summarized in the formula below.

Scenario Forecast = Output Model Volume + (Field Count – Base Year Model Volume)

6.1.1.4 Ratio Method

The ratio method is similar, except that it uses the ratio of the base year field count and the base year model volume to make the adjustment. For example, if the base year model volume for a roadway segment was 650 ADT while the field count was 700 ADT, then the ratio method would suggest the output model volume

[3] http://teachamerica.com/tih/PDF/nchrp255.pdf

should be increased by 7.7% (700 / 650 = 1.077) to develop the forecasted volume for the scenario being tested. The ratio method adjustment is summarized in the formula below.

*Scenario Forecast = Output Model Volume * (Field Count / Base Year Model Volume)*

6.1.1.5 Blended Method

The blended method takes the average of the ratio method and the difference method scenario forecasts. The blended method adjustment is summarized in the formula below.

Scenario Forecast = (Difference Method Scenario Forecast + Ratio Method Scenario Forecast) / 2

The most appropriate adjustment method is left to the judgment of the engineer for each project. However, there are guidelines that the Transportation Research Board[4] has published based on the difference between base year field counts and base year model volumes: use the ratio method if the difference is less than 50%, use the difference method if the difference is greater than 150%, otherwise use the blended method.

This methodology was followed for the production of forecasts. In cases where the model was unable to produce volume at a specific intersection or roadway, an annual growth rate of .75% (based on regional growth, industry standards and engineering judgement) was applied to the observed volumes to forecast the 2045 no project volume. In some locations, particularly around the project access points, some volumes were re-routed based on details of the internal circulation network of the project.

6.1.1.6 Roadway Cumulative Network Changes

The following roadway network changes were assumed as part of all cumulative scenarios and are included in the model (these changes are presented in **Figure 11**):

- Boronda Road was widened to 4 lanes from 2 lanes between Williams Road and San Juan Grade Road.
- As shown earlier in **Figure 2**, the internal circulation network for the West Area Specific Plan was added to the model. The network is consistent with the plan document and includes access points on Boronda Road, Natividad Road, San Juan Grade, and Rogge Road.
- When necessary, the Central Area Specific Plan was added to the model network. Engineering judgement was applied to assume the locations of access points on Natividad Road, Boronda, Old Stage Road, the planned extensions of Russell Road, Constitution Boulevard, Hemingway Drive and Independence Boulevard.

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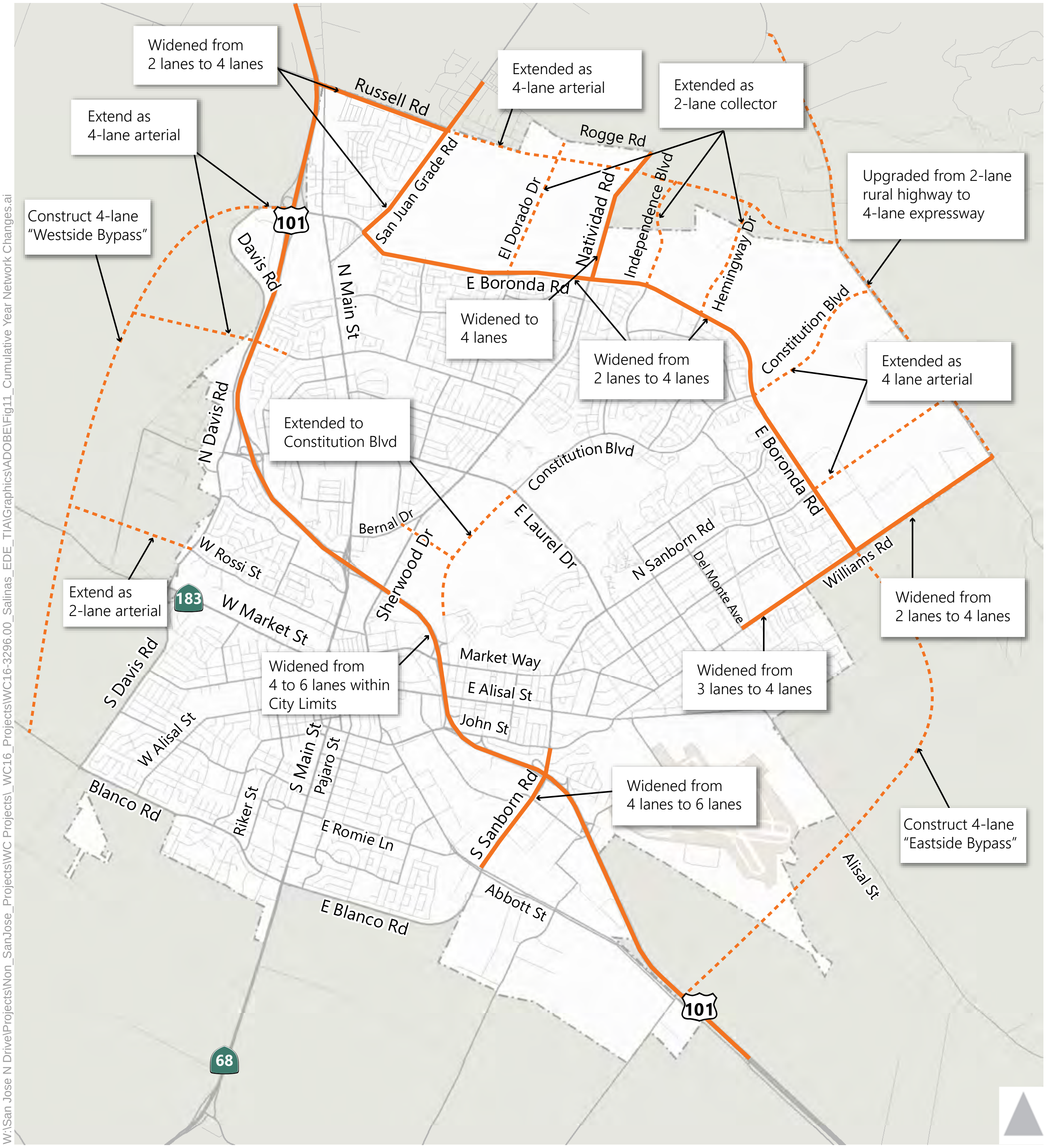
[4] *National Cooperative Highway Research Program Report 255, Highway Traffic Data for Urban Area Project Planning and Design*, Transportation Research Board, N.J. Pederson and D.R. Samdahl

In the cumulative scenarios which include the General Plan roadway network the following roadway improvements have also been coded into the model (also reflected on **Figure 11**):

- 4-lane divided arterial extending "Western Bypass" south of SR 183 to the intersection of Blanco Road and Davis Road.
- 4-lane divided arterial "Eastside Bypass" from the Boronda Road/Williams Road intersection to Harris Road at US 101
- 4 lane arterial extension of Alvin Drive across US 101 to connect with the Western Bypass.
- 2 lane arterial extension of West Rossi Street from North Davis Road to the Western Bypass



Source: City of Salinas

Roadway Widening
City Limits
New Roads

W:\San Jose N Drive\Projects\Non_SanJose_Projects\WC Projects_WC16_Projects\WC16-3296.00_Salinas_EDE_TIA\Graphics\ADOBE\Fig11_Cumulative Year Network Changes.ai

Figure 11

Cumulative Year Network Changes

Figure 11: Cumulative Year Network Assumptions

6.2 CUMULATIVE WITH NO PROJECT CONDITIONS ANALYSIS

6.2.1.1 Cumulative with No Project Conditions Intersection Operation Analysis

The study intersections were evaluated under future growth assuming 2045 buildout of the general plan, as well as other changes detailed in the previous section. The results of this analysis are shown in **Table 21,** below. Intersections that perform below the minimum local performance standards are shown in bold.

TABLE 21: CUMULATIVE WITH NO PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	**US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road**	**SSSC**	7 (16.9)	A (C)	**150 (>150)**	**F (F)**
2	**US 101 Northbound Ramps/Crazy Horse Canyon Road**	**SSSC**	2.6 (12.6)	A (B)	**4.7 (43.7)**	**A (E)**
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	9.2	A	12.1	B
4	Harrison Road/Sala Road	Signal	9	A	10.2	B
5	**Crazy Horse Canyon Road/San Juan Grade Road**	**AWSC**	10	A	**109.7**	**F**
6	Hebert Road/San Juan Grade Road	SSSC	6.6 (13.0)	A (B)	9.5 (33.9)	A (D)
7	Old Stage Road/Hebert Road	SSSC	5.2 (12.8)	A (B)	5.1 (19.7)	A (C)
8	North Main Street/Harrison Road/Russell Road	Signal	17.3	B	27.4	C
9	Van Buren Avenue/Russell Road	Signal	18.3	B	12.9	B
10	San Juan Grade Road/Rogge Road	AWSC	20.9	C	14.9	B
11	San Juan Grade Road/Russell Road	Signal	15.8	B	23.4	C
12	**Natividad Road/Rogge Road**	**SSSC**	6.1 (10.7)	A (B)	**15.2 (47.5)**	**B (E)**
13	**Natividad Road/Russell Road**	SSSC	6.5 (25.5)	A (D)	**7.7 (51.0)**	**A (F)**

TABLE 21: CUMULATIVE WITH NO PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
14	San Juan Grade Road/Van Buren Avenue	SSSC	4.4 (22.8)	A (C)	4.3 (27.0)	A (D)
15	US 101 Southbound Ramps/Boronda Road	Signal	6.6	A	8.2	A
16	US 101 Northbound Ramps/Boronda Road	Signal	8.7	A	19.5	B
17	**North Main Street/Boronda Road**	**Signal**	49.7	D	**70.2**	**E**
18	North Main Street/San Juan Grade Road	Signal	12.9	B	35.5	D
19	San Juan Grade Road/Boronda Road	Signal	37.7	D	45.6	D
20	McKinnon Street/Boronda Road	Roundabout	5.6	A	5.4	A
21	El Dorado Drive/Boronda Road	Roundabout	6.0	A	6.4	A
22	Natividad Road/Boronda Road	Roundabout	4.5	A	5.6	A
23	Independence Boulevard/Boronda Road	Roundabout	4.4	A	4.7	A
24	Hemingway Drive/Boronda Road	Signal	12.4	B	5.8	A
25	Old Stage Road/Constitution Boulevard	AWSC	8.9	A	9.9	A
26	N Main Street/East Alvin Drive	Signal	42.4	D	41	D
27	Natividad Road/East Alvin Drive	Signal	21.2	C	14.7	B
28	Independence Boulevard/Constitution Boulevard	Signal	29.2	C	28.5	C
29	Boronda Road/Constitution Boulevard	Signal	8.4	A	9.7	A
30	US 101 Southbound Ramps/West Laurel Drive	Signal	14.3	B	17.4	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	8.9	A	16.2	B
32	**N Main Street/West Laurel Drive**	Signal	41.5	D	**161.8**	**F**
33	**Natividad Road/East Laurel Drive**	**Signal**	**73.9**	**E**	**85.1**	**F**

TABLE 21: CUMULATIVE WITH NO PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
34	**Constitution Boulevard/East Laurel Drive**	**Signal**	54.5	D	**68.4**	**E**
35	North Sanborn Road/Boronda Road	Signal	12.5	B	28.2	C
36	**Old Stage Road/Williams Road/Private Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
37	**North Main Street/East Bernal Drive**	**Signal**	**56.7**	**E**	**68.6**	**E**
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**72**	**F**	**122.3**	**F**
39	East Laurel Drive/North Sanborn Road	Signal	23.9	C	29.3	C
40	Williams Road/East Boronda Road	Signal	18.9	B	39.3	D
41	Freedom Parkway/Williams Road	Signal	20.7	C	28.9	C
42	Bardin Road/Bardin Way/Williams Road	Signal	20.9	C	25.3	C
43	East Market Street/Williams Road	Signal	22.6	C	48	D
44	John Street/Williams Road/East Alisal Street	Signal	13.6	B	21.2	C
45	South Sanborn Road/North Sanborn Road/John Street	Signal	31.5	C	34.1	C
46	Bardin Road/East Alisal Street/Driveway	AWSC	9.5	A	13.9	B
47	Skyway Boulevard/Airport Boulevard	SSSC	8.3 (9.8)	A (A)	17.7 (19.2)	C (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	27.4	C	37.7	D
49	West Laurel Drive/Adams Street	Signal	19.4	B	21.7	C
50	North Davis Road/West Laurel Drive	Signal	36	D	54	D
51	East Front Street/Sherwood Drive/Market Street	Signal	18.2	B	31.9	C
52	East Market Street/East Front Street	Signal	9.4	A	11.5	B
53	**South Davis Road/Blanco Road**	**Signal**	**184.9**	**F**	**144.7**	**F**

TABLE 21: CUMULATIVE WITH NO PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Int. No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
54	Monterey Street/Monterey Street/East Market Street	Signal	18.2	B	24.9	C
55	Salinas Street/North Main Street/West Market Street/East Market Street	Signal	37.1	D	46.4	D
56	**South Main Street/West Blanco Road/East Blanco Road**	**Signal**	**48.5**	**D**	**67.4**	**E**

Source: Fehr & Peers, 2018
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service

Notes:

- *SSSC intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS). AWSC LOS is reported for the overall intersection, based on average delay per vehicle*

Fourteen intersections were found to function below the City thresholds for acceptable level of service (D or better) during the morning and/or evening peak period. Of these, six operate at LOS F during one or both peak periods for the intersection as a whole: Crazy Horse Canyon Road/San Juan Grade Road, Old Stage Road/Williams Road, South Davis Road/Blanco Road, Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way, Natividad Road/East Laurel Drive and North Main Street/West Laurel Drive.

6.2.1.2 Cumulative with No Project Conditions Freeway Mainline Capacity Analysis

Ten segments of US 101 through Salinas were analyzed using methodology from the Highway Capacity Manual in the Cumulative Conditions scenario. This Cumulative scenario includes the roadway network changes described in Section 6.1.1.6. No physical changes to US 101 are included in the forecasts or analyses. Results for the morning peak period are shown below in **Table 22** and evening results are shown in **Table 23**.

TABLE 22: AM CUMULATIVE WITH NO PROJECT CONDITIONS FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	3,060	26.1	D	3,530	31.5	D
Crazy Horse Canyon Road to San Miguel Canyon Road	2,630	22.1	C	2,920	24.7	C

San Miguel Canyon Road to SR 156	3,580	32.2	D	**3,880**	**36.6**	**E**
SR 156 to Sala Road	3,230	27.9	D	3,090	26.4	D
Sala Road to Boronda Road	3,290	18.4	C	3,020	16.9	B
Boronda Road to Laurel Drive	3,650	20.4	C	3,190	17.8	B
Laurel Drive to N. Main Street/SR 183	3,640	20.4	C	3,080	17.2	B
N. Main Street/SR 183 to E. Market Street	3,220	18.0	B	2,460	13.8	B
SR 68 John Street to S. Sanborn Road	2,300	12.9	B	2,010	11.2	B
S. Sanborn Road to Abbott Street	2,540	14.2	B	1,720	9.6	A

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

TABLE 23: PM CUMULATIVE WITH NO PROJECT CONDITIONS FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Grade Road to Crazy Horse Canyon Road	**4,170**	**40.2**	**E**	3,470	30.7	D
Crazy Horse Canyon Road to San Miguel Canyon Road	3,310	28.8	D	3,110	26.6	D
San Miguel Canyon Road to SR 156	**4,770**	**58.4**	**F**	**4,230**	**43.2**	**E**
SR 156 to Sala Road	**4,290**	**44.6**	**E**	3,280	28.4	D
Sala Road to Boronda Road	4,230	23.7	C	3,330	18.6	B
Boronda Road to Laurel Drive	4,310	24.3	C	3,830	21.4	C
Laurel Drive to N. Main Street/SR 183	4,080	22.8	C	3,990	22.3	C
N. Main Street/SR 183 to E. Market Street	3,660	20.5	C	3,900	21.8	C
SR 68 John Street to S. Sanborn Road	2,970	16.6	B	2,650	14.8	B
S. Sanborn Road to Abbott Street	2,310	12.9	B	3,180	17.8	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

San Miguel Canyon Road to SR 156 was found to operate at LOS E in northbound direction during the AM peak period, LOS F in the evening peak hour in the southbound direction and LOS E in the evening peak in the northbound direction. San Juan Grade Road to Crazy Horse Canyon Road operates at LOS E and LOS D in the south and northbound directions during the evening peak period. SR 156 to Sala Road rated LOS E in the southbound direction during the evening peak hour.

6.2.1.3 Cumulative with No Project Conditions Freeway Ramp Junction Capacity Analysis

Capacity analyses for ramp junctions were prepared at two interchanges along US 101 in Salinas. The results of this analysis for the morning and evening peak period are shown in **Table 24** and **Table 25**, respectively.

6.3 CUMULATIVE PLUS PROJECT CONDITIONS

6.3.1.1 Cumulative plus Project Conditions Intersection Operation Analysis

The Cumulative Conditions Plus Project scenario models the overall change in traffic volumes in Salinas as a result of forecast development, with the addition of the proposed project. The intent is to understand how the proposed project will influence travel behavior in light of future conditions, and to identify possible significant future impacts. The results of this analysis are shown in **Table 26** below.

TABLE 26: CUMULATIVE PLUS PROJECT INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	**US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road**	**SSSC**	8.3 (18.8)	A (C)	**150 (>150)**	**F (F)**
2	**US 101 Northbound Ramps/Crazy Horse Canyon Road**	**SSSC**	2.4 (13.1)	A (B)	**5.1 (51.5)**	**A (F)**
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	10.2	B	13.5	B
4	Harrison Road/Sala Road	Signal	11	B	12.4	B
5	**Crazy Horse Canyon Road/San Juan Grade Road**	**AWSC**	11.3	B	**147.3**	**F**
6	**Hebert Road/San Juan Grade Road**	**SSSC**	6.6 (14.2)	A (B)	**10.0 (40.3)**	**A (E)**
7	Old Stage Road/Hebert Road	SSSC	5.8 (14.6)	A (B)	9.1 (32.9)	A (D)
8	North Main Street/Harrison Road/Russell Road	Signal	17.4	B	29.4	C
9	Van Buren Avenue/Russell Road	Signal	21.9	C	17.2	B
10	San Juan Grade Road/Rogge Road	AWSC	23.1	C	17.3	C
11	San Juan Grade Road/Russell Road	Signal	33.2	C	42.2	D
12	**Natividad Road/Rogge Road**	**SSSC**	7.1 (13.4)	A (B)	**37.3 (125)**	**E (F)**
13	**Natividad Road/Russell Road**	**SSSC**	**11.2 (67.1)**	**B (F)**	**24.6 (>150)**	**C (F)**

TABLE 26: CUMULATIVE PLUS PROJECT INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
14	**San Juan Grade Road/Van Buren Avenue**	**SSSC**	**100.8 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
15	US 101 Southbound Ramps/Boronda Road	Signal	7	A	8.9	A
16	US 101 Northbound Ramps/Boronda Road	Signal	9.8	A	27.4	C
17	**North Main Street/Boronda Road**	**Signal**	50.3	D	**99.5**	**F**
18	North Main Street/San Juan Grade Road	Signal	15.5	B	42.9	D
19	San Juan Grade Road/Boronda Road	Signal	41	D	45.7	D
20	McKinnon Street/Boronda Road	Roundabout	10.6	B	9.0	A
21	El Dorado Drive/Boronda Road	Roundabout	10.8	B	12.5	B
22	Natividad Road/Boronda Road	Roundabout	9.5	A	17.8	C
23	Independence Boulevard/Boronda Road	Roundabout	5.4	A	5.9	A
24	Hemingway Drive/Boronda Road	Signal	47.0	D	4.5	A
25	Old Stage Road/Constitution Boulevard	AWSC	9.1	A	10	A
26	N Main Street/East Alvin Drive	Signal	43.3	D	44.7	D
27	Natividad Road/East Alvin Drive	Signal	23.3	C	15.4	B
28	Independence Boulevard/Constitution Boulevard	Signal	30.8	C	29.9	C
29	Boronda Road/Constitution Boulevard	Signal	8.5	A	9.8	A
30	US 101 Southbound Ramps/West Laurel Drive	Signal	14.4	B	17.5	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	9.1	A	16.5	B
32	**N Main Street/West Laurel Drive**	**Signal**	41.8	D	**158.6**	**F**

TABLE 26: CUMULATIVE PLUS PROJECT INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
33	**Natividad Road/East Laurel Drive**	**Signal**	**86.9**	**F**	**95.9**	**F**
34	**Constitution Boulevard/East Laurel Drive**	**Signal**	55	D	**69.7**	**E**
35	North Sanborn Road/Boronda Road	Signal	16.3	B	45.6	D
36	**Old Stage Road/Williams Road/Private Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
37	**North Main Street/East Bernal Drive**	**Signal**	**60**	**E**	**75.2**	**E**
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**91.9**	**F**	**133.9**	**F**
39	East Laurel Drive/North Sanborn Road	Signal	24.2	C	29.4	C
40	Williams Road/East Boronda Road	Signal	20.3	C	47.3	D
41	Freedom Parkway/Williams Road	Signal	21.6	C	31.5	C
42	Bardin Road/Bardin Way/Williams Road	Signal	21.6	C	26.6	C
43	East Market Street/Williams Road	Signal	22.9	C	49.1	D
44	John Street/Williams Road/East Alisal Street	Signal	13.7	B	21.2	C
45	South Sanborn Road/North Sanborn Road/John Street	Signal	31.6	C	34.1	C
46	Bardin Road/East Alisal Street/Driveway	AWSC	9.6	A	14.2	B
47	Skyway Boulevard/Airport Boulevard	SSSC	7.5 (10.0)	A (B)	18.9 (21.4)	C (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	27.5	C	37.8	D
49	West Laurel Drive/Adams Street	Signal	19.4	B	22.1	C

TABLE 26: CUMULATIVE PLUS PROJECT INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
50	North Davis Road/West Laurel Drive	Signal	36.3	D	54.2	D
51	East Front Street/Sherwood Drive/Market Street	Signal	25	C	49.6	D
52	East Market Street/East Front Street	Signal	10.4	B	14.2	B
53	**South Davis Road/Blanco Road**	**Signal**	**187.2**	**F**	**145.7**	**F**
54	Monterey Street/Monterey Street/East Market Street	Signal	23	C	30.6	C
55	**Salinas Street/North Main Street/West Market Street/East Market Street**	**Signal**	**84.8**	**F**	**95.1**	**F**
56	**South Main Street/West Blanco Road/East Blanco Road**	**Signal**	**50.3**	**D**	**69.8**	**E**

Source: Fehr & Peers, 2018
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Overall, seventeen intersections were found to operate below the local minimum LOS threshold in the morning and/or evening peak period. Intersections that operate below the local threshold as a result of project-related traffic are considered project contributions to significant cumulative impacts. Mitigations are discussed further in the next section.

6.3.1.2 Cumulative plus Project Conditions Freeway Mainline Capacity Analysis

The Travel Demand Model was also used to forecast vehicle volumes on the ten study segments of US 101. This Cumulative scenario includes the roadway network changes described in Section 6.1.1.6. **Table 27** shows the morning peak period results, **Table 28** shows the evening results. LOS scores are compared to the minimum operating standards defined by the County CMP in the tables below.

TABLE 27: AM CUMULATIVE PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	3,260	28.2	D	3,750	34.6	D
Crazy Horse Canyon Road to San Miguel Canyon Road	2,830	23.8	C	3,140	26.9	D
San Miguel Canyon Road to SR 156	**3,780**	**35.0**	**E**	**4,100**	**40.6**	**E**
SR 156 to Sala Road	3,430	30.2	D	3,210	27.7	D
Sala Road to Boronda Road	3,400	19.0	C	3,080	17.2	C
Boronda Road to Laurel Drive	3,880	21.7	C	3,340	18.7	C
Laurel Drive to N. Main Street/SR 183	3,890	21.8	C	3,120	17.4	B
N. Main Street/SR 183 to E. Market Street	3,260	18.2	C	2,500	14.0	B
SR 68 John Street to S. Sanborn Road	2,340	13.1	B	2,050	11.5	B
S. Sanborn Road to Abbott Street	2,580	14.4	B	1,760	9.8	A

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

TABLE 28: PM CUMULATIVE PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	**4,410**	**47.4**	**F**	3,670	33.4	D
Crazy Horse Canyon Road to San Miguel Canyon Road	3,550	31.8	D	3,310	28.6	D
San Miguel Canyon Road to SR 156	**5,010**	**68.6**	**F**	**4,430**	**47.9**	**F**
SR 156 to Sala Road	**4,530**	**50.7**	**F**	3,480	30.8	D
Sala Road to Boronda Road	4,350	24.5	C	3,380	18.9	B
Boronda Road to Laurel Drive	4,510	25.5	C	3,910	21.9	C
Laurel Drive to N. Main Street/SR 183	4,290	24.1	C	4,030	22.6	C

TABLE 28: PM CUMULATIVE PLUS PROJECT FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Segment	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
N. Main Street/SR 183 to E. Market Street	3,700	20.7	C	3,940	22.0	C
SR 68 John Street to S. Sanborn Road	3,010	16.8	B	2,690	15.0	B
S. Sanborn Road to Abbott Street	2,350	13.1	B	3,220	18.0	B

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

Similar to the Cumulative Conditions results, San Juan Road to Crazy Horse Canyon Road, San Miguel Canyon Road to SR 156, and SR 156 to Sala Road all fall below the minimum LOS standards in the evening periods. In the morning period San Miguel Canyon Road to SR 156 falls below the LOS standard.

6.3.1.3 Cumulative plus Project Freeway Ramp Junction Capacity Analysis

Capacity analyses for ramp junctions were analyzed at two interchanges along US 101 in Salinas. The results of this analysis for Cumulative Plus Project scenario during the morning and evening peak period are shown in **Table 29** and **Table 30**, respectively**.**

TABLE 29: AM CUMULATIVE PLUS PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Broad	Loop On-Ramp	23.7	C	Loop On-Ramp	14.1	B
	On-Ramp	21.5	C	Off-Ramp	26.3	C
West Laurel Drive	Off-Ramp	28.3	D	On-Ramp	20.7	C
	On-Ramp	21.8	C	Loop On-Ramp	18.2	B
				Off-Ramp	24.1	C

Source: Fehr & Peers, 2018

TABLE 30: PM CUMULATIVE PLUS PROJECT RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	26.0	C	Loop On-Ramp	14.4	B
	On-Ramp	25.2	C	Off-Ramp	31.2	D
West Laurel Drive	Off-Ramp	31.8	D	On-Ramp	23.6	C
	On-Ramp	24.1	C	Loop On-Ramp	22.0	C
				Off-Ramp	30.9	D

Source: Fehr & Peers, 2018

All ramp junctions perform at or above the minimum standards set by County CMP.

6.4 CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN CONDITIONS

6.4.1.1 Cumulative plus Project and Central Area Specific Plan Conditions Intersection Operation Analysis

The results of the intersection operations analysis for the Cumulative Plus Project and Central Area Specific Plan conditions are shown in **Table 31** below.

TABLE 31: CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
1	**US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road**	**SSSC**	8.9 (19.8)	A (C)	**150 (>150)**	**F (F)**
2	**US 101 Northbound Ramps/Crazy Horse Canyon Road**	**SSSC**	2.3 (13.4)	A (B)	**5.3 (54.4)**	**A (F)**
3	US 101 Northbound Ramps/US 101 Southbound Ramps/Sala Road	AWSC	12.6	B	16.6	C
4	Harrison Road/Sala Road/Driveway	Signal	14.4	B	19.7	B

TABLE 31: CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
5	**Crazy Horse Canyon Road/San Juan Grade Road**	**AWSC**	**11.8**	**B**	**>150**	**F**
6	**Hebert Road/San Juan Grade Road**	**SSSC**	6.7 (14.6)	A (B)	**10.8 (45.7)**	**B (E)**
7	**Old Stage Road/Hebert Road**	**SSSC**	5.6 (15.0)	A (B)	**8.6 (36.3)**	**A (E)**
8	North Main Street/Harrison Road/Russell Road	Signal	18.3	B	32.3	C
9	Van Buren Avenue/Russell Road	Signal	45.6	D	29.8	C
10	San Juan Grade Road/Rogge Road	AWSC	23.1	C	17.3	C
11	San Juan Grade Road/Russell Road	Signal	47	D	47.8	D
12	**Natividad Road/Rogge Road**	**SSSC**	7.1 (13.4)	A (B)	**37.3 (125)**	**E (F)**
13	**Natividad Road/Russell Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
14	**San Juan Grade Road/Van Buren Avenue**	**SSSC**	**100.8 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
15	US 101 Southbound Ramps/Boronda Road	Signal	7.2	A	9.2	A
16	US 101 Northbound Ramps/Boronda Road	Signal	10.5	B	32.6	C
17	**North Main Street/Boronda Road**	**Signal**	52.8	D	**117.2**	**F**
18	North Main Street/San Juan Grade Road	Signal	16.3	B	45.1	D
19	San Juan Grade Road/Boronda Road	Signal	43.9	D	50.2	D
20	McKinnon Street/Boronda Road	Roundabout	17.1	C	12.0	B
21	El Dorado Drive/Boronda Road	Roundabout	21.2	C	23.1	C
22	**Natividad Road/Boronda Road**	**Roundabout**	22.4	C	**57.7**	**F**
23	Independence Boulevard/Boronda Road	Roundabout	23.3	C	11.9	B

TABLE 31: CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
24	Hemingway Drive/Boronda Road	Signal	53.3	D	25.1	C
25	Old Stage Road/Constitution Boulevard	AWSC	11.5	B	12.9	B
26	N Main Street/East Alvin Drive	Signal	43.3	D	44.7	D
27	Natividad Road/East Alvin Drive	Signal	34.5	D	17.4	B
28	Independence Boulevard/Constitution Boulevard	Signal	52.7	D	44.9	D
29	Boronda Road/Constitution Boulevard	Signal	35.3	D	46.3	D
30	US 101 Southbound Ramps/West Laurel Drive	Signal	14.5	B	17.7	B
31	US 101 Northbound Ramps/West Laurel Drive	Signal	9.4	A	16.8	B
32	**N Main Street/West Laurel Drive**	**Signal**	43.6	D	**161.3**	**F**
33	**Natividad Road/East Laurel Drive**	**Signal**	**118.7**	**F**	**116.8**	**F**
34	**Constitution Boulevard/East Laurel Drive**	**Signal**	**82.8**	**F**	**114.2**	**F**
35	**North Sanborn Road/Boronda Road**	**Signal**	30.6	C	**83.1**	**F**
36	**Old Stage Road/Williams Road/Private Road**	**SSSC**	**>150 (>150)**	**F (F)**	**>150 (>150)**	**F (F)**
37	**North Main Street/East Bernal Drive**	**Signal**	**61**	**E**	**75.7**	**E**
38	**Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way**	**Signal**	**105**	**F**	**165.7**	**F**
39	East Laurel Drive/North Sanborn Road	Signal	30.6	C	34.2	C
40	**Williams Road/East Boronda Road**	Signal	38	D	**108.2**	**F**
41	Freedom Parkway/Williams Road	Signal	27.9	C	54.5	D
42	Bardin Road/Bardin Way/Williams Road	Signal	26.5	C	31.3	C
43	East Market Street/Williams Road	Signal	23.7	C	53.4	D

TABLE 31: CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN INTERSECTION OPERATION ANALYSIS

Int No	Study Intersection	Traffic Control	AM		PM	
			Delay	LOS	Delay	LOS
44	John Street/Williams Road/East Alisal Street	Signal	14.2	B	28.1	C
45	South Sanborn Road/North Sanborn Road/John Street	Signal	37.3	D	39.5	D
46	Bardin Road/East Alisal Street/Driveway	AWSC	10.1	B	15.6	C
47	Skyway Boulevard/Airport Boulevard	SSSC	7.1 (10.2)	A (B)	20.6 (24.1)	C (C)
48	South Sanborn Road/North Sanborn Road/East Alisal Street	Signal	33.3	C	46.8	D
49	West Laurel Drive/Adams Street	Signal	19.6	B	22.6	C
50	North Davis Road/West Laurel Drive	Signal	36.3	D	54.3	D
51	**East Front Street/Sherwood Drive/Market Street**	**Signal**	28.7	C	**66.8**	**E**
52	East Market Street/East Front Street	Signal	11.3	B	21.1	C
53	**South Davis Road/Blanco Road**	**Signal**	**189.2**	**F**	**146.5**	**F**
54	Monterey Street/Monterey Street/East Market Street	Signal	24.2	C	32.4	C
55	**Salinas Street/North Main Street/West Market Street/East Market Street**	**Signal**	**98.3**	**F**	**102.3**	**F**
56	**South Main Street/West Blanco Road/East Blanco Road**	**Signal**	52.3	D	**71.8**	**E**

Source: Fehr & Peers, 2018
AWSC = All-Way Stop Control, SSSC = Side Street Stop Control, LOS = Level of Service
Notes:

- *Side-street stop-controlled (SSSC) intersection LOS is reported as: overall intersection delay and LOS (worst-case stop-controlled movement or approach delay and LOS).*
- *All-way stop controlled (AWSC) LOS is reported for the overall intersection, based on average delay per vehicle*

Overall, twenty-two intersections were found to operate below the local LOS thresholds set by the City.

6.4.1.2 Cumulative plus Project Conditions and Central Area Specific Plan Freeway Mainline Capacity Analysis

The Travel Demand Model was used to forecast vehicle volumes on the ten study segments of US 101. **Table 32** shows the morning peak period results while **Table 33** shows the evening results. LOS scores are compared to the minimum operating standards defined by the County CMP.

TABLE 32: AM CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN FREEWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segments	Southbound			Northbound		
	Volume	Density[1]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	3,430	29.9	D	**3,970**	**38.2**	**E**
Crazy Horse Canyon Road to San Miguel Canyon Road	3,000	25.5	C	3,360	29.4	D
San Miguel Canyon Road to SR 156	**3,950**	**37.8**	**E**	**4,320**	**45.2**	**F**
SR 156 to Sala Road	3,600	32.4	D	3,410	30.0	D
Sala Road to Boronda Road	3,490	19.5	C	3,160	17.7	B
Boronda Road to Laurel Drive	4,040	22.6	C	3,420	19.1	C
Laurel Drive to N. Main Street/SR 183	3,930	22.0	C	3,150	17.6	B
N. Main Street/SR 183 to E. Market Street	3,330	18.4	C	2,530	14.2	C
SR 68 John Street to S. Sanborn Road	2,380	13.3	B	2,080	11.6	B
S. Sanborn Road to Abbott Street	2,620	14.6	B	1,790	10.0	A

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

TABLE 33: PM CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN HIGHWAY MAINLINE OPERATION ANALYSIS

Freeway Mainline Segments	Southbound			Northbound		
	Volume	Density[1s]	LOS	Volume	Density[1]	LOS
San Juan Road to Crazy Horse Canyon Road	**4,640**	**54.0**	**F**	**3,840**	**36.0**	**E**
Crazy Horse Canyon Road to San Miguel Canyon Road	**3,780**	**35.0**	**E**	3,480	30.8	D
San Miguel Canyon Road to SR 156	**5,240**	**81.9**	**F**	**4,600**	**52.7**	**F**
SR 156 to Sala Road	**4,760**	**58.0**	**F**	3,650	33.1	D
Sala Road to Boronda Road	4,470	25.3	C	3,480	19.5	C
Boronda Road to Laurel Drive	4,660	26.6	D	4,050	22.7	C
Laurel Drive to N. Main Street/SR 183	4,390	24.8	C	4,190	23.5	C
N. Main Street/SR 183 to E. Market Street	3,730	20.9	C	3,980	22.3	C
SR 68 John Street to S. Sanborn Road	3,040	17.0	B	2,730	15.3	B
S. Sanborn Road to Abbott Street	2,380	13.3	B	3,260	18.2	C

[1] Density Reported in Passenger Cars per Mile per Lane
Source: Fehr & Peers, 2018

Two segments of US 101 were found to operate below the LOS standard in the AM peak period and four segments were found to function below the LOS standard during the evening peak period.

6.4.1.3 Cumulative plus Project Freeway Ramp Junction Capacity Analysis

Capacity analyses for ramp junctions were analyzed at two interchanges along US 101 in Salinas. The results of this analysis for Cumulative Plus Project scenario during the morning and evening peak period are shown in **Table 34** and **Table 35**, respectively.

TABLE 34: AM CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	24.8	C	Loop On-Ramp	14.2	B
	On-Ramp	22.3	C	Off-Ramp	26.8	C
West Laurel Drive	Off-Ramp	29.2	D	On-Ramp	21.3	C
	On-Ramp	25.5.	C	Loop On-Ramp	18.4	B
				Off-Ramp	24.3	C

Source: Fehr & Peers, 2018

TABLE 35: PM CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN RAMP JUNCTION MERGE AND DIVERGE ANALYSIS

Location	Southbound			Northbound		
	Ramp Type	DR (pc/mi/ln)	LOS	Ramp Type	DR (pc/mi/ln)	LOS
Boronda Road	Loop On-Ramp	27.0	C	Loop On-Ramp	14.8	B
	On-Ramp	26.0	C	Off-Ramp	32.0	D
West Laurel Drive	Off-Ramp	32.6	D	On-Ramp	24.4	C
	On-Ramp	24.7	C	Loop On-Ramp	22.5	C
				Off-Ramp	30.9	D

Source: Fehr & Peers, 2018

All ramp junctions perform at or above the minimum standards set by the County CMP.

6.5 VEHICLE MILES TRAVELLED

The consumption of roadway network capacity can also be measured with vehicle-miles travelled (VMT). Overall, VMT represents how often and how far people drive. Increases in VMT are often tied to new trips from new land development projects and/or changes in land use that result in increased development intensity and related increases in vehicle trips. In this analysis, the Salinas Travel Demand Model is used to evaluate VMT in the following scenarios:

1. Existing Conditions;
2. Existing with Project;
3. Existing with Project and Central Area Specific Plan;
4. Cumulative without Project;
5. Cumulative with Project Conditions; and
6. Cumulative with Project and Central Area Specific Plan.

The model does not have the ability to add households in the base year condition, so the Existing with Project, and Existing with Project and Central Area Specific Plan scenarios could not be forecasted with that approach. Instead, VMT results for the existing scenarios were estimated by adding the incremental change in VMT from the cumulative year scenarios to the Existing Conditions VMT.

Table 36 and **Table 37** below summarize the change in VMT generated by both the West Area Specific Plan and the Central Area Specific Plan, as well as Salinas. In each case, the absolute VMT is shown. For the City and County, it is shown on a per-capita basis. For the West Area Specific Plan and the Central Area Specific Plan, VMT is shown on a per-trip basis as the project adds additional employment and employee trips cannot be isolated; using a per-capita number for the West Area Specific Plan and the Central Area Specific Plan would overstate the VMT generated due to increases in population. At each location, the VMT generated as a result of existing conditions and each forecast scenario is also presented.

Overall, the addition of the proposed project increases VMT in the existing and cumulative scenarios and the addition of the proposed project with Central Area Specific Plan increases VMT to a similar extent.

TABLE 36: WEST AREA SPECIFIC PLAN AND CENTRAL AREA SPECIFIC PLAN VMT

	Select Zone - West Area Specific Plan				Select Zone - Central Area Specific Plan			
	Daily	Daily/Trip	Annual	Annual/Trip	Daily	Daily/Trip	Annual	Annual/Trip
Existing	30,722	-	9,523,715	-	959	-	297,306	-
Existing Plus Project	282,092	5.42	87,448,457	1,679	734	-	227,614	-
Difference	251,370		77,924,743		-225		-69,692	
Existing Plus Project and Central Area Specific Plan	286,169	5.49	88,712,454	1,703	184,542	3.54	57,208,006	1,098
Difference	255,448		79,188,739		183,583		56,910,700	
Cumulative (No Project)	38,909	-	12,061,764	-	2,504	-	776,312	-
Cumulative Plus Project	290,279	5.57	89,986,507	1,727	2,279	-	706,620	-
Difference	251,370		77,924,743		-225		-69,692	
Cumulative Plus Project and Central Area Specific Plan	294,356	5.65	91,250,503	1,752	186,087	3.57	57,687,012	1,107
Difference	255,448		13,325,761		183,583		57,756,704	

Source: Fehr & Peers, 2018

TABLE 37: CITY-WIDE AND COUNTY-WIDE VMT

	City-wide				Entire Model			
	Daily	Daily/Capita	Annual	Annual/Capita	Daily	Daily/Capita	Annual	Annual/Capita
Existing	1,554,334	10.76	481,843,640	3,335	10,355,118	26.90	3,210,086,627	8,338
Existing Plus Project	1,639,043	11.35	508,103,324	3,331	10,458,626	27.17	3,242,174,087	8,421
Difference	84,709		26,259,684		103,508		32,087,460	
Existing Plus Project and Central Area Specific Plan	1,714,506	11.87	531,496,733	3,484	10,554,161	27.41	3,271,789,922	8,498
Difference	160,171		49,653,093		199,043		61,703,296	
Cumulative (No Project)	2,171,481	14.51	673,159,092	4,498	12,541,672	29.67	3,887,918,445	9,196
Cumulative Plus Project	2,256,190	15.08	699,418,775	4,674	12,645,180	29.91	3,920,005,906	9,272
Difference	84,709		26,259,684		103,508		32,087,460	
Cumulative + Project and Central Area Specific Plan	2,331,652	15.58	722,812,185	4,830	12,740,715	30.14	3,949,621,741	9,342
Difference	160,171		696,552,501		199,043		3,917,534,281	

Source: Fehr & Peers, 2018

7.0 IMPACTS AND MITIGATIONS

7.1 VEHICLE TRAFFIC OPERATIONS IMPACTS AND MITIGATIONS

Based on the model results and guiding policies from the City, several intersections were found to suffer from deteriorating LOS scores and/or delay as a result of traffic generated by the proposed project under the existing and cumulative with project conditions scenarios. Impacts are considered to be significant if the addition of project-related traffic reduces LOS scores to E or worse, or if the project adds additional traffic to an intersection already performing at E or worse. Intersections which operate below standards independent of project-related traffic are not considered a significant impact.

This section documents the impacts and proposed mitigations for the Existing plus Project Conditions and Cumulative plus Project Conditions scenarios. This section also discusses the fair-share contribution for each mitigation in the Cumulative plus Project Conditions scenario that the project proponent should be expected to contribute based on the ratio of project-related volume to non-project related volume and growth.

7.1.1 EXISTING PLUS PROJECT CONDITIONS IMPACTS AND MITIGATIONS

Impact E.1: San Juan Grade Road & Van Buren Avenue (14)

This intersection will experience a degradation in LOS from D and C in the morning and evening peak periods, respectively, to LOS F with the addition of project traffic. Under the Existing plus Project condition, this intersection's worst movement would operate with more than 150 seconds of delay in the AM and PM peak hours. The intersection would meet peak hour traffic signal warrants in the Existing plus Project scenario.

Mitigation E.1: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A for both peak periods, with 4.9 seconds of delay and 4.2 seconds of delay during the AM and PM peak hours, respectively. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.2: San Juan Grade Road & East Boronda Road (19)

This intersection will experience a degradation in LOS from D in the PM peak hour to LOS E with the addition of project traffic. The addition of project traffic to existing traffic levels was found to increase vehicular delay at this location from 42.7 seconds (LOS D) to 67.0 seconds (LOS E) during the PM peak hour, which is a significant adverse impact based on the City's significance standards.

Mitigation E.2: Optimize existing signal timing. Optimizing the intersection's signal timing during the PM peak hour will improve its operation to LOS D (50.1 seconds). As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.3: Hemingway Drive & East Boronda Road (24)

With the addition of project traffic, this intersection was found to experience worsened level of service to LOS F in both peak hours with greater than 150 seconds of delay per vehicle. The intersection would meet peak hour traffic signal warrants.

Mitigation E.3: Signalize intersection. This mitigation was found to improve LOS in both the morning and evening peak periods to LOS A (7.8 seconds per vehicle) and LOS B (11.2 seconds per vehicle), respectively. Alternatively, installation of a roundabout that would reduce traffic to the same LOS (or better) is also acceptable. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.4: North Main Street & Laurel Drive (32)

This intersection was found to experience worsened vehicle delay while operating at LOS E in the evening peak period with the addition of project traffic. Delays at the intersection would deteriorate from 56.7 seconds per vehicle under the Existing condition to 72.0 seconds per vehicle under the Existing plus Project condition in the evening peak hour, which is a significant adverse impact based on the City's significance standards.

Mitigation E.4: Optimize existing signal timings. This mitigation was found to improve level of service to LOS D, with 49.1 seconds of delay during the evening peak hour. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.5: Natividad Road & East Laurel Drive (33)

This intersection was found to experience worsened delay as a result of project-related trips in the morning and evening peak period, from LOS D to LOS E for both peak periods. In the AM peak hour, delays at the intersection would deteriorate from 54.9 seconds per vehicle under the Existing condition to 74.6 seconds per vehicle under the Existing plus Project condition. In the PM peak hour, delays at the intersection would deteriorate from 48.9 seconds per vehicle under the Existing condition to 63.6 seconds per vehicle under the Existing plus Project condition. These deteriorations are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E.5: The proposed mitigation is to widen the intersection to add additional northbound and southbound through lanes. This mitigation was found to improve the level of service to D, with 48.2 seconds of delay and 51.2 seconds of delay in the morning and evening peak periods, respectively. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.6: North Sanborn Road/Boronda Road (35)

This intersection was found to experience worsened delay and level of service as a result of the project trips in the existing scenarios. Under the Existing plus Project condition, this intersection's worst movement would operate with more than 150 seconds of delay in the AM and PM peak hours. The intersection would meet peak hour traffic signal warrants in the Existing plus Project scenario.

Mitigation E.6: Install a traffic signal. This mitigation was found to improve level of service to C in the morning peak hour and LOS B during the evening peak hour, with 22.8 seconds of delay and 15.1 seconds of delay, respectively. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. Alternatively, a roundabout that would reduce traffic to the same LOS (or better) is also acceptable. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.7: Sherwood Drive/Natividad Road & East Bernal Drive/La Posada Way (38)

With the addition of project traffic, this intersection was found to experience worsened delay in the morning and evening peak periods, from LOS D (41.9 seconds per vehicle) and LOS E (60 seconds per vehicle), respectively, to LOS F and LOS E (82.8 and 76.1 seconds per vehicle).

Mitigation E.7: Optimize existing signal timings and add an eastbound left turn pocket. The proposed mitigation is to add an eastbound left turn pocket and optimize the existing signal timing to better accommodate the expected changes in traffic distribution and volume in the with-project scenario. The proposed mitigation was found to improve LOS in the morning and evening peak periods to LOS B, with 18.0 seconds of delay and 18.3 seconds of delay, respectively. As this impact is a result of *project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.*

Impact E8. Salinas Street/North Main Street/West Market Street/East Market Street

With the addition of project traffic, the operation of this intersection would deteriorate from LOS C in both the morning and evening peak hours to LOS F (84.2 seconds per vehicle) in the morning peak hour and LOS E (59.7 seconds per vehicle) in the evening peak hour. These deteriorations are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E8: Add a southbound left turn lane and optimize the traffic signal's timing. The implementation of this mitigation measure would improve the intersection's operation to LOS D in both the morning and evening peak hours, with 45.5 and 35.9 seconds of delay per vehicle, respectively. As this impact is a result of project traffic, the project applicant shall be responsible for its funding and implementation at the project approval stage. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.9: US 101 Ramp Junctions

With the addition of project trips, the following ramp junctions are expected to function below County CMP standards during the PM peak hour:

- US 101 Northbound Boronda Road Off-Ramp: LOS E (35.1 passenger cars per vehicle per lane).
- US 101 Northbound West Laurel Drive Off-Ramp: LOS E (35.4 passenger cars per vehicle per lane).

Mitigation E.9: Contribution to the TAMC RDIF Program and payment of the City of Salina's Traffic Impact Fees. The proposed mitigation for this impact is the project's required contribution to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee (RDIF) Program and the City of Salina's Traffic Impact Fee (TIF) Program. These programs include improvements to US 101 that would improve mainline and ramp junction operations, which would mitigate this project impact.

7.1.2 EXISTING PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN IMPACTS AND MITIGATIONS

Impacts observed in the Existing plus Project and Central Area Specific Plan Conditions scenario are documented and mitigations proposed below.

Impact E.10: San Juan Grade Road & Van Buren Avenue (14)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this unsignalized intersection's worst movement from LOS C in the morning peak hour and LOS D in the evening peak hour to LOS F during both peak hours of travel (with greater than 150 seconds of delay per vehicle). Traffic levels under the Existing plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.10: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A for both peak periods, with 6.9 and 6.0 seconds of delay during the AM and PM peak hours, respectively. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.11: North Main Street & East Boronda Road (17)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this intersection from LOS D (46.2 seconds per vehicle) to LOS E (62.9 seconds per vehicle) during the evening peak hour. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.11: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this coordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS D with 50.3 seconds of delay per vehicle during the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.12: San Juan Grade Road & Boronda Road (19)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this intersection from LOS D (42.7 seconds per vehicle) to LOS F (88.8 seconds per vehicle) during the evening peak hour. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.12: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this coordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS D with 42.1 seconds of delay per vehicle during the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.13: North Main Street/West Laurel Drive (32)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this intersection from LOS E with 56.7 seconds per vehicle of delay to LOS E with 72.1 seconds per vehicle of delay during the evening peak hour. This degradation in service is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.13: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this coordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS D with 50.4 seconds of delay per vehicle during the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.14: Natividad Road & East Laurel Drive (33)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this intersection from LOS D (54.9 seconds per vehicle) to LOS F (106.7 seconds per vehicle) during the morning peak hour and from LOS D (48.9 seconds per vehicle) to LOS F (90.1 seconds per vehicle) during the evening peak hour. These degradations in service levels are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E14: Add northbound through lane, southbound through lane and convert the eastbound right turn lane to a shared through-right turn lane. With this improvement, the operation of the intersection in this scenario would improve to LOS D (52.2 seconds per vehicle) in the morning peak hour and LOS D (52.5 seconds per vehicle) in the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.15: North Sanborn Road/Boronda Road (35)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this unsignalized intersection's worst movement from LOS F (123.6 seconds of delay per vehicle) in the morning peak hour and LOS E (38.4 seconds of delay per vehicle) in the evening peak hour to LOS F during both peak hours of travel (with greater than 150 seconds of delay per vehicle). Traffic levels under the Existing plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.15: Install traffic signal and add eastbound right turn pocket. The addition of a traffic signal and eastbound right turn pocket will improve the intersection's LOS to D in the morning peak hour (40.6 seconds of delay per vehicle) and LOS C (21.8 seconds of delay per vehicle) in the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.16 Sherwood Drive/Natividad Road & East Bernal Drive/La Posada Way (38)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this intersection from LOS D (41.9 seconds per vehicle) to LOS F (116.0 seconds per vehicle) during the morning peak hour and from LOS E (60.0 seconds per vehicle) to LOS F (93.0 seconds per vehicle) during the evening peak hour. These degradations in service levels are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E16: Add eastbound left turn pocket and optimize traffic signal timings. With this improvement, the operation of the intersection in this scenario would improve to LOS C (21.8 seconds per vehicle) in the morning peak hour and LOS C (23.0 seconds per vehicle) in the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.17: Williams Road & East Boronda Road (40)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this unsignalized intersection's worst movement from LOS D (25.9 seconds of delay per vehicle) to LOS F during the PM peak hour (with greater than 150 seconds of delay per vehicle). Traffic levels under the Existing plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.17: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A in the evening peak hour (7.1 seconds of delay per vehicle). With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.18: South Sanborn/North Sanborn/John Street (45)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this intersection from LOS D with 44.6 seconds per vehicle of delay to LOS E with 73.5 seconds per vehicle of delay during the morning peak hour. This degradation in service is considered to be a significant adverse impact based on the City's significance standards.

Mitigation E.18: Optimize Signal Timing. The optimization of the existing traffic signal timing and splits at this uncoordinated intersection would mitigate the identified impact. With the implementation of this measure the operation of the intersection would improve to LOS C with 33.1 seconds of delay per vehicle during the morning peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.19: Salinas Street/Main Street/Market Street (55)

The addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects would degrade the operation of this intersection from LOS C (28.4_seconds per vehicle) to LOS F (95.0 seconds per vehicle) during the morning peak hour and from LOS C (29.5 seconds per vehicle) to LOS E (62.7 seconds per vehicle) during the evening peak hour. These degradations in service levels are considered to be significant adverse impacts based on the City's significance standards.

Mitigation E19: Add southbound left turn pocket and optimize traffic signal timings. With this improvement, the operation of the intersection in this scenario would improve to LOS D (54.0 seconds per vehicle) in the morning peak hour and LOS D (37.8 seconds per vehicle) in the evening peak hour. With the implementation of the identified mitigation measure, the impact would be less than significant.

Impact E.20: US 101 Ramp Junctions

With the addition of traffic associated with both the West Area Specific Plan and Central Area Specific Plan projects, the following ramp junctions are expected to function below County CMP standards during the PM peak hour:

- US 101 Northbound Boronda Road Off-Ramp: LOS E (36.6 passenger cars per vehicle per lane).
- US 101 Northbound West Laurel Drive Off-Ramp: LOS E (37.0 passenger cars per vehicle per lane).

Mitigation E20: Contribution to the TAMC RDIF Program and payment of the City of Salina's Traffic Impact Fees. The proposed mitigation for this impact is the project's required contribution to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee (RDIF) Program and the City of Salina's Traffic Impact Fee (TIF) Program. These programs include improvements to US 101 that would improve mainline and ramp junction operations, which would mitigate this project impact.

7.1.3 CUMULATIVE PLUS PROJECT IMPACTS AND MITIGATIONS

Impacts observed in the Cumulative plus Project Conditions scenario are documented and mitigations proposed below.

Impact C.1: US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road (1)

The addition of Project generated traffic to the Cumulative baseline condition would further degrade the operation of this unsignalized intersection's worst movement while operating at LOS F (with greater than 150 seconds of delay per vehicle) during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.1: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 16.9 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.2: US 101 Northbound Ramps/Crazy Horse Canyon Road (2)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS E (43.7 seconds of delay per vehicle to LOS F (51.5 seconds of delay per vehicle) during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.2: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 8.3 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution *to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.*

Impact C.3: Crazy Horse Canyon Road & San Juan Grade Road (5)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this all-way stop controlled intersection from LOS F with 109.7 seconds of delay per vehicle to LOS F with 147.3 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.3: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 9.9 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.4: Natividad Road & Rogge Road (12)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS E (47.5 seconds of delay per vehicle to LOS F (125.0 seconds of delay per vehicle) during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.4: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 13.3 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.5: Natividad Road & Russell Road (13)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS F with 51.0 seconds of delay per vehicle to LOS F with greater than 150 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.5: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 6.3 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. This intersection is to be constructed as part of the Project, and the project should fully fund the installation of a traffic signal at this location. With this mitigation, the Project's contribution to this significant adverse cumulative impact will be fully mitigated.

Impact C.6: San Juan Grade Road & Van Buren Avenue (14)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS D with 27.0 seconds of delay per vehicle to LOS F with greater than 150 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.6: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 6.8 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. This intersection is to be substantially modified and widened as part of the Project, and the project should fully fund the installation of a traffic signal at this location. With this mitigation, the Project's contribution to this significant adverse cumulative impact will be fully mitigated.

Impact C.7: North Main Street & East Boronda Road (17)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 70.2 seconds of delay per vehicle to LOS F with 99.5 seconds of delay per vehicle during the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.7: Install southbound and westbound left turn lanes. The addition of southbound and westbound left turn lanes at this location will improve the intersection's LOS to E with 58.7 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. The project should make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact. As the City has been collecting funds from other development projects to improve this intersection, this contribution would mitigate the Project's contribution to the significant adverse cumulative impact at this location..

Impact C.8: Natividad Road & East Laurel Drive (33)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 73.9 seconds of delay to LOS F with 86.9 seconds of delay per vehicle during the morning peak hour and from LOS F with 85.1 seconds of delay to LOS F with 95.9 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.8: Install northbound and southbound through lanes. The addition of northbound and southbound through lanes at this location will improve the intersection's LOS to E with 65.1 seconds of delay per vehicle during the morning peak hour and LOS E with 75.6 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.9: Constitution Boulevard & East Laurel Drive (34)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 68.4 seconds of delay per vehicle to LOS E with 69.7 seconds of delay per vehicle during the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.9: Install southbound left turn lane. The addition of a southbound left turn lane at this location will improve the intersection's LOS to D with 51.3 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable

Impact C.10: Old Stage Road & Williams Road (36)

The addition of Project generated traffic to the Cumulative baseline condition would further degrade the operation of this unsignalized intersection's worst movement while operating at LOS F (with greater than 150 seconds of delay per vehicle) during the evening peak hour. Traffic levels under the Cumulative plus Project scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.10: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 7.6 seconds of delay per vehicle under the Cumulative plus Project condition during the evening peak hour. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.11: North Main Street & East Bernal Drive (37)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 56.7 seconds of delay to LOS E with 60 seconds of delay per vehicle during the morning peak hour and from LOS E with 68.6 seconds of delay to LOS E with 75.2 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.11: Install northbound through lane, add in northbound right turn overlap phase and convert westbound through lane to westbound shared through-left turn lane. The addition of these improvements at this location will improve the intersection's LOS to E with 55.6 seconds of delay per vehicle during the morning peak hour and LOS E with 65.2 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.12: Sherwood Drive/Natividad Road & East Bernal Drive/La Posada Way (38)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 72.0 seconds of delay to LOS F with 91.9 seconds of delay per vehicle during the morning peak hour and from LOS F with 122.3 seconds of delay to LOS F with 133.9 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.12: Install northbound and southbound through lanes. The addition of these improvements at this location will improve the intersection's LOS to E with 60,1 seconds of delay per vehicle during the morning peak hour and LOS F with 87.3 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.13: South Davis Road & Blanco Road (53)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 184.3 seconds of delay to LOS F with 187.2 seconds of delay per vehicle during the morning peak hour and from LOS F with 144.7 seconds of delay to LOS F with 145.7 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.13: Install westbound left turn lane. The addition of a westbound left turn lane at this location will improve the intersection's LOS to F with 152.6 seconds of delay per vehicle during the morning peak hour and LOS F with 119.2 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.14: Salinas Street/North Main Street/West Market Street/East Market Street (54)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 37.1 seconds of delay to LOS F with 84.8 seconds of delay per vehicle during the morning peak hour and from LOS D with 46.4 seconds of delay to LOS F with 95.1 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.14: Install eastbound through lane and southbound left turn lane. The addition of these improvements at this location will improve the intersection's LOS to D with 42.1 seconds of delay per vehicle during the morning peak hour and LOS D with 36.9 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.15: Main Street/Blanco Road (55)

The addition of Project generated traffic to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 67.4 seconds of delay to LOS E with 69.8 seconds of delay per vehicle in the evening peak hour. This degradation in operations is considered to be a Project contribution to a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.15: Install northbound left turn lane. The addition of a northbound left turn lane at this location will improve the intersection's LOS to D with 47.4 seconds of delay per vehicle in the evening peak hour in the Cumulative plus Project condition. While the project could make a fair-share contribution to mitigate its contribution to this significant cumulative adverse impact, there is no mechanism to ensure the full funding and completion of the improvement. Thus, this cumulative impact is considered to be significant and unavoidable.

Impact C.16: US 101 Mainline Segments

With the addition of project trips, the following segments of US 101 are expected to function below County CMP standards:

- AM US 101 Northbound and Southbound between San Miguel Canyon Road and SR 156: LOS is E, with a density of 40.6 northbound; southbound is LOS E with a density of 35.0.
- PM US 101 Southbound between San Juan Road and Crazy Horse Canyon Road; LOS is F with a density of 47.4.

- PM US 101 Southbound and Northbound between San Miguel Canyon Road and SR 156: The forecasted LOS is F with a density of 68.6 southbound; northbound is LOS F with a density of 47.9.
- PM US 101 Southbound between SR 156 and Sala Road: the forecasted LOS is F with a density of 50.7 southbound.

Mitigation C.16: Contribution to the TAMC RDIF Program and City's TIF Program: The proposed mitigation for this cumulative impact is the project's required contribution to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee (RDIF) Program and the City's Traffic Impact Fee Program (TIF).

7.1.4 CUMULATIVE PLUS PROJECT AND CENTRAL AREA SPECIFIC PLAN CONDITIONS IMPACTS AND MITIGATIONS

Impacts observed in the Cumulative plus Project and Central Area Specific Plan Conditions scenario are documented and mitigations proposed below.

Impact C.17: US 101 Southbound Ramps/Echo Valley Road/Crazy Horse Canyon Road (1)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would further degrade the operation of this unsignalized intersection's worst movement while operating at LOS F (with greater than 150 seconds of delay per vehicle) during the evening peak hour. Traffic levels under the Cumulative plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.17: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 17.8 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition during the evening peak hour.

Impact C.18: US 101 Northbound Ramps/Crazy Horse Canyon Road (2)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS E with 43.7 seconds of delay per vehicle to LOS F with 54.4

seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.18: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 8.6 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition during the evening peak hour.

Impact C.19: Crazy Horse Canyon Road/San Juan Grade Road (5)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS F with 109.7 seconds of delay per vehicle to LOS F with greater than 150 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.19: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 10.0 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition during the evening peak hour.

Impact C.20: Old Stage Road/Hebert Road (7)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS C with 19.7 seconds of delay per vehicle to LOS E with 36.3 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.20: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 5.3 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition during the evening peak hour.

Impact C.21: Natividad Road/Rogge Road (12)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS E with 47.5 seconds of delay per vehicle to LOS F with 125.0 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.21: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 13.3 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition during the evening peak hour.

Impact C.22: Natividad Road/Russell Road (13)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS F with 51.0 seconds of delay per vehicle to LOS F with greater than 150.0 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.22: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to B with 10.4 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition during the evening peak hour.

Impact C.24: San Juan Grade Road/Van Buren Avenue (14)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement from LOS D with 27.0 seconds of delay per vehicle to LOS F with greater than 150.0 seconds of delay per vehicle during the evening peak hour. Traffic levels under the Cumulative plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.24: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 6.7 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition during the evening peak hour.

Impact C.25: North Main Street/Boronda Road (14)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 70.2 seconds of delay per vehicle to LOS F with 117.2 seconds of delay per vehicle during the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.25: Install southbound left turn lane and westbound right turn lane. The addition of these improvements will improve the intersection's LOS to E with 68.5 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition during the evening peak hour.

Impact C.26: Natividad Road/Boronda Road (22)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS A with 5.6 seconds of delay per vehicle to LOS F with 57.7 seconds of delay per vehicle during the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.26: No further physical improvements are possible at this location. The intersection would be built-out as a three-lane roundabout, and further widening would not be possible, thus, this impact is considered to be significant and unavoidable.

Impact C.27: Natividad Road/East Laurel Drive (33)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 73.9 seconds of delay per vehicle to LOS F with 118.7 seconds of delay per vehicle during the morning peak hour and from LOS F with 85.1 seconds of delay per vehicle to LOS F with 116.8 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.27: Install northbound and southbound through lanes and convert the existing eastbound right turn lane to a shared through-right turn lane. The addition of these improvements will improve the intersection's LOS to E with 70.5 seconds of delay per vehicle during the morning peak hour and to LOS E with 72.3 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.28: Constitution Boulevard/East Laurel Drive (34)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 54.4 seconds of delay per vehicle to LOS F with 82.8 seconds of delay per vehicle during the morning peak hour and from LOS E with 68.4 seconds of delay per vehicle to LOS F with 114.2 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.28: Install eastbound and southbound left turn lanes. The addition of these improvements will improve the intersection's LOS to D with 42.9 seconds of delay per vehicle during the morning peak hour and to LOS E with 57.4 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.29: North Sanborn Road/Boronda Road (35)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS C with 28.2 seconds of delay per vehicle to LOS F with 83.1 seconds of delay per vehicle in the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.29: Install westbound left turn lane. The addition of this improvement will improve the intersection's LOS to C with 34.5 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.30: Old Stage Road/Williams Road/Private Road (36)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this unsignalized intersection's worst movement while operating at LOS F with greater than 150 seconds of delay in both the morning and evening peak hours. Traffic levels under the Cumulative plus West Area Specific Plan and Central Area Specific Plan scenario at this intersection would also be sufficient to meet peak hour warrants for the installation of a traffic signal. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.30: Install traffic signal. The addition of a traffic signal will improve the intersection's LOS to A with 5.9 seconds of delay per vehicle during the morning peak hour and to LOS B with 11.8 seconds of delay per vehicle under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.31: North Main Street/East Bernal Drive (37)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 56.7 seconds of delay per vehicle to LOS F with 61.0 seconds of delay per vehicle during the morning peak hour and from LOS F with 68.6 seconds of delay per vehicle to LOS F with 75.7 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.31: Install a northbound through lane, northbound right turn overlap phase and convert an existing westbound through turn lane to a shared through-left turn lane. The addition of these improvements will improve the intersection's LOS to E with 55.6 seconds of delay per vehicle during the morning peak hour and to LOS E with 65.4 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.32: Sherwood Drive/Natividad Road/East Bernal Drive/La Posada Way (38)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 72.0 seconds of delay per vehicle to LOS F with 105.0 seconds of delay per vehicle during the morning peak hour and from LOS F with 122.3 seconds of delay per vehicle to LOS F with 165.7 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.32: Install northbound and southbound through lanes. The addition of these improvements will improve the intersection's LOS to E with 59.9 seconds of delay per vehicle during the morning peak hour and to LOS E with 63.0 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.33: Williams Road/East Boronda Road (40)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 39.3 seconds of delay per vehicle to LOS F with 108.2 seconds of delay per vehicle in the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.33: Install eastbound left turn lane. The addition of this improvement will improve the intersection's LOS to D with 37.3 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.34: East Front Street/Sherwood Drive/Market Street (51)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from

LOS C with 31.9 seconds of delay per vehicle to LOS E with 66.8 seconds of delay per vehicle in the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.34: Install southbound left turn lane. The addition of this improvement will improve the intersection's LOS to D with 46.3 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.35: South Davis Road/Blanco Road (53)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS F with 184.9 seconds of delay per vehicle to LOS F with 189.2 seconds of delay per vehicle during the morning peak hour and from LOS F with 144.7 seconds of delay per vehicle to LOS F with 146.5 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.35: Install a westbound left turn lane. The addition of this improvement will improve the intersection's LOS to F with 154.6 seconds of delay per vehicle during the morning peak hour and to LOS F with 120.0 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.36: Salinas Street/North Main Street/West Market Street/East Market Street (55)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS D with 37.1 seconds of delay per vehicle to LOS F with 98.3 seconds of delay per vehicle during the morning peak hour and from LOS D with 46.4 seconds of delay per vehicle to LOS F with 102.3 seconds of delay per vehicle in the evening peak hour. These degradations in service levels are considered to be significant adverse cumulative impacts based on the City's significance standards.

Mitigation C.36: Install an eastbound through lane and southbound left turn lane. The addition of this improvement will improve the intersection's LOS to D with 44.6 seconds of delay per vehicle during the morning peak hour and to LOS D with 38.6 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.37: South Main Street/Blanco Road (56)

The addition of traffic generated by the West Area Specific Plan and Central Area Specific Plan projects to the Cumulative baseline condition would degrade the operation of this intersection from LOS E with 67.4 seconds of delay per vehicle to LOS E with 71.8 seconds of delay per vehicle in the evening peak hour. This degradation in service level is considered to be a significant adverse cumulative impact based on the City's significance standards.

Mitigation C.37: Install northbound left turn lane. The addition of this improvement will improve the intersection's LOS to D with 49.3 seconds of delay per vehicle during the evening peak hour under the Cumulative plus West Area Specific Plan and Central Area Specific Plan condition.

Impact C.38: US 101 Mainline Segments

With the addition of project trips, the following segments of US 101 are expected to function below County CMP standards:

- AM US 101 Northbound between San Juan Road and Crazy Horse Canyon Road; LOS is E with a density of 38.2.
- AM US 101 Northbound and Southbound between San Miguel Canyon Road and SR 156: LOS is F, with a density of 45.2 northbound; southbound is LOS E with a density of 37.8.
- PM US 101 Southbound and Northbound between San Juan Road and Crazy Horse Canyon Road; LOS is F with a density of 54.0 southbound; LOS is E with a density of 36.0 northbound.
- PM US 101 Southbound between Crazy Horse Canyon Road and San Miguel Canyon Road; LOS is E with a density of 35.0.
- PM US 101 Southbound and Northbound between San Miguel Canyon Road and SR 156: The forecasted LOS is F with a density of 81.9 southbound; northbound is LOS F with a density of 52.7.
- PM US 101 Southbound between SR 156 and Sala Road: the forecasted LOS is F with a density of 58.0 southbound.

Mitigation C.38: Contribution to the TAMC RDIF Program and City's TIF Program: The proposed mitigation for this cumulative impact is the project's required contribution to the Transportation Agency for Monterey County (TAMC) Regional Development Impact Fee (RDIF) Program and the City's Traffic Impact Fee Program (TIF).

7.1.5 TRANSPORTATION DEMAND MANAGEMENT (TDM)

As shown, the proposed project will have many significant impacts on the transportation network. Therefore, the City should consider implementing a transportation demand management (TDM) program as part of the West Area Specific Plan entitlement process. In conjunction with roadway capacity expansions, a TDM program could potentially alleviate the traffic impacts of continued population and employment growth over time by encouraging and/or incentivizing employees to take transit, ride bicycles, walk, vanpool, or carpool to work. Typically, the goal of a TDM program is to reduce the number of people driving alone who work at a location in the plan's scope.

Transportation Demand Management programs can take many forms and are typically comprised of individual measures which employ different strategies for reducing commute trips. Most applicable to the proposed project would be a TDM plan that encompasses any or all of the following measures that are referred to as Commute Trip Reduction (CTR) measures. These are enumerated at length in the 2010 report prepared by the California Air Pollution Control Officers' Association (CAPCOA), *Quantifying Greenhouse Gas Mitigation Measures*. Potential TDM strategies from the CAPCOA document that could be implemented within the EDE areas include the following:

- *Transit fare subsidy*: Employers provide employees with a subsidized (in part or in full) transit fare and/or transfer. In some cases, the Internal Revenue Service (IRS) may consider this cost as a pre-tax deduction for the employer.
- *Employee parking cash-out:* Employees who are provided a free parking space at the employer's expense may instead elect for a cash payment from the employer equivalent to the cost of the parking space in exchange for foregoing it.
- *Workplace parking pricing:* Instead of providing a free parking space at the employer's expense, employees are required to instead pay for a parking space on their own.
- *Alternative work schedules and telecommute programs:* When feasible, employers allow their employees to work remotely from home, or hold flex hours which allow for commute travel outside of typical commute hours.
- *Commute trip reduction marketing program:* Employers distribute educational literature to their employees about alternative transportation options, usually in conjunction with other CTR measures.
- *Employer-sponsored Vanpool/Shuttle:* When feasible, employers may provide or charter private shuttles or van-pools for their employees.
- *Ride-share program:* A variety of strategies may be undertaken by the employer to encourage employees to carpool to work. Typically, these include reserving a certain number of parking spaces

for carpools only, designating loading and unloading areas for ride-sharing vehicles, and providing a website or message board for coordinating rides.

- *Unbundling of Residential Parking Costs*: Encouraging landlords to separate the cost of parking from rent can help to both lower overall rents while dis-incentivizing car ownership or multiple-car households. This may also help concurrent programs that encourage alternative commute modes.
- *Carshare Programs*: Car share companies, such as ZipCar, offer by-the-hour rental business models, can help households who have one or no cars to make necessary trips via automobile on a per-trip rate.

There are many options to implement TDM programs. In some cases, a local jurisdiction may require new development to adopt, monitor, and show proof of a TDM plan as a part of the entitlement process. In other instances, TDM elements may be incorporated into a General Plan or other policy document in the form of requirements for new businesses to include safe bicycle parking; Policy C-4.3 of the existing 2002 City of Salinas General Plan encourages existing and requires new businesses to provide bicycle parking. Other cities may formally codify these policies into their municipal ordinance.

In order to ameliorate the significant and unavoidable impacts that result from the proposed project, the City should implement a TDM program that is related to the West Area Specific Plan.

7.2 TRANSIT IMPACTS

According to Policy C-3.1 and Policy C-3.2 of the existing 2002 Salinas General Plan, the City shall support Monterey-Salinas Transit (MST) in developing frequent and effective public transportation service, including to new development areas. The West Area Specific Plan is estimated to generate approximately 1,000 new transit trips on a daily basis, as well as 140 trips in the morning peak hour and 150 trips in the evening peak hour. These new transit trips alone are not expected to overburden existing transit service in the area. Additionally, this project does not conflict with an existing transit-related policy or plan in the City. As such, this project will have **no significant impacts** on public transit service.

However, it is recommended that the City work with Monterey-Salinas Transit to implement a branch of Route 49 that operates at certain times of day such that it can accommodate students travelling to the high school currently under construction on Rogge Road. A special time-of-day school-oriented transit service would provide alternative means for students to travel to and from school. Such a branch would also provide service between the high school and the nearby Northridge Mall. It is also recommended that the City consider enhanced shelters at some bus stops to improve the conditions for transit riders who are waiting for a bus – such as on Russell Road, Rogge Road, East Boronda Road and McKinnon Street (adjacent from existing school), and Boronda and Independence Boulevard (adjacent from existing school). The Specific

Plan also proposes a Public Transit Plan which was developed based on input from MST. The transit plan is subject to change and the final routing and siting of bus shelters and stops will be subject to the approval of MST and the City of Salinas.

7.3 BICYCLE AND PEDESTRIAN IMPACTS

Overall, existing plans and policies are supportive of bicycling and walking in Salinas. City policies related to biking and walking are defined in the existing General Plan Circulation Element through Goal C-4 and Goal C-5. Together, these goals set citywide policies that provide for safe and accessible bicycle and pedestrian facilities. Additionally, the 2002 Salinas Bikeways Plan and 2004 Salinas Pedestrian Plan provide prioritized lists of projects and programs in service of the above goals. In accordance with the standards of significance, the proposed project would not have significant impacts on the bicycle and pedestrian network because the Specific Plan does not interfere with existing plans or policies related to biking and/or walking.

The proposed project is expected to generate approximately 2,400 daily walking and biking trips; 300 of which are anticipated in the morning peak hour and 260 of which are anticipated in the evening peak hour. The proposed project includes specifications to include new bicycle and pedestrian facilities that will provide access to the site. Therefore, there will be **no significant impacts** to bicycle or pedestrian facilities.

7.3.1 BICYCLE IMPACTS

San Juan Grade Road

Currently, a Class II bicycle facility is proposed for San Juan Grade Road between East Boronda Road and Cornwall Street, according to 2002 Salinas Bicycle Plan. The extents of this proposed facility are approximately coterminous with the western boundary of the proposed project. In addition to the retail shops and residences planned as part of the project, a high school is also under construction on Rogge Road and the school site abuts the future extension of Russell Road. This intersects the proposed Class II facility. Therefore, San Juan Grade Road could serve as an important connection between the amenities of the proposed project and the rest of the City, which is already served by bicycle facilities.

According to the West Area Specific Plan document, San Juan Grade Road is planned with Class II bicycle lanes and a sidewalk along the project's frontage.

Safe and adequate bicycle facilities are proposed throughout the Specific Plan area. Therefore, there are **no significant impacts** as a result of the proposed project.

7.3.2 PEDESTRIAN IMPACTS

East Boronda Road has a sidewalk on its southern portion for the road's entire extent. It does not have a sidewalk on the northern portion. San Juan Grade Road has intermittent sidewalks along its entire extent.

According to the West Area Specific Plan document, the proposed project will install continuous sidewalks along the northern side of East Boronda Road and the east side of San Juan Grade Road.

Safe and adequate pedestrian facilities are proposed throughout the Specific Plan area. Therefore, there are **no significant impacts** as a result of the proposed project.

APPENDIX A: WEST AREA SPECIFIC PLAN TRIP GENERATION RATE ASSUMPTIONS

ITE Trip Generation land use category (520) - Elementary School (Adj. Streets, 4-6P)
Daily: T = 15.43(X)
AM Peak Hour: T = 0.00(X) (0% in, 0% out)
PM Peak Hour: T = 1.21(X) (45% in, 55.00000000000001% out)

ITE Trip Generation land use category (522) - Middle School/Junior High School (Adj Streets, 4-6P)
Daily: T = 13.78(X)
AM Peak Hour: T = 0.00(X) (0% in, 0% out)
PM Peak Hour: T = 1.19(X) (52% in, 48% out)

ITE Trip Generation land use category (530) - High School (Adj Streets, 4-6P)
Daily: T = 12.89(X)
AM Peak Hour: T = 0.00(X) (0% in, 0% out)
PM Peak Hour: T = 0.97(X) (54% in, 46% out)

ITE Trip Generation land use category (710) - General Office Building (Pk Hr, AM & PM)
Daily: T = 11.03(X)
AM Peak Hour: Ln(T) = 0.80 * ln(X) + 1.57 (88% in, 12% out)
PM Peak Hour: T = 1.12(X) + 78.45 (17% in, 83% out)

ITE Trip Generation land use category (850) - Supermarket (Adj Streets, 7-9A, 4-6P)
Daily: T = 102.24(X)
AM Peak Hour: T = 3.40(X) (62% in, 38% out)
PM Peak Hour: T = 9.48(X) (51% in, 49% out)

ITE Trip Generation land use category (820) - Shopping Center (Adj Streets, 7-9A, 4-6P)
Daily: T = 42.70(X)
AM Peak Hour: T = 0.96(X) (62% in, 38% out)
PM Peak Hour: T = 3.71(X) (48% in, 52% out)

ITE Trip Generation land use category (210) - Single-Family Detached Housing (Adj Streets, 7-9A, 4-6P)
Daily: T = 9.52(X)
AM Peak Hour: T = 0.70(X) + 9.74 (25% in, 75% out)
PM Peak Hour: T = 1.00(X) (63% in, 37%

ITE Trip Generation land use category (230) - Residential Condominium/Townhouse(Pk Adj Streets, 7-9A, 4-6P)
Daily: T = 5.81(X)
AM Peak Hour: Ln(T) = 0.80 * ln(X) + 0.26 (17% in, 83% out)
PM Peak Hour: Ln(T) = 0.82 * ln(X) + 0.32 (67% in, 33% out)

ITE Trip Generation land use category (220) - Apartment (Adj Streets, 7-9A, 4-6P)

Daily: T = 6.65(X)
AM Peak Hour: T = 0.51(X) (20% in, 80% out)
PM Peak Hour: T = 0.55(X) + 17.65 (65% in, 35% out)

ITE Trip Generation land use category (411) - City Park (Adj Streets, 7-9A, 4-6P)
Daily: T = 1.89(X)
AM Peak Hour: T = 4.50(X) (56.00000000000001% in, 44% out)
PM Peak Hour: T = 3.50(X) (56.99999999999999% in, 43% out)

ITE Trip Generation land use category (170) - Utilities (Adj Streets, 7-9A, 4-6P)
Daily: T = 0.00(X)
AM Peak Hour: T = 2.49(X) (63% in, 37% out)
PM Peak Hour: T = 1.32(X) (45% in, 55.00000000000001% out)

Reductions based on application of MXD+ model:
Total Reductions: Daily = 13.1%, AM Peak Hour = 21.4%, PM Peak Hour = 25.2%
Internal Capture: Daily = 9.1%, AM Peak Hour = 15.4%, PM Peak Hour = 20.3%
External Walk, Bike, and Transit: Daily = 4.0%, AM Peak Hour = 6.0%, PM Peak Hour = 4.9%

Sources: ITE Trip Generation Manual, 9th Edition. Fehr and Peers, 2017

APPENDIX B: CENTRAL AREA SPECIFIC PLAN TRIP GENERATION RATE ASSUMPTIONS

ITE Trip Generation land use category (520) - Elementary School (Adj. Streets, 4-6P) and and (520) - Elementary School (Pk Hr, AM)
Daily: T = 15.43(X)
AM Peak Hour: T = 0.45(X) (55.00000000000001% in, 45% out)
PM Peak Hour: T = 1.21(X) (45% in, 55.00000000000001% out)

ITE Trip Generation land use category (522) - Middle School/Junior High School (Adj Streets, 4-6P) and (522) Middle School/Junior High School (Pk Hr, AM)
Daily: T = 13.78(X)
AM Peak Hour: T = 0.54(X) (55.00000000000001% in, 45% out)
PM Peak Hour: T = 1.19(X) (52% in, 48% out)

ITE Trip Generation land use category (530) - High School (Adj Streets, 4-6P) and (530) - High School (Pk Hr, AM)
Daily: T = 12.71(X)
AM Peak Hour: T = 0.43(X) (68% in, 32% out)
PM Peak Hour: T = 0.97(X) (54% in, 46% out)

ITE Trip Generation land use category (710) - General Office Building (Pk Hr, AM & PM)
Daily: T = 11.03(X)
AM Peak Hour: Ln(T) = 0.80 * ln(X) + 1.57 (88% in, 12% out)
PM Peak Hour: T = 1.12(X) + 78.45 (17% in, 83% out)

ITE Trip Generation land use category (850) - Supermarket (Adj Streets, 7-9A, 4-6P)
Daily: T = 102.24(X)
AM Peak Hour: T = 3.40(X) (62% in, 38% out)
PM Peak Hour: T = 9.48(X) (51% in, 49% out)

ITE Trip Generation land use category (820) - Shopping Center (Adj Streets, 7-9A, 4-6P)
Daily: T = 42.70(X)
AM Peak Hour: T = 0.96(X) (62% in, 38% out)
PM Peak Hour: T = 3.71(X) (48% in, 52% out)

ITE Trip Generation land use category (210) - Single-Family Detached Housing (Adj Streets, 7-9A, 4-6P)
Daily: T = 9.52(X)
AM Peak Hour: T = 0.70(X) + 9.74 (25% in, 75% out)
PM Peak Hour: T = 1.00(X) (63% in, 37% out)

ITE Trip Generation land use category (230) - Residential Condominium/Townhouse(Pk Adj Streets, 7-9A, 4-6P)
Daily: T = 5.81(X)
AM Peak Hour: Ln(T) = 0.80 * ln(X) + 0.26 (17% in, 83% out)

PM Peak Hour: Ln(T) = 0.82 * ln(X) + 0.32 (67% in, 33% out)

ITE Trip Generation land use category (220) - Apartment (Adj Streets, 7-9A, 4-6P)
Daily: T = 6.65(X)
AM Peak Hour: T = 0.51(X) (20% in, 80% out)
PM Peak Hour: T = 0.55(X) + 17.65 (65% in, 35% out)

ITE Trip Generation land use category (590) - Library (Adj Streets, 7-9A, 4-6P)
Daily: T = 56.24(X)
AM Peak Hour: T = 1.04(X) (71% in, 28.999999999999996% out)
PM Peak Hour: T = 7.30(X) (48% in, 52% out)

ITE Trip Generation land use category (411) - City Park (Adj Streets, 7-9A, 4-6P)
Daily: T = 1.89(X)
AM Peak Hour: T = 4.50(X) (56.00000000000001% in, 44% out)
PM Peak Hour: T = 3.50(X) (56.99999999999999% in, 43% out)

ITE Trip Generation land use category (170) - Utilities (Adj Streets, 7-9A, 4-6P)
Daily: T = 0.00(X)
AM Peak Hour: T = 2.49(X) (63% in, 37% out)
PM Peak Hour: T = 1.32(X) (45% in, 55.00000000000001% out)

Reductions based on application of MXD+ model:
Total Reductions: Daily = 10.7%, AM Peak Hour = 20.8%, PM Peak Hour = 22.1%
Internal Capture: Daily = 8.6%, AM Peak Hour = 17.2%, PM Peak Hour = 18.6%
External Walk, Bike, and Transit: Daily = 2.1%, AM Peak Hour = 3.6%, PM Peak Hour = 3.5%

Sources: ITE Trip Generation Manual, 9th Edition. Fehr and Peers, 2017

APPENDIX J –2007 FINAL SUPPLEMENT FOR THE SALINAS GENERAL PLAN FINAL PROGRAM EIR MITIGATION AND MONITORING REPORTING PROGRAM (MMRP)

2007 MITIGATION MONITORING AND REPORTING PROGRAM

Final Supplement for the 2002 Salinas General Plan Final Program EIR

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
Project Level Significant and Unavoidable Impacts				
Regional Highway System				
C3	The City will implement General Plan Implementation Program C-2 – Traffic Fee Ordinance. Implementation Program C-2 requires the City to update the Traffic Fee Ordinance to reflect projected circulation needs and apply the revised ordinance to applicable developments. The City will consider including alternative modes of transportation (bicycle and pedestrian) as projects eligible for use of Traffic Impact Fees. The City will also work with other local agencies, as well as the Transportation Agency for Monterey County (TAMC) and Caltrans on development of a regional traffic impact fee, to assist in the funding of regional transportation improvements throughout Monterey County.	Community Development, Development and Permit Services, Public Works,		
C5	The City will implement General Plan Implementation Program C-5. Implementation Program C-5 requires the City to reduce expenditure, improve design, and minimize traffic disruption by working with TAMC, Caltrans, MST, AMBAG, Monterey Bay Unified Air Pollution Control District, and other regional transportation agencies to coordinate local street improvements with major transportation system improvement projects such as improvements to Highway 101. In addition, the impacts of discretionary development projects and major transportation projects will be monitored by the City and mitigation may be required.	Community Development, Public Works, TAMC, Caltrans, County of Monterey		
C7	The City will to continue to monitor the planning process for regional circulation improvements to analyze how they would impact the Salinas circulation system. Regional roadway system impacts will be considered when making land use decisions for major development proposals within the City. If necessary, the	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas		

[1] All references to the Community Development, Development and Permit Services and Public Works Departments is revised- to be the Development and Engineering Services Department

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	City will revise the General Plan Circulation System to address the impact from regional circulation system improvements.	Transit		
SEIR-RT1	In addition to the roadway improvements identified in Table 5.1-11 of the Final SEIR, the City will implement the roadway improvements identified in Table 5.1-14 of the Final SEIR, where feasible, to provide LOS D or better along City roadways. For future development within the Annexation area and Settrini property, this mitigation may be satisfied by the payment of the City of Salinas Traffic Impact Fee Program, or constructing said improvements and receiving City Traffic Fee credit. This program would require the specific development within the Project area to be responsible for payment of a fee proportional to the development's impact on identified local roadway segments, or the project developers may provide the specific roadway segment improvements. The extent and timeline of the proportional mitigation will be specifically refined through the Specific Plans directing the development of the Annexation area and Settrini property. The project developers will also be responsible for payment of a Regional Development/Traffic Impact Fee, when the overall financing program is developed/approved by TAMC and this program is adopted by TAMC. The regional fee could also supplement funds for certain roadway improvements along Caltrans designated roadways within the City.	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas Transit		
SEIR-RT2	In addition to the roadway improvements identified in the Final SEIR Table 5.1-11, the City will work with the County of Monterey and TAMC to implement the roadway improvements identified in the Final SEIR Table 5.1-17, where feasible, to provide acceptable levels of service along County two-lane roadways. The City shall work with the County in developing fee programs as described in the 2006 Greater Salinas Area Memorandum of Understanding, agreed to by the City and County, and outlined in City Growth agreements 9 and 10: "The City and County agree to support fees and taxes needed to mitigate the collective impact of new and existing development on the regional transportation system to the extent that the fees and taxes reflect the overall financing program adopted by TAMC… the City and County agree that County will develop a County-wide Traffic Impact fee program for the improvement of major County roads in accordance with the County's adopted General Plan. The County will	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas Transit		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	not rely upon the imposition of an ad hoc traffic fee on City development. The development of a Traffic Impact fee for the Salinas Area … will be a priority and a nexus study and hearing process should be completed." This mitigation may be satisfied by the implementation of a Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program. When the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program is adopted, a specific project development within the Annexation area and Settrini property would be responsible for payment of a fee proportional to the development's impact on a given road segment, or the project developers may provide the necessary improvements for an impacted roadway segment. The extent and timeline of the proportional mitigation will be established by the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program. In addition to the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program, the City of Salinas Traffic Impact Fee Program may supplement funds for certain County two-lane roadway segment improvements located within the municipal boundaries of the City of Salinas. In the absence of an adopted Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program, development within the Project area is still obligated to mitigate its significant regional traffic impacts to the extent feasible, which is currently identified as pro rata fair share contributions toward the various impacted facilities.			
SEIR-RT3	In addition to the roadway improvements identified in the Final SEIR Table 5.1-11, the City will work with the County of Monterey, TAMC, and Caltrans to implement the roadway improvements identified in the Final SEIR Table 5.1-21, where feasible, to provide an acceptable level of service along regional freeway segments. The City shall work with the County in developing fee programs as described in the 2006 Greater Salinas Area Memorandum of Understanding, agreed to by the City and County, and outlined in City Growth agreements 9 and 10: "The City and County agree to support fees and taxes needed to mitigate the collective impact of new and existing development on the regional transportation system to the extent that the fees and taxes reflect the overall financing program adopted by TAMC… the City	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas Transit		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	and County agree that County will develop a County-wide Traffic Impact fee program for the improvement of major County roads in accordance with the County's adopted General Plan. The County will not rely upon the imposition of an ad hoc traffic fee on City development. The development of a Traffic Impact fee for the Salinas Area … will be a priority and a nexus study and hearing process should be completed." This mitigation may be satisfied by the implementation of a Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program described above. When the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program is adopted, a specific project development within the Annexation area and Settrini property would be responsible for payment of a fee proportional to the development's impact on a given road segment, or the project developers may provide the necessary improvements for an impacted roadway segment. The extent and timeline of the proportional mitigation will be established by the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program. In addition to the Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program, the City of Salinas Traffic Impact Fee Program may supplement funds for certain regional freeway segment improvements located within the municipal boundaries of the City of Salinas. In the absence of an adopted Regional Development/Traffic Impact Fee Program and/or Countywide Traffic Impact Fee Program, development within the Project area is still obligated to mitigate its significant regional traffic impacts to the extent feasible, which is currently identified as pro rata fair share contributions toward the various impacted facilities.			
SEIR-RT4	The same performance measures, methods of analysis of impacts, and mitigation will be applied to any future annexation and Specific Plan development proposal for the area within the proposed Sphere of Influence Amendment, south of Williams Road.	Community Development, Public Works, Caltrans, County of Monterey, APCD, Monterey-Salinas Transit		
Vehicular Traffic `				
N2	The City will apply General Plan Implementation Program N-3 – Minimize Construction Noise, during the construction phase of proposed projects within	Community Development, Development and Permit		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	the community. Implementation Program N-3 requires all construction activity to comply with the limits (maximum noise levels, hours and days of allowed activity) established in the City noise regulations (Title 24 California Code of Regulations, Salinas Zoning Code, and Chapter 21A of the Municipal Code).	Services, Police		
N5	The City will implement General Plan Implementation Program N-5 – Reduce Vehicular Noise, which requires the City to reduce the impact of vehicular noise affecting existing residential development through the addition of noise reduction methods such as sound walls, berms, or others.	Community Development, Public Works		
Short-Term Air Quality				
AQ1	The City will apply General Plan Implementation Program COS-22 – Control Fugitive Dust and Particulate Matter. Implementation Program COS-22 requires the City to reduce dust and particulate matter levels by implementing fugitive dust control measures such as: • Restrict outdoor storage of fine particulate matter; • Provide tree buffers between new residential and adjacent agricultural uses; • Monitor construction and agricultural activities and emissions; and • Pave areas used for vehicular maneuvering.	Community Development		
AQ2	The City will apply General Plan Implementation Program COS-23 – Monterey Bay Unified Air Pollution Control District Air Quality Management Plan. Implementation Program COS-23 requires the City to continue to cooperate with the MBUAPCD to implement the most recent Air Quality Management Plan to address regional motor vehicle emissions. In particular, coordinate with the MBUAPCD and AMBAG, providing technical assistance and demographic data when available, during the development of future population projections by AMBAG.	Community Development, MBUAPCD, AMBAG		
AQ3	The City will apply General Plan Implementation Program COS-26 – CEQA Review of Discretionary Projects. Implementation Program COS-26 requires the City to review discretionary development proposals for potential regional and local air quality impacts per the California Environmental Quality Act (CEQA). If potential impacts are identified, mitigation will be required to	Community Development, MBUAPCD, AMBAG		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	reduce the impact to a level less than significant, where feasible.			
Long-Term Air Quality				
Previous AQ1 through AQ3	(see previous AQ1 though AQ3			
AQ4	The City will apply General Plan Implementation Program COS-23 – Electric Vehicle Charging Areas. Implementation Program COS-23 requires the City to include electric vehicle charging areas in new public and private development and redevelopment projects. The City shall also inform property owners of electric vehicle charging area programs when plans for development and redevelopment projects are submitted.	Community Development, Redevelopment Agency		
AQ5	The City will apply General Plan Implementation Program COS-25 – Transportation Control Measures. Implementation Program COS-25 requires the City to coordinate with the MBUAPCD and AMBAG to support the updated Transportation Control Measures as described in detail in the most recent AQMP. Currently, these measures include: • Improved Public Transit Service; • Areawide Transportation Demand Management; • Signal Synchronization; • New and Improved Bicycle Facilities; • Alternative Fuels; • Livable Communities (communities designed to reduce automobile dependency); • Selected Intelligent Transportation Systems; and • Traffic Calming.	Community Development, MBUAPCD, AMBAG		
AQ6	The City will apply General Plan Implementation Program COS-32 – Energy Efficient Public Buildings. Implementation Program COS-32 requires the City to implement energy conservation measures in public buildings through the following actions: • Promote energy efficient buildings and site design for all new public buildings during the site development permit process; and • Install energy saving devices in new public buildings and retrofit	Community Development, Public Works, Development and Permit Services		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	existing public buildings.			
AQ7	The City will apply General Plan Implementation Program COS-33 – Promote Energy Retrofit Programs. Implementation Program COS-33 requires the City to promote retrofit programs to reduce energy usage and consequently reduce emissions from energy consumption. Encourage utility companies to provide informational literature about available retrofit programs at City offices, the Permit Center, and libraries.	Development and Permit Services, utility companies		
Groundwater				
HW4	The City will continue to implement General Plan Implementation Program COS-3 – Watershed Management Initiative, on an ongoing basis. Implementation Program COS-3 requires the City to cooperate with Monterey County, the Regional Water Quality Control Board Central Coast (Region 3) and the Monterey County Water Resources Agency (MCWRA), providing technical assistance when necessary to help identify, protect, and preserve critical aquifer recharge areas so that their function is maintained and groundwater quality is not further degraded.	Public Works, RWQCB, MCWRA, County of Monterey, other jurisdictions		
HW9	The City will continue to implement General Plan Implementation Program LU-14 – Water and Sewer for New Development, on an ongoing basis and in response to development proposals. Implementation Program LU-14 requires the City to review development proposals and require necessary studies and water conservation and mitigation measures to ensure adequate water and sewer service.	Community Development, Public Works, Water Providers, Monterey Regional Water Pollution Control Agency (MRWPCA)		
HW10	The City will continue to implement General Plan Implementation Program COS-2 – Seawater Intrusion, on an ongoing basis. Implementation Program COS-2 requires the City to continue to cooperate with the Monterey County Water Resources Agency (MCWRA), the Army Corps of Engineers (ACOE), State Water Resources Control Board (SWRCB), and the Regional Water Quality Control Board (RWQCB) to find a solution to halt seawater intrusion toward Salinas.	Public Works, MCWRA, ACOE, SWRCB, RWQCB		
HW11	The City will continue to implement General Plan Implementation Program COS-5 – Well Monitoring, on an ongoing basis. Implementation Program COS-5 requires the City to cooperate with the County of Monterey Water Resources	Community Development, Public Works, RWQCB, MCWRA, County of		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	Agency and water service providers, providing technical assistance when necessary, to continue to monitor urban and agricultural well usage rates and quality of the groundwater.	Monterey, water service providers		
HW12	The City will continue to implement General Plan Implementation Program COS-6 – Recycled Water, on an ongoing basis. Implementation Program COS-6 requires the City, in cooperation with the state, regional, and local water agencies and suppliers, to participate in programs that seek to limit the spread of seawater intrusion into the groundwater basins through the recycling of wastewater. Specifically, the City shall support the expansion of the use of recycled water for urban and agricultural irrigation and cooperate with these agencies to establish standards and regulations for the use of recycled water in development projects.	Community Development, Development and Permit Services, Public Works, RWQCB, MCWRA, County of Monterey, other jurisdictions		
HW13	The City will implement General Plan Implementation Program COS-7 – Promote Water Conservation, on an ongoing basis. Implementation Program COS-7 requires the City to encourage water conservation throughout Salinas in the following ways: • Implementing the Salinas Urban Water Conservation Plan [see, e.g., Salinas Municipal Code, §§ 36A-6 - 36A-13], the purpose of which is to reduce pumping of water from the Salinas Valley Groundwater Basin for urban uses to the maximum extent feasible and to reduce overall pumping from the Salinas Valley Groundwater Basin by fifteen percent from the pumping that occurred in 1987; • Regulating development with the City's Zoning Code, Landscaping and Irrigation Division [Salinas Municipal Code, §§ 37-50.680 - 37-50.710], which requires developments to apply xeriscape principles including such techniques and materials as native or low water use plants and low precipitation sprinkler heads, bubblers, drip irrigation systems and timing devices; • Supporting the production of recycled water and developing new uses for recycled water; and • Applying water conservation techniques/project "water budgets" to achieve a significant reduction over historic use and over average uses for the proposed type of development by the incorporation of water conservation devices, such as low-flow toilets, flow restriction devices	Community Development, Development and Permit Services, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	and water conserving appliances in new public and private development and rehabilitation projects.			
SEIR WS1	The City shall implement 15 percent water conservation measures for development within the Project area as described in General Plan Final Program EIR mitigation measure HW13.	Community Development, Development and Permit Services, Public Works		
SEIR WS2	The City shall confirm the availability of adequate water supply and infrastructure to ensure that development does not outpace the available water supply/infrastructure in accordance with SB 610 and SB 221.	Community Development, Development and Permit Services, Public Works		
Historic and Archaeological Resources				
CR1	The City will implement General Plan Implementation Program COS-13 – California Environmental Quality Act, prior to the approval of a discretionary project. Implementation Program COS-13 requires the City to assess discretionary development proposals for potential impacts to sensitive historic, archaeological, and paleontological resources pursuant to Section 15064.5 of the California Environmental Quality Act Guidelines. a. For structures that potentially have historic significance, the City will require that a study be conducted by a professional archaeologist or historian to determine the actual significance of the structure and potential impacts of the proposed development in accordance with CEQA Guidelines Section 15064.5. The City may require modification of the project and/or mitigation measures to avoid any impact to a historic structure, when feasible. b. For all development proposals located within the Carr Lake/Natividad Creek corridor, the City will require a study to be conducted by a professional archaeologist. The objective of the study is to determine if significant archaeological resources are potentially present and if the project will significantly impact the resources. If significant impacts are identified, the City may require the project to be modified to avoid the impacts, or require mitigation measures to mitigate the impacts. Mitigation may involve archaeological investigation and resources recovery. c. The City will assess development proposals for potential impacts to significant paleontological resources pursuant to of the California Environmental Quality Act Guidelines. If the project involves earthworks, the City may require	Community Development		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	a study conducted by a professional paleontologist to determine if paleontological assets are present, and if the project will significantly impact the resources. If significant impacts are identified, the City may require the project to be modified to avoid impacting the paleontological materials, or require mitigation measures to mitigate the impacts.			
CR2	The City will implement General Plan Implementation Program COS-14 – Historic/Architectural Preservation, on an ongoing basis. Implementation Program COS-14 requires the City to consider implementing a historic/architectural preservation program and a historic/architectural preservation ordinance that encourages public/private partnerships to preserve and enhance historically significant buildings in the community. Measures to implement may include, but are not limited to, Transfer of Development Rights (TDR), establishment of criteria for a historic/architectural resources review process, and implementation of a Mills Act program. TDR could benefit the community by protecting historic resources through an agreement that allows the development potential ("rights") on the historic property to be transferred to another property when the historic resources on the original property is preserved. The Mills Act program would involve the City entering into a contract with a property owner to change how the County Assessor calculates taxes on their property in exchange for the continued preservation of the property by the property owner. The adjusted property taxes are recalculated using a formula in the Mills Act and Revenue and Taxation Code.	Community Development, Redevelopment Agency, City Manager's Office, City Council, County Assessors Office		
CR3	The City will implement General Plan Implementation Program COS-15 – Identify Historic Sites, on an ongoing basis. Implementation Program COS-15 requires the City to promote public awareness and encourage tourism in the City by actively identifying the community's many historic resources through the location of historic landmark plaques and the Historic House Tour Guide. Promote tours of these sites on the City's and other organization's websites.	Community Development, Redevelopment Agency, Salinas Valley Chamber of Commerce, Oldtown Salinas, Monterey County Historical Society, National Steinbeck Center		
Agricultural Resources				
AG1	The City will implement General Plan Implementation Program COS-9 – Boronda Memorandum of Understanding, which requires the City to continue to	Community Development,		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	cooperate with the County of Monterey to implement the Boronda Memorandum of Understanding, which directs that City growth occur generally to the north and east away from the most productive farmland.	County of Monterey		
AG2	The City will implement General Plan Implementation Program LU-7 – City-Centered Growth, which requires the City to give priority to redevelopment and infill projects that reduce development pressure on agricultural lands. Establish an incentive program to promote these projects, such as priority permit processing and density bonuses for such developments.	Community Development, Redevelopment Agency		
AG5	The City will work with the County of Monterey, and other local jurisdictions, to create and implement an agricultural land conservation easement program including such measures as securing the dedication of easements or by paying a mitigation fee that could be used to purchase easements through a mitigation bank.	Community Development		
Public Services and Utilities-Water				
Previous HW4, HW9 though HW13	(see previous HW4, HW9 through HW13)			
Public Services and Utilities – Solid Waste				
PSU6	The City shall continue to support and cooperate with the Authority and waste haulers in their efforts to increase recycling activities in order to achieve the mandated 50 percent waste diversion goal.	Community Development, Public Works, SVSWA		
PROJECT-LEVEL IMPACTS MITIGATED TO A LEVEL LESS THAN SIGNIFICANT				
Land Use and Planning				
LU1	The City will implement General Plan Implementation Program LU-3 – Zoning and Subdivision Ordinances Update, which requires the City to review and update the Zoning Code and Subdivision Ordinance to ensure consistency with the General Plan and to help implement the General Plan policies and New Urbanism principles.	Community Development, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
LU2	The City will implement General Plan Implementation Program LU-8 – Local Agency Formation Commission, which requires the City to be consistent with a portion of Draft Policy LU 3.4 of the Monterey County Draft General Plan, and to cooperate with LAFCO and the County of Monterey to direct growth outside the City limits to the Future Growth Area, on lands that are served or are planned to be served, with a full range of urban services, such as public water and sewer, an extensive road network, public transit, safety and emergency response services, parks, trails, and open space.	Community Development, LAFCO, County of Monterey		
LU3	The City will implement General Plan Implementation Program LU-22 – Salinas Municipal Airport Master Plan, which requires the City to update and implement the Airport Master Plan. Funding has been approved to update the Salinas Municipal Airport Master Plan. The update should contain the following: address minimum distance for the Eastern bypass south of airport, define how the Eastern bypass can best be integrated with ILS approach, and determine limitations on surrounding land uses and new roadways to allow continuation of airport operations, including the potential lengthening of runway 31/13, and the California International Airshow. Upon any update of the Airport Master Plan, the Monterey County Airport Land Use Plan or the California Airport Land Use Planning Handbook, the Salinas General Plan will be reviewed and revised, as necessary.	Community Development, Salinas Airport		
LU4	The City will implement General Plan Implementation Program LU-23 – Monterey County Airport Land Use Plan, which requires the City to continue to support the implementation of the Monterey County Airport Land Use Plan (MCALUP) and support the timely update of the MCALUP to meet new State guidelines.	Community Development, Salinas Airport, County of Monterey		
LU5	The City will implement General Plan Implementation Program COS-9 – Boronda Memorandum of Understanding, which requiring the City to continue to cooperate with the County of Monterey to implement the Boronda Memorandum of Understanding, which directs that City growth occur generally to the north and east away from the most productive farmland.	Community Development, County of Monterey		
LU6	The City will implement General Plan Implementation Program LU-7, which requires the City to encourage City-Centered Growth and give priority to redevelopment and infill projects that reduce development pressure on	Community Development, Redevelopment Agency		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	agricultural lands. The City will also establish an incentive program to promote these projects, such as priority permit processing and density bonuses for such developments.			
Local Roadway System				
C1	In addition to the roadway improvements identified in Table 5.2-4 of the Final SEIR, the City will implement the roadway Public Works improvements identified in the Final SEIR Table 5.2-7 as needed to provide a level of service D or better along City roadways.	Community Development, Public Works		
C2	The City will implement General Plan Implementation Program C-1 – Proposed Development. Implementation Program C-1 requires the City to review discretionary development proposals for potential impacts to the transportation system. The Level of Service Standards established in the Circulation Element will be used to determine the significance of impacts. Intersection level of service will be determined by vehicle delay calculations in accordance with the latest version of the Highway Capacity Manual, Transportation Research Board. Mitigation in the form of physical improvements and/or impact fees will be required for significant impacts. Adequate right-of-way along new roadways will be required to permit pedestrian and bicycle facilities. Proper roadway drainage must be provided to ensure a safe system.	Community Development, Development and Permit Services, Public Works		
C3	(see previous C3)			
C4	The City will implement General Plan Implementation Program C-3 – Capital Improvement Plan. Implementation Program C-3 requires the City to continue to update on an annual basis the Capital Improvement Plan to plan for and fund future improvements to the circulation system, as well as other public facilities, including improvements to the existing pedestrian and bicycle system, within the community.	Public Works		
C5	(see previous C5)			
C6	The City will implement General Plan Implementation Program C-7 – Transportation Control Measures. Implementation Program C-7 requires the City to support the implementation of the Transportation Control Measures	Community Development, Public Works, Caltrans, County of Monterey,		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	contained in the Monterey Bay Unified Air Pollution Control District's (APCD) Air Quality Management Plan to help reduce traffic congestion and encourage the use of alternative modes of transportation.	APCD, Monterey-Salinas Transit, AMBAG		
C8	The City will implement General Plan Implementation Program LU-22 – Salinas Municipal Airport Master Plan. Implementation Program LU-22 requires the City to update and implement the Airport Master Plan. The update should contain the following: address minimum distance for the Eastern bypass south of airport, define how the Eastern bypass can best be integrated with ILS approach, and determine limitations on surrounding land uses and new roadways to allow continuation of airport operations, including the potential lengthening of runway 31/13, and the California International Airshow. Upon any update of the Airport Master Plan, the Monterey County Airport Land Use Plan or the California Airport Land Use Planning Handbook, the Salinas General Plan will be reviewed and revised, as necessary.	Community Development, Salinas Airport		
C9	The City will implement General Plan Implementation Program C-8 – Monterey County Land Use Commission. Implementation Program C-8 requires the City to continue to coordinate with the Monterey County Airport Land Use Commission (ALUC) on projects near the airport and encourage ALUC to update its County Airport Land Use Plan.	Community Development, Salinas Airport, Public Works, County of Monterey, Development and Permit Services		
Noise				
N1	The City will apply General Plan Implementation Program N-3 – Minimize Construction Noise, during the construction phase of proposed projects within the community. Implementation Program N-3 requires all construction activity to comply with the limits (maximum noise levels, hours and days of allowed activity) established in the City noise regulations (Title 24 California Code of Regulations, Salinas Zoning Code, and Chapter 21A of the Municipal Code).	Community Development, Development and Permit Services, Police		
N2	(see previous N2)			
N3	The City will apply General Plan Implementation Program N-4 – Salinas Municipal Airport Master Plan, in concert with the update of the Salinas Airport Master Plan. Implementation Program N-4 requires the City to review and revise as necessary Table N-4, Figure N-2, and the goals, policies and noise plan	Community Development, Salinas Airport Commission, County of Monterey Airport Land Use		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	within the General Plan Noise Element to correspond with any update to the Salinas Airport Master Plan.	Commission (ALUC)		
N4	The City will apply General Plan Implementation Program N-2 – Minimize Commercial/Industrial Noise, on an ongoing basis. Implementation Program N-2 requires the City to limit delivery hours for stores and businesses with loading areas, docks, or trash bins that front, side, border, or gain access on driveways next to residential and other noise sensitive areas. The City can only approve exceptions if full compliance with the nighttime limits of the noise regulations is achieved.	Community Development, Development and Permit Services, Police		
N5	(see previous N5)			
Air Quality – Sensitive				
See previous AQ2 through AQ5	(see previous AQ2 through AQ5)			
Hydrology/Water Quality				
HW1	The City will implement General Plan Implementation Program COS-1 – Improve Surface Water Quality, on an ongoing basis and in response to development proposals. Implementation Program COS-1 requires new development projects and substantial rehabilitation projects to incorporate Best Management Practices (BMPs) pursuant to the National Pollutant Discharge Elimination System (NPDES) permit to ensure the City complies with applicable state and federal regulations.	Community Development, Development and Permit Services, Public Works		
HW2	The City will implement General Plan Implementation Program COS-4 – Public Education Programs, on an ongoing basis. Implementation Program COS-4 requires the City to coordinate with other jurisdictions and agencies within the County to develop and implement an education program to inform the public of the harm to the ocean and marine environment caused by pollutants and litter deposited on the surface of the land that can be carried in drainage systems, creeks, rivers, and ultimately the ocean.	Community Development, RWQCB, MCWRA, County of Monterey, Water Awareness Committee of Monterey, other jurisdictions		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
HW3	The City will implement General Plan Implementation Program S-6 – Pesticide Use, on an ongoing basis. Implementation Program S-6 requires the City to continue to monitor regulations governing the use of pesticides and work with the County Agricultural Commission to promote the responsible use of pesticides.	Community Development, Fire Department, County Agriculture Commission		
HW4	(see previous HW4)			
HW5	The City will implement General Plan Implementation Program LU-17 that requires, as a condition of project approval, new development to provide adequate storm water and flood management facilities to control direct and indirect erosion and discharges of pollutants and/or sediments so that "no net increase in runoff" occurs as a result of the proposed project. To determine the facility and Best Management Practices (BMPs) needs, the City will require, when necessary, a hydrological/drainage analysis to be performed by a certified and City-approved engineer, with the cost of said analysis the responsibility of the project applicant.	Public Works		
HW6	The City will implement General Plan Implementation Program S-20 – MCWRA Advisory Committee, on an ongoing basis. Implementation Program S-20 requires the City to continue to participate with the Monterey County Water Resources Agency (MCWRA) Advisory Committee for the Reclamation Ditch drainage system improvement projects.	Public Works		
HW7	The City will implement General Plan Implementation Program LU-16 – Monterey Regional Water Pollution Control Agency, on an ongoing basis. Implementation Program LU-16 requires the City to continue to work with the Monterey Regional Water Pollution Control Agency (MRWPCA) to plan for and ensure adequate capacity for sewage treatment facilities.	Public Works, MRWPCA		
HW8	The City will implement General Plan Implementation Program LU-15 – Sewer and Drainage Master Plan, on an ongoing basis. Implementation Program LU-15 requires the City to continue to implement and update the Sewer and Drainage Master Plan as necessary.	Public Works		
SEIR SD1	Future development within the Project area shall utilize a combined flow control system to achieve the hydrologic mitigation and water quality requirements that	Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	follows similar agency/industry hydro-modification recommendations. The proposed flow control system will include one or more of the following components, which are illustrated in the schematic [in the Final SEIR] and include (1) duration control/water quality treatment basin, (2) pretreatment wetlands, (3) retention/infiltration basin, (4) diversion outlet to either the retention basin or the downstream receiving waters, and (5) sediment forebays to trap small amounts of sediment entering the Project area. The flow control facility will provide hydraulic distribution of flows for water quality treatment, duration/volume control and peak flow attenuation. The facility will provide temporary runoff storage volume to attenuate the peak flow rate and will also incorporate "extended detention" to provide water quality treatment for storm flows as part of the hydraulic detention time for stored runoff. Extended detention is designed with outlets that hydraulically limit the release of the stored runoff volume specifically for the water quality design storm volume (e.g. 85th percentile 24-hour storm) for some minimum time (e.g., 48 hours) to allow particles to settle. The flow control facility will also incorporate a pre-settling zone to provide additional treatment and mitigate nuisance/dry-weather flows. The facility will also provide "retention" that is separate and hydraulically independent of the "detention" zone. The retention feature will store the difference in runoff volume between the pre- and post-development conditions. The flow control facility may consist of single or multiple basins; or equivalent device(s) meeting these hydraulic and water quality performance requirements. Water quality treatment for storm water runoff and urban dry-weather flows will also be provided through the detention/retention basins system within the flow control facility portion.			
SEIR SD2	Future development within the Project area will include Low Impact Development (LID) features to be implemented through site design techniques within the Project area land plan as design elements. LID features will use natural vegetation and small-scale treatment systems to treat and infiltrate storm water runoff close to its origin.	Public Works		
Hazards and Hazardous Materials				

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
H1	The City will implement General Plan Implementation Program S-8 – Household Hazardous Waste Program, which requires the City to continue to work with the Salinas Valley Solid Waste Authority to implement the Household Hazardous Waste program to protect resident from dangers resulting from the use, transport, and disposal of hazardous materials used in the home.	County of Monterey Environmental Health Division, Salinas Valley Solid Waste Authority		
H2	The City will implement General Plan implementation Program S-9 – Small Business Hazardous Waste Program, which requires the City to continue to work with the Salinas Valley Solid Waste Authority to implement the Small Business Hazardous Waste Program, which allows qualified small businesses to dispose of their hazardous wastes at the Salinas Hazardous Household Waste Collection Facility.	County of Monterey Environmental Health Division, Salinas Valley Solid Waste Authority		
H3	The City will implement General Plan Implementation Program S-7 – Hazardous Materials, which requires the City to minimize public health risks and environmental risks from the use, transport, storage, and disposal of hazardous materials by: • Cooperating with federal, state, and county agencies to effectively regulate the management of hazardous materials and hazardous waste; • Cooperating with the County of Monterey to implement the applicable portions of the County Hazardous Waste Management Plan; • Identifying roadway transportation routes for conveyance of hazardous materials (the City does not exercise jurisdictional over transportation of freight along railroad right-of- way or state highways); • Implementing the Multi-Hazard Emergency Plan for accidents involving hazardous materials; and • Cooperating with the Certified Unified program Agency (CUPA) for Salinas (the County of Monterey, Environmental Health Division) and the Salinas Fire Department to administer Risk Management Plans for businesses within the City. • Requiring development project applicants to provide a hazardous materials report documenting past uses of the property and reporting the results of soil sampling where needed to determine whether remediation is required.	County of Monterey, Environmental Health Division, Salinas Fire Department, California Department of Transportation		
H4	The City will implement General Plan Implementation Program S-6 – Pesticide Use, which requires the City to continue to monitor regulations governing the	Community Development, Fire Department, County		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	use of pesticides and work with the County Agricultural Commission to promote the responsible use of pesticides.	Agriculture Commission		
H5	The City will implement General Plan Implementation Program S-18 – Flood Control Insurance, which requires the City to continue to participate in the National Flood Insurance Program (NFIP).	Community Development, Development and Permit Services, Public Works		
H6	The City will implement General Plan Implementation Program S-19 – Flood Overlay District Regulations, which requires the City to continue to apply the Flood Overlay District regulations, pursuant to the City's Zoning Code and implement Section 9, Article VI of the Municipal Code, to minimize the potential impact to and from new development in areas subject to flooding. Update the boundaries of the District as needed to reflect current hydrologic conditions.	Community Development, Development and Permit Services, Public Works		
H7	The City will implement General Plan Implementation Program LU-17 – Project-Related Flood Control and Stormwater Management, which requires, as a condition of project approval, new development to provide adequate storm water and flood management facilities as determined by the Public Works Department. In order to determine the facility and Best Management Practices (BMP) needs, the City may require a hydrological/drainage analysis to be performed by a certified an City-approved engineer, with the cost of said analysis the responsibility of the project applicant.	Public Works		
H8	The City will implement General Plan Implementation Program S-22 – Promote Fire Prevention, which requires the City to promote fire prevention in Salinas by: • Working closely with the Salinas Fire Department to implement fire hazard education and fire prevention programs; • Coordinating with Cal Water and Alco water districts and the Salinas Fire Department to ensure that water pressure for existing developed areas and sites to be developed is adequate for fire fighting purposes; • Conform to Fire Department requirements for individual projects; • Adopting and implementing the most recent Uniform Fire Code provisions and appropriate amendments; and • Continue to require sprinklers in new buildings.	Development and Permit Services, Fire Department, water companies		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
H9	The City will implement General Plan Implementation Program CD-10 – Weed Abatement, which requires the City to continue to monitor and abate weeds throughout the community.	Weed Abatement Specialist		
H10	The City will implement General Plan Implementation Program LU-12 – Fire Protection, Emergency Services, and Law Enforcement Annual Level Of Service Review, which requires the City to review the level of services and funding levels at budget time, adjusting when necessary to ensure that adequate levels of service are provided and facilities are maintained.	Fire Department, Police Department		
H11	The City will implement General Plan Implementation Program LU-21 – Salinas Municipal Airport Master Plan, which requires the City to continue working with the Salinas Airport Commission to implement the Airport Master Plan, providing technical assistance and information to the Commission when necessary. Funding has been approved to update the Salinas Municipal Airport Master Plan. The update should contain the following: address minimum distance for Eastern bypass south of airport, define how Eastern bypass can best be integrated with ILS approach, and determine limitations on surrounding land uses and new roadways to allow continuation of airport operations, including the potential lengthening of runway 31/13, and the California International Airshow. Upon any update of the Airport Master Plan, the Monterey County Airport Land Use Plan or the California Airport Land Use Planning Handbook, the Salinas General Plan will be reviewed and revised, as necessary.	Community Development, Salinas Airport		
H12	The City will implement General Plan Implementation Program C-8 – Monterey County Airport Land Use Commission, which requires the City to continue to coordinate with the Monterey County Airport Land Use Commission (ALUC) on projects near the airport. Encourage ALUC to update its County Airport Land Use Plan.	Community Development, Salinas Airport, Public Works, County of Monterey, Development and Permit Services		
H13	The City will implement General Plan Implementation Program S-11 – Air Transportation Safety, which requires the City to minimize the potential for accidents related to aircraft operation by coordinating with the Monterey County Airport Land Use Commission (ALUC) to review development proposals for compatibility with the Salinas Municipal Airport Master Plan, Monterey County Airport Land Use Plan, and California Airport Land Use Planning Handbook for	Community Development, Development and Permit Services, Monterey County ALUC, Salinas Airport		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	comprehensive airport land use planning.			
H14	The City will implement General Plan Implementation Program S-12 – Salinas Municipal Airport Master Plan, which requires the City to revise the Airport Master Plan in order to update operational and safety procedures, reflect State and Federal mandates, better utilize airport property, and recommend land use compatibility standards for land surrounding the airport.	Community Development, Salinas Airport, ALUC		
H15	The City will implement General Plan Implementation Program N-4 – Salinas Municipal Airport Master Plan, which requires the City upon any update of the Salinas Municipal Airport Master Plan, the County Airport Land Use Plan, or California Airport Land Use Planning Handbook, review and revise as necessary Table N-4, Figure N-2, and the goals, policies, and noise plan within the General Plan Noise Element to correspond with the updated Airport Master Plan.	Community Development, Salinas Airport Commission, ALUC		
H16	The City will implement General Plan Implementation Program S-23 – Multi-hazard Emergency Plan, which requires the City to annually review and update the Multi-Hazard Emergency Plan under the provision of the State Emergency Management System format to maximize the efforts of emergency service providers (e.g., fire, medical, and law enforcement) and minimize human suffering and property damage during disasters. Provide annual practice sessions to the City. Support high-level multi-jurisdictional cooperation and communication for emergency planning and management. Solicit private individuals and organizations to enhance service provider communications and response with cellular telephones, ham radios, AM/FM radio, and cable television.	Community Development, Police Department, Fire Department, public and private medical facilities, Monterey County Emergency Communications, Monterey County Mobile Emergency Coordination Unit, Federal Emergency Management Agency (FEMA), American Red Cross, Monterey County Office of Emergency Services		
H17	The City will implement General Plan Implementation Program S-23 – Emergency Preparedness Education, which requires the City to coordinate with local agencies and organizations to educate all citizens to take appropriate action to safeguard life and property during and immediately after emergencies.	Fire Department, Federal Emergency Management Agency (FEMA), American Red Cross, Monterey County Office of Emergency Services		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
Biological Resources				
BR1	The City will implement General Plan Implementation Program COS-17 – Setbacks and Open Space Easements to Protect Riparian and Wetland Corridors, on an ongoing basis. Implementation Program COS-17 requires project developers to protect and enhance riparian corridors through setbacks and open space easements within development areas along Gabilan and Natividad Creeks and other streams in the planning area. Protect and enhance wetlands by requiring setbacks and open space easements within future development areas in the planning area. A 100-foot setback area shall be established along Gabilan and Natividad Creeks and other unnamed creeks within the planning area. The setback shall be measured from the top of bank, or outside edge of riparian woodland, whichever is greater. A 100-foot setback area shall be established along wetlands not associated with creeks (i.e., seasonal wetland swales or ponds) within the planning area. The riparian setback shall be measured from the top of bank, or outside edge of riparian woodland, whichever is greater. The wetland setback shall be measured from the outside edge of the wetland. Except as set forth below, development activities would be prohibited in the setback area; however, the City shall consider exceptions for passive recreational uses (i.e., trails, playfields, and picnic areas). Except as set forth below, no building or structure shall be developed in the setback area. The existing riparian woodland or wetland shall be protected from construction disturbance. Fencing shall be temporarily placed at the outside edge of the setback area during construction. This fencing shall remain in-place until construction is complete. If recreational trails are placed within the buffer area, implement a re-vegetation program wherein a vegetative buffer is established between the trail and the outside edge of the riparian woodland. For properties located in the City's existing boundary as indicated on *Figure LU-1of the General Plan Land Use Element,* development activities may be considered within the setback area if the City Planner determines the encroachment will not have a significant adverse impact on the riparian and wetland resources either because: i) the implementation of alternative mitigation measures will achieve a comparable or a better level of mitigation than the strict application of the one hundred foot (100') setback, or ii) the property being developed is adjacent to a reclamation ditch, and no riparian or wetland resources are identified outside the areas of the improved ditch, as demonstrated and confirmed in either case by a biotic resources study (prepared for the City Planner by his or her designee). The	Community Development, Development and Permit Services, Recreation-Parks, ACOE, FWS, CDFG		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	applicant shall be responsible for the costs of the study, mitigation, and required monitoring.			
BR2	The City will implement General Plan Implementation Program COS-17 – Riparian/Wetland Habitat Mitigation and Management, on an ongoing basis. Implementation Program COS-17 requires the project developer to retain creeks and wetlands in their natural channels rather than placing them in culverts or underground pipes, where feasible. Where streambanks must be deepened, widened or straightened, they should be landscaped and revegetated afterward. Where wetlands are impacted, they should be re-created afterwards. If impacts are incurred to creeks and/or riparian woodlands as part of development within the planning area, the project applicant shall develop and implement a riparian/wetland habitat mitigation and management plan. The plan shall specify the replacement ratio for impacts to riparian resources and to wetland resources, pursuant to current state and federal policies. The project applicant shall receive authorization to fill wetlands and "other" waters from the US Army Corps of Engineers, pursuant to the requirements of the Clean Water Act. The project applicant shall also obtain a water quality certification (or waiver) from the Regional Water Quality Control Board, consistent with requirements of this State agency. The project applicant shall also obtain a 1601/1603 Streambed Alteration Agreement from the California Department of Fish and Game, pursuant to Fish and Game Code. These permits shall be received prior to any site grading that may occur in or immediately adjacent to creeks or wetlands. The project applicant shall also receive authorization from the National Marine Fisheries Service for "take" of steelhead and from the U. S. Fish and Wildlife Service for "take" of California red-legged frog, if work cannot avoid impacts to creek resources and/or these species. Pursuant to provisions of the Section 404 permit, 1601/1603 Streambed Alteration Agreement and State water quality certification (or waiver), the	Community Development, ACOE, FWS, CDFG		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	project applicant shall implement a riparian/wetland mitigation plan, and any other measures so identified by regulatory agencies. This plan shall identify measures for the applicant to compensate for unavoidable impacts to riparian or wetland resources. A minimum 1:1 replacement ratio is typically recommended for impacted wetland resources to satisfy requirements of the U.S. Army Corps of Engineers and the Regional Water Quality Control Board (RWQCB). A minimum 3:1 replacement ratio is typically recommended for impacted riparian resources to satisfy requirements of the CDFG. The applicant shall also identify and implement a 5-year maintenance and monitoring program.			
BR3	The City will implement General Plan Implementation Program COS-19 – Reduce Nitrate and Sediment Input to Creeks, on an ongoing basis. Implementation Program COS-19 requires the City to cooperate with the Regional Water Quality Control Board and the Resource Conservation District in their efforts to develop a plan to assist agricultural operations to reduce nitrate and sediment input to creeks. Such a plan will enhance water quality and benefit aquatic plants and wildlife within the planning area as well as downstream.	Community Development, Regional Water Quality Control Board, Resource Conservation District		
BR4	The City will implement General Plan Implementation Program COS-20 – Oak Tree Retention, on an ongoing basis. Implementation Program COS-20 requires the project developer to retain coast live oak and valley oak trees within the planning area, including oaks within new development areas. All coast live oak and valley oak trees should be surveyed prior to construction to determine if any raptor nests are present and active. If active nests are observed, the construction should be postponed until the end of the fledgling.	Community Development		
BR5	The City will implement General Plan Implementation Program COS-21 – Protection and Enhancement of Special Status Species, on an ongoing basis. Implementation Program COS-20 requires the project developer to protect and enhance special status species habitat through setbacks and open space easements within new development and/or redevelopment areas. Protection and enhancement of special status species habitat by State and Federal Agencies, with the cooperation of the City, to ensure persistence of the species within the setback areas. Surveys shall be conducted at the appropriate season to ascertain whether the habitats within the proposed project area support special status species. If	Community Development, ACOE, FWS, CDFG		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	special status species are observed, avoidance measures shall be implemented. A qualified biologist shall conduct a biological assessment of all habitat areas to assess the potential for the following special status species: Congdon's tarplant, Contra Costa goldfields, Pinnacles buckwheat, Alkali milk-vetch, Santa Cruz clover, Hutchinson's larkspur, Kellogg's horkelia, Burrowing owl, and/or California tiger salamander. If suitable habitat for any of these species is observed, then focused surveys during the appropriate season should be conducted. Such surveys would include winter and spring surveys for tiger salamander, protocol presence/absence surveys for burrowing owl, and spring/summer surveys for special status plant species. The California Department of Fish and Game shall be consulted regarding the appropriate level of effort and protocol prior to conducting focused wildlife species surveys. If any of these species are found to inhabit the survey area, the City may require the preparation and implementation of a Habitat Management Plan to provide protection for the habitat. If impacts to occurrences are deemed unavoidable, the plan shall identify mitigation measures to compensate for impacts to the species. As part of the Habitat Management Plan, a 100-foot buffer shall be established around rare plant occurrences. The plan shall include measures to manage the rare plant occurrences for their protection and persistence at the site. The Habitat Management Plan shall be reviewed and approved by California Department of Fish and Game and/or USFWS prior to issuance of any permits by the City. Prior to any proposed development within 150 feet of the stream corridors, protocol presence/absence surveys for California red-legged frog, southwestern pond turtle, and nesting birds should be conducted. If these species are observed, the CDFG and the USFWS should be consulted regarding appropriate measures to avoid and mitigate potential impacts of the project on these species. The City shall not issue any permits prior to obtaining written approval from the CDFG and/or USFWS that the proposed mitigation plan has been approved. Prior to any proposed development within or adjacent to oak woodland, a qualified biologist should conduct surveys to determine if protected wildlife species are nesting in the oak woodland, e.g., nesting raptors. If trees are to be removed, a qualified bat biologist should evaluate the trees as potential bat roost sites prior to removal, and recommend measures to avoid impacts to bats, such			

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	as exclusionary devices.			
Agricultural Resources				
AG3	The City will implement General Plan Implementation Program COS-11, which requires the City to be consistent with the County of Monterey's "Right-to-Farm" Ordinance, and the County of Monterey Draft General Plan Policy LU-7.8 and Actions LU-7.b and LU-7.c, revise the City's Zoning Ordinance to require the recordation of a Right-to-Farm Notice as a condition of discretionary permit approval for residential development within 1,000 feet of an established agricultural operation. The purpose of the Notice is to acknowledge that residents in the area may experience inconveniences and discomfort associated with the normal farming and grazing activities, such as noise and dust. The Notice shall specifically state that a variety of activities may occur that may be incompatible with the proposed development and that an established agricultural operation in full compliance with applicable laws, shall not be considered a nuisance due to changes in the surrounding area. The Notice shall also state that a person's right to recover under a nuisance claim against these activities may be restricted.	Community Development, ACOE, FWS, CDFG		
AG4	The City will implement General Plan Implementation Program COS-10 - Buffers, which requires the City to encourage the provision and maintenance of buffers, such as roadways, topographic features, and open space, to prevent incompatibilities between agricultural and non-agricultural land uses. A number of factors shall be used to determine the appropriate buffer, including type of agricultural use, topography, and pesticide and machinery use, among others.	Community Development		
Geology/Soils				
GS1	The City will implement General Plan Implementation Program S-14, Natural Hazards Risk Reduction, prior to the approval of a discretionary permit. Implementation Program S-14 requires the City to assess development proposals for potential hazards pursuant to the California Environmental Quality Act, requiring measures when necessary to mitigate all identified public safety hazards.	Community Development, Fire Department, Public Works		
GS2	The City will implement General Plan Implementation Program S-15 – Open	Community Development		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	Space Easements for Natural Hazards, when the threat from natural hazards cannot be mitigated through geotechnical and structural design methods. Implementation Program S-15 requires the City to use open space easements and other regulatory techniques to prohibit development and avoid unmitigable public safety hazards.			
GS3	The City will implement General Plan Implementation Program S-16 – Structural Design, on an ongoing basis. Implementation Program S-16 requires the City to implement the most recent state building and seismic requirements for the structural design of new development and redevelopment projects.	Development and Permit Services		
GS4	The City will implement General Plan Implementation Program S-17 – Soil and Geologic Surveys, on an ongoing basis. Implementation Program S-17 requires that during the review of development and redevelopment proposals, the City require surveys of soil and geologic conditions by state licensed Engineering Geologists and Civil Engineers where appropriate. When potential geologic impacts are identified, the City shall require project applicants to mitigate the impacts per the recommendations contained within the geologic survey.	Community Development, Development and Permit Services, Public Works		
GS5	The City will implement General Plan Implementation Program S-23 – Multi-hazard Emergency Plan, on an ongoing basis. Implementation Program S-23 requires the City to maintain the Multi-hazard Emergency Plan under the provision of the State Emergency Management System format to maximize the efforts of emergency service providers (e.g., fire, medical, and law enforcement) and minimize human suffering and property damage during disasters. Support high-level multi-jurisdictional cooperation and communication for emergency planning and management. Solicit private individuals and organizations to enhance service provider communications and response with cellular telephones, ham radios, AM/FM radio, and cable television.	Community Development, Police Department, Fire Department, public and private medical facilities, Monterey County Emergency Communications, Monterey County Mobile Emergency Coordination Unit, Federal Emergency Management Agency (FEMA), American Red Cross, Monterey County Office of Emergency Services		
GS6	The City will implement General Plan Implementation Program S-24 – Emergency Preparedness Education, on an ongoing basis. Implementation Program S-23 requires the City coordinate with local agencies and organizations	Fire Department, Federal Emergency Management Agency (FEMA), American		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	to educate all residents and businesses to take appropriate action to safeguard life and property during and immediately after emergencies.	Red Cross, Monterey County Office of Emergency Services		
Aesthetics				
A1	The City will implement General Plan Implementation Program CD-1 – City Gateway Guidelines. Implementation Program CD-1 requires the City to implement the City's Gateway Guidelines addressing identification graphics and entry signs, lighting, and landscaping for the City's major entry points identified in Figure CD-1.	Community Development		
A2	The City will implement General Plan Implementation Program CD-2 – Architectural Design. Implementation Program CD-2 requires the City to strengthen the City's Design Guidelines and require compliance to enhance the City's visual appeal and ensure compatible, aesthetically pleasing development with particular emphasis on: 1) historic areas of the community; and 2) properties visible from Highway 101.	Community Development, Redevelopment Agency		
A3	The City will implement General Plan Implementation Program CD-3 – Lighting Ordinance, on an ongoing basis. Implementation Program CD-3 requires the City to improve the City Lighting Ordinance to ensure that: 1) all future outdoor lights include cut-off lenses to minimize light dispersion above the fixture head; 2) a lighting study is required to be performed when appropriate to ensure adequate light levels, while not exceeding industry standards; and 3) sky glow is reduced.	Community Development		
A4	The City will implement General Plan Implementation Program CD-4 – Landscaping Standards, on an ongoing basis. Implementation Program CD-4 requires the City to implement landscaping requirements for public and private development and redevelopment projects to promote greater visual and functional compatibility with residential development and pedestrian/bicycle use.	Community Development, Redevelopment Agency		
A5	The City will implement General Plan Implementation Program CD-5 – Review Discretionary Development Projects, on an ongoing basis. Implementation Program CD-5 requires the City to review discretionary development proposals	Community Development		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	for potential aesthetics impacts per the California Environmental Quality Act (CEQA). The standards established in the Zoning Code, the City's Design Guidelines, Landscaping Standards, Lighting Ordinance, Gateway Guidelines, the projects incorporation of Traditional Neighborhood Development (TND) characteristics, and the projects potential to damage or block scenic resources and views will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of project redesign (e.g., bulk, height, architectural details, lighting) will be required to reduce the impact to a level less than significant.			
A6	The City will implement General Plan Implementation Program COS-10 – Buffers, on an ongoing basis. Implementation Program COS-10 requires the City to encourage the provision and maintenance of buffers, such as roadways, topographic features, and open space, to prevent incompatibilities between agricultural and non-agricultural land uses. A number of factors shall be used to determine the appropriate buffer, including type of agricultural use, topography, and pesticide and machinery use, among others.	Community Development		
A7	The City will implement General Plan Implementation Program COS-9 – Boronda Memorandum of Understanding, on an ongoing basis. Implementation Program COS-9 requires the City to continue to cooperate with the County of Monterey to implement the Boronda Memorandum of Understanding, which directs that City growth occur generally to the north and east away from the most productive farmland.	Community Development, County of Monterey		
A8	The City will implement General Plan Implementation Program LU-7 – City-Centered Growth, on an ongoing basis. Implementation Program LU-7 requires the City to give priority to redevelopment and infill projects that reduce development pressure on agricultural lands and establish an incentive program to promote these projects, such as priority permit processing and density bonuses, for such developments.	Community Development, Redevelopment Agency		
A9	The City will implement General Plan Implementation Program CD-8 – California Main Street Program on an ongoing basis. Implementation Program CD-8 requires the City to expand community participation in the Main Street Program and continue to work with the Program to create an identity that emphasizes our cultural heritage and attracts businesses and consumers to the	Community Development, Public Works, Redevelopment Agency, Oldtown Salinas organization		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	downtown area.			
A10	The City will implement General Plan Implementation Program COS-14 – Historic/Architectural Preservation, on an ongoing basis. Implementation Program COS-13 requires the City to consider implementing a historic/architectural preservation program and a historic/architectural preservation ordinance that encourages public/private partnerships to preserve and enhance historically significant buildings in the community. Measures to implement may include, but are not limited to, Transfer of Development Rights (TDR), establishment of criteria for a historic/architectural resources review process, and implementation of a Mills Act program. TDR could benefit the community by protecting historic resources through an agreement that allows the development potential ("rights") on the historic property to be transferred to another property when the historic resources on the original property is preserved. The Mills Act program would involve the City entering into a contract with a property owner to change how the County Assessor calculates taxes on their property in exchange for the continued preservation of the property by the property owner. The adjusted property taxes are recalculated using a formula in the Mills Act and Revenue and Taxation Code.	Community Development, Redevelopment Agency, City Manager's Office, City Council, County Assessors Office		
Population and Housing				
PH1	The City will implement General Plan Implementation Program HE-2 – Provision of Future Sites, which requires the City to continue to work with the Local Agency Formation Commission to ensure that sufficient land, infrastructure, and services are available to support housing development.	Community Development		
PH2	The City will implement General Plan Implementation Program LU-12 – Fire Protection, Emergency Services, and Law Enforcement Annual Level of Service Review, which requires the City to review the level of services and funding levels at budget time, adjusting when necessary to ensure that adequate levels of service are provided and facilities are maintained.	Fire Department, Police Department		
PH3	The City will implement General Plan Implementation Program C-3 – Capital Improvement Plan, which requires the City to continue to update on an annual basis the Capital Improvement Plan to plan for and fund future improvements to	Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	the circulation system, as well as other public facilities, including improvements to the existing pedestrian and bicycle system, within the community.			
PH4	The City will implement General Plan Implementation Program COS-9 – Boronda Memorandum of Understanding, which requires the City to continue to cooperate with the County of Monterey to implement the Boronda Memorandum of Understanding, which directs that City growth occur generally to the north and east from the most productive farmland.	Community Development, County of Monterey		
PH5	The City will implement General Plan Implementation Program COS-33 – Promote Energy Retrofit Programs, which requires the City to promote retrofit programs by the City to reduce energy usage and consequently reduce emissions from energy consumption. Encourage utility companies to provide informational literature about available retrofit programs at City offices, the Permit Center, and libraries.	Development and Permit Services, utility companies		
PH6	The City will implement General Plan Implementation Program CD-11 – Smart Growth Principles, which requires the City to use the Smart Growth Network's Getting to Smart Growth: 100 Policies for Implementation (ICMA, 2002) or other similar policy manual, perform an "audit" of the City's Zoning and Subdivision Ordinances to identify potential impediments to the development of smart growth and traditional neighborhood development projects. Revise, adopt, and implement new standards and procedures as necessary to encourage smart growth and traditional neighborhood development in Salinas.	Community Development, Public Works		
PH7	The City will implement General Plan Implementation Program COS-23 – Monterey Bay Unified Air Pollution Control District Air Quality Management Plan, which requires the City to continue to cooperate with the Monterey Bay Unified Air Pollution Control District to implement the most recent Air Quality Management plan to address regional motor vehicle emissions. In particular, coordinate with the District and AMBAG, providing technical assistance and demographic data when available, during the development of future population projections by AMBAG.	Community Development, Monterey Bay Unified Air Pollution Control District, AMBAG		
Public Services and Utilities				
PSU1	The City shall require new development to provide parkland and/or in-lieu fees,	Recreation-parks		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	as allowed by law, to provide for three acres of parkland for every 1,000 residents.			
PSU2	The City will implement General Plan Implementation Program LU-16 – Monterey Regional Water Pollution Control Agency, which requires the City to continue to work with the Monterey Regional Water Pollution Control Agency (MRWPCA) to plan for and ensure adequate capacity for sewage treatment facilities.	Public Works, MRWPCA		
PSU3	The City will implement General Plan Implementation Program LU-14 – Water and Sewer Services for New Development, which requires the City to review development proposals and require necessary studies, as appropriate, and water conservation and mitigation measures to ensure adequate water and sewer service.	Community Development, Public Works, Water Providers, Monterey Regional Water Pollution Control Agency (MRWPCA)		
PSU4	The City will implement General Plan Implementation Program LU-15 – Sewer and Drainage master Plan, which requires the City to continue to implement and update the Sewer and Drainage Master Plan as necessary. In addition, as part of the Master Plan update, the City will analyze the need for additional pump station capacity and identify methods to reduce the wet weather flows.	Public Works		
PSU5	Requires developers and the City to install essentially leak-free sewer piping in new developments and in City collection system projects that will prevent inflow/infiltration (I/I) from entering the system. City shall also conduct smoke testing, inspection, and improvements to the existing sanitary sewer system to help prevent I/I.	Public Works		
SEIR WW1	The City shall implement 15 percent water conservation measures for development within the Project area.	Community Development, Development and Permit Services, Public Works		
SEIR WW2	The City shall confirm the availability of adequate sewage treatment capacity prior to the approval of each tentative subdivision map within the Project area.	Community Development, Development and Permit Services, Public Works		
SIGNIFICANT AND UNAVOIDABLE CUMULATIVE IMPACTS				

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
Regional Circulation System				
	(see previous C3, C5 and C7)			
Vehicular Traffic Noise				
	(see previous N2 and N5)			
Regional Air Quality				
	(see previous AQ1 through AQ7)			
Groundwater				
	(see previous HW4 and HW9 through HW13)			
Cultural Resources				
	(see previous CR1)			
Conversion of Agricultural Land				
	(see previous AG1, AG2, and AG5)			
Parkland				
	(see previous PSU1)			
Solid Waste				
	(see previous PSU6)			
Global Climate Change				
SEIR GCC1	Within 36 months, the City shall establish a global climate change action plan that includes a baseline inventory of all GHG emissions associated with all residences, businesses, industries, agriculture, municipal operations, and other sources within the City limits; establishment of a GHG emissions reduction	Community Development, Development and Permit Services, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	target; development of enforceable, feasible GHG emissions reduction measures to meet the established target; and performance monitoring of the GHG emissions reduction measures shall occur every 3 years to ensure the emissions reductions are being achieved.			
SEIR GCC2	Prioritized parking within new commercial and retail areas shall be given to electric vehicles, hybrid vehicles, and alternative fuel vehicles.	Community Development, Development and Permit Services, Public Works		
SEIR GCC3	The City shall require that new or major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) for residential projects of 6 units or more comply with at least one of the following: • Participate in the CEC's New Solar Homes Partnership (this program provides rebates to developers of 6 units or more who offer solar power in 50 percent of new units), or a similar program with solar power requirements equal to or greater than those of the CEC's New Solar Homes Partnership as demonstrated to the City by the project applicant. • Design, construct, or retrofit 50 percent of the square footage of the building(s) that are part of the project capable of being certified under one of the following Leadership in Energy and Environmental Design (LEED) or equivalent building rating systems: LEED for New Construction; LEED for Existing Buildings, LEED for Homes, LEED for Core & Shell, or any Application Guides of these rating systems. However, no formal LEED certification shall be required, and the City Manager or his/her designee shall make the determination that the potential for LEED certification has been achieved. All credits used to demonstrate capability to meet one of the above certifications must directly or indirectly result in a reduction in GHG emissions.	Community Development, Development and Permit Services, Public Works		
SEIR GCC4	The City shall require that new or major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) of commercial, office, or industrial development greater than or equal to 25,000 square feet in size must incorporate renewable energy generation (on- or off-site) to provide 15 percent or more of the project's energy needs.	Community Development, Development and Permit Services, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
SEIR GCC5	The City shall require new development or redevelopment projects in excess of 10 acres in size be capable of meeting the certification requirements of the LEED for Neighborhood Development Rating System Pilot Version (February 2007) ("LEED ND"). However, no formal certification shall be required, and the City Manager or his/her designee shall make the determination that the potential for certification has been achieved. All credits used to demonstrate capability to meet the LEED ND certification must directly or indirectly result in a reduction in GHG emissions.	Community Development, Development and Permit Services, Public Works		
SEIR GCC6	The City shall require that the design or purchase of any new street lights and water and wastewater pumps and treatment systems achieve a 10 percent reduction beyond an estimated baseline energy use for this infrastructure. All new traffic lights installed within Salinas shall use LED technology.	Community Development, Development and Permit Services, Public Works		
SEIR GCC7	The City shall require all new development or major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) projects to recycle and/or salvage at least 50 percent of nonhazardous construction and demolition debris. To implement this requirement, a construction waste management plan identifying materials to be diverted from disposal and whether the materials will be stored on-site or commingled shall be developed and implemented by the applicant for said development or rehabilitation. Excavated soil and land-clearing debris do not contribute to this credit. Calculation can be done by weight or volume but must be consistent throughout.	Community Development, Development and Permit Services, Public Works		
SEIR GCC8	The City shall require all new development and major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) projects to incorporate any combination of the following strategies to reduce heat gain for 50 percent of the nonroof impervious site landscape (including roads, sidewalks, courtyards, parking lots, and driveways): • Shaded (within 5 years of occupancy) • Paving materials with a Solar Reflectance Index (SRI) of at least 29 • Open grid pavement system • Parking spaces under cover (defined as underground, under deck, under roof, or under a building). Any roof used to shade or cover parking	Community Development, Development and Permit Services, Public Works		

Mitigation Number	Nature of Mitigation	Responsible Agency/Department[1]	Implementation Confirmed	Remarks
	must have an SRI of at least 29.			
SEIR GCC9	The City shall require that all new development or major rehabilitation (additions of 25,000 square feet of office/retail commercial or 100,000 square feet of industrial floor area) projects incorporate "green building" points in construction plans prior to issuing a permit to build. Such points may be achieved through checklists identified by New Home Construction Green Building Guidelines available at www.builditgreen.org, or through a similar list that distinguishes specific measures targeting efficiencies in energy, resource use, or other measures that would also directly or indirectly result in GHG emission reductions. Specific efficiencies that would reduce GHG emissions should be implemented where feasible for all project areas including site design, landscaping, foundation, structural frame and building envelope, exterior finishing, plumbing, appliance use, insulation, heating, venting and air conditioning, building performance, use of renewable energy, finishes, and flooring.	Community Development, Development and Permit Services, Public Works		

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