FINAL SUPPLEMENT
FOR THE SALINAS GENERAL PLAN
FINAL PROGRAM EIR

SCH# 2007031055

November 19, 2007

Prepared for:

City of Salinas
200 Lincoln Avenue
Salinas, CA 93901
(831) 758-7357

Prepared by:

EDAW, Inc.
1420 Kettner Boulevard
Suite 500
San Diego, CA 92101
(619) 233-1454

APPENDICES

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APPENDIX A
NOTICE OF PREPARATION (NOP), RESPONSES TO THE NOP

NOTICE OF PREPARATION

DATE: March 5, 2007

TO: Responsible Agencies

FROM: City of Salinas

SUBJECT: **Notice of Preparation (NOP) of Draft Supplemental Environmental Impact Report (SEIR) to the Final Environmental Impact Report certified by the Salinas City Council on September 17, 2002 for the Salinas General Plan. The Supplemental Environmental Impact report is being prepared in support of the City of Salinas' pending applications to the Monterey County Local Agency Formation Commission (LAFCO) for a Sphere of Influence Amendment and Annexation as discussed herein.**

The City of Salinas needs to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed Sphere of Influence Amendment and Annexation. Your agency (Responsible Agencies) will need to use the EIR prepared by our agency (Lead Agency) when considering agency actions in connection with the project.

The City of Salinas (City) will be the Lead Agency and will prepare a Supplemental Environmental Impact Report for the project identified below. The City has determined through the preparation of an Initial Study that the probable environmental effects of the project include, however may not be limited to, air quality (global warming), hydrology and water quality (groundwater supplies and stormwater drainage), traffic and circulation (regional transportation system) and utilities/service systems (regional sewage treatment plant capacity). The final determination of environmental issues to be addressed in the SEIR will be resolved as a result of this NOP and consultation through a public scoping process.

Due to the time limits mandated by state law, your response must be sent at the earliest possible date but not later than thirty (30) days after receipt of this NOP. Please send your response and the name of an agency contact person to the City of Salinas at the address shown below.

Project Title:
Supplemental EIR to the Salinas General Plan FEIR for the Salinas Future Growth Area proposals for a Sphere of Influence Amendment and Annexation.

Project Applicant:
City of Salinas

Send Response To:
Robert Richelieu
City of Salinas
Department of Engineering and Development Services
200 Lincoln Avenue
Salinas, CA 93901

Telephone: (831) 758-7241
Email: robertr@ci.salinas.ca.us

Scoping Sessions:

Responsible Agencies:	Thursday, March 15, 2007, 2:00 PM Salinas City Hall – West Wing Conference Room 200 Lincoln Avenue Salinas, CA 93901
Public:	Thursday, March 15, 2007, 7:00 PM Salinas City Hall – Rotunda 200 Lincoln Avenue Salinas, CA 93901

The Scoping Sessions will be conducted per Public Resources Code Section 21083.9.

Project Location and Description:
The City of Salinas (City) proposes: 1) a sphere of influence (SOI) amendment (hereinafter referred to as SOI Amendment); and 2) an annexation of unincorporated Monterey County land to the City of Salinas (hereinafter referred to as Annexation). The proposed project is currently within the jurisdiction of the County of Monterey and consists of two overlapping geographic areas.

The first is the SOI Amendment area. The City's current SOI is depicted in **Figure 1**. The SOI Amendment area is depicted in **Figure 2** and includes lands located to the north and east of the current City boundaries. The second geographic area is the Annexation area, as depicted in Figure 3. The Annexation area includes unincorporated Monterey County lands within a portion of the SOI Amendment area and is generally bounded by Rogge Road and a future extension of Russell Road on the north, Old Stage Road on the northeast, Williams Road on the east, Boronda Road on the south, and San Juan Grade Road on the west (see Figure 3). The SOI Amendment area and Annexation area share common boundaries along Old Stage Road, Williams Road, Boronda Road and San Juan

Grade Road. However, east of Natividad Road and the future alignment of Russell Road, a portion of the Settrini property is included in the SOI Amendment request but is not included in the Annexation request (refer to **Figures 2 and 3**). On the east, the Annexation area boundary is Williams Road while the SOI Amendment area extends south to the Salinas Municipal Airport. The SOI Amendment and Annexation areas are located within the Future Growth Area as described in the City of Salinas General Plan. **Figure 4** identifies planned land uses for the SOI Amendment and Annexation areas which are consistent with those identified in Figure LU-3 of the General Plan. The planned alignment of Russell Road between Natividad Road and Old Stage Road varies slightly from the expected alignment identified in the General Plan Land Use and Circulation Policy Map (LU-3). Although this variation will add some additional land area to the SOI Amendment and Annexation areas, no additional development beyond that identified in the General Plan is planned for these areas

Development plans for the proposed Annexation area are underway through the preparation of Specific Plans. In accordance with the General Plan, development of the Annexation area could provide up to 11,761 total dwellings and 3.9 million square feet of non-residential development. Currently, there are no imminent development plans for the Sphere of Influence Amendment area. The City's General Plan requires the preparation of Specific Plans including annexation plans, prior to the approval of development projects in the Future Growth Area. The annexation plan is to include a plan for providing municipal services and a fiscal analysis describing how these services will be financed. Currently there are three Specific Plans under development for the Annexation area. A separate project EIR will be prepared for each Specific Plan. As illustrated in **Table 1**, the Sphere of Influence and Amendment Area contains approximately 3,347 gross acres (2,845 net acres) and is planned for up to 14,318 dwelling units and up to 9,023 square feet of commercial/office/mixed use and light industrial uses.

Table 1
Development Capacity
Sphere of Influence Amendment and Annexation Area

Development Type	Gross Acres	Net Acres	Dwelling Units	Non-Residential Square Feet (Thousands)
Residential	1,840	1,564	13,958	-
Commercial/Office/Mixed Use	151	129	360	2,686
Light Industrial	366	311	-	4,065
Open Space	990	842	-	2,272
Total Development Capacity	**3,347**	**2,845**	**14,318**	**9,023**

Regional Setting:
The City of Salinas is located in northern Monterey County between the Gabilan and Santa Lucia mountain ranges. Located at the northern end of the Salinas Valley, Salinas

is situated approximately 20 miles northeast of the City of Monterey, 60 miles south of San Jose, 101 miles south of San Francisco and 325 miles north of Los Angeles. The City is located in proximity to regional transportation routes including Highway 101, Routes 68 and 183, and the Union Pacific Railroad line, which traverse the City. Unincorporated land under the jurisdiction of the County of Monterey surrounds the City. Land uses in the areas surrounding the City include land in agricultural production, open space, commercial, and very low-density rural development.

Environmental Setting:
The SOI Amendment and Annexation areas contain approximately 3,455 acres and consists of relatively flat topography with slopes generally ranging from one to 10 percent. Existing land uses within the Project areas are primarily cultivated farmland and grazing lands. Other land uses within the areas are as follows: a 16-acre natural oak woodland parcel with a farmhouse and barn; Gabilan and Natividad Creek riparian corridors and a tributary riparian corridor; electrical easement with electric towers and lines; approximately 10 single-family residences, the majority of which are associated with ongoing agricultural operations; greenhouses; a church; and, barns, storage and other ancillary buildings. Additionally, McKinnon Elementary School is located on McKinnon Street north of Boronda Road in the northwest portion of the Annexation area. Based on 10 residences and an estimated 3.67 persons per household in the Salinas area, the Project areas contain a population of approximately 37 people.

Project Objectives:
The Salinas General Plan calls for future growth to occur within the SOI Amendment and Annexation areas. The City has purposely encouraged compact, dense and infill development and has limited the amount of land available for residential development at the City's boundaries in order to protect the region's best agricultural land, especially to the south and west of the City. As a result, Salinas is one of the most densely developed cities in California. The City has little developable land remaining within its boundaries. Overcrowding within the existing housing stock has resulted. Thus, the City seeks a SOI Amendment and Annexation to provide land for a variety of housing opportunities as well as employment opportunities, including industrial development. The City will continue to promote compact development within the Future Growth Area to minimize the loss of farmland.

Required Agency Approvals:
The proposed Project requires the approval of LAFCO of Monterey County, which has the authority to approve changes in organization (annexation) and sphere of influence amendments, per Government Code Section 56375. In addition, the proposed Project requires the approval of the City of Salinas City Council.

Probable Environmental Effects of the Project:
Probable environmental effects of the proposed Project include, but are not limited to, air quality (global warming), hydrology and water quality (groundwater supplies and stormwater drainage), traffic/circulation (regional transportation system), and

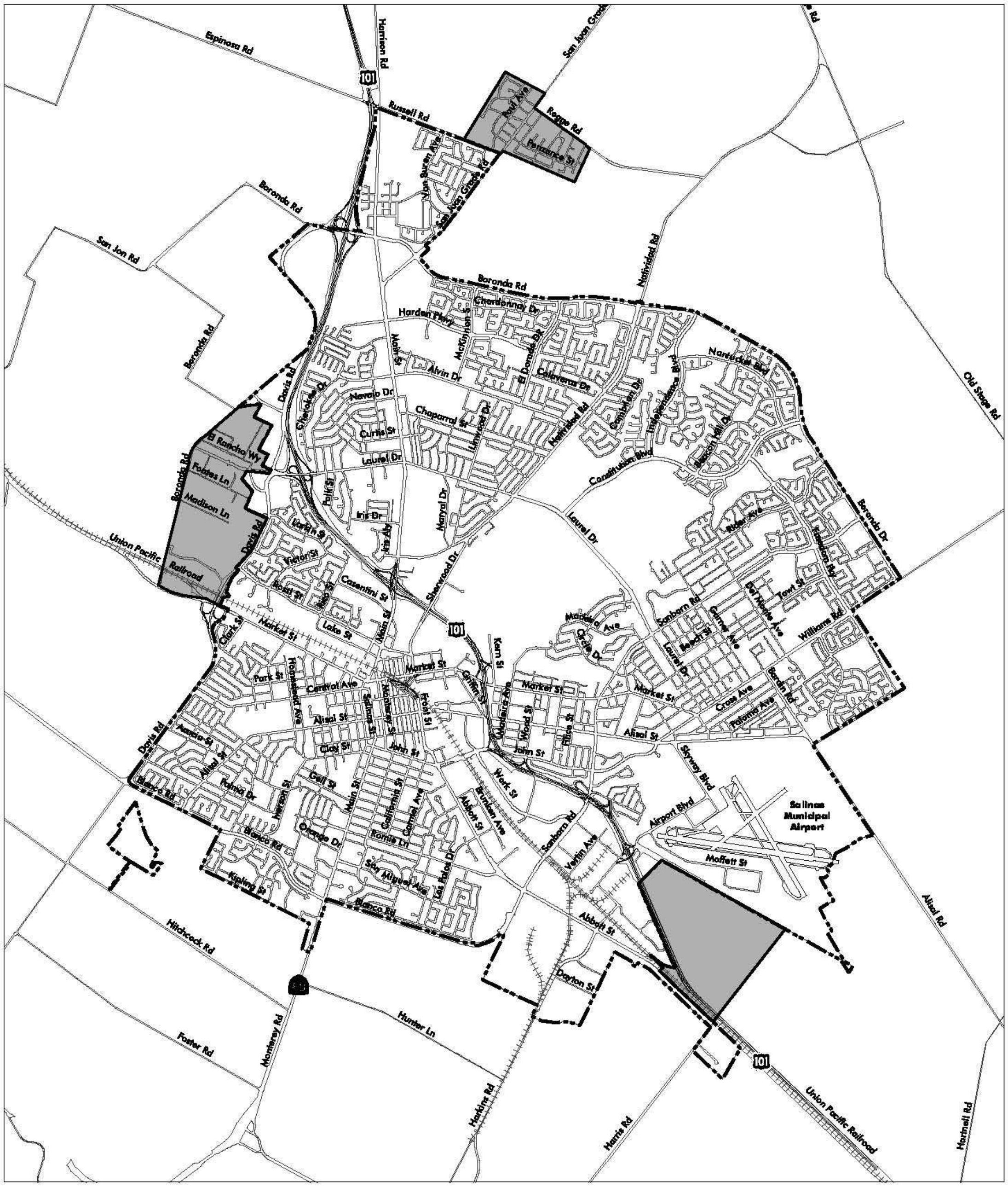
utilities/service systems (regional sewage treatment plant capacity). The final determination of environmental issues to be addressed in the EIR will be resolved as a result of the notice of preparation and public scoping process.

References:

California Code of Regulations, Title 14, Sections 15082(a), 15103 and 15375

Attachments:

Figure 1 – Existing Sphere of Influence
Figure 2 – Proposed and Existing Sphere of Influence
Figure 3 – Proposed Annexation Area
Figure 4 – Salinas General Plan Land Use and Circulation Policy Map with Proposed Sphere of Influence Area Highlighted



Legend

City Boundary

Existing Sphere of Influence

NORTH 0 0.5 1 1.5 2 Miles

Figure 1

City of Salinas
Existing Sphere of Influence

Legend

City Boundary

Existing Sphere of Influence

Proposed Sphere of Influence Amendment Area

NORTH 0 0.5 1 1.5 2 Miles

Figure 2

City of Salinas Proposed and Existing Sphere of Influence

City of Salinas

February 2007

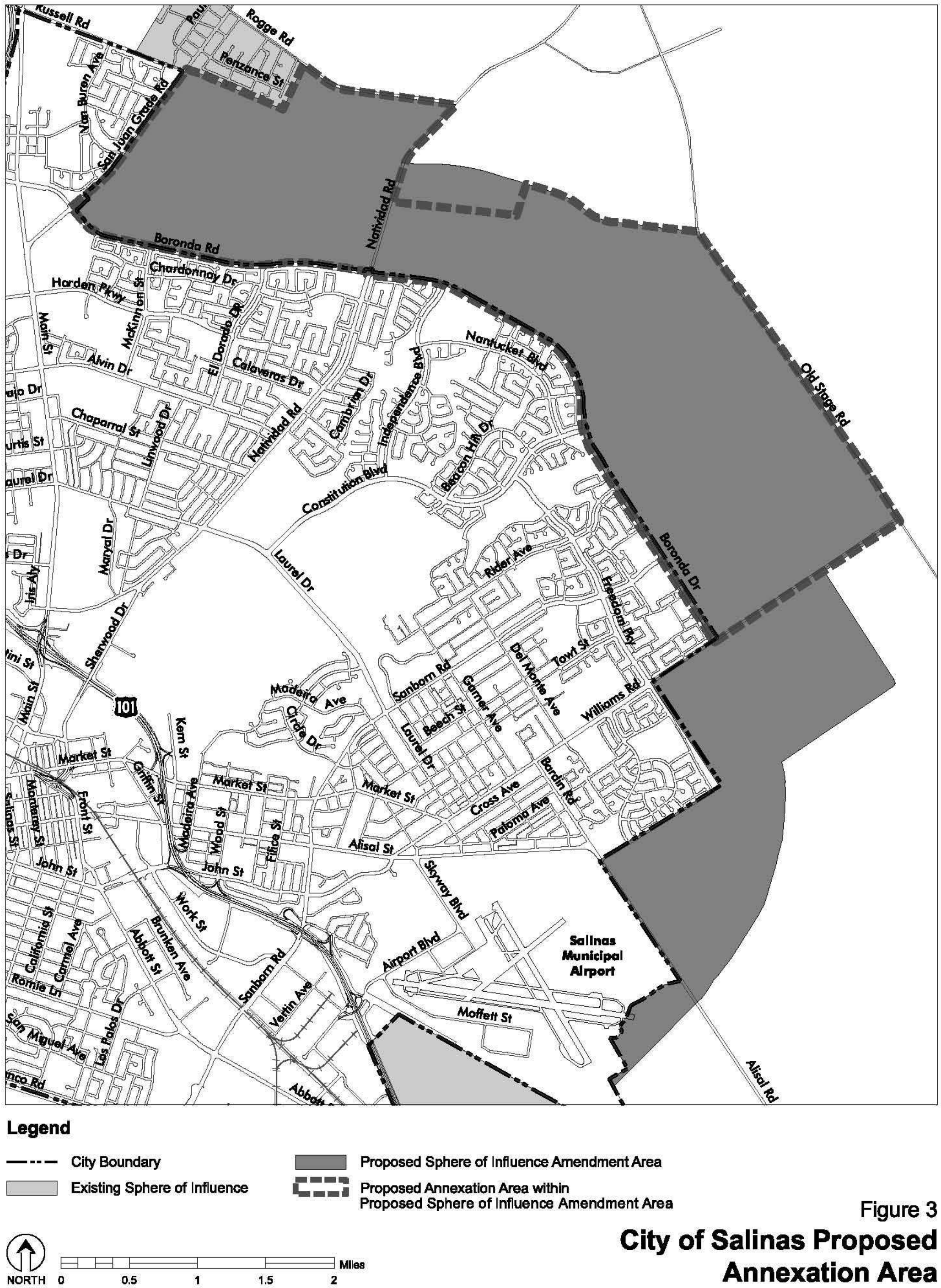


Figure 3
City of Salinas Proposed Annexation Area

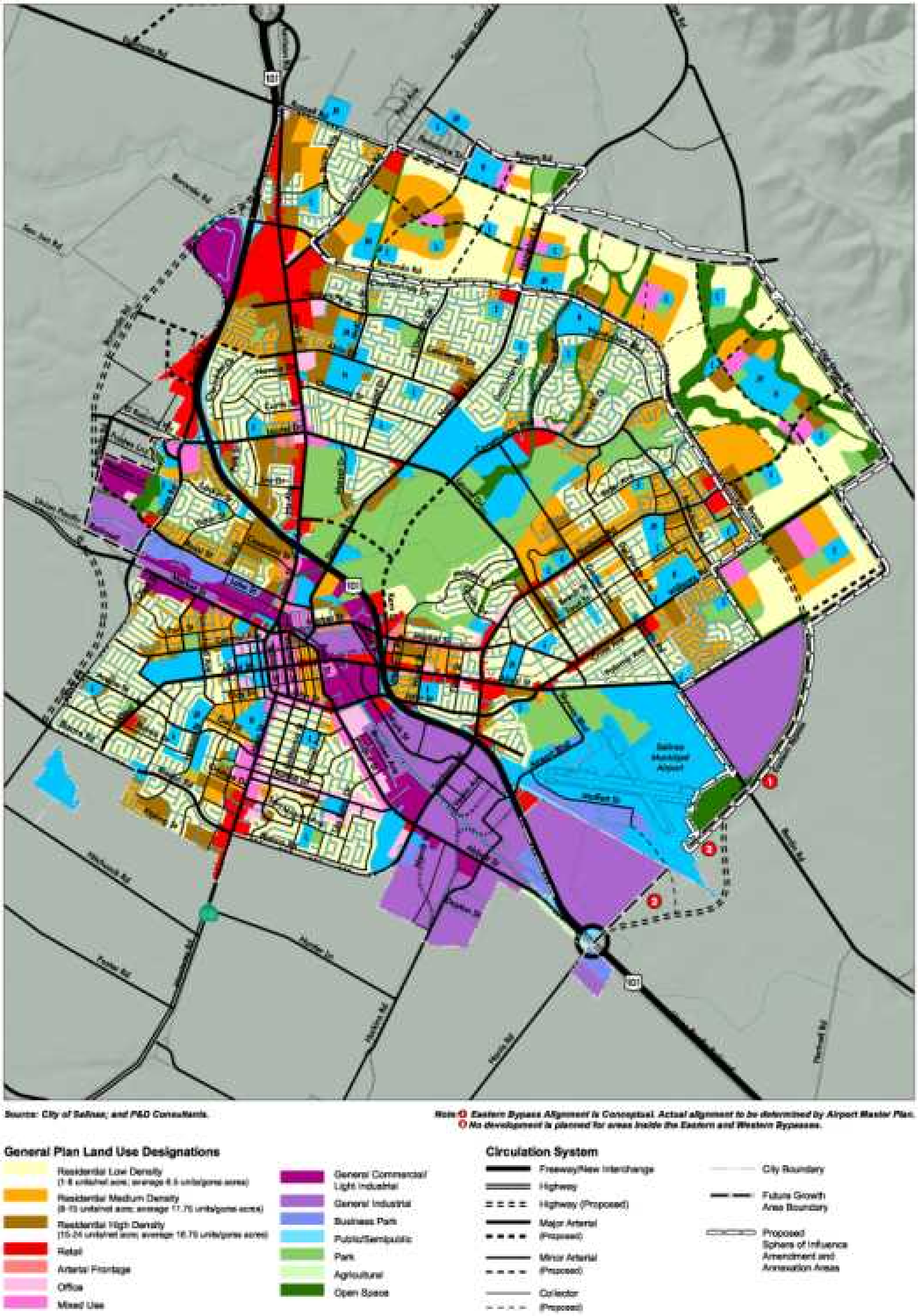


Figure 4
Land Use and Circulation Policy Map

AMBAG
ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS

RECEIVED
APR 16 2007
DEPT OF PUBLIC WORKS

April 11, 2007

Mr. Robert Richelieu
City of Salinas
Department of Engineering and
Development Services
200 Lincoln Avenue
Salinas, CA 93901

Re: MCH# 20070305 - Supplemental EIR for Salinas General Plan Growth Areas and Sphere of Influence Amendment and Annex

Dear Mr. Richelieu:

AMBAG's Regional Clearinghouse circulated a summary of notice of your environmental document to our member agencies and interested parties for review and comment.

The AMBAG Board of Directors considered the project on **March 31, 2007** and has no comments at this time.

Thank you for complying with the Clearinghouse process.

Sincerely,

Nicolas Papadakis
Executive Director

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445 RESERVATION ROAD, SUITE G ✦ P. O. BOX 809 ✦ MARINA, CA 93933-0809
(831) 883-3750 ✦ FAX (831) 883-3755 ✦ www.ambag.org

Salinas Union High School District

Roger C. Antón, Jr.
Superintendent
superintendent@salinas.k12.ca.us

Nina Van Cleave
Administrative Assistant
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Tim Vanoli
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James A. Earhart
Associate Superintendent/
Chief Business Officer
jearhart@salinas.k12.ca.us

RECEIVED
MAR 28 2007
DEPT OF PUBLIC WORKS

March 22, 2007

Mr. Robert Richelieu
Department of Engineering and
Development Services
City of Salinas
200 Lincoln Avenue
Salinas, CA 93901

SUBJECT: NOTICE OF PREPARATION OF DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT (SEIR) TO THE FINAL ENVIRONMENTAL IMPACT REPORT CERITIFED BY THE SALINAS CITY COUNCIL ON SEPTEMBER 17, 2002 FOR THE SALINAS GENERAL PLAN

Dear Mr. Richelieu:

Thank you for the opportunity to comment on the Notice of Preparation for the Sphere of Influence Amendments and the Annexation of the Salinas Future Growth Area.

The Notice of Preparation dated March 5, 2007 identifies issues pertaining to global warming, water supplies, and transportation systems that do not affect the Salinas Union High School District.

The District may have comments when the three Specific Plans are submitted by the Developers for the Salinas Future Growth Area.

Sincerely,

Roger C. Anton, Jr.
Superintendent

RCA:kll:pvc

431W. Alisal Street, Salinas, CA 93901 • P.O. Box 80900, Salinas, CA 93912 • Phone: (831) 796-7000 • Fax: (831) 796-7005 • www.salinas.k12.ca.us

CALIFORNIA WATER SERVICE COMPANY
254 COMMISSION STREET • SALINAS, CA 93901-3737
(831) 757-3644 • FAX (831) 757-0497

SALINAS DISTRICT

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MAR 23 2007
DEPT OF PUBLIC WORKS

March 19, 2007

Robert Richelieu
City of Salinas
Department of Engineering and Development Services
200 Lincoln Avenue
Salinas, CA 93901

Re: Notice of Preparation (NOP) of Draft Supplemental Environmental Impact Report (SEIR) to the Final Environmental Impact Report certified by the Salinas City Council for the Salinas General Plan.

Dear Robert:
The following is in response to your letter dated March 5, 2007 and our subsequent meeting on March 12, 2007 attended by you, Jeff Yarne, Mike Jones and myself.

Your letter suggests that the City of Salinas needs to know our views as to the scope and content of the environmental information that is germane to our statutory responsibilities in connection with the proposed Sphere of Influence Amendment and Annexation.

Per you request, we are currently revising the Water Supply Assessment (WSA) for the West Area to include all three future growth areas. We agreed that once this is completed, you will have the necessary information that you requested in your March 5, 2007 letter.

Should you have any questions or need additional information, please don't hesitate to call me at 757-3644.

Sincerely,

James E. Smith
District Manager

Cc: M. Jones
J. Yarne

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
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March 21, 2007

MON-101-91.90
SCH# 2006021072
2006021085
2006021086
2007031055

Robert Richelieu
City of Salinas
200 Lincoln Avenue
Salinas, CA 93901

Dear Mr. Richelieu:

COMBINED COMMENTS TO SALINAS FUTURE GROWTH AREA SPHERE OF INFLUENCE AMENDMENT AND ANNEXATION

The California Department of Transportation (Department), District 5, Development Review, appreciates the opportunity to participate in the discussions with the City in preparing the environmental documents for the annexation and large-scale development in Salinas.

For the supplemental document (SCH# 2007031055) attached is our most recent correspondence on the growth areas; many of the points contained therein reflect our position and desired outcomes of the entire effort. In addition to the items attached, the following points are provided for clarification.

1. Completion of the Alvin Overcrossing. While we will provide comments on the overall transportation element of the EIR when the traffic study is completed, we feel strongly that successfully mitigating impacts the growth areas will create can only be accomplished with a new east-west connection over Highway 101. We would likely not support the notion that only making improvements to existing interchanges (such as the current efforts to improve the Laurel Interchange) meets the requirements of CEQA for impact mitigation.

2. Level of Service (LOS) Standards. As the owner and operator of the highway system, the Department is ultimately responsible for operations, maintenance, and tort liability on State facilities. We maintain a target LOS at the transition between LOS C and LOS D on all State transportation facilities. At times, *for mainline planning documents only*, there might be deviation from the LOS C/D standard. However, this deviation is not carried through into traffic management and operations (including design, construction, etc.) where the LOS C/D is adhered. Unfortunately, we have seen a recent trend of traffic studies incorrectly using a threshold below the standard, and justifying it by referencing the Caltrans planning documents.

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

cc: Debbie Hale (TAMC)
Ron Lundquist (Monterey Co DPW)
Kathy Urlie (AMBAG)
File

Attachments

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
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December 19, 2006

MON-101-91.90
SCH# 2006021072
2006021085
2006021086

Robert Richelieu
City of Salinas
200 Lincoln Avenue
Salinas, CA 93901

Dear Mr. Richelieu:

COMBINED COMMENTS TO SALINAS FUTURE GROWTH AREAS – EAST, WEST, CENTRAL TRAFFIC STUDY PARTICIPATION

The California Department of Transportation (Department), District 5, Development Review, appreciates the opportunity to participate in the discussions with the City in preparing the traffic study for the above project. Due to the magnitude and regional significance of the projects and since a Memorandum of Assumptions has yet to be completed, we are providing this letter for the record to clarify some of the details surrounding the EIR and traffic study efforts.

The Department has generally concurred with the study efforts to date; however, official support or non-support of the traffic study, findings, and associated mitigations are not made until the study is complete, a document has been produced for the record, and we have reviewed and provided written comments. It should be noted that our ultimate support of the traffic study (and EIR process) includes, but is not limited to, the following outcomes.

1. All impacts to the State Highway system created by build-out of the future growth areas are mitigated to an acceptable level. (Acceptable as determined by the Department—authority by Government Code and Streets and Highways Code).

2. Completion of the Alvin Overcrossing. In regards to this, the City may wish to begin communicating to the impacted property and business owners of the Westridge Shopping Plaza that this project is in the foreseeable future.

3. A clear direction and implementation plan for constructing a West-Side bypass of Salinas and Highway 101.

4. All growth pays the prescribed amount of regional, cumulative impact fees per the Transportation Agency for Monterey County (TAMC) Nexus Study, dated September 2005, for a proposed Regional Development Impact Fee Program.

At any time during the environmental review and approval process, the Department 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].

All of the proceeding has been verbally discussed during phone conferences or meetings regarding the project. 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

cc: Debbie Hale (TAMC)
Ron Lundquist (Monterey Co DPW)
Kathy Urlie (AMBAG)
File

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
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March 10, 2006

MON-101-91.90
SCH# 2006021072
2006021085
2006021086

Robert Richelieu
City of Salinas
200 Lincoln Avenue
Salinas, CA 93901

Dear Mr. Richelieu:

COMBINED COMMENTS TO SALINAS FUTURE GROWTH AREAS – EAST, WEST, CENTRAL NOTICE OF PREPARATION

The California Department of Transportation (Department), District 5, Development Review, has reviewed the above referenced Notice of Preparation and offers the following comments in preparing your Environmental Impact Report (EIR). Please note that for this and all future correspondence with the growth areas, we are considering this effort as one project, despite the resulting three EIR's.

1. The Department supports local development that is 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 and development.

2. To ensure the traffic study in the Draft EIR's includes the information needed by the Department to analyze the impacts (both cumulative and project-specific) of this project, 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 the Department is 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. In cases where a State facility is already operating at an unacceptable LOS, *any* additional trips added should be considered a significant cumulative traffic impact, and should be mitigated accordingly.

4. Our future comments to any EIR 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 development 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. Feel free to contact us for assistance in acquiring the most recent count 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's as an appendix made available for review.

7. As previously discussed and agreed to by City staff, and to ensure that the traffic study for these EIR's cover all the necessary components required, a Memorandum of Assumptions (MOA) should be developed and reviewed by the Department prior to the start of work. The MOA, which includes project milestones, will help with project oversight.

8. In preparing the three EIR's, we caution the City of Salinas not to segment the analysis of the growth/development between the three. While we understand the magnitude of the development proposals, it is imperative that all studies and components of the EIR's are harmonious. Specifically, the Department will be closely scrutinizing the documents that all impacts are fully disclosed in the entire growth areas, and associated mitigation is included as well.

9. The Transportation Agency for Monterey County (TAMC) has prepared a Nexus Study, dated September 2005, for a proposed Regional Development Impact Fee Program which identifies proposed regional transportation improvements. Based on the proposed TAMC program, this project (and resulting developments) should contribute a "fair share" contribution as mitigation for its' cumulative impacts to the regional transportation system as a condition of approval. This application should be applied to all development proposals in the growth areas. This condition of approval should also stipulate that if the TAMC program is not implemented by December 31, 2006, the fees identified for these developments will be transferred to Caltrans to help fund improvements, including, but not limited to, U.S. 101 corridor improvements in the vicinity of the project.

10. The issuance of an encroachment permit will be based upon reviewing complete engineering drawings, traffic studies, hydraulic calculations, environmental reports, etc.

We look forward to receiving the Draft EIR's, and providing comments from a more thorough analysis. District 5 staff has been, and will continue to be, committed to working very closely with you to achieve a shared vision of how the transportation system should and can accommodate interregional and local travel.

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

cc: Paul McClintic (D5)
Ron Lundquist (Monterey Co DPW)
Andy Cook (TAMC)
Kathy Urlie (AMBAG)
File

LAFCO of Monterey County

LOCAL AGENCY FORMATION COMMISSION
P.O. Box 1369 132 W. Gabilan Street, Suite 102
Salinas, CA 93902 Salinas, CA 93901
Telephone (831) 754-5838 Fax (831) 754-5831
www.monterey.lafco.ca.gov

KATE McKENNA, AICP
Executive Officer

April 6, 2007

Robert Richelieu
City of Salinas
Department of Engineering & Development Services
200 Lincoln Avenue
Salinas, CA 93901

RE: Notice of Preparation of a Draft Supplemental Environmental Impact Report (SEIR) for the proposed Salinas Sphere of Influence Update and Annexations

Dear Mr. ~~Richelieu~~ Bob:

Thank you for the opportunity to comment on the Notice of Preparation for the Draft SEIR for the City's upcoming application for an expansion of its Sphere of Influence (SOI) and annexation. LAFCO commends the City for the work it has done to involve LAFCO in the early planning stages of this pending application.

The City submitted a pre-application to LAFCO in the spring of 2005 to informally begin dialogue on the SOI proposal. A copy of the Executive Officer's comments and minutes from the LAFCO meeting are attached for consideration in the scope of the SEIR.

We understand that the City will rely on the 2002 General Plan EIR for the SOI Expansion, as supplemented by the proposed SEIR. We are also aware that the City recently entered into the "Greater Salinas MOU" with the County and that this agreement outlines provisions that will be given weight by LAFCO.

As a responsible agency, LAFCO will consider the following environmental information when we formally review the City's SOI proposal. Some of this may already be contained in the 2002 EIR or the "Greater Salinas MOU;" other portions of this information may best be addressed in the Scope of the SEIR.

Open Space and Agricultural Resources

- A detailed review of the project's direct impact on open space and farmland mapped as prime and of statewide importance according to the state Department of Conservation as well as "prime" as defined in Section 56064 the Cortese-Knox-Hertzberg Local Government Reorganization Act (Government Code). The review should include a full assessment of recommendations for avoidance of impacts and mitigation of impacts, such as permanent conservation and agricultural buffers. Some examples of potential conservation actions are on-site open space and agricultural reserves, off-site replacement of agricultural lands, and payment of mitigation fees to a regional agricultural lands conservation bank program.

Land Use and Planning

- A review of the proposal's consistency with the Cortese-Knox-Hertzberg legislation, including consistency with the state mandated determinations and factors contained in the attached Section 56425(e) for SOI updates and Section 56668 for annexations.
- A review of the proposal's compatibility with LAFCO of Monterey County's Sphere of Influence and Annexation policies, specifically consistency with the "Sphere of Influence Policies and Criteria," the "Standards for the Evaluation of Proposals." These documents are attached.
- A review of compliance with regional population and employment forecasts and regional air quality plans.

Municipal Services

- A review of impacts on the delivery of municipal services including water, sewer, fire, schools, police, emergency medical services, flood protection, parks and open space.

Cumulative Impact

- The cumulative impact to the Salinas Valley of the conversion of farmland mapped as prime and of statewide importance and any required mitigations.
- The cumulative impacts to regional roadways and regional jobs/housing balance.
- The cumulative impacts to regional water supply.

Alternatives

- Alternatives that would avoid and lessen the project's direct and cumulative impacts, particularly to agricultural resources, availability of water, regional housing needs, and regional traffic

Prior to submitting the proposal for the Sphere of Influence Update, please confer with the County to ensure compliance with the required City-County consultation process outlined in Government Code Section 56425.

Again, thank you for the opportunity to participate early in this process. If you have any questions regarding this letter please contact Thom McCue, Senior LAFCO Analyst, or me.

Sincerely,

Kate McKenna

Kate McKenna, AICP
Executive Officer

Attachments:

A. Executive Officer report on the "Preliminary Sphere of Influence Evaluation for the City of Salinas (LAFCO File 05-09), September 26, 2005
B. Section from the minutes of the LAFCO meeting of September 26, 2005
C. Government Code Section 56064 ("Prime Agricultural Land" definition)
D. Government Code Section 56425(e) (determinations required for SOI updates)
E. Government Code Section 56668 (factors required to be examined for annexations)
F. "Sphere of Influence Policies and Criteria" (LAFCO of Monterey County)
G. "Standards for the Evaluation of Proposals" (LAFCO of Monterey County)

APPENDIX B
INITIAL STUDY

Initial Study

City of Salinas
Sphere of Influence Amendment and Annexation

August 29, 2007

Lead Agency:
City of Salinas
200 Lincoln Avenue
Salinas, CA 93901

Contact:
Robert Richelieu
Planning Manager
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Consultant to the City:
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1. Introduction

This Initial Study (IS) provides a preliminary analysis of environmental impacts which may result from a proposal by the City of Salinas for a Sphere of Influence Amendment and Annexation (SOI Amendment and Annexation) of unincorporated Monterey County land to the City of Salinas (proposed Project). In 2002, the City of Salinas (City) adopted its most recent comprehensively updated General Plan and associated Final Program Environmental Impact Report (Final Program EIR, SCH# 1987012703). In order to plan for and manage future growth, the General Plan identifies areas primarily to the north and east of the City, currently outside of the City's boundaries, as the "Future Growth Area." The proposed Project is a SOI Amendment and Annexation of a portion of the Future Growth Area. The City's certified General Plan Final Program EIR addresses the SOI Amendment and Annexation and is hereby incorporated by reference. The summaries of significant environmental impacts and mitigation measures identified in the Final Program EIR are listed in **Table 1**. Table 1 is not a summary of new analysis of environmental effects identified in the General Plan or Final Program EIR, but is purely a restatement of previously identified impacts for purposes of reference within this Initial Study. However, issues related to certain environmental topics addressed in the certified Final Program EIR were identified through a pre-application process with the Monterey County Local Agency Formation Committee (LAFCO) in September 2005. In addition, AB 32, the California Global Warming Solution Act of 2006, has become law since the Final Program EIR was certified. Thus, the proposed Project requires additional environmental documentation to further evaluate certain issues addressed in the certified Final Program EIR and to address global climate change. Development proposals within the Project area will require separate CEQA analysis which will occur when Specific Plans are submitted to the City.

The proposed Project has been evaluated through this initial study analysis based on the criteria (Section 2) identified in CEQA Guidelines Sections 15162 through 15164 to determine whether a subsequent EIR, supplemental EIR or addendum to an EIR is the appropriate environmental document for the proposed Project.

The proposed SOI Amendment and Annexation is considered a project under the California Environmental Quality Act (CEQA), and the City of Salinas is the Lead Agency for CEQA purposes. Section 21067 of the CEQA Statutes defines a Lead Agency as the public agency that has the principal responsibility for carrying out or approving a project which may have a significant effect on the environment. The City of Salinas has the principal responsibility for approving the proposed Project; thus, the City will serve as the Lead Agency, and has the authority to oversee and complete the environmental review documentation and process for the proposed Project.

Lead agency name and address	***Contact person and phone number***
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Table 1
Summary of Significant Environmental Impacts and Mitigation Measures from 2002 Salinas General Plan EIR

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
PROJECT-LEVEL IMPACTS		
SIGNIFICANT AND UNAVOIDABLE IMPACTS		
5.2 Traffic		
Regional Highway System A portion of City generated traffic will also impact state highways and county roads beyond the immediate vicinity of the City of Salinas. Several of these roadways currently operate deficiently. Assuming no roadway improvements are implemented, the Monterey County 21st Century General Plan Environmental Impact Report indicates that these roadways will continue to deteriorate with all of these roadways operating at Level of Service E or F by the year 2020. Some of the necessary roadway improvements may be able to be implemented if the County of Monterey, the Transportation Agency for Monterey County (TAMC) and cities within Monterey County are able to develop additional funding sources. A Regional Traffic Impact fee is being considered by the TAMC at the present time. The introduction of a sales tax increase has also been proposed but rejected by the voters in the past. If these types of funding programs can be	C5. The City will implement Implementation Program C-5. Implementation Program C-5 requires the City to reduce expenditure, improve design, and minimize traffic disruption by working with the Transportation Agency for Monterey County (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. 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 City will revise the General Plan Circulation System to address the impact from regional circulation system improvements.	The City will continue to work with regional transportation agencies to address the need for regional improvements as identified in Mitigation Measures C5 and C7, but, until funding is identified, implementation of the proposed General Plan may result in a significant and unavoidable impact to the regional highway system.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
put in place in the future, it is possible that at least some of the additional roadway improvements will be able to be implemented. Because it is speculative to anticipate additional funding at the present time, it must be assumed that no additional funding will be available and implementation of the proposed project will result in a significant and unavoidable impact to the regional highway system.		
5.3 Noise		
Vehicular Traffic Implementation of the Salinas General Plan will allow new development within the planning area. Such development will generate additional traffic that will increase noise levels along the roadways. As identified in Figure 5.3-4 of the EIR, certain portions of the City will be subject to noise levels exceeding the City's noise standards. This may result in existing development and future development areas being exposed to excessive noise levels. This is considered a potentially significant impact. Because the noise contours of each alternative Circulation Element scenario (Buildout with Prunedale Bypass and Eastern Expressway, Buildout without Roadway Improvements, and Buildout with the Prunedale Bypass) are similar	N2. The City will apply Implementation Program N-1 during the review phase of discretionary development proposals. Implementation Program N-1 requires the City to review development proposals for potential on-and off-site stationary and vehicular noise impacts per the California Environmental Quality Act (CEQA). Any proposed development located within a 60 dB or higher noise contour (Figure N-1 and N-2 of the Noise Element) shall be reviewed for potential noise impacts and compliance with the noise and land use compatibility standards. The thresholds established in the Zoning Code, Noise Ordinance, the Noise Contours Map (Figures N-1 and N-2 of the Noise Element), and Tables N-3 and N-4 of the Noise Element will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of noise reduction designs/structures will be required to reduce the impact to a level less than significant. If the impact cannot be reduced to a level less than significant or avoided with accepted noise reduction methods, the proposed project will be determined "Clearly Unacceptable" and will not be approved. N5. The City will implement Implementation Program N-5 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.	Mitigation Measure N2 and N5 require the City to review development proposals per the California Environmental Quality Act (CEQA) and utilize noise reduction methods to reduce the impact on existing development. Implementation of Mitigation Measures N2 and N5 will reduce this impact to the extent feasible; however, there is no guarantee that existing development within the noise impact contours will be retrofitted to reduce the noise impacts to a level less than significant. Because of this future noise impacts associated with vehicular traffic will remain significant and unavoidable.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
to the proposed Circulation Element scenario, these scenarios would also result in a significant noise impact due to vehicular traffic.		
	5.4 Air Quality	
Short-Term Impact Construction related emissions would have to be evaluated on a project specific basis. However, based on the time frame of the General Plan, it is likely that construction of projects of sufficient magnitude to exceed the MBUAPCD construction thresholds would occur. As such, the potential short-term air quality impacts from construction of allowed General Plan land uses are considered significant for CO, SO_x and PM_{10}.	AQ1. The City will apply Implementation Program COS-21. Implementation Program COS-21 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. AQ2. The City will apply Implementation Program COS-23. 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 and the District. AQ3. The City will apply Implementation Program COS-25. Implementation Program COS-25 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 reduce the impact to a level less than significant, where feasible.	Implementation of Mitigation Measures AQ1 through AQ3 will reduce this impact to the extent feasible; however, this impact will remain significant and unavoidable.
Long-Term Impact In its *1997 Regional Population and Employment Forecast*, AMBAG forecasted a population of approximately 130,200 persons in	AQ1. The City will apply Implementation Program COS-21. Implementation Program COS-21 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;	Mitigation Measures AQ1 through AQ7 will reduce this impact to a degree; however, the inconsistency with the adopted AQMP will remain significant and unavoidable.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
Salinas for the Year 2000. However, the recently completed 2000 Census identified a population of approximately 143,800 persons in Salinas. It can thus be assumed that population and employment projections contained in the 1997 *Regional Population and Employment Forecast* by AMBAG for years 2000 through 2020 for Salinas are significantly lower than will actually occur. Thus, the General Plan projections for 2020 for Salinas are not consistent with the population projections identified by AMBAG for 2020 (approximately 170,100). Instead, the General Plan projections assume the *level* of growth that AMBAG anticipated to occur between 2000 and 2020 (approximately 40,000 persons) is valid. When this 40,000 is added to the actual year 2000 population of approximately 143,800 as identified by the Census, the City's population projection for 2020 is 183,800, approximately 13,700 higher than AMBAG's 2020 projection of 170,100. Based on the difference between AMBAG's projections and those expected to occur according to the General Plan, emissions attributable to General Plan implementation are inconsistent with the AQMP. Inconsistency with the population estimates would result in emissions not accounted for in the AQMP and would conflict with the applicable air quality	• Monitor construction and agricultural activities and emissions; and • Pave areas used for vehicular maneuvering. AQ2. The City will apply Implementation Program COS-23. 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 and the District. AQ3. The City will apply Implementation Program COS-25. Implementation Program COS-25 requires the City to review 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 reduce the impact to a level less than significant, where feasible. AQ4. The City will apply Implementation Program COS-22. Implementation Program COS-22 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. AQ5. The City will apply Implementation Program COS-24. Implementation Program COS-24 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 • Traffic Calming	

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
plan (AQMP). Inconsistency with the population estimates used in the AQMP would cause a delay in the attainment of the AAQS due to the increased emissions associated with a population projection larger than was used in the emissions inventory for the AQMP. This inconsistency in population forecasts is considered to result in a significant air quality impact.	AQ6. The City will apply Implementation Program COS-30. Implementation Program COS-30 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 existing public buildings. AQ7. The City will apply Implementation Program COS-31. Implementation Program COS-31 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.	
	5.5 Hydrology/Water Quality	
Groundwater Salinas relies solely on groundwater to meet its urban and agricultural demands. Implementation of the General Plan has the potential to affect the quality and supply of groundwater in the following ways: • The proposed General Plan will create a need for the expansion of facilities to meet the additional water use demands and fire flow requirement. To meet the increased demand for water, new wells may need to be constructed or existing wells may need to be made deeper.	HW4. The City will implement Implementation Program COS-3 on an ongoing basis. Implementation Program COS-3 requires the City, consistent with County of Monterey Draft General Plan Policy ER-6.3, if adopted, 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 ground water quality is not further degraded. HW9. The City will implement Implementation Program LU-14 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. HW10. The City will implement Implementation Program COS-2 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.	Implementation of Mitigation Measures HW4 and HW9 through HW13 will reduce this potential impact to a degree; however, the potential impacts (i.e., overdrafting and seawater intrusion) associated with the increased pumping of groundwater will remain significant and unavoidable.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
• Increased pumping of groundwater may exacerbate the contamination of the water supply by seawater intrusion and increases the degradation of the water supply by nitrate contamination. • Increases in impervious surfaces may result in a reduction in the amount of water that infiltrates the soil to the groundwater table, which leads to a reduction in the groundwater recharge rate over time; and • Development allowed by the proposed General Plan may result in an increase in the amount of industrial chemicals and urban contaminants infiltrating groundwater supplies, further decreasing groundwater quality. The above effects of the General Plan may result in a significant impact to the supply and quality of groundwater in the Salinas Watershed.	HW11. The City will implement Implementation Program COS-5 on an ongoing basis. Implementation Program COS-5 requires the City to cooperate with the County of Monterey Water Resources 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. HW12. The City will implement Implementation Program COS-6 on an ongoing basis. Implementation Program COS-6 requires the City, in cooperation with the state, regional, and local water agencies and suppliers, 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. HW13. The City will implement Implementation Program COS-7 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, 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 Landscaping and Irrigation Ordinance, 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 use 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 and water conserving appliances in new public and private development and rehabilitation projects.	

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
5.8 Cultural Resources		
Historic and Archaeological Resources Portions of the planning area contain potentially significant historical resources. Implementation of the General Plan may result in new development in the planning area. Most of the anticipated development will occur in vacant areas where there are no structures. However, small urban in-fill development or redevelopment projects that are not subject to discretionary review by the City may also occur that could involve the removal or alteration of existing structures with historical value or significance. As described previously, the Carr Lake/Natividad Creek corridor and a wide band on either side of Highway 101 in the northwest portion of the planning area are the only areas within the planning area that have a potential for high sensitivity (potential for archaeological resources). Implementation of the General Plan may result in development in some of the vacant areas with a high potential of containing archaeological resources. Construction that could occur in these areas has the potential to impact archaeological resources. A significant	CR1. The City will implement Implementation Program COS-12 prior to the approval of a discretionary project. Implementation Program COS-12 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 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 Implementation Program COS-13 on an ongoing basis. Implementation Program COS-13 requires the City to consider implementing a historic/architectural preservation program and a historic/architectural preservation	Implementation of Mitigation Measures CR1, CR2, and CR3 would potentially reduce the impact to historic and archaeological resources to a level less than significant. However, the above mitigation measures may not reduce the potentially significant impacts to historic and archaeological resources for the following reasons: Mitigation Measure CR1 would apply only to discretionary permits, which would allow ministerial projects to be processed without being reviewed and subjected to the requirements of Mitigation Measures CR1; Mitigation Measure CR2, which is presented as a way to extend the discretionary review powers of the City over projects with potential impacts to historic and archaeological resources only requires the City to consider implementing the historic/architectural preservation ordinance. In effect, there is no assurance at this time that the historic/architectural preservation ordinance would actually be adopted and implemented by the City; and Mitigation Measure CR3 does not place specific requirements on property owners or

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
impact to historic and archaeological could occur as a result of the proposed project.	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. CR3. The City will implement Implementation Program COS-14 on an ongoing basis. Implementation Program COS-14 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.	the City to protect significant historic and archaeological resources. Because no other mitigation has been identified that would definitively reduce the potentially significant impacts to historic and archaeological resources to a level less than significant, the impact to historic and archaeological resources is significant and unavoidable.
	5.9 Agricultural Resources	
Loss of Agricultural Land Implementation of the proposed General Plan will result in conversion of much of the agricultural land within the City limits to park lands and other urban uses. 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 Future Growth Areas are located away from the best agricultural lands in the	AG1. The City will implement Implementation Program COS-9, 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 away from the most productive farmland. AG2. The City will implement Implementation Program LU-7, 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.	Implementation of Mitigation Measures AG1 and AG2 will help to minimize the impact related to the loss of important farmland to the extent feasible; however, the impact related to the loss of agricultural resources will remain significant and unavoidable.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
south and west. Even though the land designated for future growth outside the City limits will be minimized to protect the valuable agricultural resources, a significant impact associated with loss of agricultural resources has been identified.		
	5.13 Public Services and Utilities	
Water Quality and Supply The availability of good quality groundwater may be negatively impacted by the ongoing problems related to seawater intrusion and nitrate contamination. If too much of the groundwater basin becomes contaminated, reducing available supplies, the demand for potable water generated by development allowed under the General Plan may exceed available supply. This would be considered a significant impact.	HW4. The City will implement Implementation Program COS-3 on an ongoing basis. Implementation Program COS-3 requires the City, consistent with County of Monterey Draft General Plan Policy ER-6.3, if adopted, 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 ground water quality is not further degraded. HW9. The City will implement Implementation Program LU-14 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. HW10. The City will implement Implementation Program COS-2 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. HW11. The City will implement Implementation Program COS-5 on an ongoing basis. Implementation Program COS-5 requires the City to cooperate with the County of Monterey Water Resources 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.	Implementation of Mitigation Measures HW4 and HW9 through HW13 will reduce the potential groundwater supply impact to a degree; however, the potential impacts associated with the increased pumping of groundwater will remain significant and unavoidable.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	HW12. The City will implement Implementation Program COS-6 on an ongoing basis. Implementation Program COS-6 requires the City, in cooperation with the state, regional, and local water agencies and suppliers, 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. HW13. The City will implement Implementation Program COS-7 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, 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 Landscaping and Irrigation Ordinance, 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 use 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 and water conserving appliances in new public and private development and rehabilitation projects.	
Solid Waste Implementation of the General Plan will result in new residential and non-residential development, as well as population growth. This new	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.	Implementation of Mitigation Measure PSU6 will reduce the impact to the extent feasible, but will not avoid a significant impact. Mitigation Measure PSU6 requires the City to continue to support and

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
development and population growth will generate an increased demand for solid waste collection and disposal capacity. The Salinas Valley Solid Waste Authority has adequate landfill capacity under currently permitted landfill sites to continue receiving waste until 2015. The Salinas Valley Solid Waste Authority is presently circulating for comment a Regional Facilities Expansion EIR, which identifies proposed scenarios to accommodate the long-term disposal needs of all Salinas Valley residents. The Authority anticipates that the current CEQA process and certification of the EIR will be completed and fully implemented prior to 2015, when existing capacity will be exceeded. The current planning project will also ensure future compliance with federal, state, and local statutes and regulations related to solid waste since the EIR and its project will address the long-term disposal needs of Salinas Valley residents. Since the Regional Facilities Expansion EIR not yet been adopted, a significant impact associated with the landfill capacity may occur if an expansion plan is not adopted to provide long term capacity to meet the needs generated by the proposed General Plan.		cooperate with the Authority and waste haulers in their efforts to increase recycling activities. Implementation of the proposed General Plan will result in an unavoidable, significant impact related to the landfill capacity. While an unavoidable, significant impact is identified, it is anticipated that it will not occur, since the Authority is working to expand capacity.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
PROJECT-LEVEL IMPACTS MITIGATED TO A LEVEL LESS THAN SIGNIFICANT		
5.1 Land Use and Planning		
Salinas Zoning Code The proposed project will change existing General Plan land use designations for certain parcels within the planning area. The existing zoning designations for those parcels may not be consistent with the new land use designation. 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.	LU1. The City will implement Implementation Program LU-3, 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.	Implementation of Mitigation Measure LU1 will reduce the impact to a level less than significant.
Greater Salinas Area Plan Implementation of the proposed 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.	LU2. The City will implement Implementation Program LU-8, 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.	Implementation of Mitigation Measure LU2 will reduce the impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
Salinas Municipal Airport Master Plan The proposed General Plan will result in an increase in development in the areas surrounding the Salinas Municipal Airport that are subject to noise and safety impacts identified in the Master Plan. A significant impact would occur if implementation of the proposed General Plan results in the development of land uses that are not compatible with the Salinas Municipal Airport Master Plan. For the most part, the proposed General Plan Land Use Map designates compatible land uses for the areas surrounding the Airport. Implementation of Mitigation Measure LU3 will reduce any other potentially significant impact resulting from new development adjacent to the Airport to a less than significant level.	LU3. The City will implement Implementation Program LU-21, 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 Instrument Landing System (ILS) approach, and determine limitations on surrounding land uses and new runways 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.	Implementation of Mitigation Measure LU3 will reduce any other potentially significant impact resulting from new development adjacent to the Airport to a less than significant level.
Monterey County Airport Land Use Plan The proposed General Plan will result in an increase in development in the areas surrounding the Salinas Municipal Airport that are subject to noise and safety impacts identified in the Airport Land Use Plan. A significant impact would occur if implementation of the proposed General Plan results in the	LU4. The City will implement Implementation Program LU-22, 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.	Implementation of Mitigation Measure LU4 will reduce the impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
development of land uses that are not compatible with the Monterey County Airport Land Use Plan.		
Boronda Memorandum of Understanding Implementation of the General Plan will result in the eventual annexation of additional land to the City in order to accommodate future growth. Annexed land will be converted from agricultural use to urban use. A significant land use impact may occur if agricultural land that has been designated for preservation (to the west and south) by the Boronda Memorandum of Understanding is converted to urban uses. Implementation of Mitigation Measures LU5 and LU6 will reduce the impact to a level less than significant.	LU5. The City will implement Implementation Program COS-9, 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 away from the most productive farmland. LU6. The City will implement 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 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.	Implementation of Mitigation Measures LU5 and LU6 will reduce the impact to a level less than significant.
5.2 Traffic/Circulation		
Local Roadway System The circulation network included in the proposed General Plan will substantially mitigate traffic operational deficiencies throughout the City of Salinas. However, a number of additional streets will require capacity improvements beyond those identified in the base improvement program to	C1. In addition to the roadway improvements identified in Table 5.2-4 of the EIR, the City will implement the roadway improvements identified in Table 5.2-7 of the EIR as needed to provide a level of service D or better along City roadways. C2. The City will implement Implementation Program C-1. 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	Mitigation Measures C1 through C6 will result in the improvement of LOS to an acceptable level of service for all local roadway segments, reducing the impact to the local roadway system to a less than significant impact.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
achieve an acceptable LOS D or better, as shown in Table 5.2-7 of the EIR. Without the improvements depicted in the General Plan and in Table 5.2-7 of the EIR, a significant impact to the local roadway system may occur.	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. C3. The City will implement Implementation Program C-2. 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. C4. The City will implement Implementation Program C-3. 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. C5. The City will implement Implementation Program C-5. Implementation Program C-5 requires the City to reduce expenditure, improve design, and minimize traffic disruption by working with the Transportation Agency for Monterey County (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. C6. The City will implement Implementation Program C-7. Implementation Program C-7 requires the City to support the implementation of the Transportation Control Measures 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.	

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
Salinas Municipal Airport Implementation of the proposed General Plan may result in an increase in the number of individuals and businesses using the Salinas Municipal Airport, as well as new development in the area subject to aircraft noise and safety hazards. An increase in airport users and construction of incompatible development within the airport area of influence has the potential to result in a change in air traffic patterns, including either an increase in traffic levels or additional safety risks associated with new development in areas subject to airport operations. This is considered a potentially significant impact.	C8. The City will implement Implementation Program LU-21. Implementation Program LU-21 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. C9. The City will implement Implementation Program C-8. 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.	Implementation of Mitigation Measures C8 and C9 would reduce the potential impact to a level less than significant.
	5.3 Noise	
Construction Activities Implementation of the Salinas General Plan would result in additional development within the planning area, which would generate noise associated with construction activity. Noise from construction activity would have the potential to impact noise sensitive land uses adjacent to construction sites. Construction equipment generates high levels of intermittent noise ranging from 70 dBA to 105 dBA, resulting in	N1. The City will apply Implementation Program N-4 during the construction phase of proposed projects within the community. Implementation Program N-4 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).	Although construction activities will result in a noise impact at certain locations, this impact will be short-term in nature and will cease upon completion of construction. Additionally, implementation of Mitigation Measure N1 will reduce this impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
a significant impact where noise sensitive land uses adjoin construction sites. This is considered a potentially significant noise impact. Although construction activities will result in a noise impact at such locations, this impact will be short-term in nature and will cease upon completion of construction.		
Railroad Operations According to the Union Pacific Railroad, no change to train service or schedules is anticipated to occur in the foreseeable future; therefore, noise levels generated by the train will remain the same as under existing conditions where land uses within 250 feet of the train tracks may experience noise levels in excess of 65 dB. Because the proposed General Plan may allow development and redevelopment to occur within areas with noise levels exceeding 65 dB, the proposed General Plan may result in a potentially significant impact. Implementation of Mitigation Measure N2 as described above will reduce this impact to a level less than significant.	N2. The City will apply Implementation Program N-1 during the review phase of discretionary development proposals. Implementation Program N-1 requires the City to review development proposals for potential on-and off-site stationary and vehicular noise impacts per the California Environmental Quality Act (CEQA). Any proposed development located within a 60 dB or higher noise contour shall be reviewed for potential noise impact and compliance with the noise and land use compatibility standards. The thresholds established in the Zoning Code, Noise Ordinance, the Noise Contours Map (Figure N-1 of the Noise Element), and Tables N-3 and N-4 of the Noise Element will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of noise reduction designs/structures will be required to reduce the impact to a level less than significant. If the impact cannot be reduced to a level less than significant or avoided with accepted noise reduction methods, the proposed project will be determined “Clearly Unacceptable” and will not be approved.	Implementation of Mitigation Measure N2 as described above will reduce this impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
Airport Operations The proposed General Plan may allow development to occur within the Salinas Airport 65 dB or greater noise contours. This is considered a potentially significant impact.	N2. The City will apply Implementation Program N-1 during the review phase of discretionary development proposals. Implementation Program N-1 requires the City to review development proposals for potential on-and off-site stationary and vehicular noise impacts per the California Environmental Quality Act (CEQA). Any proposed development located within a 60 dB or higher noise contour shall be reviewed for potential noise impact and compliance with the noise and land use compatibility standards. The thresholds established in the Zoning Code, Noise Ordinance, the Noise Contours Map (Figure N-1 of the Noise Element), and Tables N-3 and N-4 of the Noise Element will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of noise reduction designs/structures will be required to reduce the impact to a level less than significant. If the impact cannot be reduced to a level less than significant or avoided with accepted noise reduction methods, the proposed project will be determined "Clearly Unacceptable" and will not be approved. N3. The City will apply Implementation Program N-5 in concert with the update of the Salinas Airport Master Plan. Implementation Program N-5 requires the City to 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 any update to the Salinas Airport Master Plan.	Implementation of Mitigation Measures N2 and N3 will reduce this impact to a level less than significant.
Stationary Noise Implementation of the General Plan may result in excessive noise generated by non-residential projects such as industrial and commercial centers, restaurants and bars, religious institutions and civic/community centers. These types of uses may occur throughout the planning area. This is considered a potentially significant impact.	N2. The City will apply Implementation Program N-1 during the review phase of discretionary development proposals. Implementation Program N-1 requires the City to review development proposals for potential on-and off-site stationary and vehicular noise impacts per the California Environmental Quality Act (CEQA). Any proposed development located within a 60 dB or higher noise contour shall be reviewed for potential noise impact and compliance with the noise and land use compatibility standards. The thresholds established in the Zoning Code, Noise Ordinance, the Noise Contours Map (Figure N-1 of the Noise Element), and Tables N-3 and N-4 of the Noise Element will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of noise reduction designs/structures will be required to reduce the impact to a level less than significant. If the impact cannot be reduced to a level less than significant or avoided with accepted noise reduction methods, the proposed project will be determined "Clearly Unacceptable" and will not be approved.	Implementation of Mitigation Measures N2 and N4 will reduce this impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	N4. The City will apply Implementation Program N-3 on an ongoing basis. Implementation Program N-3 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.	
	5.4 Air Quality	
Sensitive Receptors As listed in Table 5.4-5 of the EIR, there are five roadway segments that will experience a significant deterioration in the LOS due to the implementation of the updated General Plan. This deterioration of LOS would result in decreased vehicle speeds and increased idling times due to congested traffic conditions and may potentially result in the occurrence of CO "hotspots" or elevated concentrations of CO in exceedance of the AAQS. Consequently, the implementation of the updated General Plan may potentially result in local air quality impacts.	AQ2. The City will apply Implementation Program COS-23. 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. AQ3. The City will apply Implementation Program COS-25. Implementation Program COS-25 requires the City to review 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 reduce the impact to a level less than significant, where feasible. AQ4. The City will apply Implementation Program COS-22. Implementation Program COS-22 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. AQ5. The City will apply Implementation Program COS-24. Implementation Program COS-24 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:	Mitigation AQ2 through AQ5, in addition to mitigation measures contained in Section *5.2 Traffic/Circulation* would potentially reduce the occurrence of roadway segments functioning at poor LOS. However, application of these mitigations would need to be done on a project-by-project basis. Implementation of the mitigation measures will reduce the impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	• 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 • Traffic Calming	
5.5 Hydrology/Water Quality		
Surface Water Implementation of the General Plan will result in the development and redevelopment of residential and non-residential uses in the community. A majority of this new development will occur in the northern portion of the planning area. Development of this land may contribute additional urban runoff to Gabilan, Santa Rita, Alisal, and Natividad Creeks, as well as the Reclamation Ditch, the Salinas River, and Carr Lake basin. The quality of these surface waters may be affected by the development allowed by the General Plan. Pollutants associated with urban uses, such as oil, grease, pesticides, fertilizers, and detergents will be used	HW1. The City will implement Implementation Program COS-1 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. HW2. The City will implement Implementation Program COS-4 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. HW3. The City will implement Implementation Program S-6 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. HW4. The City will implement Implementation Program COS-3 on an ongoing basis. Implementation Program COS-3 requires the City, consistent with County of	Implementation of Mitigation Measures HW1, HW2, HW3, HW4, and HW5 will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
more widely over time. In addition, grading and construction activity could cause erosion, increasing the sediment load of runoff. These non-point source pollutants in the runoff may flow into local surface waters and incrementally deteriorate water quality. This is considered a potentially significant impact.	Monterey Draft General Plan Policy ER-6.3, if adopted, 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 ground water quality is not further degraded. HW5. The City will implement Implementation Program LU-17, on an ongoing basis. Implementation Program LU-17 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. 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 and City-approved engineer, with the cost of said analysis the responsibility of the project applicant.	
Hydrology Development of the planned land uses will affect the drainage system in the planning area. New development will result in greater areas of impervious surfaces (such as streets, roofs, sidewalks, and parking lots), particularly in the northern portion of the planning area. The absorption rate for impervious surfaces is less than the rate for natural lands. Instead of absorbing into the ground, water on impervious surfaces runs and drains off into local surface streams and improved channels. This could result in an increase in the amount of urban pollutants in the surface creeks and drainage channels as well as overall	HW5. The City will implement Implementation Program LU-17, on an ongoing basis. Implementation Program LU-17 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. In order to determine the facility and Best Management Practices (BMP) 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. HW6. The City will implement Implementation Program S-19 on an ongoing basis. Implementation Program S-19 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. HW7. The City will implement Implementation Program LU-16 on an ongoing basis. Implementation Program LU-16 requires the City to continue to work with the	Implementation of Mitigation Measures HW5, HW6, HW7, and HW8 will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
increase in the volume of runoff. This is considered a significant impact.	Monterey Regional Water Pollution Control Agency (MRWPCA) to plan for and ensure adequate capacity for sewage treatment facilities. HW8. The City will implement Implementation Program LU-15 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.	
	5.6 Hazards and Hazardous Materials	
Hazardous Materials Generators and Leaking Underground Storage Tanks Implementation of the General Plan will result in the development of new residential, commercial, and industrial uses. As a result, more hazardous materials will be used within the planning area. The expected increase in residential development will result in more household hazardous materials being used, stored, and discarded within the community. A significant impact associated with household hazardous materials could occur. The proposed General Plan will also result in additional small businesses that handle hazardous materials. A significant impact with this issue could occur. In addition, many of the planned commercial and industrial operations will store and use hazardous materials. The hazardous materials	H1. The City will implement Implementation Program S-8, 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. H2. The City will implement implementation Program S-9, 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. H3. The City will implement Implementation Program S-7, 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	Implementation of Mitigation Measures H1, H2, and H3 will reduce the impacts associated with hazardous materials generators and leaking underground storage tanks impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
used and stored within the City would be common materials associated with uses such as gasoline stations and automotive repair shops. This could also lead to an increase in the number of leaking underground storage tanks. A significant impact associated with these issues could occur.	(the County of Monterey, Environmental Health Division) and the Salinas Fire Department to administer Risk Management Plans for businesses within the City.	
Pesticide Use Implementation of the General Plan will result in additional residential areas on the edges of the City limits where agricultural operations and the use of pesticides take place. The interface between the urban areas and agricultural operations will be expanded, resulting in a greater potential for human exposure to pesticides. Serious adverse effect either within or outside the agricultural environment could occur. A significant impact associated with human exposure to pesticides could occur.	H4. The City will implement Implementation Program S-6, which 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.	Implementation of Mitigation Measure H4 will reduce the impact associated with pesticide use to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
Transportation of Hazardous Materials More hazardous materials will also be transported through the City on major arterials and on regional Highways 101, 68, and 183, and the Union-Pacific rails line. Due to the increased generation and transport of hazardous materials, the potential for accidents and environmental contamination may increase. A significant impact associated with transportation of hazardous materials could occur.	H3. The City will implement Implementation Program S-7, 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.	Implementation of Mitigation Measures H3 will reduce the impact associated with transportation of hazardous materials to a level less than significant.
Flooding Recognizing the importance of Carr Lake in regards to flood control within the community, the majority of Carr Lake is designated for open space park uses in the Land Use Element. However; development may occur on areas adjacent to the areas subject to flooding. A potentially significant impact associated with flooding could occur. Additionally, new development may change the planning area drainage patterns due to increase in impervious surfaces. The planning area is anticipated to have an additional 29 million square feet of non-residential	H5. The City will implement Implementation Program S-17, which requires the City to continue to participate in the National Flood Insurance Program (NFIP). H6. The City will implement Implementation Program S-18, 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. H7. The City will implement Implementation Program LU-17, 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.	Implementation of Mitigation Measures H5 through H7 will reduce the impact associated with flooding to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
development at buildout. The City will continue to require new developments to provide adequate stormwater drainage systems to address runoff resulting from those developments. A potentially significant impact associated with this issue could occur.		
Fires Implementation of the General Plan will result in both, the construction of new development in the urban area and the expansion of the urban area closer to wildland fire hazards area. The interface between the urban areas and natural vegetation will be expanded, resulting in a greater potential for wildland and urban fires. A significant impact associated with urban and wildland fires could occur.	H8. The City will implement Implementation Program S-21, 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. H9. The City will implement Implementation Program CD-10, which requires the City to continue to monitor and abate weeds throughout the community. H10. The City will implement Implementation Program LU-12, 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.	Implementation of Mitigation Measures H8 through H10 will reduce the impact associated with fires to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
Salinas Municipal Airport Implementation of the General Plan may place more demand on aircraft use on the Salinas Municipal Airport. The increased operations may cause higher noise levels and limit the intensity and height of development within aircraft hazard zones. A significant impact associated with these issues may occur.	H11. The City will implement Implementation Program LU-21, 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. H12. The City will implement Implementation Program C-8, 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. H13. The City will implement Implementation Program S-11, 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 comprehensive airport land use planning. H14. The City will implement Implementation Program S-12, 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.	Implementation of Mitigation Measures H11 through H15 will reduce the impact associated with Salinas Municipal Airport to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	H15. The City will implement Implementation Program N-4, 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.	
Emergency Preparedness The General Plan will result in new development and population growth resulting in an increase in demand for emergency services during disasters. A significant impact associated with emergency services will occur.	H10. The City will implement Implementation Program LU-12, 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. H16. The City will implement Implementation Program S-22, 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. H17. The City will implement Implementation Program S-23, 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.	Implementation of Mitigation Measures H10, H16, and H17 will reduce the impact to emergency preparedness to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
5.7 Biological Resources		
Riparian and Wetland Resources Development in a portion of the project's planning area will occur adjacent to creeks, riparian woodland and wetlands (i.e., other waters of the U.S. and wetlands). This development may result in significant direct or indirect impacts to riparian and wetland resources from habitat removal, noise, lighting, increased human uses and urban runoff. Additionally, in areas where development cannot avoid impacts to riparian/wetland resources, such as new road crossings, removal of riparian and/or wetland resources may occur. This may in turn impact federally listed species (i.e., steelhead, California red-legged frog) or other special status species (i.e., California tiger salamander). These impacts are considered significant.	BR1. The City will implement Implementation Program COS-16 on an ongoing basis. Implementation Program COS-16 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. Development activities would be prohibited in the setback area; the City shall consider exceptions for open space recreational uses (i.e., trails, playfields, and picnic areas). No building or structures 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. This fencing shall remain in-place until construction is complete. If recreational trails are placed within the buffer area, implement a revegetation program wherein a vegetative buffer is established between the trail and the outside edge of the riparian woodland. BR2. The City will implement Implementation Program COS-17 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	Implementation of Mitigation Measures BR1, BR2, and BR3 will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	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 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 Implementation Program COS-18 on an ongoing basis. Implementation Program COS-18 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.	

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
Trees and Oak Woodlands The proposed project may allow development to occur in areas with trees or oak woodland. If trees are removed for a project, the project may impact breeding raptors if they are nesting in the trees. Additionally, oak woodland habitat, including singular trees, are considered a significant biological resource due to their value to wildlife. The potential impact to trees, nesting raptors, and oak woodlands is considered a significant impact.	BR4. The City will implement Implementation Program COS-19 on an ongoing basis. Implementation Program COS-19 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.	Implementation of Mitigation Measure BR4 will reduce this potential impact to a level less than significant.
Grasslands Development within the grasslands within the planning area may impact species status species, if such species are confirmed to be present. In general, the loss of non-native grassland is not considered a significant impact. This is due to the prevalence of non-native plant species and lack of special status plants species. Loss of non-native grassland may however be significant if special status species are utilizing it, such as: ▪ Congdon's tarplant ▪ Contra Costa goldfields ▪ Pinnacles buckwheat ▪ Alkali milk-vetch	BR5. The City will implement Implementation Program COS-20 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 supports special status species. If 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	Implementation of Mitigation Measure BR5 will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
▪ Santa Cruz clover ▪ Hutchinson's larkspur ▪ Kellogg's horkelia ▪ Burrowing owl ▪ California tiger salamander Because future development could occur that would disturb grassland areas that are being used by special status species, the proposed project could result in a significant impact associated with grassland.	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 as exclusionary devices.	

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<tr><td colspan="3">5.8 Cultural Resources</td></tr>
<tr><td>Paleontological Resources

Important paleontological resources have the potential to occur within the planning area, especially in the undeveloped future growth areas. Implementation of the General Plan will result in development in some of the vacant areas of the community. The construction of new development would involve grading and other earthwork that can disturb important fossils. Once fossils are disturbed, the information about past plant and animal species is lost. The potential impact to paleontological resources is considered significant.</td><td>CR1. The City will implement Implementation Program COS-12 prior to the approval of a discretionary project. Implementation Program COS-12 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 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.</td><td>Implementation of Mitigation Measure CR1, will reduce potentially significant impacts to paleontological resources to a level less than significant.</td></tr>
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<tr><th>POTENTIAL IMPACTS</th><th>MITIGATION MEASURES</th><th>CONCLUSION</th></tr>
<tr><td colspan="3">5.9 Agricultural Resources</td></tr>
<tr><td>Compatibility with Urban Uses

Implementation of the General Plan will result in expansion of residential and urban uses closer to agricultural land uses. Agricultural activity in proximity to residential and other urban uses may result in conflicts between the uses. 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. A significant impact associated with these issues is anticipated.</td><td>AG3. The City will implement the 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.

AG4. The City will implement Implementation Program COS-10, 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.

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.</td><td>Implementation of Mitigation Measures AG3 and AG4 will reduce the impact associated with the compatibility of agricultural uses with urban uses to a level less than significant.</td></tr>
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POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	5.10 Geology/Soils	
Geologic Conditions As discussed in the *Environmental Setting*, all of the incorporated, urbanized area and most of the surrounding planning area is located within the area of "least landslide and erosion susceptibility." However, some localized constraints related to clay and steeper slopes may occur within the planning area. The proposed General Plan may allow development to occur in these areas of potential geologic hazards. This is considered a significant impact. Implementation of Mitigation Measures GS1 through GS4 will reduce this potential impact to a level less than significant.	GS1. The City will implement Implementation Program S-13 prior to the approval of a discretionary permit. Implementation Program S-13 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. GS2. The City will implement Implementation Program S-14 when the threat from natural hazards cannot be mitigated through geotechnical and structural design methods. Implementation Program S-14 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 Implementation Program S-15 on an ongoing basis. Implementation Program S-15 requires the City to implement the most recent state building and seismic requirements for the structural design of new development and redevelopment projects. GS4. The City will implement Implementation Program S-16 on an ongoing basis. Implementation Program S-16 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.	Implementation of Mitigation Measures GS1 through GS4 will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
Seismicity Although, no known active fault is located in the City and no Alquist-Priolo Earthquake Fault Zoning has been established by the State for the planning area, Salinas is at risk for damage caused by groundshaking and seismic activity. With the increase in development and population allowed under the proposed Plan, the number of people and buildings exposed to seismic groundshaking will increase. This is considered a significant impact. Implementation of Mitigation	GS1. The City will implement Implementation Program S-13 prior to the approval of a discretionary permit. Implementation Program S-13 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. GS2. The City will implement Implementation Program S-14 when the threat from natural hazards cannot be mitigated through geotechnical and structural design methods. Implementation Program S-14 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 Implementation Program S-15 on an ongoing basis. Implementation Program S-15 requires the City to implement the most recent state building and seismic requirements for the structural design of new development and redevelopment projects. GS4. The City will implement Implementation Program S-16 on an ongoing basis. Implementation Program S-16 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. GS5. The City will implement Implementation Program S-22 on an ongoing basis. Implementation Program S-22 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.	Implementation of Mitigation Measures GS1 through GS6 will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	GS6. The City will implement Implementation Program S-23 on an ongoing basis. Implementation Program S-23 requires the City coordinate with local agencies and organizations to educate all residents and businesses to take appropriate action to safeguard life and property during and immediately after emergencies.	
5.11 Aesthetics		
Citywide Aesthetics Implementation of the Salinas General Plan will allow development to occur in the planning area in both vacant and underdeveloped portions of the community. 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 planning area according to the General Plan may increase the amount of light and glare in the community, particularly in areas planned for non-residential development, such as Retail and General Commercial. Future development according to the proposed General Plan has the potential to change the visual character of the planning area, resulting in a significant aesthetic impact. Implementation of Mitigation Measures A1 through A5 will reduce the overall aesthetics	A1. The City will implement Implementation Program CD-1. 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. A2. The City will implement Implementation Program CD-2. 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. A3. The City will implement Implementation Program CD-3 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. A4. The City will implement Implementation Program CD-4 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. A5. The City will implement Implementation Program CD-5 on an ongoing basis. Implementation Program CD-5 requires the City to review discretionary development proposals for potential aesthetics impacts per the California	Implementation of Mitigation Measures A1 through A5 will reduce the overall aesthetics impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
impact to a level less than significant.	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.	
Gateways Implementation of the Salinas General Plan will allow new development to occur in the gateway areas to the City. New development in these areas, if not properly designed and implemented, could significantly impact travelers' first impressions of the City and interrupt views from these major entry points. This is considered a significant impact.	A1. The City will implement Implementation Program CD-1. 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. A2. The City will implement Implementation Program CD-2. 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. A3. The City will implement Implementation Program CD-3 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. A4. The City will implement Implementation Program CD-4 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. A5. The City will implement Implementation Program CD-5 on an ongoing basis. Implementation Program CD-5 requires the City to review discretionary development proposals for potential aesthetics impacts per the California	Implementation of Mitigation Measures A1 through A5 as described above will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	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.	
Views from Highway 101 The proposed General Plan will allow new development and rehabilitation projects to occur on sites adjacent to and visible from Highway 101. These projects could block scenic views from the Highway, degrade the visual character of the surroundings, and be incompatible (e.g., architecturally, size, height, bulk) with existing development and the character of the community. This is considered a significant impact.	A1. The City will implement Implementation Program CD-1. 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. A2. The City will implement Implementation Program CD-2. 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. A3. The City will implement Implementation Program CD-3 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. A4. The City will implement Implementation Program CD-4 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. A5. The City will implement Implementation Program CD-5 on an ongoing basis. Implementation Program CD-5 requires the City to review discretionary development proposals for potential aesthetics impacts per the California	Implementation of Mitigation Measures A1 through A5 will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	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.	
Urban/Agricultural Edges The proposed General Plan 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. This is considered a potentially significant aesthetic impact.	A1. The City will implement Implementation Program CD-1. 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. A2. The City will implement Implementation Program CD-2. 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. A5. The City will implement Implementation Program CD-5 on an ongoing basis. Implementation Program CD-5 requires the City to review discretionary development proposals 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 Implementation Program COS-10 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	Implementation of Mitigation Measures A1, A2, and A5 through A8 will reduce this impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	number of factors shall be used to determine the appropriate buffer, including type of agricultural use, topography, and pesticide and machinery use, among others. A7. The City will implement Implementation Program COS-9 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. A8. The City will implement Implementation Program LU-7 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.	
Architectural Resources 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	A5. The City will implement Implementation Program CD-5 on an ongoing basis. Implementation Program CD-5 requires the City to review discretionary development proposals 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. A9. The City will implement Implementation Program CD-8 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 downtown area. A10. The City will implement Implementation Program COS-13 on an ongoing basis. Implementation Program COS-13 requires the City to consider implementing a	Implementation of Mitigation Measure A5 and Mitigation Measures A9 and A10 will reduce this potential impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
resources or that would modify the structure so that the aesthetic value of the structure is destroyed. This is considered a significant aesthetic impact.	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.	
5.12 Population and Housing		
Substantial Growth The estimated population for the planning area at the time of buildout is approximately 213,063 living in 58,056 housing units. This is an increase of 49 percent and 48 percent, respectively, over existing conditions. However, buildout according to the plan is not anticipated to occur for approximately 30 to 40 years. Based on certain development assumptions and historic growth rates, it is anticipated that by the year 2020, approximately 184,000 people will reside in approximately	PH1. The City will implement Implementation Program HE-2, 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. PH2. The City will implement Implementation Program LU-12, 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. PH3. The City will implement Implementation Program C-3, which 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.	Implementation of Mitigation Measures PH1 through PH7 will reduce the impact to substantial growth within the planning area to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
50,100 dwelling units in Salinas. It is also anticipated that approximately 90,300 employment opportunities will exist in the planning area by 2020. A potentially significant impact associated with substantial growth is anticipated.	PH4. The City will implement Implementation Program COS-9, 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. PH5. The City will implement Implementation Program COS-29, 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. PH6. The City will implement Implementation Program CD-11, 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. PH7. The City will implement Implementation Program COS-23, 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.	

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
5.13 Public Services and Utilities		
Project Level Parkland Dedication Per State law, the City is allowed to impose parkland dedication and/or in-lieu fees on new development equal to three acres of parkland per 1,000 new residents. If the City did not require new development to provide parkland or in-lieu fees as allowed by State law, new development may 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, resulting in a significant project level impact.	PSU1. The City shall require new development to provide parkland and/or in-lieu fees, as allowed by law, to provide for three acres of parkland for every 1,000 residents.	New development will be required to provide for parkland, as required by the proposed General Plan and Mitigation Measure PSU1. Implementation of Mitigation Measure PSU1 will reduce the impact to a level less than significant.
Sewer Service - Capacity to Serve Additional Demand Implementation of the General Plan will result in new residential and non-residential development which will require additional sewer service. The MRWPCA anticipated that it has	PSU2. The City will implement Implementation Program LU-16, 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. PSU3. The City will implement Implementation Program LU-14, 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.	Implementation of Mitigation Measures PSU2, PSU3, and PSU4 will reduce the impact to a level less than significant.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
sufficient capacity for some time into the future; however, eventually it will be necessary to increase the capacity of the Salinas Pump Station to provide adequate service. A significant impact associated with this issue may occur.	PSU4. The City will implement Implementation Program LU-15, 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.	
Sewer Service - Exceeding Wastewater Treatment Services/Regional Water Quality Control Board PWWFs have occasionally exceeded the Salinas Pump Station and Salinas Interceptor 29 mgd threshold, resulting in a backup in the City's system. Since the General Plan will result in additional need for sewer services within the planning area, a significant impact associated with this issue may occur.	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.	Implementation of Mitigation Measures PSS2, PSS4, and PSS5 will reduce the impact to a level less than significant.
CUMULATIVE IMPACTS		
SIGNIFICANT AND UNAVOIDABLE CUMULATIVE IMPACTS		
5.2 Traffic/Circulation		
Regional Circulation System As development occurs, both within the City and throughout the County,	C5. The City will implement Implementation Program C-5. Implementation Program C-5 requires the City to reduce expenditure, improve design, and minimize traffic disruption by working with the Transportation Agency for Monterey County (TAMC), Caltrans, MST, AMBAG, Monterey Bay Unified Air Pollution Control	Even with implementation of the proposed mitigation, a significant unavoidable impact may remain in regards to the regional roadway

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
traffic volumes on the regional circulation system will increase and may exceed the capacity of various roadways. This is considered a cumulatively significant impact.	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. 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 within the City. If necessary, the City will revise the General Plan Circulation System to address the impact from these regional circulation system improvements.	system since there are existing deficiencies and there may not be adequate future funding to pay for the needed regional improvements. As a result, an unavoidable, significant, cumulative impact to regional roadways may occur.
5.3 Noise		
Vehicular Traffic Increased vehicular traffic along certain local and regional roadways may subject existing and future development along these roadways to significant increases in noise and noise levels in excess of 65 dB. This is considered a cumulatively significant impact.	N2. The City will apply Implementation Program N-1 during the review phase of discretionary development proposals. Implementation Program N-1 requires the City to review development proposals for potential on-and off-site stationary and vehicular noise impacts per the California Environmental Quality Act (CEQA). Any proposed development located within a 60 dB or higher noise contour (Figure N-1 and N-2 of the Noise Element) shall be reviewed for potential noise impacts and compliance with the noise and land use compatibility standards. The thresholds established in the Zoning Code, Noise Ordinance, the Noise Contours Map (Figures N-1 and N-2 of the Noise Element), and Tables N-3 and N-4 of the Noise Element will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of noise reduction designs/structures will be required to reduce the impact to a level less than significant. If the impact cannot be reduced to a level less than significant or avoided with accepted noise reduction methods, the proposed project will be determined "Clearly Unacceptable" and will not be approved.	Because there is no guarantee that existing development would be retrofitted to meet acceptable noise levels, existing development may continue to be impacted by the cumulative vehicular traffic along the region's roadways. As a result, the proposed project may result in an unavoidable, significant, cumulative noise impact to existing development.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
5.4 Air Quality		
Regional Air Quality In its *1997 Regional Population and Employment Forecast*, AMBAG forecasted a population of approximately 130,200 persons in Salinas for the Year 2000. However, the recently completed 2000 Census identified a population of approximately 143,800 persons in Salinas. It can thus be assumed that population and employment projections contained in the 1997 *Regional Population and Employment Forecast* by AMBAG for years 2000 through 2020 for Salinas are significantly lower than will actually occur. Thus, the General Plan projections for 2020 for Salinas are not consistent with the population projections identified by AMBAG for 2020 (approximately 170,100). Instead, the General Plan projections assume the *level* of growth that AMBAG anticipated to occur between 2000 and 2020 (approximately 40,000 persons) is valid. When this 40,000 is added to the actual year 2000 population of approximately 143,800 as identified by the Census, the City's population projection for 2020 is 183,800, approximately 13,700 higher than AMBAG's 2020 projection of	AQ1. The City will apply Implementation Program COS-21. Implementation Program COS-21 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. AQ2. The City will apply Implementation Program COS-23. 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 and the District. AQ3. The City will apply Implementation Program COS-25. Implementation Program COS-25 requires the City to review 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 reduce the impact to a level less than significant, where feasible. AQ4. The City will apply Implementation Program COS-22. Implementation Program COS-22 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.	The significant unavoidable impact associated with consistency with the existing AQMP will remain until the AQMP is updated to reflect more current population statistics and projections.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
170,100. Based on the difference between AMBAG's projections and those expected to occur according to the General Plan, AMBAG determined that emissions attributable to General Plan implementation are inconsistent with the AQMP. Inconsistency with the population estimates may lead to increased emissions not accounted for in the AQMP and may conflict with the applicable air quality plan (AQMP). Inconsistency with the population estimates used in the AQMP may cause a delay in the attainment of the California AAQS due to the increased emissions associated with a population projection larger than was used in the emissions inventory for the AQMP. Since AMBAG has determined that the proposed General Plan is inconsistent with the AQMP, an unavoidable, significant cumulative air quality impact may occur.	AQ5. The City will apply Implementation Program COS-24. Implementation Program COS-24 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 • Traffic Calming AQ6. The City will apply Implementation Program COS-30. Implementation Program COS-30 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 existing public buildings. AQ7. The City will apply Implementation Program COS-31. Implementation Program COS-31 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.	

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
5.5 Hydrology/Water Quality		
Groundwater Due to the continued issue of seawater intrusion and nitrate contamination in the region, additional development and population growth associated with the General Plan will contribute to a cumulatively significant impact associated with groundwater supply and quality.	HW4. The City will implement Implementation Program COS-3 on an ongoing basis. Implementation Program COS-3 requires the City, consistent with County of Monterey Draft General Plan Policy ER-6.3, if adopted, 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 ground water quality is not further degraded. HW9. The City will implement Implementation Program LU-14 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. HW10. The City will implement Implementation Program COS-2 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. HW11. The City will implement Implementation Program COS-5 on an ongoing basis. Implementation Program COS-5 requires the City to cooperate with the County of Monterey Water Resources 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. HW12. The City will implement Implementation Program COS-6 on an ongoing basis. Implementation Program COS-6 requires the City, in cooperation with the state, regional, and local water agencies and suppliers, participate in programs that seek to limit the spread of seawater intrusion into the groundwater basins through the	Despite the implementation of mitigation, a significant and unavoidable impact associated with groundwater quality and quantity will remain.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	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. HW13. The City will implement Implementation Program COS-7 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, 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 Landscaping and Irrigation Ordinance, 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 use 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 and water conserving appliances in new public and private development and rehabilitation projects.	

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
5.8 Cultural Resources		
Cultural Resources Cultural resources in Monterey County could be cumulatively impacted by future development. This is considered a cumulatively significant impact.	CR1. The City will implement Implementation Program COS-12 prior to the approval of a discretionary project. Implementation Program COS-12 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 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.	Because non-discretionary projects may not be required to incorporate mitigation to protect historic and archaeological resources. Historic or archaeological resources may be lost in the planning area as a result of non-discretionary projects. Because of this, the General Plan's impact to cumulative cultural resources will remain significant and unavoidable.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
	CR2. The City will implement Implementation Program COS-13 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. CR3. The City will implement Implementation Program COS-14 on an ongoing basis. Implementation Program COS-14 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.	
	5.9 Agricultural Resources	
Conversion of Agricultural Land Implementation of the proposed Salinas General Plan will allow the eventual conversion of approximately 4,000 acres of land currently designated for agricultural use to urban uses. While the possible conversion of	AG1. The City will implement Implementation Program COS-9, 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 away from the most productive farmland.	The impact related to the loss of agricultural land will be minimized by continued implementation of City and County policies to minimize the conversion of agricultural lands, including encouraging infill development and compact development; however,

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
4,000 acres of farmland would account for 0.3 percent of the existing agricultural land within the County, or approximately two percent of the important farmland in the County, it will still result in a project level significant impact.	AG2. The City will implement Implementation Program LU-7, 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. 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.	the Plan will still result in the loss of approximately 4,000 acres of agricultural land. As a result, the significant, unavoidable, cumulative impact on agricultural resources within Monterey County will remain.
	5.13 Public Services and Utilities	
Parkland While new development will avoid project level impacts associated with parkland to the extent allowed by State law, there is an existing deficiency that will need to be addressed by the City. Since the City has limited resources, they may not be able to fund the needed improvements. As a result, an unavoidable, significant, cumulative impact parklands may occur.	PSU1. The City shall require new development to provide parkland and/or in-lieu fees, as allowed by law, to provide for three acres of parkland for every 1,000 residents.	Because needed improvements at existing parks may not be funded and development allowed under the General Plan may exacerbate the deficiencies at these facilities, a significant and unavoidable cumulative impact to parkland and park facilities may occur.
Solid Waste An unavoidable, significant, cumulative impact associated with solid waste may occur since the regional land fill capacity is expected to be used in the next 15 years and no new plan for landfill expansion has	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.	Because no formal plan for landfill capacity expansion has been adopted, the cumulative impact will remain significant and unavoidable.

POTENTIAL IMPACTS	MITIGATION MEASURES	CONCLUSION
been adopted. While this cumulative impact has been identified, it is unlikely to occur since the Salinas Valley Solid Waste Authority is in the process of adopting an expansion plan for its facilities which will provide additional capacity.		
Groundwater As discussed under the Hydrology/Water Quality section above, an unavoidable significant cumulative impact associated with groundwater quality and supply may occur.	Mitigation Measures HW4 and HW9 through HW13 identified in the Hydrology/Water Quality section above.	Despite the implementation of mitigation, a significant and unavoidable impact associated with groundwater quality and quantity will remain.

In addition, Monterey County LAFCO is a Responsible Agency responsible for reviewing, modifying, approving or disapproving requests for changes in organization (annexation) and sphere of influence amendments, in accordance with Government Code Section 56375.

Initial Study Analysis Criteria

CEQA Guidelines Sections 15162 through 15164 are used to determine whether a subsequent EIR, supplemental EIR or addendum to an EIR is the appropriate environmental document to address issues raised regarding the proposed Project.

The Guidelines indicate that when changes to a project or its circumstances occur or new information becomes available after adoption of an EIR, the lead agency shall prepare a subsequent EIR if one or more of the following conditions occur:

- Substantial changes are proposed in the project that would require major revisions to the certified EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

- New information of substantial importance exists, which was not known or could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete. New information may show any of the following:

    - The project will have one or more significant effects not discussed in the previous EIR;

    - Significant effects previously examined will be substantially more severe than shown in the previous EIR;

    - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopted the mitigation measure or alternative; or,

    - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

However, if the project exhibits one or more of the previous conditions, a supplemental EIR instead of a subsequent EIR may be prepared if:

- Only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.

A supplemental EIR augments a previously certified EIR to the extent necessary to address the conditions described in Section 15162 and to examine mitigation and project alternatives accordingly. It is intended to revise the previous EIR through supplementation with only minor additions or changes to make the previous EIR adequate. In contrast, a subsequent EIR is a complete EIR that focuses on the conditions in Section 15162.

An addendum to the EIR may be prepared if some changes or additions to the previous EIR are necessary but none of the conditions described in Section 15162 have occurred calling for the preparation of a subsequent EIR.

Project Location and Description

The City of Salinas (City) proposes: 1) a sphere of influence (SOI) amendment (hereinafter referred to as SOI Amendment); and 2) an annexation of unincorporated Monterey County land to the City of Salinas (hereinafter referred to as Annexation). The proposed project is currently within the jurisdiction of the County of Monterey and consists of two overlapping geographic areas.

The first is the SOI Amendment area and encompasses approximately 3,347 gross acres. The City's current SOI is depicted in **Figure 1**, while the SOI Amendment area is depicted in **Figure 2**. As shown in **Figure 2**, the SOI Amendment area includes lands located to the north and east of the current City boundaries The second geographic area includes the Annexation of unincorporated Monterey County land to the City of Salinas (the Annexation area), as depicted in **Figure 3** and encompasses approximately 2,388 gross acres. The Annexation area is contained within a portion of the SOI Amendment area and is generally bounded by Rogge Road and a future extension of Russell Road on the north, Old Stage Road on the northeast, Williams Road on the east, Boronda Road on the south, and San Juan Grade Road on the west. The SOI Amendment area and Annexation area share common boundaries along Old Stage Road, Williams Road, Boronda Road and San Juan Grade Road. However, east of Natividad Road and the future alignment of Russell Road, a portion of the Settrini property is included in the SOI Amendment request but is not included in the Annexation request (refer to **Figures 2 and 3**). On the east, the Annexation area boundary is Williams Road while the SOI Amendment area extends south to the Salinas Municipal Airport. The SOI Amendment and Annexation areas are located within the Future Growth Area as described in the City of Salinas General Plan. **Figure 4** identifies planned land uses for the SOI Amendment and Annexation areas which are consistent with those identified in Figure LU-3 of the General Plan. The planned alignment of Russell Road between Natividad Road and Old Stage Road varies slightly from the expected alignment identified in the General Plan Land Use and Circulation Policy Map (LU-3). Although this variation will add some additional land area to the SOI Amendment and Annexation areas, no additional development beyond that identified in the General Plan is planned for these areas.

Development plans for the proposed Annexation area will be provided through the preparation of Specific Plans. The Specific Plans will contain the details of the proposed development and will require separate environmental analysis and documentation. In accordance with the General Plan, development of the Annexation area could provide up to 11,761 total dwellings and 3.99 million square feet of non-residential development. Currently, there are no imminent development plans for the Sphere of Influence Amendment area. The City's General Plan requires the preparation of Specific Plans including annexation plans, prior to the approval of development projects in the Future Growth Area. The annexation plan is to include a plan for providing municipal services and a fiscal analysis describing how these services will be financed. Currently there are three Specific Plans under development for the Annexation area. As shown in **Table 2**, the Sphere of Influence and Amendment Area contains approximately 3,347 gross acres (2,845 net acres) and is planned for up to 14,318 dwelling units and up to 9,023,000 square feet of commercial/office/mixed use and light industrial uses. **Table 3** describes the gross acres, net acres, and development capacity for each Project component area.

Table 2
Development Capacity
Project Area

Development Type	Gross Acres	Net Acres[1]	Dwelling Units	Non-Residential Square Feet (Millions)
Residential	1,840	1,564	13,958	-
Commercial/Retail/Mixed Use	151	129	360	2.686
General Industrial	366	311	-	4.065
Public/Semi-Public and Open Space	990	842	-	2.272
Total Development Capacity	**3,347**	**2,845**	**14,318**	**9.023**

[1] Net acres represents 85 percent of the gross acres, removing an approximate amount of acreage to dedicate for roads and rights-of-way.

Table 3
Project Areas

Project Components	Gross Acres	Net Acres[1]	Dwelling Units	Non-Residential Square Feet (Millions)
Sphere of Influence (SOI) Amendment	3,347	2,845	14,318	9.023
Annexation	2,388	2,030	11,485	3.992
Remainder (within SOI, not Annexation)	958	815	2,833	5.032
-----Settrini Property	50	43	276	-
----- South of Williams Road	908	772	2,557	5.032

[1] Net acres represents 85 percent of the gross acres, removing an approximate amount of acreage to dedicate for roads and rights-of-way.

The Project area represents only a portion of the total Future Growth Area identified in the 2002 General Plan Land Use Element (Table LU-3).

Regional Setting

The City of Salinas is located in northern Monterey County between the Gabilan and Santa Lucia mountain ranges. Located at the northern end of the Salinas Valley, Salinas is situated approximately 20 miles northeast of the City of Monterey, 60 miles south of San Jose, 101 miles south of San Francisco and 325 miles north of Los Angeles. The City is located in proximity to regional transportation routes including Highway 101, Routes 68 and 183, and the Union Pacific Railroad line, which traverse the City. Unincorporated land under the jurisdiction of the County of Monterey surrounds the City. Land uses in the areas surrounding the City include land in agricultural production, open space, commercial, and very low density rural development.

Environmental Setting

The SOI Amendment and Annexation areas contain approximately 3,347 acres and consists of relatively flat topography with slopes generally ranging from one to 10 percent. Existing land uses within the Project areas are primarily cultivated farmland and grazing lands. Other land uses within the areas are as follows: a 16-acre natural oak woodland parcel with a farmhouse and barn; Gabilan and Natividad Creek riparian corridors and a tributary riparian corridor; electrical easement with electric towers and lines; approximately 10 single-family residences, the majority of which are associated with ongoing agricultural operations; greenhouses; a church; and, barns, storage and other ancillary buildings. Additionally, McKinnon Elementary School is located on McKinnon Street north of Boronda Road in the northwest portion of the Annexation area.

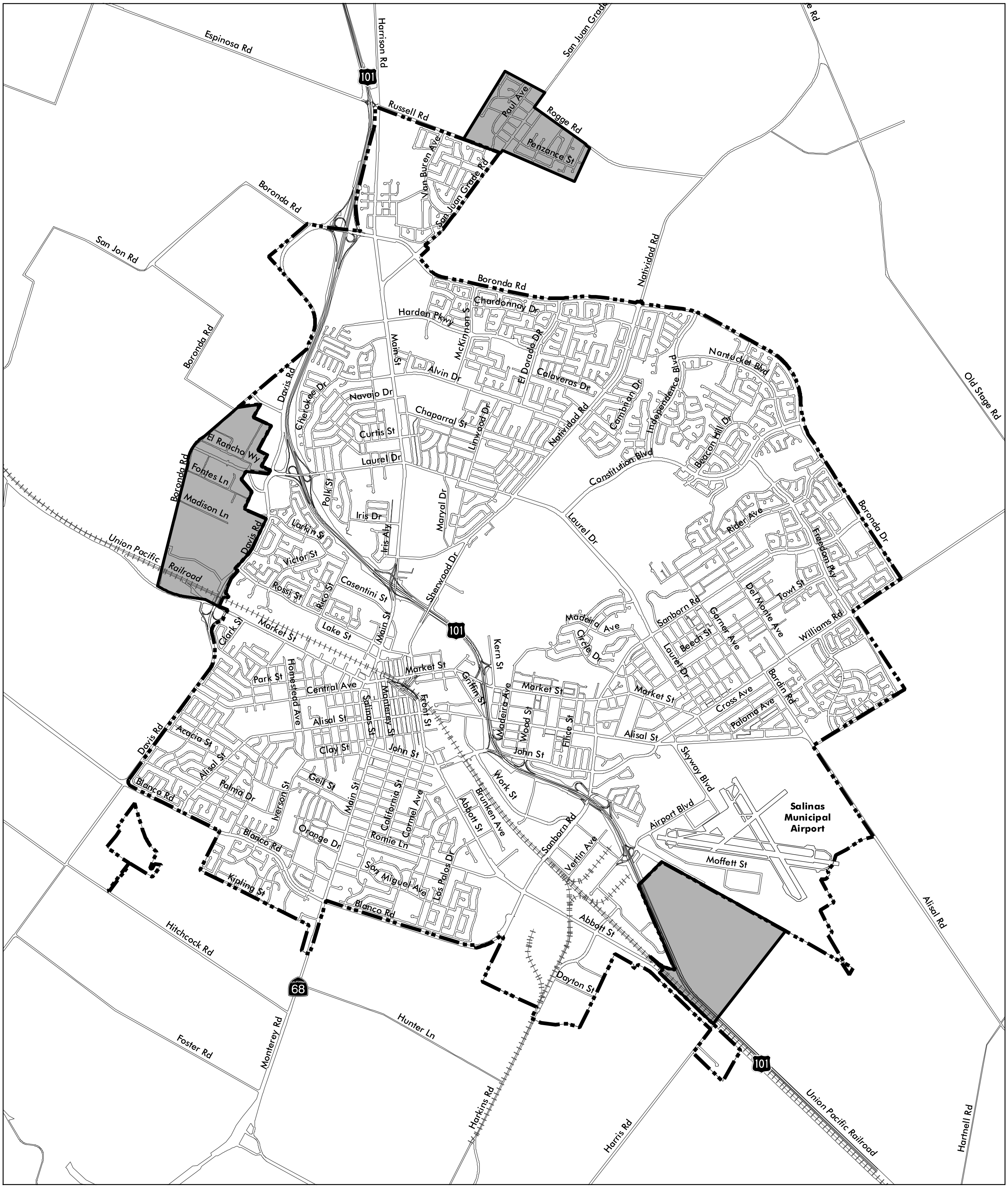
Based on 10 residences and an estimated 3.67 persons per household in the Salinas area, the Project areas contain a population of approximately 37 people.

Project Objectives

The Salinas General Plan calls for future growth to occur within the SOI Amendment and Annexation areas. The City has purposely encouraged compact, dense and infill development and has limited the amount of land available for residential development at the City's boundaries in order to protect the region's best agricultural land, especially to the south and west of the City. As a result, Salinas is one of the most densely developed cities in California. The City has little developable land remaining within its boundaries. Overcrowding within the existing housing stock has resulted. Thus, the City seeks a SOI Amendment and Annexation to provide land for a variety of housing opportunities as well as employment opportunities, including industrial development. The City will continue to promote compact development within the Future Growth Area to minimize the loss of farmland.

Required Agency Approvals

The proposed Project requires the approval of LAFCO of Monterey County, which has the authority to approve changes in organization (annexation) and sphere of influence amendments, per Government Code Section 56375. In addition, the proposed Project requires the approval of the City of Salinas City Council.



Legend

City Boundary

Existing Sphere of Influence

NORTH 0 0.5 1 1.5 2 Miles

Figure 1

City of Salinas
Existing Sphere of Influence

Legend

City Boundary

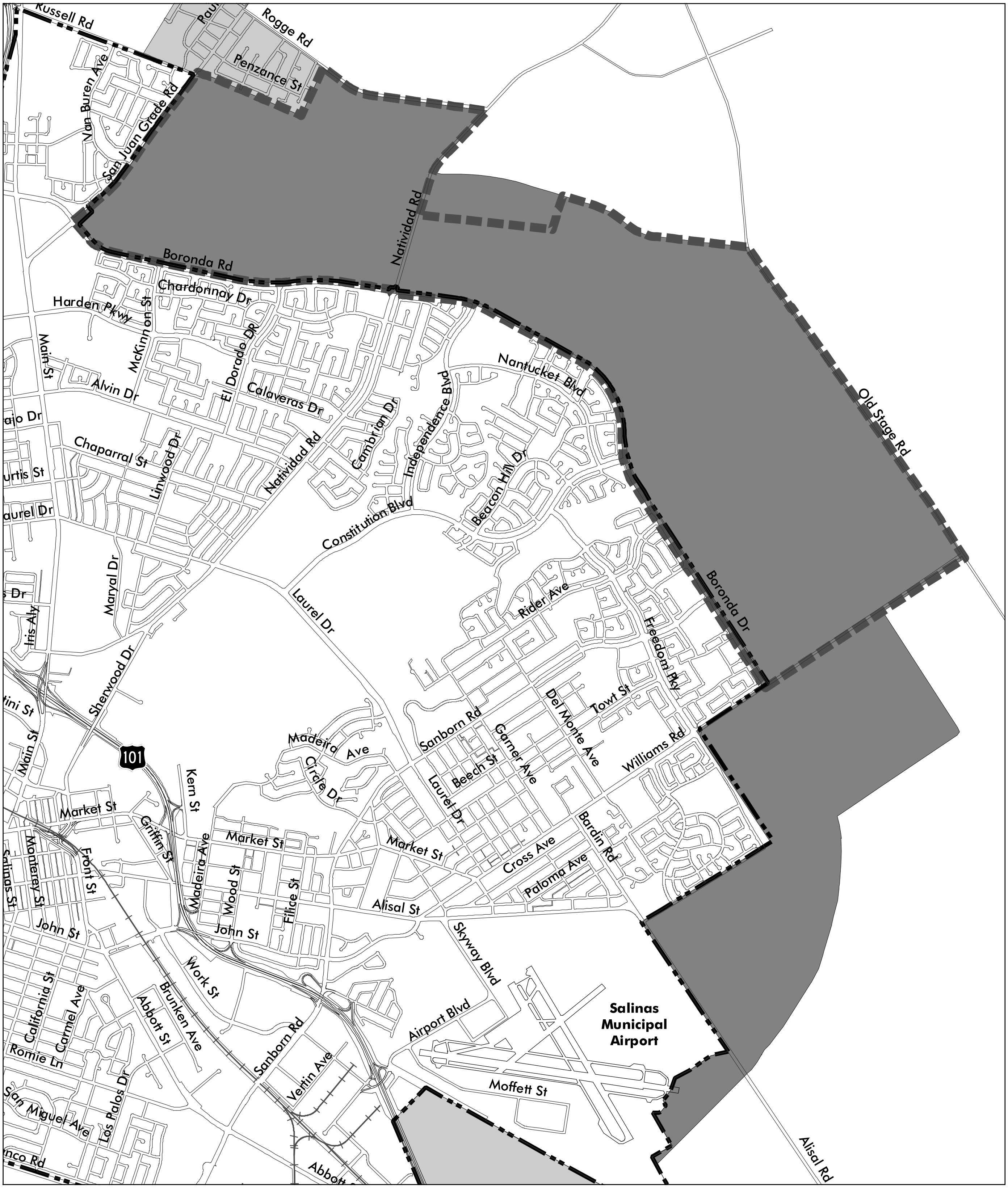
Proposed Sphere of Influence Amendment Area

Existing Sphere of Influence

NORTH 0 0.5 1 1.5 2 Miles

Figure 2

City of Salinas Proposed and Existing Sphere of Influence



Legend

City Boundary

Existing Sphere of Influence

Proposed Sphere of Influence Amendment Area

Proposed Annexation Area within Proposed Sphere of Influence Amendment Area

NORTH 0 0.5 1 1.5 2 Miles

Figure 3

City of Salinas Proposed Annexation Area

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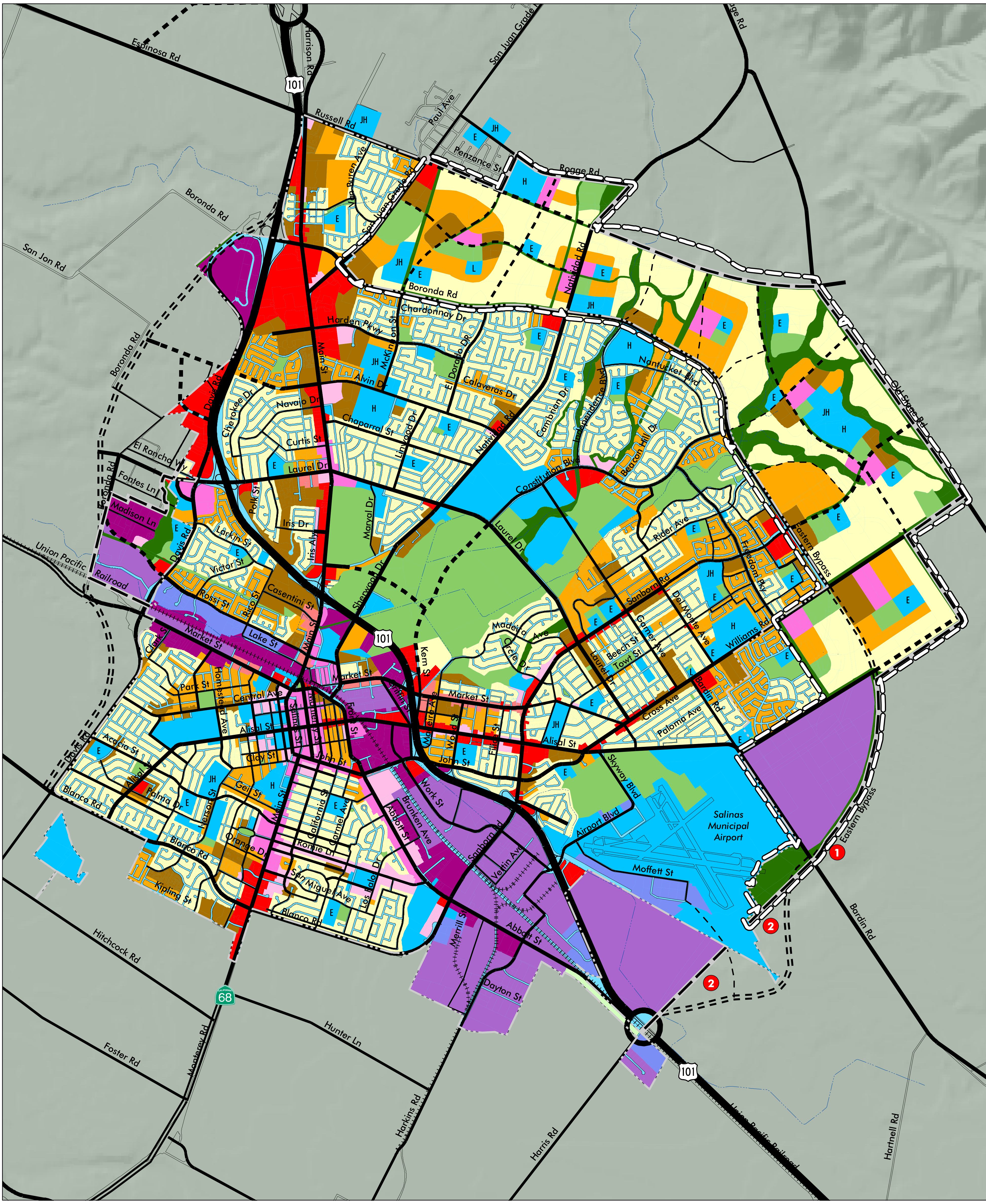

Source: City of Salinas; and P&D Consultants.

Note: **1** *Eastern Bypass Alignment is Conceptual. Actual alignment to be determined by Airport Master Plan.*
2 *No development is planned for areas inside the Eastern and Western Bypasses.*

General Plan Land Use Designations

- Residential Low Density (1-8 units/net acre; average 6.5 units/gorss acres)
- Residential Medium Density (8-15 units/net acre; average 11.75 units/gorss acres)
- Residential High Density (15-24 units/net acre; average 16.75 units/gorss acres)
- Retail
- Arterial Frontage
- Office
- Mixed Use
- General Commercial/ Light Industrial
- General Industrial
- Business Park
- Public/Semipublic
- Park
- Agricultural
- Open Space

Circulation System

- Freeway/New Interchange
- Highway
- Highway (Proposed)
- Major Arterial
- (Proposed)
- Minor Arterial
- (Proposed)
- Collector
- (Proposed)
- City Boundary
- Future Growth Area Boundary
- Proposed Sphere of Influence Amendment and Annexation Areas

NORTH

0 0.25 0.5 0.75 1 Miles

Figure 4

Land Use and Circulation Policy Map

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2. INITIAL STUDY ANALYSIS

This section of the Initial Study analyzes and identifies potential impacts of the proposed Project described in the Project Description above. The environmental factors considered are:

☒ Aesthetics	☒ Agricultural Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☒ Hazards & Hazardous Materials	☒ Hydrology/Water Quality	☒ Land Use/Planning
☒ Mineral Resources	☒ Noise	☒ Population/Housing
☒ Public Services	☒ Recreation	☒ Transportation / Traffic
☒ Utilities/Service Systems		

Issue	Finding
1. AESTHETICS. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or	☐ **Yes** ☒ **No**

Issue	Finding
(4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	

The 2002 General Plan Final Program EIR analyzed impacts to aesthetics and found that future development resulting from implementation of the General Plan had the potential to degrade the visual character of the planning area, including impacts to scenic resources and vistas, gateway areas, views from Highway 101, urban agricultural edges, and architectural resources. Light and glare impacts were also found to be significant, particularly in areas planned for non-residential development.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant aesthetics impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant aesthetic effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to aesthetics since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken which will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the aesthetic impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical and that there is no new information of importance that would suggest that the Project would have any significant aesthetic effects not discussed in the Final Program EIR, or that any of the aesthetic effects identified in the Final Program EIR would be substantially more severe. The Final Program EIR did, however, identify significant impacts to aesthetics as a result of implementation of the General Plan; because of the identical nature of the Project, the significant impacts to aesthetics resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the aesthetic impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of aesthetic impacts after mitigation for the Project will be identical to the significance of aesthetic impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for aesthetic impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant aesthetic effects. In fact, for the aesthetic impacts identified, mitigation measures identified in the Final Program EIR will reduce aesthetic impacts of the Project to a less than significant level. Therefore, no new information of substantial importance exists since the certification of the Final Program EIR suggesting the need to develop new mitigation measure or alternatives addressing the aesthetic impacts of the Project.

Issue	Finding
2. AGRICULTURAL RESOURCES. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**

Issue	Finding
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☐ **Yes** ☒ **No**

The 2002 General Plan Final Program EIR analyzed impacts to agricultural resources and found that future development resulting from implementation of the General Plan would result in a project-level and/or cumulative significant and unavoidable impacts related to the loss of "important farmland" (Important Farmland). For the analysis in the General Plan EIR, the definition of Important Farmland was supplied by the California Department of Conservation, and includes lands categorized as "prime farmland," "farmland of statewide importance," or "unique farmland." According to mapping studies illustrated in the Final Program EIR, parcels meeting this definition of Important Farmland occupy approximately 90% of the project area. The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (the Act) furthermore defines "prime agricultural land" (Prime Agricultural Land) as areas of land that have not been developed for a use other than an agricultural use and that meet one of five other criteria. The most applicable criteria for purposes of comparison in this study would be a rating as class I or class II in the USDA Natural Resources Conservation Service land use capability classification. Map studies of the project area demonstrate that approximately 95% of the project area meets the criteria of Prime Agricultural Land using the USDA classification rating system. Comparison of these mapping studies demonstrate a strong correlation between parcels classified as Important Farmland under the California Department of Conservation definition and those classified as Prime Agricultural Land under the Act, and therefore for our purposes at the General Plan level, the two definitions are largely synonymous and the impacts to Important Farmlands as analyzed in the Final Program EIR would also accurately describe the impacts to lands classified as Prime Agricultural Land under the Act. Henceforth in this initial study, "agricultural resources" refer to those lands classified as Important Farmland, Prime Agricultural Land, or both.

The Final Program EIR also identified a significant but mitigable impact relating to the compatibility of agricultural uses occurring in proximity to urban uses. Additionally, a significant unavoidable impact was identified for the conversion of agricultural zoned uses to urban uses.

The following mitigation measures were adopted in the Final Program EIR:

AG-1. The City will implement Implementation Program COS-9, 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 away from the most productive farmland.

AG-2. The City will implement Implementation Program LU-7, 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.

AG-3. The City will implement the Implementation Program COS-1l, 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.

AG-4. The City will implement Implementation Program COS-10, 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.

AG-5. 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.

In spite of implementation of these mitigation measures, the Final Program EIR concluded that there will continue to be significant and unavoidable impacts after mitigation to the conversion of agricultural zoned uses to urban uses.

(a) The Project is identical to that analyzed in the Final Program EIR. The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map (page LU-27 of the General Plan). Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant agricultural resources impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant agricultural resources effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the substantially identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan’s adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to agricultural resources since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on agricultural resources in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken which will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate that agricultural resources impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical. There is no new information of importance that would suggest that the Project would have any significant agricultural resources effects not discussed in the Final Program EIR, or that any of the agricultural resources effects identified in the Final Program EIR would be substantially more severe.

History of City's Agriculture Protection Efforts

Development-related impacts to agricultural resources have been an important consideration for the City of Salinas (City) over the last 50 years. The first General Plan for the City was adopted in 1960 and set the foundation for goals and policies to be established in future planning documents:

> "*There are no soils in the world better than those in Salinas Valley – they must be saved for agricultural uses. Salinas must be prepared to absorb its inevitable share of California's population increase but it should make a sincere attempt to encourage growth on the least productive soils in the Valley*."

This central vision has been respected since 1960 and recited and enhanced in subsequent planning documents. In general, these documents all express the City's interest in maintaining its agricultural identity, retaining agricultural lands for as long as possible, guiding growth away from prime agricultural lands, promoting infill development, separating prime agricultural lands from other uses, and recognizing agricultural lands as an equal to other major land uses.

In 1976 the City prepared a Natural Resources of Salinas Area Technical Report. This study identified a higher quality of soil suitable for agriculture production south and west of the City municipal limits. Subsequently in 1976, the City Council passed Council Resolution 9299 which established policy regarding annexations to the south and southwest of Salinas. This policy indicated the City did not intend to request or encourage the annexation of any territory to its south or southwest except when such territory might be required for public facilities.

In 1988, an update to the General Plan reaffirmed the City's policies towards growth management and preservation of agricultural lands. The 1988 General Plan included the policies of minimizing disruption of agriculture by maintaining a compact city form and directing urban expansion away from the most productive land, which resulted in growth generally northward and eastward, and called for retention of all agricultural lands designated on the General Plan map.

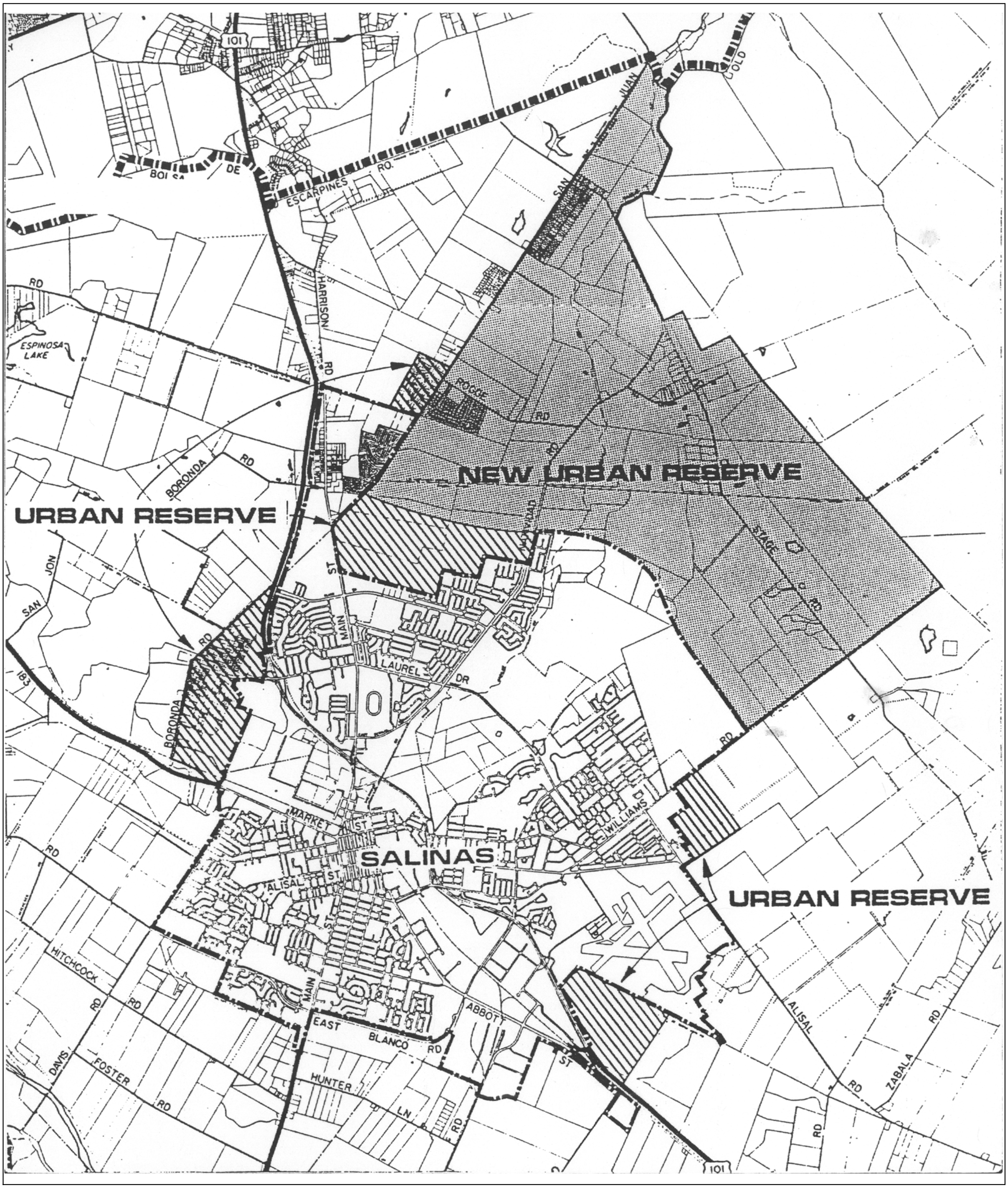
Implementing Mitigation Measures AG-1 through AG-5.

This section discusses the City's efforts to implement Mitigation Measures AG-1 through AG-5 since the General Plan EIR was certified.

AG-1. Cooperation with County of Monterey to Implement Boronda MOU.

As noted above, Mitigation Measure AG-1 requires the City to continue to cooperate with the County pursuant to the Boronda Memorandum of Understanding in order to direct growth away from the most productive farmland. The City of Salinas (City) and County of Monterey (County) adopted the Boronda Memorandum of Understanding (BMOU) in 1986, which established agreement between the City and County on the areas for growth and agricultural land preservation. It specifically directs growth to the north and east of the City boundaries for future development in the vicinity of Salinas away from the most productive farmland, as depicted in **Figure 5**. These directives were guided by the 1976 Natural Resources Report and were consistent with Council Resolution 9299 and the 1988 General Plan policies described above. The 2002 General Plan established Implementation Program Policy COS-9, which requires the City to continue to cooperate with the County to implement the BMOU. This policy was recited in the Final Program EIR as mitigation for loss of agricultural resources as Mitigation Measure AG-1 set out above.

Since the adoption of the 2002 General Plan and the Final Program EIR, the City and County adopted the Greater Salinas Area Memorandum of Understanding (GSA-MOU) on August 29, 2006. The GSA-MOU broadened, updated, and replaced the BMOU while retaining the principles of orderly growth and appropriate land use in the vicinity of Salinas as depicted in **Figure 6**. The GSA-MOU is currently applicable to growth and development of the project area and does not propose any changes in the location, types, or intensities of development envisioned that might affect agricultural resources differently than development under the 2002 Salinas General Plan. The GSA-MOU allows the City to implement General Plan Policy COS-9 and Mitigation Measure AG1 as described above.



Legend

City Boundary

Other Urban Reserve Growth Areas

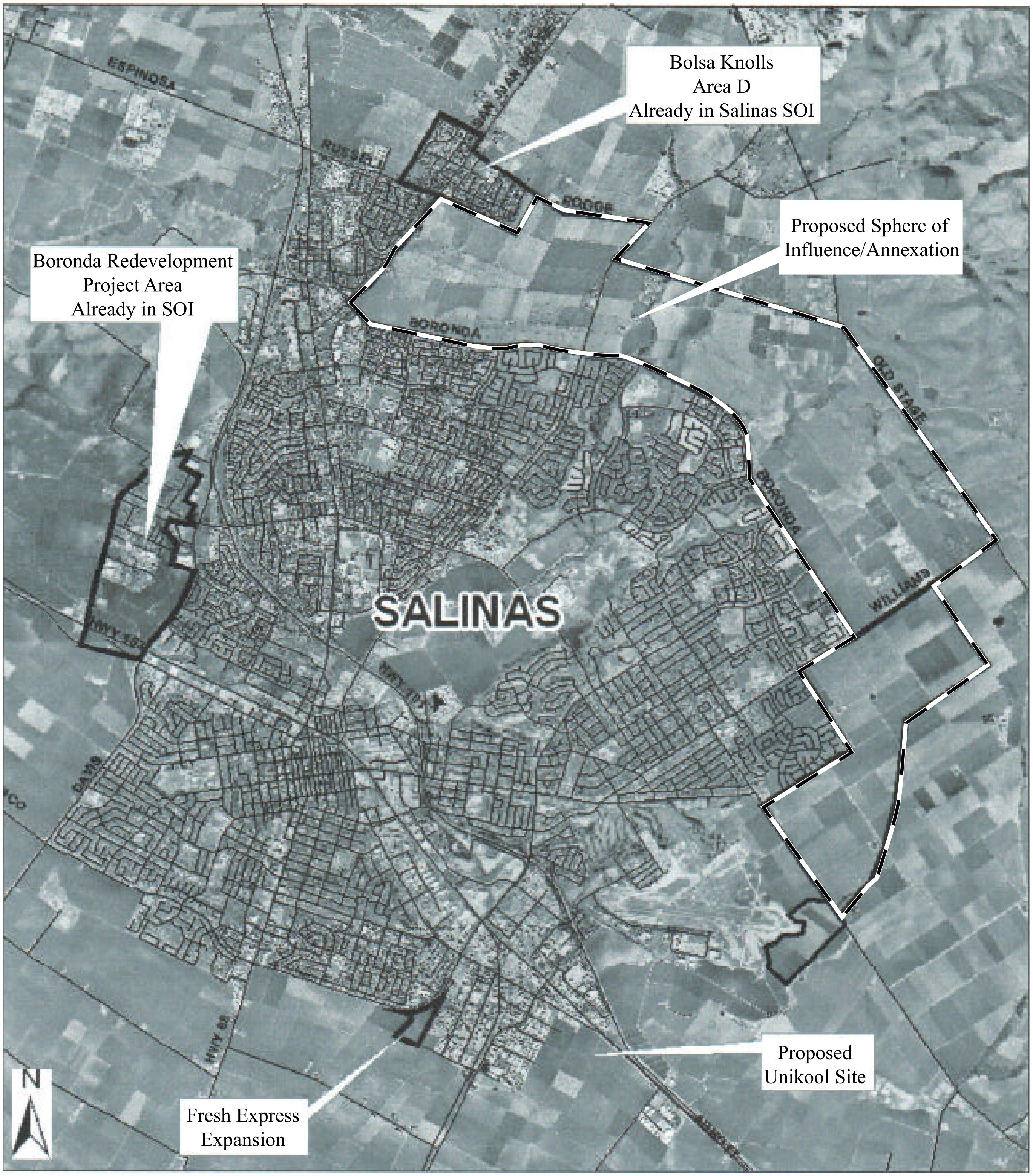
Lands Designated for Future Urban Growth

NORTH

0 400 800 1600 Feet

Figure 5

Boronda Memorandum of Understanding Direction of Growth



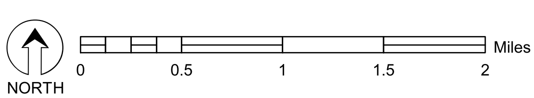


Figure 6
2006 Greater Salinas Area Memorandum of Understanding Direction of Growth

AG-2. Priority to Infill and Redevelopment Projects.

As noted above, Mitigation Measure AG-2 requires the City to implement Implementation Program LU-7. The 2002 General Plan established Implementation Program Policy LU-7 which required 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. This program was recited in the Final Program EIR as mitigation for loss of agricultural resources as Mitigation Measure AG-2. Since adoption of the 2002 General Plan and certification of the Final Program EIR, the City revised its Zoning Code and adopted an updated Zoning Code in November, 2006. This comprehensive update to the Zoning Code contains several development regulations to promote “smart growth,” “mixed-use,” “focused growth districts” and “new urbanism” concepts which promote more compact development and offer incentive programs for family-sized units, mixed-use buildings, live-work units, or infill residential development in certain zoning districts. These programs include density bonuses, relaxation of parking, open space and bedroom mix requirements, greater ground floor residential use, less-cumbersome administrative permits where discretionary review permits had been required, or additional flexibility in development standards, depending on the nature of the infill or mixed-use development. All future developments, including developments within the project area, will be required to comply with their respective Specific Plans and the updated Zoning Code, and may take advantage of the new incentive programs within the Zoning Code.

AG-3. Right to Farm Requirements.

As noted above, Mitigation Measure AG-3 requires the City to implement Implementation Program COS-11. The 2002 General Plan established Implementation Program Policy COS-11 which directed the City to revise the City’s Zoning Code to require the recordation of a Right-to-Farm Notice as a condition of discretionary permit approval for development within 1,000 feet of an established agricultural operation, consistent with the County’s “Right-to-Farm” Ordinance and the County’s General Plan Policy LU-7.8 and Actions LU-7.b and LU-7.c. 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. This program policy was recited in the Final Program EIR as mitigation for land use incompatibilities near agricultural production and other land use interfaces as Mitigation Measure AG-3. The City adopted an updated Zoning Code in November, 2006 which contained the Right-to-Farm Notice in Section 37.50-220 of the Zoning Code, allowing the City to comply with both Implementation Program Policy COS-11 and Mitigation Measure AG-3. All future developments, including developments within the project area, will be required to comply with the updated Zoning Code.

AG-4. Buffers between Agricultural and Non-Agricultural Uses.

As noted above, Mitigation Measure AG-4 requires the City to implement Implementation Program COS-10. The 2002 General Plan established Implementation Program Policy COS-10 which encouraged the provision and maintenance of buffers, such as roadways, topographic features, and open space, to prevent incompatibilities between agricultural and non-agricultural land uses. This program policy was recited in the Final Program EIR as mitigation for land use incompatibilities near agricultural production and other land use interfaces as Mitigation Measure AG-4. The City and LAFCO have an accepted practice of using perimeter roads as an agricultural/urban buffer as demonstrated with LAFCO approval of the annexation of Mountain Valley property to Salinas and the recent City of Greenfield annexation. The proposed West Side Bypass and existing PG&E easements represent examples of buffers the City could use to comply with Implementation Program Policy COS-10 and Mitigation Measure AG-4 in establishing the boundary of growth for the project area and mitigate potential land use incompatibilities between agricultural uses outside the project area and non-agricultural uses within the project area.

AG-5. Agricultural Land Conservation Easement Program.

As explained above, Mitigation Measure AG-5 requires the City to implement Implementation Program COS-12. The 2002 General Plan Implementation Program identifies policy COS-12, which directs the City to "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." A conservation easement is a legal agreement designed to serve as a flexible resource protection tool. As noted above, this program policy was recited in the Final Program EIR as mitigation for loss of agricultural resources under EIR Mitigation Measure AG-5.

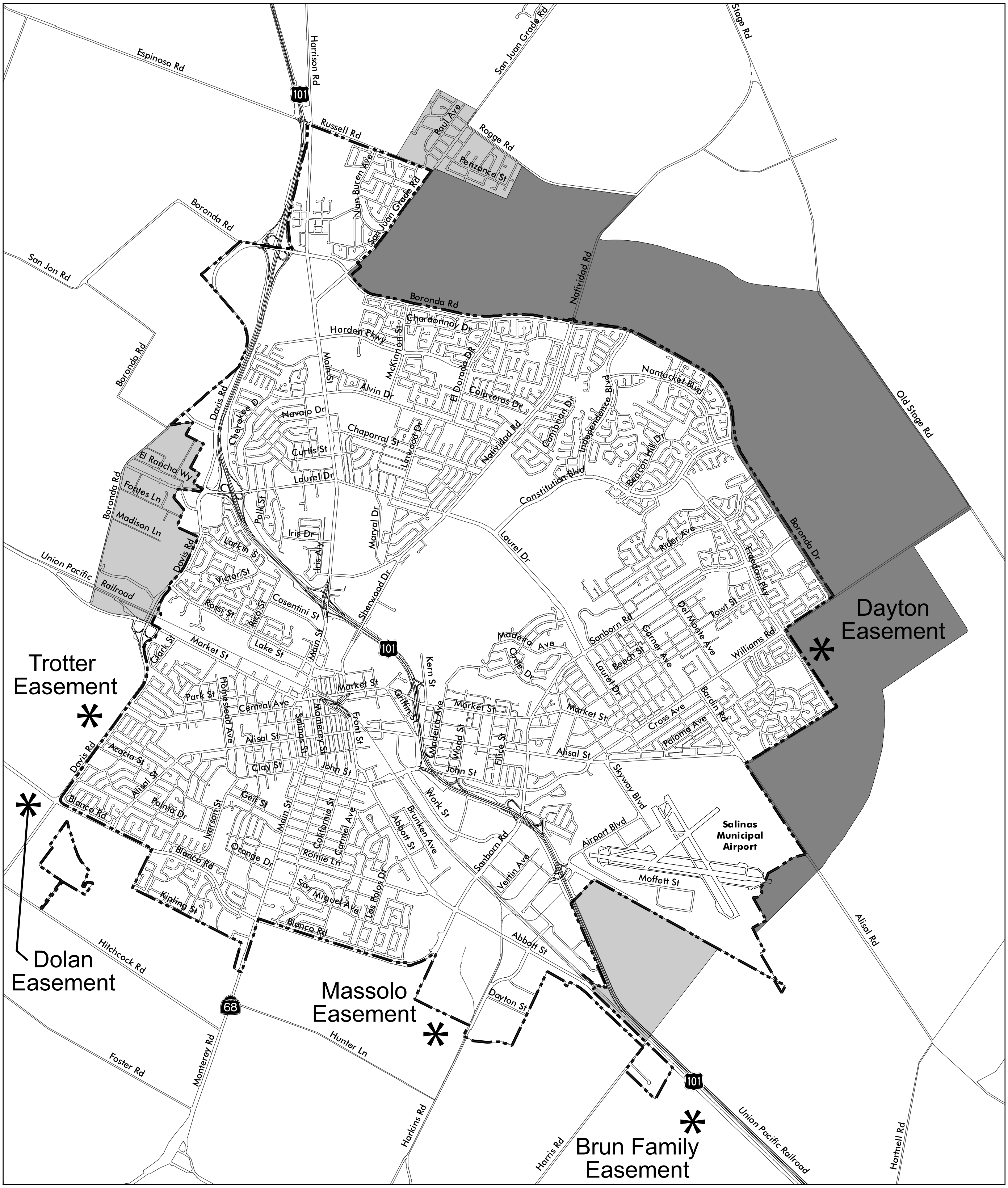
As mandated by these provisions, the City has engaged in efforts, in concert with the County, to establish programs for conservation easements, most notably through the memoranda of understanding discussed above. In particular, one aspect of implementing the GSA-MOU is the establishment of conservation easements (although technically the GSA-MOU's conservation easement requirements exempt the project area).

The City will continue to implement Implementation Program COS-12 and Mitigation Measure AG-5. In harmony with the GSA-MOU as well as the 2002 General Plan Implementation Program Policy COS-12 and the Final Program EIR Mitigation Measure AG-5, agricultural land conservation easements have been established to further protect highly productive agricultural land from urban development (see **Table 4** and **Figure 7** identifying these conservation easements). Such easements have been secured by groups like the Monterey County Agricultural and Historical Land Conservancy (MCAHLC), which recognize the regional importance and promote the conservation of agricultural lands. The legal process allows MCAHLC to enter into an agreement with a private property owner to purchase a conservation easement based on an appraised value and the property receives the monetary value of the purchase while maintaining the ability to continue farming.

As shown in **Table 4**, five noteworthy conservation easements have been established through purchases in the Salinas area, four of which total approximately 660 acres south and west of the city limits. These easements were discussed in the 2004 Boronda Crossing SEIR and illustrate the preservation of the most valuable agricultural land to the south and west of the City of Salinas.

As in the City's Final Program EIR, which analyzed impacts to agricultural land and identified conservation easements as mitigation, the County has analyzed loss of Important Farmland in the County General Plan EIR. The draft County General Plan EIR initially proposed specific mitigation in the form of conservation easements of "Important Farmland" and at mitigation ratios of a minimum 2:1. The final County General Plan EIR concluded that this initial mitigation measure was infeasible for four reasons: (1) it did not "replace farmland," (2) Important Farmland is increasing in the County, (3) mitigation at a 2:1 ratio was too costly and would adversely impact the County's ability to provide affordable housing, and (4) the measure was not sufficiently flexible to mitigate for all categories of farmland or to result in a viable mitigation program. A similar but more flexible mitigation measure was contained in the final County General Plan EIR, which relies primarily on the concept of conservation easements as follows:

AG-1.12. The County shall prepare, adopt and implement a program that requires projects involving a change of land use designation resulting in the loss of Important Farmland (as mapped by the California Department of Conservation Farmland Mapping and Monitoring Program) or involving land to be annexed to an incorporated area, in consultation with the cities to mitigate the loss of Important Farmland resulting from annexation, to mitigate the loss of that acreage. The program may include ratios, payment of fees, or some other mechanisms. Until such time as the program has been established, the County shall consult and cooperate with the cities so that projects shall mitigate the loss of Important Farmland on an individual basis as much as is feasible as determined by the Board of Supervisors. The acreage in a project or annexation that is to be utilized for inclusionary housing shall not be subject to this mitigation policy. A Community Plan or Rural Center Plan that includes a mitigation program shall not be subject to this policy. This policy would not apply to annexations covered by the 2006 Greater Salinas Area Memorandum of Understanding (MOU) between the County of Monterey and the City of Salinas.



Legend

City Boundary

Existing Sphere of Influence

Proposed Sphere of Influence Amendment Area

NORTH

0 0.5 1 1.5 2 Miles

Figure 7

City of Salinas
Existing Agricultural Easements

Table 4 Agricultural Conservation Easements						
Name of Easement	**Location / AP#**	**Purpose**	**Acreage**	**Date Recorded**	**Appraised Value**	**Price per Acre**
Trotter	Davis Rd / 207-011-003 & 023	▪ Protect agriculture ▪ Prohibit conversion	89.0	4/6/01	$612,435	$6,846
Dolan	Davis Rd/Blanco Rd / 207-031-004, 005, 006, & 008	▪ Protect agriculture ▪ Prohibit conversion	179.0	4/27/01	$1,195,000	$6,676
Brun Family	Abbott St. / 177-132-007	▪ Protect agriculture ▪ Prohibit conversion	152.0	9/24/99	$600,000	$3,947
Massolo	Hunter Land / 177-091-016, 017, 018, 019, 020, 021, 025	▪ Protect agriculture ▪ Prohibit conversion	14.6	12/29/99	$397,000	$27,192
Dayton	Williams Road / 153-021-012	▪ Protect agriculture ▪ Prohibit conversion	226.0	7/28/03	$3,700,000	$16,372
Total			*660.6*			
Average					*$6,504,435*	*$9,846*

Source: Boronda Crossing SEIR

The County General Plan EIR concluded that, despite the implementation of this mitigation measure, impacts to farmland would be significant and unavoidable. Likewise City's Final Program EIR finds that there will continue to be significant and unavoidable impacts related to the loss of Important Farmland in the Project Area in spite of the implementation of mitigation measure AG-5.

Conclusion

The Final Program EIR identified significant, unavoidable impacts and significant, but mitigable impacts to agricultural resources as a result of implementation of the General Plan; because of the identical nature of the Project and the General Plan, the significant, unavoidable and significant, mitigable impacts to agricultural resources resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the agricultural resources impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. These mitigation measures AG-1 through AG-5, as described above, were established using a "macro approach." They simultaneously satisfied multiple issues: reserving the best lands in the region for agriculture, encouraging development at a higher density to make a more efficient use of land and retain agricultural lands elsewhere, and allowing development to proceed in areas less suitable for agricultural resources. This approach allowed for a multi-faceted implementation program using different regulatory tools available to the City to preserve the most valuable farmland while still meeting its housing needs, and to allow for loss of agricultural resources in agriculturally less-efficient lands.

As described above, mitigation measures are already established and will not be countered or hindered through implementation of the proposed Project. This mitigation may take the form of conservation easements, cooperation with the County of Monterey and implementing growth Memoranda of Understanding, incentives programs to encourage infill development and redevelopment of existing urban uses, provision and maintenance of buffers, and recordation of a Right-to-Farm notice for future development. The significance of agricultural resources impacts after mitigation for the Project will be identical to the significance of agricultural resources impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for agricultural resources impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant agricultural resources effects. For the agricultural resources impacts identified related to compatibility of agricultural uses with urban uses, mitigation measures in the Final Program EIR will reduce these impacts of the Project to a less-than-significant level. For the conversion of agricultural zoned uses to urban uses, mitigation measures identified in the Final Program EIR will reduce these impacts of the Project, but not to a less-than-significant level and a significant, unavoidable impact would remain. Mitigation measures identified for the project-level and/or cumulative impacts related to the loss of important farmland would reduce the impacts of the Project; however, significant and unavoidable impacts would remain. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken which will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

Issue	Finding
3. AIR QUALITY. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☒ **Yes** ☐ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☒ **Yes** ☐ **No**

The 2002 General Plan Final Program EIR identified significant but mitigable local air quality impacts related to deteriorated LOS on five roadway segments due to implementation of the General Plan. The Final Program EIR also found that project-level significant and unavoidable short-term air quality impacts would result from construction activities associated with implementing the General Plan. Additionally, population forecasts in the General Plan exceed the population forecasts in the Air Quality Management Plan (AQMP). Based on this, the General Plan is not consistent with the AQMP and therefore would result in air pollutant emissions in excess of those quantified within the Air Quality Management Plan (AQMP) resulting in project-level and cumulative significant and unavoidable impacts.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant air quality impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant air quality effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to air quality since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on air quality in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. However, since the Final Program EIR was certified, changes in the circumstances under which the Project is undertaken which require minor revisions to the Program EIR have occurred in relation to global climate change. In 2006, AB 32, the California Global Warming Solution Act of 2006, became law. Therefore, further environmental analysis is needed to address this change in circumstance and evaluate the Project effects in relation to global climate change. With the exception of changes in circumstance associated with global climate change requiring minor revisions to the Program EIR, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken that will require major (or minor) revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the air quality impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical, with the exception of impacts related to global climate change. Since the Final Program EIR was certified, new information of importance has become available which was not analyzed in the Final Program EIR. In 2006, AB 32, the California Global Warming Solution Act of 2006, became law. Therefore, further environmental analysis is needed to address new information related to the Project effects in relation to global climate change.

Mitigation measures were identified in the Final Program EIR that would reduce the air quality impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of air quality impacts after mitigation for the Project will be identical to the significance of air quality impacts after mitigation for the General Plan, with the possible exception of air emission impacts in relation to global climate change. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible, with the possible exception of those relating to global climate change. Also, no new information since the adoption of the Final Program EIR has been identified which would suggest other mitigation measures for air quality impacts or alternatives considerably different from those analyzed in the Final Program EIR would substantially reduce one or more significant air quality project-level or cumulative effects, with the possible exception of those relating to global climate change.

For the air quality impacts related to deteriorated LOS on five roadway segments due to implementation of the General Plan, mitigation measures in the Final Program EIR will reduce these impacts of the Project to a less than significant level. For project-level air quality impacts related to construction activities associated with implementing the General Plan, mitigation measures identified in the Final Program EIR will reduce these impacts of the Project, but not to a less than significant level and a significant and unavoidable impact would remain. Mitigation measures identified for the project-level and/or cumulative impacts related to air pollutant emissions, in excess of those quantified within the AQMP based on the inconsistency of the AQMP and the General Plan, would reduce the impacts of the Project; however, a significant and unavoidable impact would remain.

Issue	Finding
4. BIOLOGICAL RESOURCES. *Does the Project result in:* (a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**

Issue	Finding
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ Yes ☒ No
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☐ Yes ☒ No

The 2002 General Plan Final Program EIR analyzed impacts to biological resources and found that future development resulting from implementing the General Plan had the potential to result in significant but mitigable impacts associated with the loss of riparian habitat, seasonal wetlands and/or loss of habitat for special status species. Additionally, the Final Program EIR identified significant but mitigable impacts to trees, nesting raptors, and oak woodlands. The Final Program EIR also found that future development resulting from implementing the General Plan could disturb grassland areas that are being used by special status species.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant biological resources impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant biological resources effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to biological resources since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on biological resources in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken that will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the biological resources impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical and that there is no new information of importance that would suggest that the Project would have any significant biological resources effects not discussed in the Final Program EIR, or that any of the biological resources effects identified in the Final Program EIR would be substantially more severe. The Final Program EIR did, however, identify significant impacts to biological resources as a result of implementation of the General Plan; because of the identical nature of the Project, the significant impacts to biological resources resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the biological resources impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of biological resources impacts after mitigation for the Project will be identical to the significance of biological resources impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for biological resources impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant biological resources effects. In fact, for the biological resources impacts identified, mitigation measures identified in the Final Program EIR will reduce biological resources impacts of the Project to a less than significant level. Therefore, no new information of substantial importance exists since the certification of the Final Program EIR suggesting the need to develop new mitigation measures or alternatives addressing the biological resources impacts of the Project.

Issue	Finding
5. CULTURAL RESOURCES. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☐ **Yes** ☒ **No**

The 2002 General Plan Final Program EIR analyzed impacts to cultural resources and found that future development resulting from implementing the General Plan had the potential to result in significant impacts. Small urban in-fill or redevelopment projects could involve the removal or alteration of existing structures with historical value or significance. Development could also occur in vacant areas with a high potential of containing archaeological resources. Although the Final Program EIR identified mitigation measures to reduce the project-level and cumulative impacts to historic and archaeological resources, a significant and unavoidable impact remains, as mitigation has not been identified to definitively reduce the impacts to a less than significant level.

The Final Program EIR also identified a significant but mitigable impact to paleontological resources associated with development-related grading and earthwork attributable to General Plan implementation.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant cultural resources impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant cultural resources effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to cultural resources since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on cultural resources in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken that will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the cultural resources impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical and that there is no new information of importance that would suggest that the Project would have any significant cultural resources effects not discussed in the Final Program EIR, or that any of the cultural resources effects identified in the Final Program EIR would be substantially more severe. The Final Program EIR did, however, identify significant impacts to cultural resources as a result of implementation of the General Plan; because of the identical nature of the Project, the significant impacts to cultural resources resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the cultural resources impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of cultural resources impacts after mitigation for the Project will be identical to the significance of cultural resources impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for cultural resources impacts or alternatives which are considerably different from those analyzed in the Final Program EIR would substantially reduce one or more significant cultural resources effects. For the paleontological resources impacts associated with development-related grading and earthwork attributable to General Plan implementation, mitigation measures identified in the Final Program EIR will reduce these impacts of the Project to a less than significant level. For project-level and cumulative historic and archaeological resources impacts related to urban in-fill development or redevelopment, and development in some vacant areas containing a high potential for archaeological resources, mitigation measures identified in the Final Program EIR will reduce these impacts of the Project, but not to a less than significant level and a significant and unavoidable impact would remain.

Issue	Finding
6. GEOLOGY/SOILS. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☐ **Yes** ☒ **No**

The 2002 General Plan Final Program EIR analyzed impacts to geology/soils and found that future development resulting from implementation of the General Plan had the potential to allow development to occur in areas with some localized constraints related to clay soils and steeper slopes. This is a significant but mitigable impact. The Final Program EIR also identified a significant but mitigable impact related to an increase in the number of people and buildings exposed to seismic groundshaking, as a result of an increase in development by implementing the General Plan.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant geology/soils impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant geology/soils effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan’s adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to geology/soils since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and geology/soils impacts in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken that will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the geology/soils impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical and that there is no new information of importance that would suggest that the Project would have any significant geology/soils effects not discussed in the Final Program EIR, or that any of the geology/soils effects identified in the Final Program EIR would be substantially more severe. The Final Program EIR did, however, identify significant impacts to geology/soils as a result of implementation of the General Plan; because of the identical nature of the Project, the significant impacts to geology/soils resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the geology/soils impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of geology/soils impacts after mitigation for the Project will be identical to the significance of geology/soils impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for geology/soils impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant geology/soils effects. In fact, for the geology/soils impacts identified, mitigation measures identified in the Final Program EIR will reduce geology/soils impacts of the Project to a less than significant level. Therefore, no new information of substantial importance exists since the certification of the Final Program EIR suggesting the need to develop new mitigation measures or alternatives addressing the geology/soils impacts of the Project.

Issue	Finding
7. HAZARDS AND HAZARDOUS MATERIALS. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the	☐ **Yes** ☒ **No**

Issue	Finding
previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	

The 2002 General Plan Final Program EIR analyzed impacts to hazards and hazardous materials and identified the following significant but mitigable impacts associated with new development by implementing the General Plan:

- An increase in the use of hazardous materials by new households and small businesses.
- Many of the planned commercial and industrial operations will store and use hazardous materials which could also lead to an increase in the number of leaking underground storage tanks.
- A greater potential for human exposure to pesticides as new development occurs in proximity to agricultural areas.
- Increased generation and transport of hazardous materials through the City's major transportation corridors and the related increase in the potential for accidents and environmental contamination.
- New development may occur adjacent to the areas subject to flooding and also has the potential to change drainage patterns due to the increase in impervious surfaces.
- New development in proximity to natural vegetation areas has the potential to increase the potential for urban and wildland fires.
- More demand on aircraft use on the Salinas Municipal Airport and increased operations may cause higher noise levels and limit the intensity and height of development within aircraft hazard zones.
- Increased demand for emergency services during disasters.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed

Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant hazards and hazardous materials impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant hazards and hazardous materials effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to hazards and hazardous materials since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and hazards/hazardous materials in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken that will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the hazards and hazardous materials impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical and that there is no new information of importance that would suggest that the Project would have any significant hazards and hazardous materials effects not discussed in the Final Program EIR, or that any of the hazards and hazardous materials effects identified in the Final Program EIR would be substantially more severe. The Final Program EIR did, however, identify significant impacts to hazards and hazardous materials as a result of implementation of the General Plan; because of the identical nature of the Project, the significant impacts to hazards and hazardous materials resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the hazards and hazardous materials impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of hazards and hazardous materials impacts after mitigation for the Project will be identical to the significance of hazards and hazardous materials impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for hazards and hazardous materials impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant hazards and hazardous materials effects. In fact, for the hazards and hazardous materials impacts identified, mitigation measures identified in the Final Program EIR will reduce hazards and hazardous materials impacts of the Project to a less than significant level. Therefore, no new information of substantial importance exists since the certification of the Final Program EIR suggesting the need to develop new mitigation measures or alternatives addressing the hazards and hazardous materials impacts of the Project.

Issue	Finding
8. HYDROLOGY AND WATER QUALITY. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☒ **Yes** ☐ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☒ **Yes** ☐ **No**

The 2002 General Plan Final Program EIR identified significant but mitigable surface water quality impacts due to the potential for increased urban runoff, as well as erosion from grading and construction activity associated with future development from implementation of the General Plan. The Final Program EIR also found that future development would result in greater areas of impervious surfaces leading to an increase in the volume of urban pollutants in local water bodies.

Additionally, the Final Program EIR found that implementation of the General Plan had the potential to affect the quality and supply of groundwater in the following ways:

- The General Plan will create a need for the expansion of facilities to meet the additional water use demands and fire flow requirements. To meet the increased demand for water, new wells may need to be constructed or existing wells may need to be made deeper.
- Increased pumping of groundwater may exacerbate the contamination of the water supply by seawater intrusion and increase the degradation of the water supply by nitrate contamination.
- Increases in impervious surfaces may result in a reduction in the amount of water that infiltrates the soil to the groundwater table, which leads to a reduction in the groundwater recharge rate over time; and
- Development allowed by the General Plan may result in an increase in the amount of industrial chemicals and urban contaminants infiltrating groundwater supplies, further decreasing groundwater quality.

Although the Final Program EIR identified mitigation measures to reduce the project-level and/or cumulative impacts to groundwater quality and supply, the potential impacts (i.e. overdrafting and seawater intrusion) associated with the increased pumping of groundwater remain significant and unavoidable.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant hydrology and water quality impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant air quality effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on hydrology and water quality in the Project areas.

However, changes with respect to the circumstances under which the Project was undertaken have occurred. Since the 2002 General Plan Final Program EIR was certified, the Monterey County Water Resources Agency (MCWRA) has continued to negotiate with the National Marine Fisheries Service (NMFS) regarding the amount of water to be released over the Nacimiento Dam to provide adequate habitat for Steelhead, a fish species listed as "threatened" by the Endangered Species Act. Though the negotiations specifically pertain to the Salinas Valley Water Project, the outcome could impact the water supply availability to the Project area. As part of the pre-application process for the proposed Project in September 2005, the Monterey County Local Agency Formation Commission (LAFCO) determined that the Project may be required to reduce the amount of stored water to provide more release water for Steelhead; thereby reducing the amount of water planned to solve the saltwater intrusion problem. If this occurs, the increased water demand to serve the Project area could result in greater project-level and/or cumulative impacts to groundwater supplies than were analyzed in the Final Program EIR. Therefore, minor changes to the Final Program EIR will need to incorporate the outcome of MCWRA and NMFS negotiations regarding water releases over the Salinas Dam and its resultant effect on water supply available to the proposed Project and Future Growth Area.

In addition, LAFCO also noted that stormwater conveyance facilities downstream of the SOI Amendment and Annexation area are at capacity in September 2005. Therefore, further analysis of stormwater drainage solutions is necessary.

(c) Subsection (a) above demonstrates the hydrology and water quality impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical and that there is no new information of importance that would suggest that the Project would have any significant hydrology and water quality effects not discussed in the Final Program EIR, or that any of the hydrology and water quality effects identified in the Final Program EIR would be substantially more severe. The Final Program EIR did, however, identify significant impacts to hydrology and water quality as a result of implementation of the General Plan; because of the identical nature of the Project, the significant impacts to hydrology and water quality resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the hydrology and water quality impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of hydrology and water quality impacts after mitigation for the Project will be identical to the significance of hydrology and water quality impacts after mitigation for the General Plan, with the possible exception of water supply issues subject to MCWRA and NMFS negotiations. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for hydrology and water quality impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant hydrology and water quality effects, with the possible exception of those associated with water supply issues.

For the hydrology and water quality impacts related to increased urban runoff, erosion from grading and construction activity, and increased impervious surface areas, mitigation measures in the Final Program EIR will reduce these impacts of the Project to a less than significant level. Although the Final Program EIR identified mitigation measures to reduce the project-level and cumulative impacts to groundwater quality and supply, the potential impacts (i.e. overdrafting and seawater intrusion) associated with the increased pumping of groundwater remain significant and unavoidable.

Issue	Finding
9. LAND USE AND PLANNING. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following:	☐ **Yes** ☒ **No**

Issue	Finding
(1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	

The 2002 General Plan Final Program EIR analyzed impacts to land use and planning and identified the following significant but mitigable impacts associated with related land use plans and policies:

- Existing zoning designations per the Salinas Zoning Code may not be consistent with new General Plan designations proposed as part of implementation of the General Plan.
- Implementation of the General Plan may conflict with the land use designations in the Greater Salinas Area Plan which is under the jurisdiction of Monterey County.
- Implementation of the General Plan may result in the development of land uses that are not compatible with the Salinas Municipal Airport Master Plan resulting in potential noise and safety impacts.
- Implementation of the General Plan may result in the development of land uses that are not compatible with the Monterey County Airport Land Use Plan resulting in potential noise and safety impacts.
- Implementation of the General Plan could result in the conversion of agricultural land designated for preservation (to the west and south of the City) by the Boronda Memorandum of Understanding to urban uses.

Since the adoption of the General Plan and the Final Program EIR, the City of Salinas and the County of Monterey have replaced the Boronda Memorandum of Understanding with the Greater Salinas Area Memorandum of Understanding (GSAMOU). The GSAMOU addresses orderly and appropriate land use development in the vicinity of Salinas. However, the GSAMOU does not propose any changes in the location, types or intensities of development that might affect land use and planning differently than development under the Salinas General Plan.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General

Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant land use and planning impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant land use and planning effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to land use and planning since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and land use and planning in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken that will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the land use and planning impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical and that there is no new information of importance that would suggest that the Project would have any significant land use and planning effects not discussed in the Final Program EIR, or that any of the land use and planning effects identified in the Final Program EIR would be substantially more severe. The Final Program EIR did, however, identify significant impacts to land use and planning as a result of implementation of the General Plan; because of the identical nature of the Project, the significant impacts to land use and planning resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the land use and planning impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of land use and planning impacts after mitigation for the Project will be identical to the significance of land use and planning impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for land use and planning impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant land use and planning effects. In fact, for the land use and planning impacts identified, mitigation measures identified in the Final Program EIR will reduce land use and planning impacts of the Project to a less than significant level. Therefore, no new information of substantial importance exists since the certification of the Final Program EIR suggesting the need to develop new mitigation measures or alternatives addressing land use and planning impacts of the Project.

Issue	Finding
10. MINERAL RESOURCES. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR;	☐ **Yes** ☒ **No**

Issue	Finding
(3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	

The 2002 General Plan Final Program EIR did not analyze the impacts to mineral resources resulting from implementation of the General Plan. However, an area (a dolomite quarry) to the northeast, but outside of the Planning Area has been designated by the State Division of Mines and Geology as an Aggregate Resource Area. The proposed Project is not located in or adjacent to this area. Additionally, the City does not propose any development in or adjacent to this area, nor does it have jurisdiction in this area. Therefore, no additional mineral resources analysis is applicable.

Issue	Finding
11. NOISE. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR;	☐ **Yes** ☒ **No**

Issue	Finding
(3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	

The 2002 General Plan Final Program EIR analyzed noise impacts and found that future development resulting from implementation of the General Plan would result in a significant and unavoidable impact related to vehicular transportation related project-level and/or cumulative noise impacts on existing development. The Final Program EIR also identified a significant but mitigable impact relating to the construction, railroad- and aircraft-related, and stationary noise impacts on sensitive receptors.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant noise impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant noise effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to noise since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its noise impacts in the Project area. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken which will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the noise impacts of the Project and those analyzed for the Project area as part of the certified Final Program EIR are identical. There is no new information of importance that would suggest that the Project would have any significant noise effects not discussed in the Final Program EIR, or that any of the noise effects identified in the Final Program EIR would be substantially more severe.

The Final Program EIR identified significant, unavoidable noise impacts and significant, but mitigable noise impacts as a result of implementation of the General Plan; because of the identical nature of the Project and the General Plan, the significant, unavoidable and significant, mitigable noise impacts resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the noise impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of noise impacts after mitigation for the Project will be identical to the significance of noise impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for noise impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant noise effects. For the noise impacts related to construction activities, railroad or airport operations, and stationary sources, mitigation measures in the Final Program EIR will reduce these impacts of the Project to a less than significant level. For the project-level and/or cumulative noise impacts related to vehicular traffic, mitigation measures identified in the Final Program EIR will reduce these impacts of the Project, but not to a less than significant level and a significant, unavoidable impact would remain.

Issue	Finding
12. POPULATION/HOUSING. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☐ **Yes** ☒ **No**

The 2002 General Plan Final Program EIR analyzed impacts to population/housing and found that future development resulting from implementation of the General Plan had the potential to result in a significant, but mitigable impact related to substantial population and housing unit growth over existing conditions.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant population/housing impacts beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant population/housing effects that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to population/housing since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and population/housing impacts in the Project areas. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken that will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the population/housing impacts of the Project and those analyzed for the Project areas as part of the certified Final Program EIR are identical and that there is no new information of importance that would suggest that the Project would have any significant population/housing effects not discussed in the Final Program EIR, or that any of the population/housing effects identified in the Final Program EIR would be substantially more severe. The Final Program EIR did, however, identify significant impacts to population/housing as a result of implementation of the General Plan; because of the identical nature of the Project, the significant impacts to population/housing resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the population/housing impacts of implementing the General Plan, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of population/housing impacts after mitigation for the Project will be identical to the significance of population/housing impacts after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for population/housing impacts or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce one or more significant population/housing effects. In fact, for the population/housing impacts identified, mitigation measures identified in the Final Program EIR will reduce population/housing impacts of the Project to a less than significant level. Therefore, no new information of substantial importance exists since the certification of the Final Program EIR suggesting the need to develop new mitigation measures or alternatives addressing the population/housing impacts of the Project.

Issue	Finding
13. PUBLIC SERVICES. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☐ **Yes** ☒ **No**

The 2002 General Plan Final Program EIR analyzed impacts to public services (including police protection, fire and emergency services, schools, and libraries) and found that General Plan policies addressed the public services needs of future development resulting from implementation of the General Plan. The specific environmental impact of constructing new facilities could not be determined at the time, but the Final Program EIR found that construction and operation of such facilities could potentially cause significant impacts. These potential impacts however were addressed by the General Plan policies and mitigation measures included in Sections 5.1 through 5.12 of the Final Program EIR.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant impacts to public services beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant effects to public services that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan’s adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to public services since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on public services in the Project area. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken which will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the impacts to public services of the Project and those analyzed for the Project area as part of the certified Final Program EIR are identical. There is no new information of importance that would suggest that the Project would have any significant effects to public services not discussed in the Final Program EIR, or that any of the effects to public services identified in the Final Program EIR would be substantially more severe.

The Final Program EIR did not identify significant impacts to public services as a result of implementation of the General Plan. However, the Final Program EIR did find a potential for significant impacts resulting from the construction and operation of public services facilities. Because of the identical nature of the Project and the General Plan, any potentially significant impacts as a result of construction and operation of new facilities through implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the land use section of the Final Program EIR that would reduce the potential construction and operation impacts of public service facilities, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of impacts of public service facilities after mitigation for the Project will be identical to the significance of impacts to parklands or recreational facilities after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for impacts of public service facilities or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce significant effects on public services.

Issue	Finding
14. RECREATION. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☐ **Yes** ☒ **No**

Issue	Finding
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☐ **Yes** ☒ **No**

The 2002 General Plan Final Program EIR analyzed impacts to recreation and found that future development resulting from implementation of the General Plan would result in a significant but mitigable project-level impact relating provision of parklands and the construction of park and recreational facilities. The Final Program EIR also identified a potential significant and unavoidable cumulative impact relating to the ability of the City to provide for an existing deficiency in the amount of parkland.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant impacts to parklands or recreational facilities beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant effects to parklands or recreational facilities that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however this development was contemplated by the General Plan and analyzed in the Final Program EIR. The development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to parklands or recreational facilities since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on parklands or recreational facilities in the Project area. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken which will require major revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the impacts to parklands or recreational facilities of the Project and those analyzed for the Project area as part of the certified Final Program EIR are identical. There is no new information of importance that would suggest that the Project would have any significant effects to parklands or recreational facilities not discussed in the Final Program EIR, or that any of the effects to parklands or recreational facilities identified in the Final Program EIR would be substantially more severe.

The Final Program EIR identified significant, unavoidable cumulative impacts and significant, but mitigable project-level impacts to parklands or recreational facilities as a result of implementation of the General Plan; because of the identical nature of the Project and the General Plan, the significant, unavoidable cumulative and significant, mitigable project-level impacts to parklands or recreational facilities resulting from implementation of the Project would be the same as those identified by the Final Program EIR.

Mitigation measures were identified in the Final Program EIR that would reduce the impacts of implementing the General Plan to parklands or recreational facilities, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of impacts to parklands or recreational facilities after mitigation for the Project will be identical to the significance of impacts to parklands or recreational facilities after mitigation for the General Plan. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for impacts to parklands or recreational facilities or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce significant effects on parklands or recreational facilities. For the impact to parklands or recreational facilities related to the sufficient provision of parkland, a mitigation measure in the Final Program EIR will reduce this impact of the Project at the project-level to a less than significant level, though there would remain a significant, unavoidable cumulative impact.

Issue	Finding
15. TRAFFIC/CIRCULATION. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☒ **Yes** ☐ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☒ **Yes** ☐ **No**

The 2002 General Plan Final Program EIR analyzed impacts to traffic and circulation using three different alternative scenarios, and found that development resulting from implementation of the General Plan could result in a significant and unavoidable project-level and cumulative impact to the regional highway system. The Final Program EIR also identified a significant but mitigable impact relating to the local roadway system, regional roadway modifications, and the Salinas Municipal Airport. The Final Program EIR identified no significant impacts to bicycle and pedestrian systems, bus service, rail service, or roadway design and safety.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant impacts to traffic or circulation beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant effects to traffic or circulation that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however, in general, this development was contemplated by the General Plan and analyzed in the Final Program EIR. Since 2002, questions have been raised about the environmental impact analysis of the capacity of the regional transportation system to serve proposed land uses in and around the City's new growth areas. This concern was raised during the LAFCO pre-application process for the proposed SOI Amendment and Annexation. The California Department of Transportation believes that a regional transportation study should be prepared prior to annexation of lands into the City, and the Transportation Agency for Monterey County (TAMC) states that the EIR prepared for the General Plan did not address the impact of new development on the regional transportation system. Because of the identical nature of the Project, therefore, the Final Program EIR may not have fully addressed the Project's impacts on the regional transportation network (including the regional highway system and regional roadway modifications). Additional environmental review at both the project- and cumulative-levels to analyze these would be necessary.

With the possible exception of the impact on the regional transportation network, the development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to traffic and circulation since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on traffic and circulation in the Project area. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, with the possible exception of the impact on the regional transportation network, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the impacts to traffic and circulation of the Project and those analyzed for the Project area as part of the certified Final Program EIR are identical, with the possible exception of the project and cumulative impacts on the regional transportation network. For the identical impacts, there is no new information of importance that would suggest that the Project would have any significant effects to traffic and circulation not discussed in the Final Program EIR, or that any of the effects to traffic and circulation identified in the Final Program EIR would be substantially more severe. As mentioned in subsection (b), however, there is new information that there may be a project-level and/or cumulative impact by the Project to the regional transportation network not considered by the Final Program EIR.

The Final Program EIR identified significant and unavoidable project-level and cumulative impacts to the regional highway system, and significant but mitigable impacts to the regional roadway modifications, though as mentioned above it is possible that the impacts would be even greater than those identified. As well, the Final Program EIR identified significant but mitigable impacts to the local roadway system and the Salinas Municipal Airport. Because of the identical nature of the Project and the General Plan, these significant and mitigable or significant and unavoidable impacts through implementation of the Project would be the same as those identified by the Final Program EIR, with the possible exception of the project-level and/or cumulative impacts to the regional transportation network (including the regional highway system and regional roadway modifications).

Mitigation measures were identified in the Final Program EIR that would reduce the impacts of implementing the General Plan to traffic and circulation, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of impacts to traffic and circulation after mitigation for the Project will be identical to the significance of impacts to traffic and circulation after mitigation for the General Plan, with the possible exception of the regional transportation network. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible, with the possible exception of the regional transportation network. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for impacts to traffic and circulation or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce significant effects on traffic and circulation, with the possible exception of the regional transportation network. For the impacts related to the local roadway system and the Salinas Municipal Airport, mitigation measures in the Final Program EIR will reduce these impacts of the Project to a less than significant level. For the project-level and/or cumulative impacts related to the regional transportation network (including the regional highway system and regional roadway modifications), mitigation measures in the Final Program EIR may reduce these impacts of the Project, though these will need further analyses and the impacts could remain significant and unavoidable.

Issue	Finding
16. UTILITIES/SERVICE SYSTEMS. *Does the Project result in:*	
(a) Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	☐ **Yes** ☒ **No**
(b) Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	☒ **Yes** ☐ **No**
(c) New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified? New information may show any of the following: (1) The Project will have one or more significant effects not discussed in the previous EIR; (2) Significant effects previously examined will be substantially more severe than shown in the previous EIR; (3) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, but the Project proponents decline to adopt the mitigation measure; or (4) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the Project proponents decline to adopt the mitigation measure.	☒ **Yes** ☐ **No**

The 2002 General Plan Final Program EIR analyzed impacts to utilities or service systems (water, sewer, flood control, energy, solid waste, and communications) and found that General Plan policies addressed the infrastructure and facilities demands of utilities or services systems from future development resulting from implementation of the General Plan. The specific environmental impact of constructing new facilities could not be determined at the time, but the Final Program EIR found that construction and operation of such facilities could potentially cause significant impacts. These potential impacts however were addressed by the General Plan policies and mitigation measures included in Sections 5.1 through 5.12 of the Final Program EIR. The Final Program EIR identified project-level and cumulative significant and unavoidable impacts to water quality and supply, and landfill capacity. The Final Program EIR also identified significant but mitigable impacts to the capacity of sewer infrastructure to meet additional demand, and exceedance of wastewater treatment requirements of the Regional Water Quality Control Board.

(a) The 2002 General Plan and its associated Final Program EIR identify the SOI Amendment and Annexation (the Project) areas as Future Growth Areas (Salinas General Plan, page LU-22 and Figure LU-1 Future Growth area, page LU-23). Land uses for the Project areas are identified in Figure LU-3 Land Use and Circulation Policy Map, page LU-27 of the General Plan. Types and intensities of development for the Project areas are described in the General Plan on pages LU-28 through page LU-35 and on Table LU-3 Development Capacity, page LU-37.

The 2002 General Plan identifies growth within Project area, a 2,845-acre area, including 842 acres of open space. The Project includes development of over 14,000 residential units and 9 million square feet of retail, industrial, public/semi-public, or mixed use development; the 2002 General Plan also allows the same types and levels of development within the SOI Amendment and Annexation areas. Because the proposed Project development is identical to the development types and intensities identified in the General Plan and its associated Final Program EIR, the Project does not substantially change limits, amount, type, or intensity of development allowed in the Project area beyond what was analyzed in the certified Final Program EIR for the General Plan. No new or greater significant impacts to utilities or service systems beyond those identified and analyzed in the Final Program EIR could then occur. Therefore, there are no substantial changes proposed in the Project or substantial increases of previously identified significant effects to utilities or service systems that would require major (or minor) revisions to the Final Program EIR.

(b) Subsection (a) above demonstrates the identical nature of the Project and the types and intensities of development identified in the 2002 General Plan and its associated Final Program EIR. Some development within the General Plan Future Growth Area has occurred since the General Plan's adoption in 2002; however in general this development was contemplated by the General Plan and analyzed in the Final Program EIR. Since 2002, questions have been raised about the environmental impact analysis of the capacity of the regional sewage treatment plant to serve proposed land uses in and around the City's new growth areas. This concern was raised during the LAFCO pre-application process for the proposed SOI Amendment and Annexation. The plant may have been designed with the objective of serving unincorporated areas with a lesser magnitude of development than that proposed by the General Plan. Because of the identical nature of the Project, the plant design therefore may not have anticipated serving a development density of that proposed by the Project, and additional environmental review to analyze the capacity of the plant and its planned future expansions to do so is necessary.

With the possible exception of the sewage treatment plant capacity, the development baseline of the Project conforms to the General Plan and the environmental impacts of the development related to utilities or service systems since 2002 are not in addition to or more severe than that which the Final Program EIR analyzed. The City of Salinas has made no modifications to its General Plan since 2002 that change the policies related to growth and its effect on utilities or service systems in the Project area. Implementation of the Project from this point forward will continue to be identical to that described in the General Plan and analyzed by the Final Program EIR. Therefore, with the possible exception of sewage treatment plant capacity, no substantial changes have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous Final Program EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

(c) Subsections (a) and (b) above demonstrate the impacts to utilities or service systems of the Project and those analyzed for the Project area as part of the certified Final Program EIR are identical, with the possible exception of sewage treatment capacity. For the identical impacts, there is no new information of importance that would suggest that the Project would have any significant effects to utilities or service systems not discussed in the Final Program EIR, or that any of the effects to utilities or service systems identified in the Final Program EIR would be substantially more severe. As mentioned in subsection (b), however, there is new information that there may be an impact associated with implementing the Project related to sewage treatment capacity not considered by the Final Program EIR.

The Final Program EIR could not identify specific significant impacts related to construction of utilities or service system facilities as a result of implementation of the General Plan. However, the Final Program EIR did find a potential for significant impacts resulting from the construction and operation of public services facilities. The Final Program EIR identified project-level and cumulative significant and unavoidable impacts to water quality and supply, and landfill capacity. As well, the Final Program EIR identified significant but mitigable impacts to the capacity of sewer infrastructure to meet additional demand, and inability to meet wastewater treatment requirements of the Regional Water Quality Control Board. Because of the identical nature of the Project and the General Plan, any potentially significant impacts as a result of construction and operation of new facilities, significant and mitigable or significant and unavoidable impacts through implementation of the Project would be the same as those identified by the Final Program EIR, with the possible exception of the sewage treatment capacity.

Mitigation measures were identified in the Final Program EIR that would reduce the impacts of implementing the General Plan to utilities or service systems, and these mitigation measures would continue to apply to implementation of the proposed Project. The significance of impacts to utilities or service systems after mitigation for the Project will be identical to the significance of impacts to utilities or service systems after mitigation for the General Plan, with the possible exception of the sewage treatment capacity. No proposed mitigation measures or alternatives found to be infeasible in the Final Program EIR would now be feasible. Also, no new information since the adoption of the Final Program EIR has been identified that would suggest other mitigation measures for impacts to utilities or service systems or alternatives which are considerably different from those analyzed the Final Program EIR would substantially reduce significant effects on utilities or service systems, with the possible exception of the sewage treatment capacity. For the project-level and cumulative impacts related to water quality and supply, mitigation measures in the Hydrology and Water Quality section of the Final Program EIR would reduce these impacts, though there would remain a significant and unavoidable impact. As well, for the project-level and/or cumulative impacts on landfill capacity, mitigation measures in the Final Program EIR will reduce these impacts of the Project though there would remain a significant and unavoidable impact. For the project-level and cumulative impacts related to the capacity of sewer infrastructure to meet additional demand, and the inability to meet wastewater treatment requirements of the Regional Water Quality Control Board, mitigation measures in the Final Program EIR may reduce these impacts of the Project to a less than significant level, though this will need further analysis and the impact could remain significant and unavoidable.

3. SOURCES

City of Salinas:

Salinas General Plan, 2002.

Salinas General Plan, Final Environmental Impact Report, 2002.

Salinas Zoning Code

Traffic Fees - Cost Estimates and Fee Schedule, (Revised: March 1, 2005).

1989 Historical and Architectural Resources Survey and Preservation Plan - Appendix, 1989.

Harden Ranch Planned Community Precise Plan, 1988.

Williams Ranch Planned Community Precise Plan, 1993.

Multihazard Emergency Plan, 1986.

City of Salinas Sewage and Drainage Master Plan, 1992.

Harden Ranch Planned Community Final EIR, 1987

Williams Ranch Planned Community Final EIR, 1987

Association of Monterey Bay Area Governments:

2004 Regional Population and Employment Forecasts, 2004.

Federal Agencies:

2000 Census of Population and Housing, 2000.

Soil Survey of Monterey County, California, 1978.

Monterey County Local Agency Formation Commission:

Preliminary Sphere of Influence Evaluation for the City of Salinas, letter to the Members of the Formation Commission, dated September 26, 2005.

Standards for the Evaluation of Proposals.

Monterey Bay Unified Air Pollution Control District:

CEQA Air Quality Guidelines, dated June 2004

2005 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region

2004 Air Quality Management Plan.

Monterey County:

Monterey County 2006 General Plan Final Program Environmental Impact Report (dated December 20, 2006 and Certified January 3, 2007).

Greater Salinas Area Plan, 1986, as amended November 2005.

Boronda Neighborhood Improvement Plan, 1987.

Monterey County Hazardous Waste Management Plan, 1989.

Greater Salinas Memorandum of Understanding, 2006.

Monterey County Water Resources Agency:

Salinas Valley Ground Water Basin Seawater Intrusion Delineation/Monitoring Well Construction Program, 180-Foot Aquifer, 1993.

Monterey County Drainage Study: Carr Lake and Reclamation Ditch, 1979.

Transportation Agency for Monterey County:

Monterey County Regional Transportation Plan, 2005.

Congestion Management Program, 1994.

1994 General Bikeways Plan for Monterey County, 1994

Monterey-Salinas Transit:

Short Range Transit Plan, Fiscal Year 1995-1999.

Other:

California Water Service Company Urban Water Management Plan, Sept. 2004.

4. DETERMINATION

The table below summarizes the results of the initial study analysis. As indicated in the table, the issue areas of air quality, hydrology and water quality, traffic/circulation and utilities and service systems require further analysis in a supplemental EIR.

Summary of Initial Study Analysis Conclusions				
	Substantial changes proposed in the Project that would require major (or minor) revisions to the certified EIR due to the involvement of new significant effects or a substantial increase of previously identified significant effects?	Substantial changes that have occurred with respect to the circumstances under which the Project is undertaken which will require major (or minor) revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects?	New information of substantial importance exists, which was not known or could not have been known within the exercise of reasonable diligence at the time the previous EIR was certified?	Does issue need to be addressed in Supplemental EIR?
Issue Area				
Aesthetics	No	No	No	No
Agricultural Resources	No	No	No	No
Air Quality (global climate change)	No	**Yes**	**Yes**	**Yes**
Biological Resources	No	No	No	No
Cultural Resources	No	No	No	No
Geology/Soils	No	No	No	No
Hazards/Hazardous Materials	No	No	No	No
Hydrology/Water Quality	No	**Yes**	**Yes**	**Yes**
Land Use and Planning	No	No	No	No
Mineral Resources	No	No	No	No
Noise	No	No	No	No
Population/Housing	No	No	No	No
Public Services	No	No	No	No
Recreation	No	No	No	No
Traffic/Circulation	No	**Yes**	**Yes**	**Yes**
Utilities/Service Systems	No	**Yes**	**Yes**	**Yes**

This Initial Study was performed to analyze the potential for changes in the analysis of environmental impacts, mitigation measures and conclusions of the 2002 Salinas General Plan Final Program EIR as described in CEQA Guidelines Sections 15162 through 15164 resulting from the proposed Salinas Sphere of Influence Amendment and Annexation (“Project”). All environmental issue areas addressed in the Final Program EIR were studied to determine if substantial differences exist between the analysis, mitigation measures, and conclusions cited in the Final Program EIR and that needed for the proposed Project. The study finds that for certain environmental issues, either minor changes have occurred in the circumstances under which the Project is undertaken, or that new information of substantial importance is available suggesting that the Project has new or more severe significant effects not previously discussed or that new or considerably different mitigation measures not previously included could now reduce the significance of environmental effects, or both. These findings specifically applied to the analysis of the following environmental issues:

- Traffic/Circulation – regional transportation system;
- Public Services and Utilities – regional wastewater treatment plant capacity;
- Hydrology/Water Quality – water supply and storm water drainage; and
- Air Quality - Global Climate Change.

On the basis of this Initial Study:

☐ The City of Salinas finds that the proposed Project has been analyzed in the earlier 2002 General Plan Final Program EIR pursuant to applicable standards. Because the Project triggers one or more of the following conditions a ***SUBSEQUENT ENVIRONMENTAL IMPACT REPORT*** will be prepared:

- ➢ Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

- ➢ Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions to the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or,

- ➢ New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:

  - The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

  - Significant effects previously examined will be substantially more severe than shown in the previous EIR;

  - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or,

  - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative. (CEQA Section 15162)

☒ The City of Salinas finds that the proposed Project meets one or more of the criteria above that would trigger a preparation of a Subsequent EIR, however only ***MINOR*** additions or changes are necessary to make the earlier 2002 General Plan Final Program EIR adequately apply to the proposed Project. Therefore, a ***SUPPLEMENT TO AN ENVIRONMENTAL IMPACT REPORT*** will be prepared. (CEQA Section 15163)

☐ The City of Salinas finds that the proposed Project does not meet one or more of the criteria above that would trigger a preparation of a Subsequent EIR, and only minor or technical changes or additions to the earlier 2002 General Plan Final Program EIR are necessary, and therefore an ***ADDENDUM TO AN ENVIRONMENTAL IMPACT REPORT*** will be prepared. (CEQA Section 15164)

Prepared by: ______________________ Date: 8/31/07

Robert Richelieu, Planning Manager
City of Salinas Community Planning and Development

APPENDIX C
TRAFFIC REPORT

Final Transportation Impact Analysis

Salinas Sphere of Influence Amendment and Annexation Supplemental TIA

TRANSPORTATION

&PLANNING

FEHR & PEERS
TRANSPORTATION CONSULTANTS

160 W. Santa Clara St., Ste. 675
San Jose, CA 95113

SJ04-738

November 14, 2007

Final Report

Salinas Sphere of Influence Amendment and Annexation Supplemental TIA

Prepared for:

EDAW
and
City of Salinas

Prepared by:

Fehr & Peers

November 14, 2007

This report was prepared under my direction and responsible charge. I attest to the technical information contained herein and have judged the qualification of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

11/14/07

D. Sohrab Rashid, P.E. — Date
Registered Traffic Engineer

REGISTERED PROFESSIONAL ENGINEER
D. SOHRAB RASHID
No. 1845
Exp. 6/30/08
TRAFFIC
STATE OF CALIFORNIA

SJ04-738

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1. INTRODUCTION

This report documents the supplemental transportation analysis for the proposed Sphere of Influence (SOI) Amendment and Annexation development north of East Boronda Road in the City of Salinas. The Project area is comprised of three specific plan areas (West, Central and East) with distinct development plans and land uses. This project was originally analyzed as part of the City *General Plan* update in 2002, and the evaluation of potential transportation impacts were included in the Circulation Element update. While that study focused on the impact of the proposed annexation on the local roadway system, this document reports on the potential impacts to regional and sub-regional facilities maintained by Caltrans, Monterey County and the City of Salinas based on the currently proposed uses. The analysis presented herein is at the General Plan-level, where impacts are based on daily and peak hour roadway segment volumes only. Once the Sphere of Influence Amendment and Annexation is approved, separate and more detailed environmental review will be conducted for each of the individual Specific Plan areas. The more detailed analysis will include intersection-level studies and address issues such as transit, bicycle, pedestrian facilities and services.

PROJECT DESCRIPTION

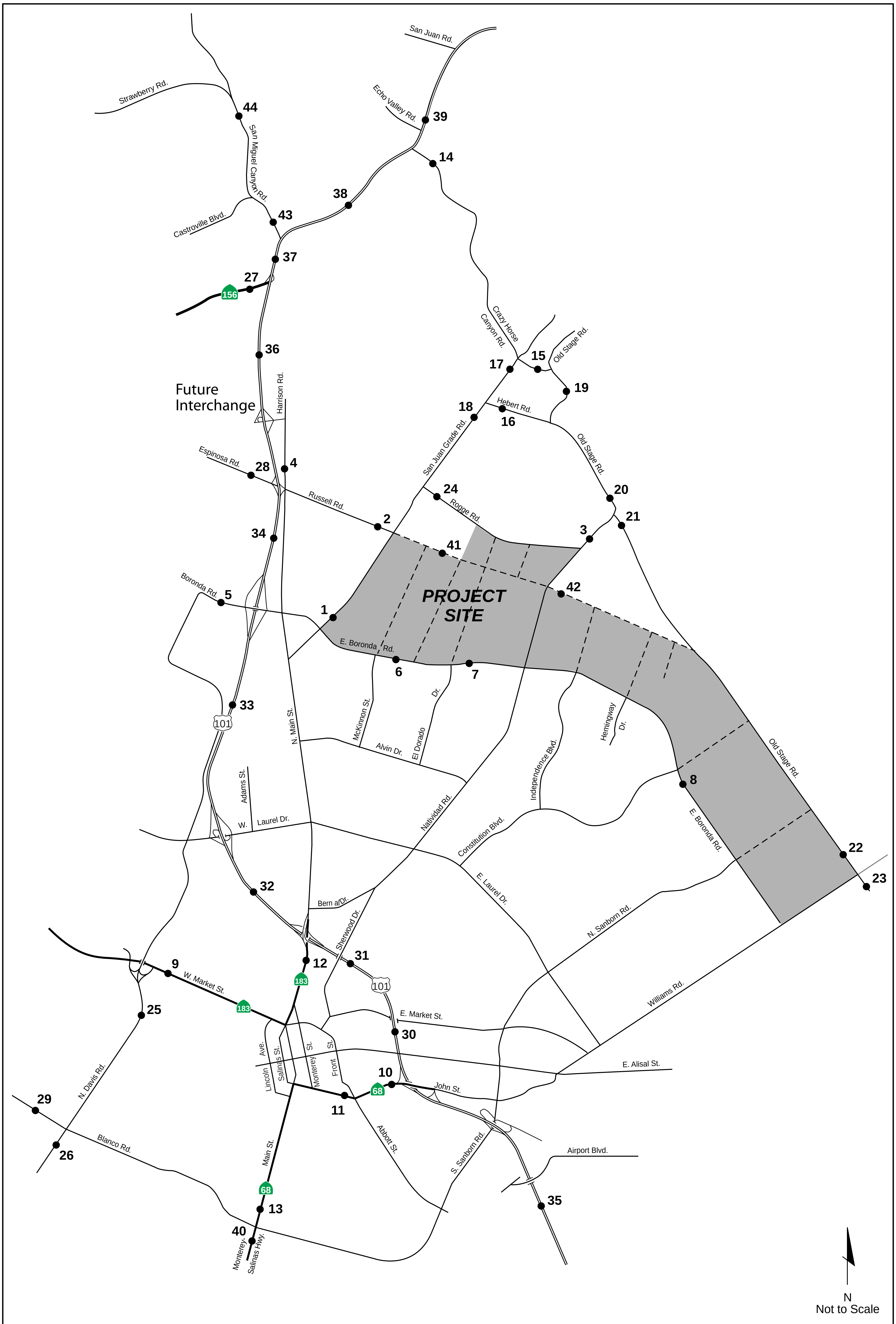
The proposed development area is generally bounded by San Juan Grade Road to the west; the Russell Road extension, Rogge Road, and Old Stage Road to the north; Williams Road and the future growth boundary to the east; and East Boronda Road to the south. The proposed project includes a planned 11,761 residential dwelling units, 1,839,000 square feet (sf) of retail/office space, and 12 schools on approximately 2,455 acres. **Table 1** summarizes the number of residential dwelling units, and retail/office space by specific plan area. The site location and surrounding roadway network are presented on **Figure 1**.

TABLE 1
PROJECT LAND USE BY SPECIFIC PLAN AREA

Specific Plan Area	Site Plan Date	Residential (d.u.)				Retail/ Office (s.f.)
		Low-Density[1]	Medium-Density[1]	High-Density[2]	Total	
West	December 1, 2006	2,821	819	700	4,340	866,000[3]
Central	November 4, 2005	2,363	312	702	3,377	346,000
East	February 1, 2007	2,467	840	737	4,044	627,000
	Total	**7,651**	**1,971**	**2,139**	**11,761**	**1,839,000**

Notes:
1 Medium-density split 50/50 between low and medium-density residential units because the project sponsors expect the medium-density residential units to include some small lot single-family homes.
2 The high-density residential category includes dwelling units under mixed use and high-density designations.
3 Size of retail/office includes 659,000 s.f. of mixed use and 207,000 s.f. of retail at the intersection of Boronda Road and San Juan Grade Road.

Source: Fehr & Peers, August 2007.



FEHR & PEERS
TRANSPORTATION CONSULTANTS

Salinas Sphere of Influence Amendment and Annexation Supplemental TIA

STUDY ROADWAY SEGMENTS

August 2007
SJ04-738

FIGURE 1

STUDY ROADWAY SEGMENTS

This analysis examines the operation of roadway and freeway segments near the project site to identify segments with reduced level of service. Thirty-four City of Salinas and Monterey County roadway segments were analyzed, as well as ten US 101 segments from north of Crazy Horse Canyon Road to south of Airport Boulevard. **Figure 1** shows the location of roadway and freeway segments included in this analysis. Listed by index number, the segments are identified as:

1. San Juan Grade Road between Boronda Road and Van Buren Avenue
2. Russell Road between Van Buren Avenue and San Juan Grade Road
3. Natividad Road between Old Stage Road and Rogge Road
4. Harrison Road north of Russell Road
5. Boronda Road between N. Davis Road and US 101
6. Boronda Road between McKinnon Street and El Dorado Drive
7. Boronda Road between El Dorado Drive and Natividad Road
8. Boronda Road between Constitution Boulevard and North Sanborn Road
9. W. Market Street (SR 183) between N. Davis Road and Clark Street
10. John Street (SR 68) between Abbott Street and US 101
11. John Street (SR 68) between Monterey Street and Abbott Street
12. N. Main Street (SR 183) between US 101 and Rossi Street
13. S. Main Street (SR 68) between San Miguel Avenue and Blanco Road
14. Crazy Horse Canyon Road south of US 101
15. Crazy Horse Canyon Road between San Juan Grade Road and Old Stage Road
16. Hebert Road between San Juan Grade Road and Old Stage Road
17. San Juan Grade Road between Hebert Road and Crazy Horse Canyon Road
18. San Juan Grade Road between Rogge Road and Hebert Road
19. Old Stage Road between Crazy Horse Canyon Road and Hebert Road
20. Old Stage Road between Hebert Road and Natividad Road
21. Old Stage Road between Natividad Road and Future Russell Road Extension
22. Old Stage Road between Russell Road Extension and Williams Road
23. Old Stage Road east of Williams Road
24. Rogge Road between San Juan Grade Road and Natividad Road
25. Davis Road between West Market Street and Central Avenue
26. Davis Road south of Blanco Road
27. SR 156 west of US 101
28. Espinosa Road west of US 101

29. Blanco Road west of Davis Road
30. US 101 between John Street (SR 68) and Market Street
31. US 101 between Market Street and Main Street (SR 183)
32. US 101 between Main Street (SR 183) and Laurel Drive
33. US 101 between Laurel Drive and Boronda Road
34. US 101 between Boronda Road and Russell Road
35. US 101 south of Airport Boulevard
36. US 101 between Russell Road and SR 156
37. US 101 between SR 156 and San Miguel Canyon Road
38. US 101 between San Miguel Canyon Road and Crazy Horse Canyon Road
39. US 101 between Crazy Horse Canyon Road and San Juan Road
40. S. Main Street (SR 68) between Blanco Road and Hunter Lane
41. Russell Road between McKinnon Street and El Dorado Drive (future roadway)
42. Russell Road between Natividad Road and Independence Boulevard (future roadway)
43. San Miguel Canyon Road between US 101 and Castroville Boulevard
44. San Miguel Canyon Road between Castroville Boulevard and Strawberry Road

This report is divided into five chapters. The existing transportation system serving the site and the current operating conditions of the roadway and freeway segments are described in Chapter 2. Chapter 3 discusses the creation and use of a sub-area travel demand model for the Year 2030 roadway segment volume forecasts. This chapter also discusses the roadway improvements for each future year scenario and presents the future year forecasts. Chapter 4 describes the roadway improvements and levels of service for Year 2030 Without Project Conditions. Finally, Chapter 5 describes the Year 2030 with Project Conditions.

2. EXISTING CONDITIONS

This chapter describes the existing roadway facilities, traffic volumes, and roadway operations. This chapter also includes a discussion of the methods used to calculate roadway and freeway levels of service, followed by the corresponding results for Existing Conditions.

EXISTING ROADWAY NETWORK

US 101 (north and south), and State Routes (SR) 183 (to and from the northwest) and SR 68 (to and from the southwest) provide regional access to and from Salinas. The following north-south roadways provide local access near the project site: North Main Street, San Juan Grade Road, Natividad Road, and Williams Road. The east-west roadways providing local access near the project site include the following: Crazy Horse Canyon Road, Hebert Road, Old Stage Road, Russell Road, and Boronda Road. Descriptions of these roadway facilities are presented below.

Regional Access

US 101 extends northward through San Jose and San Francisco and southward along the California Central Coast. Except for Russell Road, the intersection of US 101 and major roadways in Salinas are either an interchange or grade separated overpass. US 101 is a four-lane divided highway with a three beam median barrier through Salinas, and a multilane highway immediately north and south of Salinas.

State Route 183 originates at Highway 1 in Castroville to the northwest of Salinas. SR 183 turns into West Market Street at the intersection of Davis Road (also the Salinas city limits) where it becomes a four-lane major arterial roadway with a center two-way-left-turn-lane. SR 183 then heads north on North Main Street, which is a four lane major arterial until it connects with US 101. Within the City of Salinas SR 183 has a 35 mph posted speed limit on West Market Street and North Main Street. The posted speed limit is 55 mph outside of the City of Salinas.

State Route 68 is a four-lane highway south of the Salinas city limits. SR 68 continues through Salinas as South Main Street from East Blanco Road to John Street and then continues on John Street until it connects with US 101. The designated streets of SR 68, South Main Street and John Street, are generally four-lane arterials with a posted speed limit of 30 to 35 mph.

North/South Local Roadways

North Main Street is four-lane major arterial south of its intersection with US 101. North of US 101, North Main Street is generally a six-lane divided arterial roadway that intersects E. Laurel Drive, San Juan Grade Road, E. Boronda Road, and Russell Road with posted speed limits from 35 to 45 mph. North of Boronda Road, N. Main Street is a four-lane major arterial with a center two-way-left-turn-lane. From Market Street to US 101, N. Main Street is designated SR 183. South of Market Street, N. Main Street splits into a one-way couplet (Salinas Street southbound and Monterey Street northbound) until John Street, at which point it becomes S. Main Street. From Blanco Road to John Street, S. Main Street is designated SR 68. Major intersections are controlled by traffic signals.

San Juan Grade Road is a four-lane divided major arterial that runs northeasterly from N. Main Street to E. Boronda Road. Leaving the city limits north of E. Boronda Road, San Juan Grade Road narrows to a two-lane rural road. San Juan Grade Road passes west of the project site as a two-lane rural roadway and intersects Russell Road, Rogge Road, Hebert Road, and Crazy Horse Canyon Road. The posted speed limit ranges from 35 to 55 mph.

Natividad Road is a six-lane divided major arterial from E. Laurel to E. Boronda Road. A portion of Natividad Road, between E. Boronda Road and Los Coches Drive, has sound walls on each side of the roadway with a posted speed limit of 45 mph. Natividad Road is a two-lane rural roadway north of E. Boronda Road. Natividad Road passes through the center of the project site as a two-lane rural roadway. South of E. Bernal Drive, this road is known as Sherwood Drive, a 4-lane arterial.

Williams Road is a four-lane major arterial with a center two-way-left-turn-lane from E. Laurel Drive to Freedom Parkway. North of Freedom Parkway there is, at the time of this study, two southbound lanes and only one northbound lane with a wide median. Williams Road is a two-lane rural roadway north of E. Boronda Road to its terminus at Old Stage Road. The posted speed limit ranges from 35 to 55 mph. Williams Road passes to the east of the project site.

East/West Local Roadways

Crazy Horse Canyon Road is a two-lane rural roadway that intersects US 101, San Juan Grade Road and Old Stage Road, north of Salinas. The posted speed limit ranges from 45 to 55 mph.

Old Stage Road is a two-lane rural road that intersects Natividad Road and Williams Road. Old Stage Road passes to the north of the project site. The posted speed limit ranges from 45 to 55 mph.

Russell Road begins at the Espinosa Road/Russell Road interchange with US 101 and proceeds east to San Juan Grade Road as a two-lane roadway. The posted speed limit ranges from 25 to 45 mph.

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 narrows to a four-lane major arterial to San Juan Grade Road. Boronda Road narrows to a two-lane roadway and terminates at Williams Road. Boronda Road intersects all major and minor north-south arterials described above. These major intersections are controlled by traffic signals. E. Boronda Road passes to the south of the project site and has a posted speed limit of 45 mph.

TRAFFIC DATA COLLECTION

City of Salinas staff provided daily local roadway segment volumes. Monterey County staff provided existing peak hour directional roadway segment counts. Finally, Caltrans staff provided existing peak hour directional multi-lane and freeway segment counts for study segments. The Peak Hour Factor (PHF) obtained from peak period counts were applied to the individual roadway and freeway segments under Existing Conditions and a PHF of 0.95 was applied to future year roadway segments except Caltrans facilities.

LEVEL OF SERVICE METHODS

The operations of roadway facilities are described with the term level of service. Level of Service (LOS) is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, as the best operating conditions, to LOS F, or the worst operating conditions. LOS E represents “at-capacity” operations. When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

Local Roadway Segments

Roadways in Salinas were evaluated using the level of service method described in the *2002 Salinas General Plan*, which is the comparison of the daily volume to threshold volumes for various roadway types presented in **Table 2**. The City of Salinas roadway segment standard (i.e., minimum acceptable LOS) is LOS D.

TABLE 2
LEVEL OF SERVICE THRESHOLD VOLUMES FOR VARIOUS ROADWAY TYPES

Roadway Type	Maximum Daily Volume (both directions)				
	LOS A	LOS B	LOS C	LOS D	LOS E
8-Lane Freeway	51,000	79,000	112,000	136,000	146,000
6-Lane Freeway	39,000	59,000	85,000	102,000	110,000
8-Lane Expressway	35,000	54,000	75,000	90,000	98,000
6-Lane Expressway	28,000	42,000	56,000	67,000	74,000
4-Lane Freeway	26,000	39,000	57,000	68,000	73,000
8-Lane Divided Arterial (w/ left-turn lanes)	40,000	47,000	54,000	61,000	68,000
6-Lane Divided Arterial (w/ left-turn lanes)	32,000	38,000	43,000	49,000	54,000
4-Lane Expressway	18,000	27,000	36,000	45,000	50,000
4-Lane Divided Arterial (w/ left-turn lane)	22,000	25,000	29,000	32,500	36,000
4-Lane Undivided Arterial (no left-turn lane)	16,000	19,000	22,000	24,000	27,000
2-Lane Rural Highway	4,000	8,000	12,000	17,000	25,000
2-Lane Arterial (with left-turn lane)	11,000	12,500	14,500	16,000	18,000
2-Lane Collector	6,000	7,500	9,000	10,500	12,000
2-Lane Local Street [2]	1,200	1,400	1,600	1,800	2,000
1-Lane Freeway Ramp [3]	5,000	7,500	10,500	13,000	15,000
2-Lane Freeway Ramp [3]	10,000	15,000	21,000	26,000	28,000

Notes:

1 Non-directional peak hour traffic volumes are assumed to be 10% of the daily traffic volume. Directional split is assumed 60/40. All volumes are approximate and assume ideal roadway characteristics.

2 The capacity limitation is related to neighborhood quality of life rather than the physical carrying capacity of the road. This assumes a standard suburban neighborhood, 40-foot roadway width, and 25 mile per hour speed limit with normal speed violation rates.

3 Capacities given for each level of service assume the same level of service for adjoining merging roadway as well as level of service being determined by volume to capacity and not attainable speed. Level of service will be controlled by freeway level of service if worse than ramp.

Source: City of Salinas, *Salinas General Plan*, 2002.

Urban Street Segments

Under Year 2030 Conditions Davis Road is evaluated using the urban streets analysis method described in Chapter 15 of the *2000 HCM*. The LOS designation for urban streets, as shown in **Table 3**, is correlated to the average travel time. We used the HCS+ analysis software to calculate the LOS of the Monterey County urban street segment – Davis Road between Market Street and Central Avenue under Year 2030 without and with Project Conditions. In Monterey County the minimum acceptable roadway LOS is C.

Urban street facilities are separated into four classes. These classes are based on design (e.g., high-speed, suburban, intermediate, and urban) and functional categories (e.g., principal and minor arterial) described in the HCM from a high-speed principle arterial to an urban minor arterial.

TABLE 3
URBAN STREET LEVEL OF SERVICE DEFINITIONS

Level of Service	Class I[1]	Class II[2]	Class III[3]	Class IV[4]
	Average Travel Speed			
A	> 42 mph	> 35 mph	> 30 mph	> 25 mph
B	34.1 to 42 mph	28.1 to 35 mph	24.1 to 30 mph	19.1 to 25 mph
C	27.1 to 34 mph	22.1 to 28 mph	18.1 to 24 mph	13.1 to 19 mph
D	21.1 to 27 mph	17.1 to 22 mph	14.1 to 18 mph	9.1 to 13 mph
E	16.1 to 21 mph	13.1 to 17 mph	10.1 to 14 mph	7.1 to 9 mph
F	≤ 16 mph	≤ 13 mph	≤ 10 mph	≤ 7 mph

Notes:
1 Class I Free-flow speed (FFS) ranges from 55 to 45 mph and typical FFS of 50 mph
2 Class II Free-flow speed ranges from 45 to 35 mph and typical FFS of 40 mph
3 Class III Free-flow speed ranges from 35 to 30 mph and typical FFS of 35 mph
4 Class IV Free-flow speed ranges from 35 to 25 mph and typical FFS of 30 mph
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Two-Lane Highway Segments

Most roadways in Monterey County were evaluated using the two-lane highway analysis method described in Chapter 20 of the *2000 HCM*. The LOS designation for two-lane highway faculties, as shown in **Table 4**, is correlated to the percent time-spent-following, which is defined as the average percentage of travel time vehicles spend traveling in platoons behind slower vehicles due to their inability to pass. We used the HCS+ analysis software to calculate the LOS of each Monterey County two-lane highway segment. In Monterey County the minimum acceptable roadway LOS is C.

Two-lane highway facilities are separated into two classes. Class I facilities have higher speeds and more direct routes where mobility is more critical, and LOS is defined by both time-spent-following and average travel speed. Class II facilities have slower travel speeds and primarily serve shorter trips where travel time is less important, and LOS is defined only in terms of percent time-spent-following without consideration of average travel speed.

TABLE 4
TWO-LANE HIGHWAY LEVEL OF SERVICE DEFINITIONS

Level of Service	Class I[1]		Class II[1]
	Average Travel Speed	PTSF[2]	PTSF[2]
A	> 55 mph	≤ 35	≤ 40
B	50.1 to 55 mph	35.1 to 50	40.1 to 55
C	45.1 to 50 mph	50.1 to 65	55.1 to 70
D	40.1 to 45 mph	65.1 to 80	70.1 to 85
E	≤ 40 mph	> 80	> 85

Notes:
1 Class Designation = Class I facilities have higher speeds and primarily serve long distance trips or connect to facilities that serve long distance trips. In contrast, Class II facilities have slower travel speeds and primarily serve shorter trips where travel time is less important.
2 PTSF = Percent Time-Spent-Following.
3 LOS F applies whenever the flow rate exceeds the segment capacity – two-way volume of 3,200 pc/hr or directional split of 1,700 pc/hr.
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Freeway Mainline Segments

Freeway mainline segments were evaluated using the method presented in Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002). This method was used for US 101 freeway mainline segments from Russell Road to south of Airport Boulevard. Caltrans' analysis procedure is based on the density of the traffic flow using methods described the *2000 HCM*. Density is expressed in vehicles per mile per lane (veh/mi/ln). **Table 5** presents the range of densities for freeway mainline segment levels of service. Caltrans' level of service standard is LOS C.

TABLE 5
DENSITY-BASED FREEWAY LEVEL OF SERVICE DEFINITIONS

Level of Service	Mainline Density[1]
A	≤ 11.0
B	11.1 to 18.0
C	18.1 to 26.0
D	26.1 to 35.0
E	35.1 to 45.0
F	> 45.0

Note:
1 Measured in vehicles per mile per lane (veh/mi/ln).
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Multilane Highway Segments

Multilane highways were evaluated using the method outlined in Chapter 21 of the *2000 HCM*. This method was used to evaluate operations of US 101 multilane highway segments north of Russell Road and south of Airport Boulevard, and on SR 68 south of Blanco Road. This multilane highway method is based on density and free-flow speed of the roadway segment and is correlated to a LOS designation as shown in **Table 6**. Caltrans' level of service standard is LOS C.

TABLE 6
MULTILANE HIGHWAY LEVEL OF SERVICE DEFINITIONS

Level of Service	60 mph[1]	55 mph[1]	50 mph[1]	45 mph[1]
	Maximum Density[2]	Maximum Density[2]	Maximum Density[2]	Maximum Density[2]
A	11	11	11	11
B	18	18	18	18
C	26	26	26	26
D	35	35	35	35
E	40	41	43	45

Notes:
1 Free-flow speed, miles per hour (mph).
2 Measured in vehicles per mile per lane (veh/mi/ln).
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Freeway On- and Off-Ramp Segments

Finally, to identify the need for an additional freeway on- or off-ramp lane we used the maximum peak-hour capacity of 1,500 vehicles per hour per lane (veh/hr/ln) and 1,200 veh/hr/ln for direct and loop freeway ramps, respectively. These are planning-level thresholds and are only intended to identify potential operational issues.

EXISTING ROADWAY SEGMENT LEVELS OF SERVICE

The results of the City of Salinas and Monterey County roadway segment analysis are presented in **Tables 7 and 8**, respectively. The corresponding level of service calculation sheets are contained in **Attachment A.**

Local Roadway Segments

The level of service results for local roadway segments are shown in **Table 7**. Measured against the City of Salinas level of service standard, all local roadway segments operate at an acceptable level of service (LOS D or better) under Existing Conditions except, the following:

- East Boronda Road between McKinnon Street and El Dorado Drive
- John Street (SR 68) between Abbott Street and US 101
- North Main Street (SR 68) between US 101 and Rossi Street

Measured against Caltrans level of service standard, two of five Caltrans designated roadway segments do not operate at an acceptable level of service (LOS C or better) under Existing Conditions as shown below the following:

- John Street (SR 68) between Abbott Street and US 101
- North Main Street (SR 183) between US 101 and Rossi Street

TABLE 7
EXISTING LOCAL ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Roadway Type	ADT[1]	LOS[2]
San Juan Grade Road between Boronda Road and Van Buren Avenue	2-Lane Arterial	14,600	D
Russell Road between Van Buren Avenue and San Juan Grade Road	2-Lane Arterial	6,500	A
Natividad Road between Old Stage Road and Rogge Road	2-Lane Rural Highway	4,400	B
Harrison Road north of Russell Road	2-Lane Rural Highway	3,400	A
Boronda Road between N. Davis Road and US 101	4-Lane Divided Arterial	16,200	A
E. Boronda Road between McKinnon Street and El Dorado Drive	2-Lane Arterial	**18,900**	**F**
E. Boronda Road between El Dorado Drive and Natividad Road	2-Lane Arterial	15,100	D
E. Boronda Road between Constitution Boulevard and N. Sanborn Road	2-Lane Arterial	7,900	A

TABLE 7
EXISTING LOCAL ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Roadway Type	ADT[1]	LOS[2]
W. Market Street (SR 183) between N. Davis Road and Clark Street	4-Lane Divided Arterial	20,000	A
John Street (SR 68) between Abbott Street and US 101	4-Lane Undivided Arterial	**24,700**	**E**
John Street (SR 68) between Monterey Street and Abbott Street	4-Lane Divided Arterial	11,100	A
N. Main Street (SR 183) between US 101 and Rossi Street	4-Lane Divided Arterial	**39,500**	**F**
S. Main Street (SR 68) between San Miguel Avenue and Blanco Road	4-Lane Divided Arterial	26,700	C
Russell Road between McKinnon Street and El Dorado Drive	4-Lane Divided Arterial	Does not exist – Project conditions only	
Russell Road between Natividad Road and Independence Boulevard	4-Lane Divided Arterial		

Notes:
1 ADT = Average two-way daily traffic.
2 LOS = Level of service.
3 **Bold** text indicates unacceptable operations by City of Salinas LOS standards (LOS E or worse) and/or Caltrans LOS standards (exceeds LOS C/D cusp).
Source: Fehr & Peers, August 2007.

Two-Lane Highway Segments

The level of service results for two-lane highway segments are shown in **Table 8**. Measured against the Monterey County level of service standards the following two-lane roadway segments would operate at an unacceptable LOS D or worse during each peak hour (unless noted):

- Crazy Horse Canyon Road south of US 101
- Crazy Horse Canyon Road between San Juan Grade Road and Old Stage Road
- Davis Road between Market Street (SR 183) and Central Avenue
- Davis Road south of Blanco Road
- SR 156 west of US 101
- Espinosa Road west of US 101 (PM peak hour only)
- Blanco Road west of Davis Road
- San Miguel Canyon Road between US 101 and Castroville Boulevard
- San Miguel Canyon Road between Castroville Boulevard and Strawberry Road

TABLE 8
EXISTING TWO-LANE HIGHWAY LEVELS OF SERVICE

Roadway Segment	Peak Hour	Class Designation[1]	Avg. Travel Speed[2]	PTSF[3]	LOS[4]
Crazy Horse Canyon Road south of US 101	AM PM	I	**41.6** **41.6**	**57.2** **57.0**	**D** **D**
Crazy Horse Canyon Road between San Juan Grade Road and Old Stage Road	AM PM	I	**43.7** **43.7**	**24.6** **30.1**	**D**[5] **D**[5]
Hebert Road between Old Stage Road and San Juan Grade Road	AM PM	II	N/A N/A	53.9 55.9	B C
San Juan Grade Road between Hebert Road and Crazy Horse Canyon Road	AM PM	II	N/A N/A	52.1 53.9	B B
San Juan Grade Road between Rogge Road and Hebert Road	AM PM	II	N/A N/A	38.5 39.4	A A
Old Stage Road between Crazy Horse Canyon Road and Hebert Road	AM PM	II	N/A N/A	24.4 51.2	A B
Old Stage Road between Hebert Road and Natividad Road	AM PM	II	N/A N/A	32.2 39.6	A A
Old Stage Road between Natividad Road and Future Russell Road Extension	AM PM	II	N/A N/A	24.0 28.5	A A

TABLE 8
EXISTING TWO-LANE HIGHWAY LEVELS OF SERVICE

Roadway Segment	Peak Hour	Class Designation[1]	Avg. Travel Speed[2]	PTSF[3]	LOS[4]
Old Stage Road between Russell Road Extension and Williams Road	AM PM	II	N/A N/A	31.5 30.7	A A
Old Stage Road east (south) of Williams Road	AM PM	I	57.0 57.2	18.0 16.7	A A
Rogge Road between San Juan Grade Road and Natividad Road	AM PM	II	N/A N/A	43.7 34.4	B A
Davis Road between Market Street (SR 183) and Central Avenue	AM PM	I	**24.0** **24.5**	**96.1** **95.5**	**F** **F**
Davis Road south of Blanco Road	AM PM	I	**40.8** **40.0**	**62.3** **66.7**	**D** **D**
SR 156 west of US 101	AM PM	I	**32.8** **29.6**	**87.0** **91.0**	**E** **E**
Espinosa Road west of US 101	AM PM	I	46.8 **44.7**	59.0 **69.7**	C **D**
Blanco Road west of Davis Road	AM PM	I	**31.2** **27.3**	**89.2** **93.2**	**E** **E**
San Miguel Canyon Road between US 101 and Castroville Boulevard	AM PM	I	**39.6** **34.5**	**84.0** **90.7**	**E** **E**
San Miguel Canyon Road between Castroville Boulevard and Strawberry Road	AM PM	I	**41.7** **39.5**	**78.0** **83.0**	**D** **E**

Notes:
1 Class Designation = Class I facilities have higher speeds and primarily serve long distance trips or connect to facilities that serve long distance trips. In contrast, Class II facilities have slower travel speeds and primarily serve shorter trips where travel time is less important.
2 Average Travel Speed reported in miles-per-hour (mph).
3 PTSF = Percent Time-Spent-Following.
4 LOS = Level of Service.
5 Field observations indicate operations are better than Existing Conditions level of service calculations. The low measured volumes and relative unimpeded flow observed in the field indicate LOS C or better operations.
6 **Bold** text indicates unacceptable operations by Monterey County LOS standards (exceeds LOS C/D cusp).

Source: Fehr & Peers, August 2007.

EXISTING FREEWAY MAINLINE LEVELS OF SERVICE

The results of the US 101 freeway and multilane analysis are presented in **Tables 9 and 10**, respectively. The corresponding level of service calculation sheets are contained in **Attachment A**.

Freeway Mainline Segments

Measured against the Caltrans level of service standards the following freeway mainline segments would operate at an unacceptable LOS D or worse during one or both of the AM and PM peak hours:

AM Peak Hour

- Southbound US 101 between Boronda Road and John Street (4 segments)

PM Peak Hour

- Northbound US 101 between John Street and Russell Road (5 segments)
- Southbound US 101 between Russell Road and Boronda Road (1 segment)

TABLE 9
EXISTING FREEWAY MAINLINE LEVELS OF SERVICE

Travel Direction	Segment[1]	Peak Hour	Density[2]	LOS[3]
NB US 101	John Street (SR 68) to Market Street	AM PM	13.9 **26.5**	B **D**
	Market Street to Main Street (SR 183)	AM PM	14.7 **30.1**	B **D**
	Main Street (SR 183) to Laurel Drive	AM PM	14.0 **29.1**	B **D**
	Laurel Drive to Boronda Road	AM PM	15.9 **29.0**	B **D**
	Boronda Road to Russell Road	AM PM	16.6 **28.3**	B **D**
SB US 101	Russell Road to Boronda Road	AM PM	25.7 **26.8**	C **D**
	Boronda Road to Laurel Drive	AM PM	**26.9** 23.0	**D** C
	Laurel Drive to Main Street (SR 183)	AM PM	**26.3** 20.7	**D** C
	Main Street (SR 183) to Market Street	AM PM	**28.7** 21.6	**D** C
	Market Street to John Street (SR 68)	AM PM	**27.1** 20.1	**D** C

Notes:
1 Balanced counts derived from adjacent Caltrans freeway mainline and ramps counts.
2 Measured in vehicles per mile per lane (veh/mi/ln).
3 LOS = Level of Service.
4 **Bold** text indicates unacceptable operations by Caltrans LOS standards (exceeds LOS C/D cusp).
Source: Fehr & Peers, August 2007.

Multilane Highway Segments

Measured against the Caltrans level of service standards the following multilane highway segments would operate at an unacceptable LOS D or worse during one or both of the AM and PM peak hours:

AM Peak Hour

- Southbound US 101 between San Miguel Canyon Road and SR 156 (1 segment)

PM Peak Hour

- Northbound US 101 between SR 156 and San Miguel Canyon Road (1 segment)

TABLE 10
EXISTING MULTILANE HIGHWAY LEVELS OF SERVICE

Travel Direction	Segment[1]	Peak Hour	Density[2]	LOS[3]
NB US 101	South of Airport Boulevard	AM PM	15.1 18.9	B C
	Russell Road to SR 156	AM PM	17.1 24.5	B C
	SR 156 to San Miguel Canyon Road	AM PM	19.2 **30.9**	C **D**
	San Miguel Canyon Road to Crazy Horse Canyon Road	AM PM	14.9 21.3	B C
	Crazy Horse Canyon Road to San Juan Road	AM PM	16.3 22.5	B C
SB US 101	San Juan Road to Crazy Horse Canyon Road	AM PM	22.6 21.2	C C
	San Miguel Canyon Road to Crazy Horse Canyon Road	AM PM	21.5 19.2	C C
	San Miguel Canyon Road to SR 156	AM PM	**29.9** 25.7	**D** C
	SR 156 to Russell Road	AM PM	25.6 21.0	C C
	South of Airport Boulevard	AM PM	10.6 17.4	A B
NB SR 68	Hunter Lane to Blanco Road	AM PM	15.8 17.8	B B
SB SR 68	Blanco Road to Hunter Lane	AM PM	8.9 16.9	A B

Notes:
1 Balanced counts derived from adjacent Caltrans freeway mainline and ramps counts.
2 Measured in vehicles per mile per lane (veh/mi/ln).
3 LOS = Level of Service.
4 **Bold** text indicates unacceptable operations by Caltrans LOS standards (exceeds LOS C/D cusp).
Source: Fehr & Peers, August 2007.

Ramp Segments

Measured against the one-lane planning-level thresholds none of the existing direct or loop freeway ramps need an additional lane. The results of the subsequent intersection analysis to be prepared as part of the environmental documentation for the three Specific Plan areas may show the need for additional lanes on ramps to accommodate queues from intersections.

TABLE 11
EXISTING RAMP SEGMENT VOLUMES

Roadway Segment	Ramp Type[1]	Peak Hour	Volume	Additional Lane?
US 101 and Crazy Horse Canyon Road Interchange				
NB Off-Ramp to Crazy Horse Canyon Road	Direct	AM PM	Does not exist under Existing Conditions	
NB On-Ramp from Crazy Horse Canyon Road	Direct	AM PM		
SB Off-Ramp to Crazy Horse Canyon Road	Direct	AM PM		
SB On-Ramp from Crazy Horse Canyon Road	Direct	AM PM		
US 101 and Russell Road (Harrison Road) Interchange				
NB Off-Ramp to Harrison Road	Direct	AM PM	Does not exist under Existing Conditions	
NB On-Ramp from Harrison Road	Direct	AM PM		
SB Off-Ramp to Harrison Road	Direct	AM PM		
SB On-Ramp from Harrison Road	Loop	AM PM		
US 101 and Boronda Road Interchange				
NB Off-Ramp to Boronda Road	Direct	AM PM	474 887	No No
NB On-Ramp from Boronda Road	Direct	AM PM	441 546	No No
NB On-Ramp from Boronda Road	Loop	AM PM	108 283	No No
SB Off-Ramp to Boronda Road	Direct	AM PM	851 1221	No No

TABLE 11
EXISTING RAMP SEGMENT VOLUMES

Roadway Segment	Ramp Type[1]	Peak Hour	Volume	Additional Lane?
SB On-Ramp from Boronda Road	Direct	AM PM	62 128	No No
SB On-Ramp from Boronda Road	Loop	AM PM	913 695	No No
US 101 and Laurel Drive Interchange				
NB Off-Ramp to Laurel Drive	Direct	AM PM	252 804	No No
NB On-Ramp from Laurel Drive	Direct	AM PM	155 258	No No
NB On-Ramp from Laurel Drive	Loop	AM PM	294 529	No No
SB Off-Ramp to Laurel Drive	Direct	AM PM	557 744	No No
SB On-Ramp from Laurel Drive	Direct	AM PM	259 363	No No
SB On-Ramp from Laurel Drive	Loop	AM PM	237 134	No No

Notes:
1 Peak hour ramp capacity is 1,500 veh/hr/ln (vehicles per hour per lane) and 1,200 veh/hr/ln for direct and loop ramps, respectively.
2 Each ramp is one lane.
3 **Bold** text indicates potential need for an additional freeway ramp lane.
Source: Fehr & Peers, August 2007.

3. YEAR 2030 VOLUME FORECASTS

This chapter discusses the development and use of a sub-area travel demand model to generate Year 2030 roadway segment volume forecasts. This chapter also discusses the roadway improvements for each future year scenario (i.e., without and with the proposed project) and presents the future year forecasts.

SUB-AREA TRAVEL DEMAND MODEL VALIDATION

Fehr & Peers completed a sub-area travel demand model validation for the Salinas Sphere of Influence Amendment and Annexation (e.g., west, central, and east specific plan) to improve our ability to forecast traffic volumes within the project study area. At present, the AMBAG model is the only tool available for estimating long-range traffic forecasts for streets and highways in the greater Salinas area. The sub-area travel demand model provides more accurate forecasts than are currently available for non-regional (i.e., local) roadways in Salinas. The goal was to validate the sub-area model to Caltrans and FHWA standards to ensure that state of the practice forecasting method was followed and that the sub-area model forecasts are defensible given they will be used in the CEQA transportation impact analysis of the proposed Sphere of Influence Amendment and Annexation north and east of Boronda Road.

Technical Approach

Fehr & Peers' March 22, 2007 technical memorandum *Sub-Area Validation for the Salinas Future Growth Area (FGA) TIA*, described the modifications and refinements to the regional AMBAG travel demand model to create the Salinas sub-area travel demand model. The changes made to the regional AMBAG travel demand model are described below and the complete memo is included in **Attachment B**.

We began with the base year (Year 2000) model described in Fehr & Peers' October 6, 2006 technical memorandum titled *ERSB Sub-Area Travel Demand Forecasting Model Validation*. The El Rancho San Benito (ERSB) model includes three key changes made from the model initially received from AMBAG:

- Woods & Poole employment land use inputs for Santa Clara County to provide more consistent data sets between Monterey and Santa Clara Counties
- Minor network modifications near the ERSB study area
- AM & PM peak hour factors from the SLOCOG Travel Demand Forecasting model

In general, the base year model underestimated volumes on most facilities in Salinas even with the modifications noted above. Since we were not able to review detailed trip generation rates and other key model inputs, we conducted numerous tests to determine the effect of modifying various parameters including household size, income levels, and K factors, which are adjustments made to better replicate County-to-County travel. When the sensitivity of each of these elements did not sufficiently improve the sub-area validation, we discussed our findings with AMBAG staff (Dean Munn), who then modified the model script to allow us to adjust the mode split or proportion of persons using each travel mode (single occupant vehicle, shared ride, bicycling, walking, and transit). Lastly, we discovered that several traffic analysis zones (TAZs) near the Mall and the retail along the northern part of Davis Road were not generating enough vehicle trips due to inaccurate land use assumptions. A summary of the adjustments we made for the final Salinas sub-area travel demand model are listed below:

- Modified common files model script and logit model input file. This script deactivates the mode choice model and uses fixed mode percentages by trip purpose. As summarized below, we used the mode splits by trip purpose described in Caltrans' 2000-2001 California Statewide Household Travel Survey: Final Report (June 2002).

  - Home-based work purpose: Drive alone = 89%; Shared ride (2 persons) = 7%; Transit = 1%; Other = 3%
  - Other trip purposes: Drive alone = 56%; Shared ride (2 persons) = 35%; Transit = 2%; Other = 7%

- Corrected number of northbound lanes on Main Street between Bernal Road and Laurel Drive.
- Corrected number of northbound lanes on Main Street between Curtis Street and Navajo Drive.
- Corrected number of SB US 101 lanes from Martines Road to Boronda Road.
- Corrected direction and speed of SB US 101 off-ramp to Main Street.
- Corrected speed for short segments of Boronda Road, Sanborn Road and Harvest Street to make speeds consistent.
- Increased speeds on Main Street, Market Street, and Alisal Street from US 101 to downtown Salinas. This more accurately distributed traffic amongst the interchanges between and including Main Street to John Street.
- Corrected land use in TAZs 916, 1160, 1168, 1170, 1171, and 1172. Increased the number of retail employees to generate approximately the same number of trips that would be estimated using standard trip generation rates published by Institute of Transportation Engineers (ITE). See **Table 1** for the land use summary.
- Added centroid connectors to zones 916 and 1160, and 1168 to more accurately represent loading to the adjacent streets.
- Added turn penalties to prevent illegal movements near study intersections.
- Adjusted speeds for Blanco Road, Crazy Horse Canyon Road, McFadden Road, and Cooper Road

For each of the adjustments, we reviewed the traffic volume forecasts to verify that they changed in appropriate direction and magnitude. By adjusting the mode split, correcting the land use, and making the network corrections, we were able to substantially improve the validation and reduce the overall error in the model for Salinas area street and highway segments.

Without access to all of the model parameters such as trip generation rates, trip distribution factors, and other information, plus a detailed review of the land use in every single TAZ, it would be very difficult to substantially improve the validation. We have already made extensive improvements to increase the accuracy of future year traffic volumes and have enhanced the best available forecasting tool. To this end, we have met the intent of CEQA as it relates to the information that will be used for the transportation analysis and projecting Year 2030 volumes.

YEAR 2030 TRAFFIC FORECASTING APPROACH

The land use and network changes in the base year model were added to the 2030 model as appropriate to ensure consistency with existing information. The 2030 model includes future land use in all areas of Monterey County, as well as growth in adjacent Counties such as Santa Clara and San Benito. In addition, regional through traffic growth is accounted for at external stations such as State Route 152 east of US 101.

Roadway Network Assumptions

Some roadway network changes were included to develop future 2030 forecasts, but most improvements in the City were not coded into the model to provide a “worst-case” analysis. In addition, improvements such as the Prunedale Bypass were excluded since funding has not been assured for many of these roadway capacity enhancements. This approach was used to help validate many of the improvements included in the City of Salinas Traffic Fee Ordinance (TFO), since they will likely be needed to partially or fully mitigate project impacts. The following improvements described in the Salinas *Traffic Improvement Program* and *2005 Monterey County Constrained Regional Transportation Plan* but were **not** included in Year 2030 Without or With Project Conditions:

- The Prunedale Bypass
- Western Bypass
- Eastern Bypass
- US 101 widening through Salinas
- Alisal Road extension
- Moffett Street extension
- Main Street widening to 6-lanes between Bernal Street and Market Street
- Roadway extensions of Bernal Street and Constitution Boulevard into Carr Lake
- Alvin Drive extension as 4-lane arterial to include Westridge Parkway extension
- US 101/Laurel interchange widening to six-lanes between Davis Road and Adams Street
- Williams Road widening to 4-lanes between Freedom Parkway and Boronda Road
- Espinosa Road widening to 4-lanes between US 101 and SR-183
- Blanco Road extension as a 4 lane arterial between Reservation Road and Imjin Road

The roadway improvements that were included under each future scenario are consistent with the City of Salinas *Traffic Improvement Program* (2005 Update), and the *2005 Monterey County Constrained Regional Transportation Plan*. **Table 12** summarizes the roadway improvements included in the Salinas sub-area travel demand model for Year 2030 Without and With Project Conditions.

Year 2030 Traffic Forecasts

Using the base year and future year model forecasts, we developed initial weekday daily, and peak-hour roadway segment forecasts for streets and highways within the Salinas Sphere of Influence Amendment and Annexation study area. The sub-area travel demand model has a base year of 2000 and a horizon year of 2030, thus reflecting 30 years of growth in the City of Salinas and the region. Land uses corrected or modified as part of the sub-area validation process were also updated in the Year 2030 model files. Per City of Salinas staff direction, planned growth in the area south of Williams Road, near the Airport, and near Davis Road and Market Street were included in the 2030 land use.

TABLE 12
YEAR 2030 ROADWAY IMPROVEMENT

Roadway	Year 2030 without Project	Year 2030 with Project
1. Addition of left-turn lane on Laurel Drive between Adams Street and Main Street	X	X
2. Blanco Road widening to 4-lanes between Alisal Street and Davis Road	X	X
3. Laurel Drive widening to 6-lanes between Natividad Road and Constitution Boulevard with left turn channelization east of Constitution Boulevard	X	X
4. Davis Road widening to 4-lanes between Market Street and Reservation Road	X	X
5. Reservation Road widening to 4-lanes between Blanco Road and Davis Road	X	X
6. San Juan Grade Road widening to 4-lanes between Boronda Road and Rogge Road	X	X
7. New interchange at US 101 and Crazy Horse Canyon Road	X	X
8. New US 101/Harrison Road diamond interchange with local roadway improvements	X	X
9. Eastside Road between Intergarrison Road and Giggling Road	X	X
10. Intergarrison Road widening to 4-lanes between Reservation Road and Eastside Road	X	X
11. Sanborn Road widening to 6-lanes between John Street and Abbott Street	X	X
12. General Jim Moore Boulevard widening to 4-lanes McClure Road to South Boundary Road	X	X
13. Alisal Street widening to 4-lanes between Williams Road and Alisal Road	X	X
14. Extension of Russell Road as a 4-lane arterial between San Juan Grade Road and Old Stage Road		X
15. Extension of McKinnon Street as a 2-lane collector between Boronda Road and Russell Road		X

TABLE 12
YEAR 2030 ROADWAY IMPROVEMENT

Roadway	Year 2030 without Project	Year 2030 with Project
16. Extension of El Dorado Drive as a 2-lane collector between Boronda Road and Russell Road		X
17. Extension of Independence Boulevard as a 2-lane collector between Boronda Road and Russell Road		X
18. Extension of Constitution Boulevard as a 2-lane arterial between Boronda Road and Old Stage Road[1]		X
19. Extension of Sanborn Road as a 2-lane arterial between Boronda Road and Old Stage Road[1]		X
20. Boronda Road widening to a 6-lane arterial between San Juan Grade Road and Williams Road		X
22. Natividad Road widening to a 4-lane arterial between Boronda Road and Rogge Road		X
23. Addition of two east-west 2-lane collectors between San Juan Grade Road and Williams Road		X

Notes:
[1] The *Salinas General Plan* (2002) identified a need for 4-lane arterials; however, initial coding is as 2-lane arterial with final determination to be completed with the forthcoming Specific Plan Traffic Impact Analysis.
Source: City of Salinas-Public Works Department and Fehr & Peers, August 2007.

The 2000 and 2030 models were run and the difference in roadway segment volume was added to the existing traffic counts to determine the projected change in traffic growth without the proposed project (i.e., assuming no substantive change in land use in the project area). The 2030 model was then run with the project land uses in place and included new roadways such as extensions of Russell Road, El Dorado Drive, and Constitution Boulevard. The difference between the 2030 with project model and the 2000 base year model was added to the existing count for each segment to establish future "with project" volumes. **Figures 2, 3 and 4** present the daily, AM peak-hour, and PM peak-hour segment volumes, respectively, for three scenarios: Existing Conditions, Year 2030 without Project forecast, and Year 2030 with Project forecast.

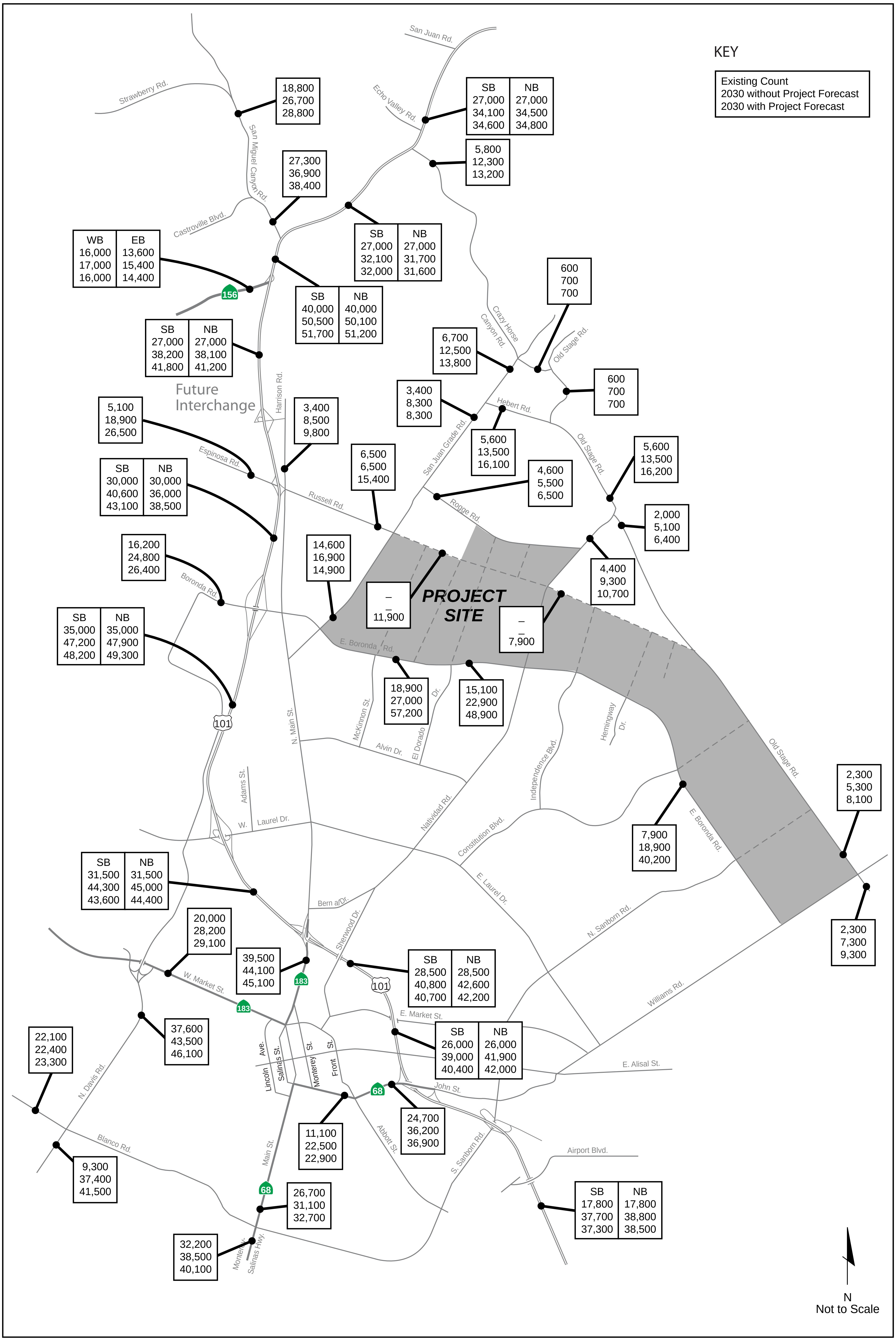
With development projects of a small to moderate size, transportation impact studies are completed by simply adding traffic (i.e., vehicle trips) to existing or future year traffic volumes projected on study roadways within the study area. The traditional method assumes that the proposed land use(s) will develop in addition to the growth expected to accommodate future population and economic conditions. Adding a project the size of the Sphere of Influence Amendment and Annexation will change travel patterns under future conditions compared to future conditions without the thousands of residential units and supporting commercial and school uses. For example, the addition of substantial amounts of residential units will allow more workers to live in Salinas instead of having to live in communities further away.

With the change in travel patterns, the difference between Without Project and With Project Conditions may appear to be a small increase or even a small decrease in some cases. These differences reflect the redistribution of vehicle trips projected by the model and properly illustrates the change in travel patterns. However, project traffic is still expected to comprise a substantial amount of the traffic on roadways such as

Boronda Road and Russell Road in 2030. A select zone analysis was performed to identify the amount of project traffic only on each affected roadway segment.

A copy of the select zone analysis is included in **Attachment C** and shows that a substantial amount of the project-generated traffic traveling between the SOI area and points south (e.g., Marina, Seaside, Monterey) will use the new direct connection of Russell Road/Espinosa Road across US 101. The use of higher speed roadways with a limited number of traffic signals and freeways will be a more attractive route to the Monterey Peninsula from the SOI area than traveling through the center of Salinas on arterial streets. In addition, many trips from the proposed project will have origins and destinations within the City.

Commuting out of Salinas will continue to occur with development of the SOI area, but at a level comparable to existing conditions. Based on Census and Caltrans survey data, approximately five (5) percent of home-based work trips from Salinas travel on US 101 north of Crazy Horse Canyon Road. Home-to-work trips in the AMBAG region represent approximately 25 percent of total trips according to household survey data (*Caltrans 2000-2001 California Statewide Travel Survey – Weekday Travel Report*, June 2003). In addition, data from the *Census 2000: Journey to Work* indicates that approximately 20 percent of work trips originating in Salinas travel to cities north of Salinas. Thus, 20% of 25% or approximately five (5) percent of home-to-work trips use US 101 north of Salinas. The proposed project analysis is consistent with existing travel patterns by assigning approximately 4 percent of daily project traffic to US 101 north of Crazy Horse Canyon Road.



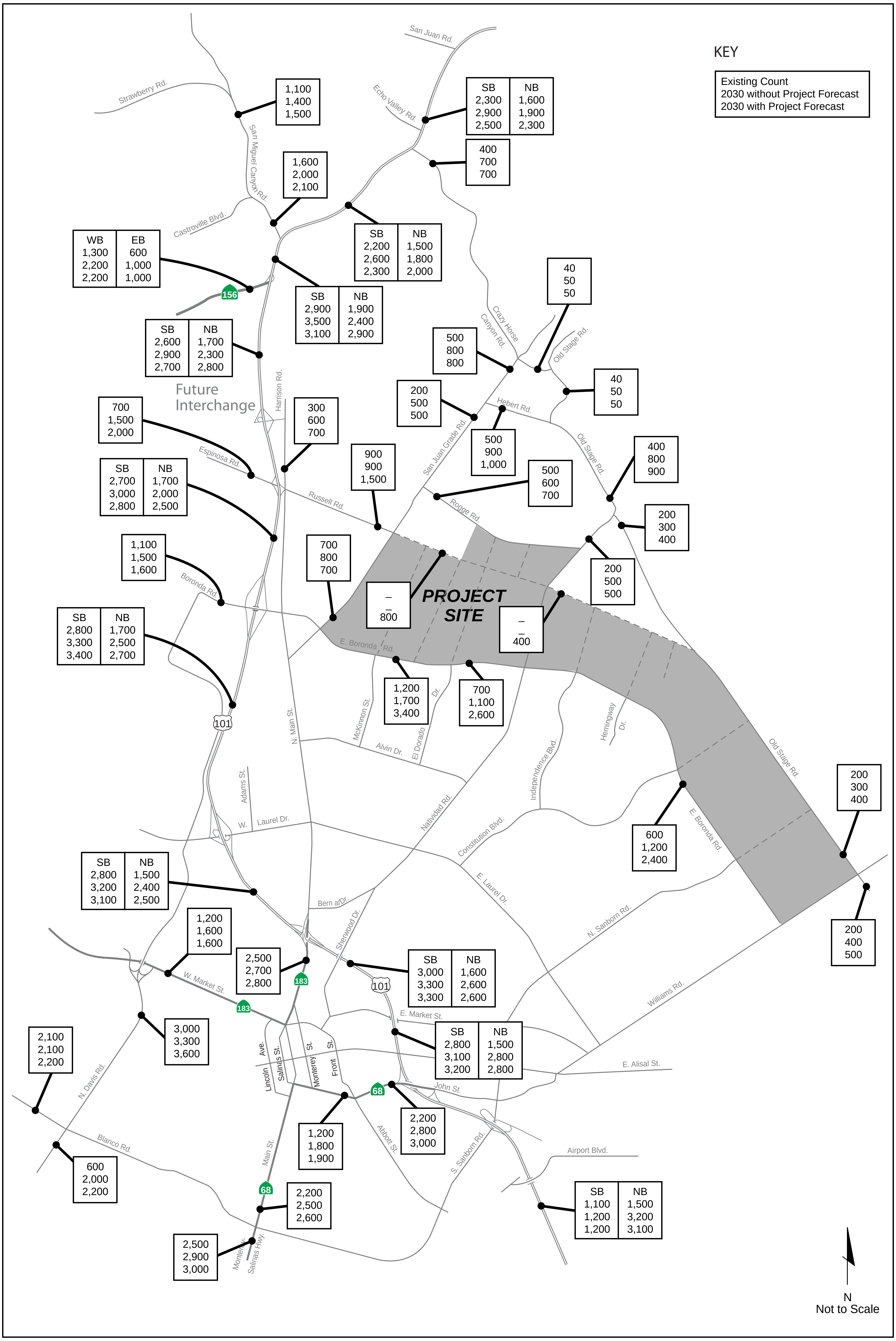
Salinas Sphere of Influence Amendment and Annexation Supplemental TIA

FEHR & PEERS
TRANSPORTATION CONSULTANTS

STUDY ROADWAY SEGMENTS: DAILY TWO-WAY COUNTS AND FORECASTS

FIGURE 2

August 2007
SJ04-738



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Salinas Sphere of Influence Amendment and Annexation Supplemental TIA

STUDY ROADWAY SEGMENTS:
AM PEAK-HOUR TWO-WAY COUNTS AND FORECASTS

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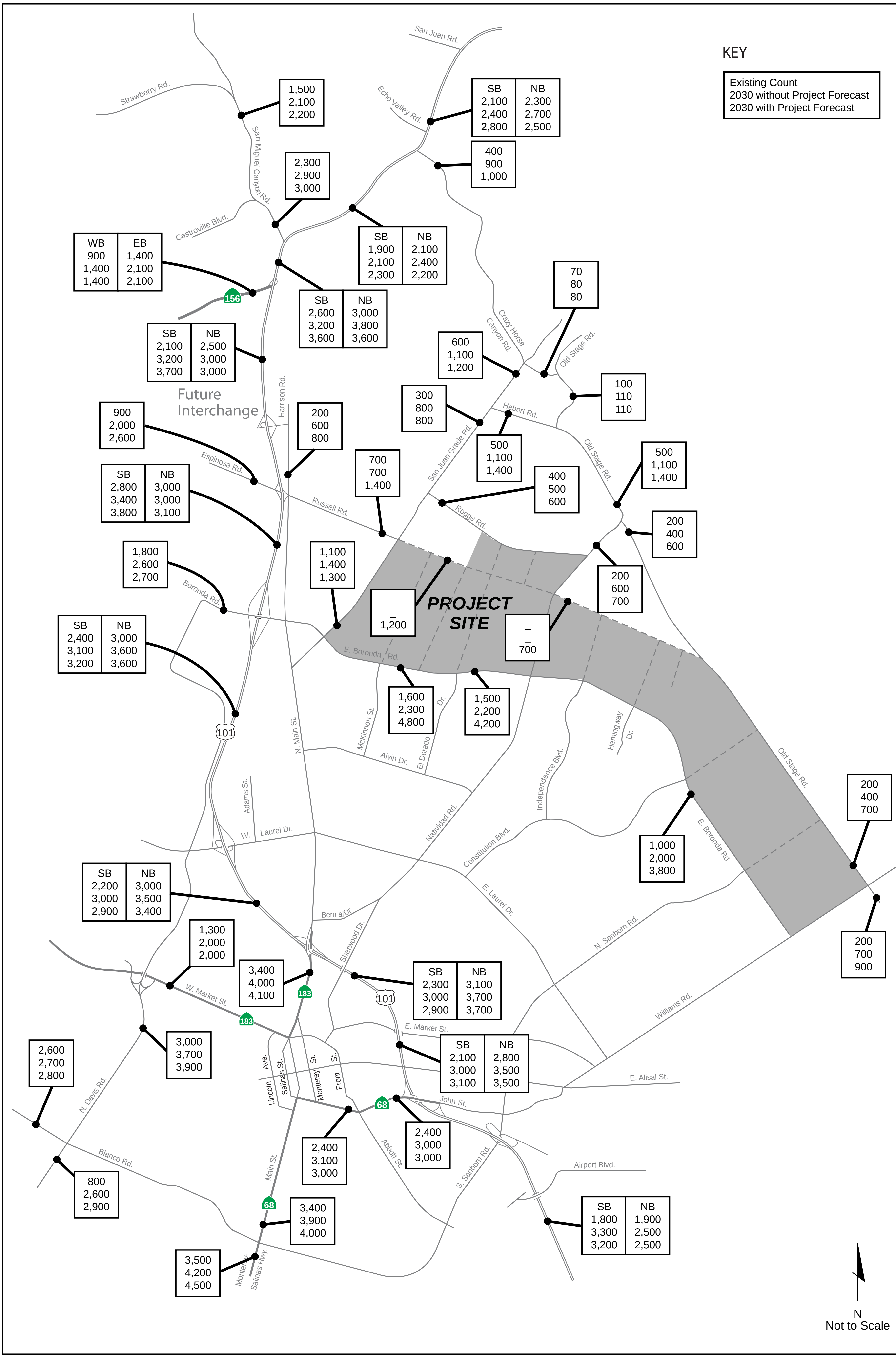
FIGURE 3



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STUDY ROADWAY SEGMENTS:
PM PEAK-HOUR TWO-WAY COUNTS AND FORECASTS

August 2007
SJ04-738

FIGURE 4

4. YEAR 2030 WITHOUT PROJECT CONDITIONS

This chapter discusses the results of the level of service analysis for Year 2030 Without Project Conditions.

YEAR 2030 WITHOUT PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

The results of the City of Salinas and Monterey County roadway segment analysis for Year 2030 Without Project Conditions are presented in **Tables 13, 14, and 15**. The corresponding level of service calculation sheets are contained in **Attachment A**.

Local Roadway Segments

The level of service results for local roadway segments are shown in **Table 13**. Measured against the City of Salinas LOS standard, all local roadway segments operate at an acceptable LOS (D or better) under Year 2030 Without Project Conditions except the following:

- East Boronda Road between McKinnon Street and El Dorado Drive
- East Boronda Road between El Dorado Drive and Natividad Road
- East Boronda Road between Constitution Boulevard and North Sanborn Road
- John Street (SR 68) between Abbott Street and US 101
- North Main Street (SR 183) between US 101 and Rossi Street
- South Main Street (SR 68) between San Miguel Avenue and Blanco Road

Measured against Caltrans operating standards, three of five Caltrans non-highway segments do not operate at an acceptable level (LOS C or better) under this scenario as shown below:

- John Street (SR 68) between Abbott Street and US 101
- North Main Street (SR 183) between US 101 and Rossi Street
- South Main Street (SR 68) between San Miguel Avenue and Blanco Road

TABLE 13
YEAR 2030 WITHOUT PROJECT LOCAL ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Roadway Type	ADT[1]	LOS[2]
San Juan Grade Road between Boronda Road and Van Buren Avenue	4-Lane Divided Arterial	16,900	A
Russell Road between Van Buren Avenue and San Juan Grade Road	4-Lane Divided Arterial	6,500	A
Natividad Road between Old Stage Road and Rogge Road	2-Lane Rural Highway	9,300	C
Harrison Road north of Russell Road	2-Lane Rural Highway	8,500	C
Boronda Road between N. Davis Road and US 101	4-Lane Divided Arterial	24,800	B
E. Boronda Road between McKinnon Street and El Dorado Drive	2-Lane Arterial	**27,000**	**F**
E. Boronda Road between El Dorado Drive and Natividad Road	2-Lane Arterial	**22,900**	**F**
E. Boronda Road between Constitution Boulevard and N. Sanborn Road	2-Lane Arterial	**18,900**	**F**
W. Market Street (SR 183) between N. Davis Road and Clark Street	4-Lane Divided Arterial	28,200	C
John Street (SR 68) between Abbott Street and US 101	4-Lane Undivided Arterial	**36,200**	**F**
John Street (SR 68) between Monterey Street and Abbott Street	4-Lane Divided Arterial	22,500	B
N. Main Street (SR 183) between US 101 and Rossi Street	4-Lane Divided Arterial	**44,100**	**F**
S. Main Street (SR 68) between San Miguel Avenue and Blanco Road	4-Lane Divided Arterial	**31,100**	**D**[3]
Russell Road between McKinnon Street and El Dorado Drive	4-Lane Divided Arterial	Does not exist – Project conditions only	
Russell Road between Natividad Road and Independence Boulevard	4-Lane Divided Arterial	Does not exist – Project conditions only	

Notes:
1 ADT = Average two-way daily traffic.
2 LOS = Level of service.
3 Unacceptable only under Caltrans LOS standard.
4 **Bold** text indicates unacceptable operations by City of Salinas LOS standards (LOS E or worse) and/or Caltrans LOS standards (exceeds LOS C/D cusp).
Source: Fehr & Peers, August 2007.

Urban Arterial Segments

The level of service result for the Davis Road urban arterial segment is shown in **Table 14**. Measured against the Monterey County level of service standard, this segment operates at an acceptable level of service (LOS C or better) under Year 2030 Without Project Conditions.

TABLE 14
YEAR 2030 WITHOUT PROJECT URBAN ARTERIAL SEGMENT LEVELS OF SERVICE

Roadway Segment	Peak Hour	Peak Direction	Class Designation[1]	Avg. Travel Speed[2]	LOS[2]
Davis Road between Market Street and Central Avenue	AM PM	SB NB	II II	25.7 25.3	C C

Notes:
1 Urban street facilities are separated into four classes. These classes are based on design (e.g., high-speed, suburban, intermediate, and urban) and functional categories (e.g., principal and minor arterial) described in the HCM from a high-speed principle arterial to an urban minor arterial.
2 LOS = Level of service.
3 **Bold** text indicates unacceptable operations by Monterey County LOS standards (exceeds LOS C/D cusp).
Source: Fehr & Peers, August 2007.

Two-Lane Highway Segments

The operating conditions for two-lane highway segments under 2030 Without Project Conditions are shown in **Table 15**. Measured against the Monterey County standards the following two-lane roadway segments would operate at an unacceptable LOS D or worse during one or both peak hours:

AM Peak Hour

- Crazy Horse Canyon Road south of US 101
- Crazy Horse Canyon Road between San Juan Grade Road and Old Stage Road
- Espinosa Road west of US 101
- Blanco Road west of Davis Road
- San Miguel Canyon Road between US 101 and Castroville Boulevard
- San Miguel Canyon Road between Castroville Boulevard and Strawberry Road

PM Peak Hour

- Crazy Horse Canyon Road south of US 101
- Crazy Horse Canyon Road between San Juan Grade Road and Old Stage Road
- Hebert Road between Old Stage Road and San Juan Grade Road
- Espinosa Road west of US 101

- Blanco Road west of Davis Road
- San Miguel Canyon Road between US 101 and Castroville Boulevard
- San Miguel Canyon Road between Castroville Boulevard and Strawberry Road

TABLE 15
YEAR 2030 WITHOUT PROJECT TWO-LANE HIGHWAY LEVELS OF SERVICE

Roadway Segment	Peak Hour	Class Designation[1]	Avg. Travel Speed[2]	PTSF[3]	LOS[4]
Crazy Horse Canyon Road south of US 101	AM PM	I	**40.3** **39.0**	**64.0** **70.5**	**D** **E**
Crazy Horse Canyon Road between San Juan Grade Road and Old Stage Road	AM PM	I	**43.7** **42.9**	**24.7** **32.4**	**D**[5] **D**[5]
Hebert Road between Old Stage Road and San Juan Grade Road	AM PM	II	N/A N/A	68.7 **74.0**	C **D**
San Juan Grade Road between Hebert Road and Crazy Horse Canyon Road	AM PM	II	N/A N/A	61.5 69.8	C C
San Juan Grade Road between Rogge Road and Hebert Road	AM PM	II	N/A N/A	49.6 60.4	B C
Old Stage Road between Crazy Horse Canyon Road and Hebert Road	AM PM	II	N/A N/A	24.1 48.0	A B
Old Stage Road between Hebert Road and Natividad Road	AM PM	II	N/A N/A	52.4 63.9	B C
Old Stage Road between Natividad Road and Russell Road Extension	AM PM	II	N/A N/A	37.4 44.2	A B
Old Stage Road between Future Russell Road Extension and Williams Road	AM PM	II	N/A N/A	37.3 43.8	A B
Old Stage Road east (south) of Williams Road	AM PM	I	55.4 53.0	31.0 47.7	A B
Rogge Road between San Juan Grade Road and Natividad Road	AM PM	II	N/A N/A	42.7 37.1	B A
Davis Road between Market Street (SR 183) and Central Avenue	AM PM	Analyzed as a 4-lane urban arterial – see Table 14.			
Davis Road south of Blanco Road	AM PM	Analyzed as a multilane highway – see Table 17.			
SR 156 west of US 101	AM PM	Analyzed as a freeway mainline – see Table 16.			
Espinosa Road west of US 101	AM PM	I	**41.6** **37.6**	**78.3** **85.7**	**D** **E**

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TABLE 15
YEAR 2030 WITHOUT PROJECT TWO-LANE HIGHWAY LEVELS OF SERVICE

Roadway Segment	Peak Hour	Class Designation[1]	Avg. Travel Speed[2]	PTSF[3]	LOS[4]
Blanco Road west of Davis Road	AM PM	I	**31.2** **26.5**	**89.2** **93.9**	**E** **E**
San Miguel Canyon Road between US 101 and Castroville Boulevard	AM PM	I	**36.8** **30.1**	**88.2** **94.7**	**E** **E**
San Miguel Canyon Road between Castroville Boulevard and Strawberry Road	AM PM	I	**40.9** **35.5**	**79.8** **89.3**	**D** **E**

Notes:
1 Class Designation = Class I facilities have higher speeds and primarily serve long distance trips or connect to facilities that serve long distance trips. In contrast, Class II facilities have slower travel speeds and primarily serve shorter trips where travel time is less important.
2 Average Travel Speed reported in miles-per-hour (mph).
3 PTSF = Percent Time-Spent-Following.
4 LOS = Level of Service.
5 Field observations indicate operations are better than Existing Conditions level of service calculations. The low measured volumes and relative unimpeded flow observed in the field indicate LOS C or better operations.
6 **Bold** text indicates unacceptable operations by Monterey County LOS standards (exceeds LOS C/D cusp).

Source: Fehr & Peers, August 2007.

YEAR 2030 WITHOUT PROJECT FREEWAY LEVEL OF SERVICE

The results of the US 101 freeway and multilane analysis are presented in **Tables 16 and 17**, respectively. The corresponding level of service calculation sheets are contained in **Attachment A**.

Freeway Mainline Segments

Measured against the Caltrans level of service standards the following freeway segments would operate at an unacceptable LOS D or worse during one or both of the AM and PM peak hours:

AM Peak Hour

- Northbound US 101 between John Street and Market Street (1 segment)
- Southbound US 101 between Russell Road and John Street (5 segments)

PM Peak Hour

- Northbound US 101 between John Street and Russell Road (5 segments)
- Southbound US 101 between Russell Road and John Street (5 segments)

TABLE 16
YEAR 2030 WITHOUT PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

Travel Direction	Segment	Peak Hour	Density[1]	LOS[2]
NB US 101	John Street (SR 68) to Market Street	AM PM	**26.6** **35.5**	**D** **E**
	Market Street to Main Street (SR 183)	AM PM	24.7 **39.4**	C **E**
	Main Street (SR 183) to Laurel Drive	AM PM	22.8 **35.5**	C **E**
	Laurel Drive to Boronda Road	AM PM	23.7 **37.3**	C **E**
	Boronda Road to Russell Road	AM PM	19.0 **28.7**	C **D**
SB US 101	Russell Road to Boronda Road	AM PM	**28.7** **33.9**	**D** **D**
	Boronda Road to Laurel Drive	AM PM	**32.4** **29.8**	**D** **D**
	Laurel Drive to Main Street (SR 183)	AM PM	**31.1** **28.7**	**D** **D**
	Main Street (SR 183) to Market Street	AM PM	**32.4** **28.7**	**D** **D**
	Market Street to John Street (SR 68)	AM PM	**29.8** **28.7**	**D** **D**
EB SR 156	Cathedral Oak Road to US 101	AM PM	9.5 19.9	A C
WB SR 156	US 101 to Cathedral Oak Road	AM PM	20.9 13.3	C B

Notes:
1 Measured in vehicles per mile per lane (veh/mi/ln).
2 LOS = Level of Service.
3 **Bold** text indicates unacceptable operations by Caltrans LOS standards (exceeds LOS C/D cusp).
Source: Fehr & Peers, August 2007.

Multilane Highway Segments

Measured against the Caltrans level of service standards the following multilane highway segments would operate at an unacceptable LOS D or worse during one or both of the AM and PM peak hours:

AM Peak Hour

- Northbound US 101 south of Airport Boulevard (1 segment)
- Southbound US 101 between San Juan Road and Crazy Horse Canyon Road (1 segment)
- Southbound US 101 between San Miguel Canyon Road and Russell Road (2 segments)

PM Peak Hour

- Northbound US 101 between Russell Road and San Miguel Canyon Road (2 segments)
- Northbound US 101 between Crazy Horse Canyon Road and San Juan Road (1 segment)
- Southbound US 101 between San Miguel Canyon Road and Russell Road (2 segments)
- Southbound US 101 south of Airport Boulevard (1 segment)

TABLE 17
YEAR 2030 WITHOUT PROJECT MULTILANE HIGHWAY LEVELS OF SERVICE

Travel Direction	Segment	Peak Hour	Density[1]	LOS[2]
NB US 101	South of Airport Boulevard	AM PM	**33.2** 24.9	**D** C
	Russell Road to SR 156	AM PM	22.8 **30.7**	C **D**
	SR 156 to San Miguel Canyon Road	AM PM	23.8 **>40**	C **F**
	San Miguel Canyon Road to Crazy Horse Canyon Road	AM PM	17.8 23.8	B C
	Crazy Horse Canyon Road to San Juan Road	AM PM	18.8 **27.1**	C **D**
SB US 101	San Juan Road to Crazy Horse Canyon Road	AM PM	**29.5** 23.8	**D** C
	San Miguel Canyon Road to Crazy Horse Canyon Road	AM PM	26.0 20.8	C C
	San Miguel Canyon Road to SR 156	AM PM	**37.2** **33.2**	**E** **D**
	SR 156 to Russell Road	AM PM	**29.5** **33.2**	**D** **D**

TABLE 17
YEAR 2030 WITHOUT PROJECT MULTILANE HIGHWAY LEVELS OF SERVICE

Travel Direction	Segment	Peak Hour	Density[1]	LOS[2]
SB US 101	South of Airport Boulevard	AM PM	11.9 **34.5**	B **D**
NB SR 68	Hunter Lane to Blanco Road	AM PM	17.8 19.8	B C
SB SR 68	Blanco Road to Hunter Lane	AM PM	10.9 21.8	A C
NB Davis Road	Reservation Road to Blanco Road	AM PM	5.8 19.2	A C
SB Davis Road	Blanco Road to Reservation Road	AM PM	13.4 21.1	B C

Notes:
1 Measured in vehicles per mile per lane (veh/mi/ln).
2 LOS = Level of Service.
3 **Bold** text indicates unacceptable operations by Caltrans LOS standards (exceeds LOS C/D cusp).
Source: Fehr & Peers, August 2007.

Ramp Segments

Ramp volumes under 2030 Without Project Conditions and the need for additional capacity is presented in **Table 18**.

TABLE 18
YEAR 2030 WITHOUT PROJECT RAMP SEGMENT VOLUMES

Roadway Segment	Ramp Type[1]	Peak Hour	Volume	Additional Lane?
US 101 and Crazy Horse Canyon Road Interchange				
NB Off-Ramp to Crazy Horse Canyon Road	Direct	AM PM	100 200	No No
NB On-Ramp from Crazy Horse Canyon Road	Direct	AM PM	300 360	No No
SB Off-Ramp to Crazy Horse Canyon Road	Direct	AM PM	320 430	No No
SB On-Ramp from Crazy Horse Canyon Road	Direct	AM PM	70 40	No No

TABLE 18
YEAR 2030 WITHOUT PROJECT RAMP SEGMENT VOLUMES

Roadway Segment	Ramp Type[1]	Peak Hour	Volume	Additional Lane?
US 101 and Russell Road (Harrison Road) Interchange				
NB Off-Ramp to Harrison Road	Direct	AM PM	180 410	No No
NB On-Ramp from Harrison Road	Direct	AM PM	160 130	No No
SB Off-Ramp to Harrison Road	Direct	AM PM	110 270	No No
SB On-Ramp from Harrison Road	Loop	AM PM	310 320	No No
US 101 and Boronda Road Interchange				
NB Off-Ramp to Boronda Road	Direct	AM PM	940 1400	No No
NB On-Ramp from Boronda Road	Direct	AM PM	350 530	No No
NB On-Ramp from Boronda Road	Loop	AM PM	90 270	No No
SB Off-Ramp to Boronda Road	Direct	AM PM	840 1260	No No
SB On-Ramp from Boronda Road	Direct	AM PM	120 290	No No
SB On-Ramp from Boronda Road	Loop	AM PM	1020 670	No No
US 101 and Laurel Drive Interchange				
NB Off-Ramp to Laurel Drive	Direct	AM PM	400 850	No No
NB On-Ramp from Laurel Drive	Direct	AM PM	160 270	No No
NB On-Ramp from Laurel Drive	Loop	AM PM	340 680	No No
SB Off-Ramp to Laurel Drive	Direct	AM PM	680 840	No No
SB On-Ramp from Laurel Drive	Direct	AM PM	340 580	No No

TABLE 18
YEAR 2030 WITHOUT PROJECT RAMP SEGMENT VOLUMES

Roadway Segment	Ramp Type[1]	Peak Hour	Volume	Additional Lane?
SB On-Ramp from Laurel Drive	Loop	AM PM	240 160	No No

Notes:
1 Peak hour ramp capacity is 1,500 veh/hr/ln (vehicles per hour per lane) and 1,200 veh/hr/ln for direct and loop ramps, respectively.
2 Each ramp is one lane.
3 **Bold** text indicates potential need for an additional freeway ramp lane.
Source: Fehr & Peers, August 2007.

5. YEAR 2030 WITH PROJECT CONDITIONS

The impacts of the proposed project on the regional roadway system are discussed in this chapter. First, the method used to estimate the amount of traffic generated by the proposed project is described. Then, the results of the level of service calculations for Year 2030 With Project Conditions are presented. A comparison of the roadway and freeway operating levels under Year 2030 Conditions without and with the project are presented, and the impacts of the project on the study intersections are discussed.

TRIP GENERATION ESTIMATES

Future traffic volumes were estimated using the Salinas sub-area travel demand model noted in Chapter 2. The Salinas sub-area travel demand model trip generation estimation method included a select zone analysis of the 21 project traffic analysis zones (TAZs), which represent geographic areas that include proposed land uses. A select zone analysis identifies the number of project trips assigned and the roadways to which they are assigned. This method details the number of intrazonal, internal, and external vehicle trips. Each is described below, and the model trip estimates are summarized in **Table 19**:

- Intrazonal trips occur within each zone and represent trips within a neighborhood;
- internal trips occur between zones within the project and represent trips between neighborhoods; and
- external trips are those that have an origin or destination outside the project area and are added to the surrounding roadway system.

TABLE 19
SALINAS SUB-AREA TRAVEL DEMAND MODEL TRIP GENERATION ESTIMATE

Area	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Assigned Project Trips[1]	157,822	3,122	5,279	8,401	7,778	5,769	13,547
Intrazonal Project Trips[2]	31,616	765	765	1,530	1,535	1,534	3,069
Subtotal of Gross Project Trips (A)	***189,438***	***3,887***	***6,044***	***9,931***	***9,313***	***7,303***	***16,616***
Internal Project Trips (B)[3]	*66,151*	*1,528*	*1,529*	*3,057*	*2,972*	*2,971*	*5,943*
External Project Trips (A-B)[4]	***123,287***	***2,359***	***4,515***	***6,874***	***6,341***	***4,332***	***10,673***

Notes:
1 Assigned project trips are all trips generated by project TAZs.
2 Intrazonal project trips are all trips that stay within the same TAZ.
3 Internal project trips are trips assigned to the roadway system but do not cross the project boundary.
4 External project trips are trips assigned to the roadway system that cross the project boundary.
Source: Fehr & Peers, August 2007.

The project trips generated from the proposed development were assigned to the roadway system by the travel demand model. A sample plot of the daily project trips assigned to the greater Salinas area roadway network is provided in **Attachment C**.

YEAR 2030 WITH PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

The results of the roadway segment analysis for Year 2030 With Project Conditions are presented in **Tables 20, 21, and 22** for local roadways, arterial segments, and two-lane highways, respectively. The corresponding level of service calculation sheets are contained in **Attachment A**.

Local Roadway Segments

The level of service results for local roadway segments are shown in **Table 20**. Measured against the City of Salinas level of service standard, all local roadway segments operate at an acceptable level of service (LOS D or better) under Year 2030 With Project Conditions except the following:

- East Boronda Road between McKinnon Street and El Dorado Drive
- John Street (SR 68) between Abbott Street and US 101
- North Main Street (SR 183) between US 101 and Rossi Street
- South Main Street (SR 68) between San Miguel Avenue and Blanco Road

Measured against Caltrans level of service standard, four of five Caltrans designated roadways do not operate at an acceptable level of service (LOS C or better) under Year 2030 With Project Conditions except, the following:

- W. Market Street (SR 183) between N. Davis Road and Clark Street
- John Street (SR 68) between Abbott Street and US 101
- North Main Street (SR 183) between US 101 and Rossi Street
- South Main Street (SR 68) between San Miguel Avenue and Blanco Road

TABLE 20
YEAR 2030 PROJECT LOCAL ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Roadway Type	Year 2030 Without Project		Year 2030 With Project		
		ADT[1]	LOS[2]	ADT[1]	LOS[2]	Project Trips
San Juan Grade Road between Boronda Road and Van Buren Avenue	4-Lane Divided Arterial	16,900	A	14,900	A	2,350
Russell Road between Van Buren Avenue and San Juan Grade Road	4-Lane Divided Arterial	6,500	A	15,400	A	7,990
Natividad Road between Old Stage Road and Rogge Road	2-Lane Rural Highway	9,300	C	10,700	C	2,210
Harrison Road north of Russell Road	2-Lane Rural Highway	8,500	C	9,800	C	2,250
Boronda Road between N. Davis Road and US 101	4-Lane Divided Arterial	24,800	B	26,400	C	4,570

TABLE 20
YEAR 2030 PROJECT LOCAL ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Roadway Type	Year 2030 Without Project		Year 2030 With Project		
		ADT[1]	LOS[2]	ADT[1]	LOS[2]	Project Trips
E. Boronda Road between McKinnon Street and El Dorado Drive	2-Lane Arterial/ 6-Lane Divided Arterial	27,000	F	**57,200**	**F**	**32,660**
E. Boronda Road between El Dorado Drive and Natividad Road	2-Lane Arterial/ 6-Lane Divided Arterial	22,900	F	48,900	D	28,530
E. Boronda Road between Constitution Boulevard and N. Sanborn Road	2-Lane Arterial/ 6-Lane Divided Arterial	18,900	F	40,200	C	23,980
W. Market Street (SR 183) between N. Davis Road and Clark Street	4-Lane Divided Arterial	28,200	C	**29,100**	**D[3]**	**160**
John Street (SR 68) between Abbott Street and US 101	4-Lane Undivided Arterial	36,200	F	**36,900**	**F**	**3,920**
John Street (SR 68) between Monterey Street and Abbott Street	4-Lane Divided Arterial	22,500	B	22,900	B	2,650
N. Main Street (SR 183) between US 101 and Rossi Street	4-Lane Divided Arterial	44,100	F	**45,100**	**F**	**3,460**
S. Main Street (SR 68) between San Miguel Avenue and Blanco Road	4-Lane Divided Arterial	31,100	D[3]	**32,700**	**E**	**2,420**
Russell Road between McKinnon Street and El Dorado Drive	4-Lane Divided Arterial	Does not exist – Project conditions only		11,900	A	9,690
Russell Road between Natividad Road and Independence Boulevard	4-Lane Divided Arterial			7,900	A	7,360
Old Stage Road between Future Russell Road Extension and Williams Road	2-Lane Arterial	County facility – see Table 15 or 22		8,100	A	2,040

Notes:
1 ADT = Average two-way daily traffic.
2 LOS = Level of service.
3 Unacceptable only under Caltrans LOS standard.
4 **Bold** text indicates significant impact.
Source: Fehr & Peers, August 2007.

Urban Arterial Segment

The level of service result for the Davis Road urban arterial segment is shown in **Table 21**. Measured against the Monterey County level of service standard, this segment operates at an acceptable level of service (LOS C or better) under Year 2030 With Project Conditions.

TABLE 21
YEAR 2030 PROJECT URBAN ARTERIAL SEGMENT LEVELS OF SERVICE

Roadway Segment	Peak Hour	Year 2030 Without Project				Year 2030 With Project				
		Peak Dir.	Class[1]	Avg. Travel Speed[2]	LOS[2]	Peak Dir.	Class[1]	Avg. Travel Speed[2]	LOS[2]	Project Trips
Davis Road between Market Street and Central Avenue	AM	SB	II	25.7	C	SB	II	25.0	C	160
	PM	NB	II	25.3	C	NB	II	24.7	C	220

Notes:
1 Urban street facilities are separated into four class designations. These class designations are based on design (e.g., high-speed, suburban, intermediate, and urban) and functional categories (e.g., principal and minor arterial) described in the HCM from a high-speed principle arterial to an urban minor arterial.
2 LOS = Level of service.
3 **Bold** text indicates significant impact.
Source: Fehr & Peers, July 2007.

Two-Lane Highway Segments

The level of service results for two-lane highway segments are shown in **Table 22**. Measured against the Monterey County operating standards the following two-lane roadway segments would operate at an unacceptable LOS D or worse during one or both peak hour:

- Crazy Horse Canyon Road south of US 101 (AM and PM peak)
- Crazy Horse Canyon Road between San Juan Grade Road and Old Stage Road (AM and PM peak)
- Hebert Road between Old Stage Road and San Juan Road (AM and PM peak)
- San Juan Grade Road between Hebert Road and Crazy Horse Canyon Road (PM peak only)
- Old Stage Road between Hebert Road and Natividad Road (PM peak only)
- Espinosa Road west of US 101 (AM and PM peak)
- Blanco Road west of Davis Road (AM and PM peak)
- San Miguel Canyon Road between US 101 and Castroville Boulevard (AM and PM peak)
- San Miguel Canyon Road between Castroville Boulevard and Strawberry Road (AM and PM peak)

TABLE 22
YEAR 2030 PROJECT TWO-LANE HIGHWAY LEVELS OF SERVICE

Roadway Segment	Peak Hour	Class[1]	Year 2030 Without Project			Year 2030 With Project			
			Speed[2]	PTSF[3]	LOS[4]	Speed[2]	PTSF[3]	LOS[4]	Project Trips
Crazy Horse Canyon Road south of US 101	AM PM	I	40.3 39.0	64.0 70.5	D E	**40.3** **38.3**	**64.0** **73.2**	**D** **E**	**90** **120**
Crazy Horse Canyon Road between San Juan Grade Road and Old Stage Road	AM PM	I	43.7 42.9	24.7 32.4	D[5] D[5]	43.7 42.9	24.7 32.4	D[5, 6] D[5, 6]	10 10
Hebert Road between Old Stage Road and San Juan Grade Road	AM PM	II	N/A N/A	68.7 74.0	C D	N/A N/A	**71.4** **79.8**	**D** **D**	**200** **300**
San Juan Grade Road between Hebert Road and Crazy Horse Canyon Road	AM PM	II	N/A N/A	61.5 69.8	C C	N/A N/A	61.5 **72.2**	C **D**	120 **170**
San Juan Grade Road between Rogge Road and Hebert Road	AM PM	II	N/A N/A	49.6 60.4	B C	N/A N/A	49.6 60.4	B C	50 80
Old Stage Road between Crazy Horse Canyon Road and Hebert Road	AM PM	II	N/A N/A	24.1 48.0	A B	N/A N/A	24.1 48.0	A B	10 10
Old Stage Road between Hebert Road and Natividad Road	AM PM	II	N/A N/A	52.4 63.9	B C	N/A N/A	56.6 **72.6**	C **D**	210 **320**
Old Stage Road between Natividad Road and Russell Road Extension	AM PM	II	N/A N/A	37.4 44.2	A B	N/A N/A	44.6 54.5	B B	80 110
Old Stage Road between Future Russell Road Extension and Williams Road	AM PM	II	N/A N/A	37.3 43.8	A B	City facility – see Table 20			
Old Stage Road east (south) of Williams Road	AM PM	I	55.4 53.0	31.0 47.7	A B	54.6 51.4	37.1 56.6	B C	110 170
Rogge Road between San Juan Grade Road and Natividad Road	AM PM	II	N/A N/A	42.7 37.1	B A	N/A N/A	47.7 42.7	B B	40 50
Davis Road between Market Street (SR 183) and Central Avenue	AM PM	Analyzed as a 4-lane urban arterial – see Table 14.				Analyzed as a 4-lane urban arterial – see Table 21.			
Davis Road south of Blanco Road	AM PM	Analyzed as a multilane highway – see Table 17.				Analyzed as a multilane highway – see Table 24.			
SR 156 west of US 101	AM PM	Analyzed as a freeway mainline – see Table 16.				Analyzed as a freeway mainline – see Table 23.			
Espinosa Road west of US 101	AM PM	I	41.6 37.6	78.3 85.7	D E	**37.6** **32.7**	**86.0** **92.4**	**E** **F[7]**	**570** **680**
Blanco Road west of Davis Road	AM PM	I	31.2 26.5	89.2 93.9	E E	**30.4** **25.8**	**90.1** **94.5**	**E** **E**	**70** **100**
San Miguel Canyon Road between US 101 and Castroville Boulevard	AM PM	I	36.8 30.1	88.2 94.7	E E	**36.0** **29.3**	**89.2** **95.1**	**E** **E**	**110** **160**

TABLE 22
YEAR 2030 PROJECT TWO-LANE HIGHWAY LEVELS OF SERVICE

Roadway Segment	Peak Hour	Class[1]	Year 2030 Without Project			Year 2030 With Project			
			Speed[2]	PTSF[3]	LOS[4]	Speed[2]	PTSF[3]	LOS[4]	Project Trips
San Miguel Canyon Road between Castroville Boulevard and Strawberry Road	AM PM	I	40.9 35.5	79.8 89.3	D E	**40.1** **34.7**	**81.6** **90.1**	**D** **E**	**70** **110**

Notes:
1 Class Designation = Class I facilities have higher speeds and primarily serve long distance trips or connect to facilities that serve long distance trips. In contrast, Class II facilities have slower travel speeds and primarily serve shorter trips where travel time is less important.
2 Average Travel Speed reported in miles-per-hour (mph).
3 PTSF = Percent Time-Spent-Following.
4 LOS = Level of Service.
5 Field observations indicate operations are better than Existing Conditions level of service calculations. The low measured volumes and relative unimpeded flow observed in the field indicate LOS C or better operations.
6 Not considered a significant impact because of the low volumes, the superior connection provided by Hebert Road, and the negligible amount of project traffic added to this segment.
7 LOS F because directional volume greater than 1700 pc/hr.
8 **Bold** text indicates significant impact.

Source: Fehr & Peers, August 2007.

YEAR 2030 WITH PROJECT FREEWAY LEVEL OF SERVICE

The results of the US 101 freeway and multilane analysis are presented in **Tables 23 and 24**, respectively. The corresponding level of service calculation sheets are contained in **Attachment A**. The freeway ramp evaluation is presented in **Table 25**.

Freeway Mainline Segments

Measured against the Caltrans level of service standards the following freeway segments would operate at an unacceptable LOS D or worse during one or both of the AM and PM peak hours:

AM Peak Hour

- Northbound US 101 between John Street and Market Street (1 segment)
- Southbound US 101 between Russell Road and John Street (5 segments)

PM Peak Hour

- Northbound US 101 between John Street and Russell Road (5 segments)
- Southbound US 101 between Russell Road and John Street (5 segments)

TABLE 23
YEAR 2030 PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

Travel Direction	Segment[1]	Peak Hour	Year 2030 Without Project		Year 2030 With Project		
			Density[1]	LOS[2]	Density[1]	LOS[2]	Project Trips
NB US 101	John Street (SR 68) to Market Street	AM PM	26.6 35.5	D E	**26.6** **35.5**	**D** **E**	**90** **240**
	Market Street to Main Street (SR 183)	AM PM	24.7 39.4	C E	24.7 **39.4**	C **E**	110 **250**
	Main Street (SR 183) to Laurel Drive	AM PM	22.8 35.5	C E	23.7 **33.9**	C **D**	230 **200**
	Laurel Drive to Boronda Road	AM PM	23.7 37.3	C E	25.6 **37.3**	C **E**	230 **380**
	Boronda Road to Russell Road	AM PM	19.0 28.7	C D	23.7 **29.8**	C **D**	360 **190**
SB US 101	Russell Road to Boronda Road	AM PM	28.7 33.9	D D	**26.6** **41.7**	**D** **E**	100 **340**
	Boronda Road to Laurel Drive	AM PM	32.4 29.8	D D	**33.9** **31.1**	**D** **D**	**460** **320**
	Laurel Drive to Main Street (SR 183)	AM PM	31.1 28.7	D D	**29.8** **27.6**	**D** **D**	**230** **200**
	Main Street (SR 183) to Market Street	AM PM	32.4 28.7	D D	**32.4** **27.6**	**D** **D**	**240** **170**
	Market Street to John Street (SR 68)	AM PM	29.8 28.7	D D	**31.1** **29.8**	**D** **D**	**350** **210**
EB SR 156	Cathedral Oak Road to US 101	AM PM	9.5 19.9	A C	9.5 19.9	A C	10 40
WB SR 156	US 101 to Cathedral Oak Road	AM PM	20.9 13.3	C B	20.9 13.3	C B	20 20

Notes:
[1] Measured in vehicles per mile per lane (veh/mi/ln).
[2] LOS = Level of Service.
[3] **Bold** text indicates significant impact.
Source: Fehr & Peers, August 2007.

Multilane Highway Segments

Measured against the Caltrans level of service standards the following multilane highway segments would operate at an unacceptable LOS D or worse during one or both of the AM and PM peak hours:

AM Peak Hour

- Northbound US 101 south of Airport Boulevard (1 segment)
- Northbound US 101 between Russell Road and San Miguel Canyon Road (2 segments)
- Southbound US 101 between San Miguel Canyon Road and Russell Road (2 segments)

PM Peak Hour

- Northbound US 101 between Russell Road and San Miguel Canyon Road (2 segments)
- Southbound US 101 between San Juan Road and Crazy Horse Canyon Road (1 segment)
- Southbound US 101 between San Miguel Canyon Road and Russell Road (2 segments)
- Southbound US 101 south of Airport Boulevard (1 segment)

Ramp Segments

Measured against the one-lane capacity planning level thresholds, the northbound US 101 direct off-ramp to Boronda Road, and southbound US 101 direct off-ramp and loop on-ramp from Boronda Road may need an additional lane.

SIGNIFICANT IMPACT CRITERIA

The determination of significance for project impacts is based on applicable policies, regulations, goals, and guidelines defined by the City of Salinas, Monterey County, and Caltrans. The City of Salinas *General Plan* does not include a policy regarding the analysis of a roadway that is already operating below standard. However, in recent traffic impact studies prepared for the City, the threshold used states 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 detailed impact criteria for this study are presented below.

City of Salinas Roadways

The LOS standard for City of Salinas roadways is LOS D. Traffic impacts on City facilities are defined to occur when:

1. Added project traffic causes roadway segment operations to deteriorate from an acceptable level (LOS D or better) under Year 2030 Without Project Conditions to an unacceptable level (LOS E or worse); or
2. New trips are added to a facility already operating unacceptably (LOS E or worse) under Year 2030 Without Project Conditions.

TABLE 24
YEAR 2030 PROJECT MULTILANE HIGHWAY LEVELS OF SERVICE

Travel Direction	Segment	Peak Hour	Year 2030 Without Project		Year 2030 With Project		
			Density[1]	LOS[2]	Density[1]	LOS[2]	Project Trips
NB US 101	South of Airport Boulevard	AM PM	33.2 24.9	D C	**31.9** 24.9	**D** C	**40** 30
	Russell Road to SR 156	AM PM	22.8 30.7	C D	**28.3** **30.7**	**D** **D**	**390** **170**
	SR 156 to San Miguel Canyon Road	AM PM	23.8 >40	C F	**29.5** **38.5**	**D** **E**	**360** **140**
	San Miguel Canyon Road to Crazy Horse Canyon Road	AM PM	17.8 23.8	B C	19.8 21.8	C C	90 270
	Crazy Horse Canyon Road to San Juan Road	AM PM	18.8 27.1	C D	22.8 24.9	C C	300 110
SB US 101	San Juan Road to Crazy Horse Canyon Road	AM PM	29.5 23.8	D C	24.9 **28.3**	C **D**	100 **320**
	San Miguel Canyon Road to Crazy Horse Canyon Road	AM PM	26.0 20.8	C C	22.8 22.8	C C	270 100
	San Miguel Canyon Road to SR 156	AM PM	37.2 33.2	E D	**31.9** **38.5**	**D** **E**	**110** **380**
	SR 156 to Russell Road	AM PM	29.5 33.2	D D	**27.1** **40.0**	**D** **E**	**110** **430**
	South of Airport Boulevard	AM PM	11.9 34.5	B D	11.9 **33.2**	B **D**	20 **40**
NB SR 68	Reservation Road to Blanco Road	AM PM	17.8 19.8	B C	17.8 19.8	B C	200 260
SB SR 68	Blanco Road to Reservation Road	AM PM	10.9 21.8	A C	12.9 24.9	B C	180 220
NB Davis Road	Reservation Road to Blanco Road	AM PM	5.8 19.2	A C	5.8 19.2	A C	150 210
SB Davis Road	Blanco Road to Reservation Road	AM PM	13.4 21.1	B C	15.3 24.0	B C	150 210

Notes:
1 Measured in vehicles per mile per lane (veh/mi/ln).
2 LOS = Level of Service.
3 **Bold** text indicates significant impact.
Source: Fehr & Peers, August 2007.

TABLE 25
YEAR 2030 PROJECT RAMP SEGMENT VOLUMES

Roadway Segment	Ramp Type[1]	Peak Hour	Year 2030 Without Project		Year 2030 With Project	
			Volume	Add'l Lane Req'd?	Volume	Add'l Lane Req'd?
US 101 and Crazy Horse Canyon Road Interchange						
NB Off-Ramp to Crazy Horse Canyon Road	Direct	AM PM	100 200	No No	100 180	No No
NB On-Ramp from Crazy Horse Canyon Road	Direct	AM PM	300 360	No No	380 340	No No
SB Off-Ramp to Crazy Horse Canyon Road	Direct	AM PM	320 430	No No	270 580	No No
SB On-Ramp from Crazy Horse Canyon Road	Direct	AM PM	70 40	No No	70 60	No No
US 101 and Russell Road (Harrison Road) Interchange						
NB Off-Ramp to Harrison Road	Direct	AM PM	160 410	No No	220 590	No No
NB On-Ramp from Harrison Road	Direct	AM PM	460 410	No No	520 490	No No
SB Off-Ramp to Harrison Road	Direct	AM PM	210 370	No No	300 420	No No
SB On-Ramp from Harrison Road	Loop	AM PM	310 570	No No	400 520	No No
US 101 and Boronda Road Interchange						
NB Off-Ramp to Boronda Road	Direct	AM PM	940 1400	No No	990 **1530**	No **Yes**
NB On-Ramp from Boronda Road	Direct	AM PM	350 530	No No	690 720	No No
NB On-Ramp from Boronda Road	Loop	AM PM	90 270	No No	100 310	No No
SB Off-Ramp to Boronda Road	Direct	AM PM	840 1260	No No	910 **1550**	No **Yes**
SB On-Ramp from Boronda Road	Direct	AM PM	120 290	No No	110 230	No No
SB On-Ramp from Boronda Road	Loop	AM PM	1020 670	No No	**1400** 720	**Yes** No

TABLE 25
YEAR 2030 PROJECT RAMP SEGMENT VOLUMES

Roadway Segment	Ramp Type[1]	Peak Hour	Year 2030 Without Project		Year 2030 With Project	
			Volume	Add'l Lane Req'd?	Volume	Add'l Lane Req'd?
US 101 and Laurel Drive Interchange						
NB Off-Ramp to Laurel Drive	Direct	AM PM	400 850	No No	350 830	No No
NB On-Ramp from Laurel Drive	Direct	AM PM	160 270	No No	160 260	No No
NB On-Ramp from Laurel Drive	Loop	AM PM	340 680	No No	390 770	No No
SB Off-Ramp to Laurel Drive	Direct	AM PM	680 840	No No	880 930	No No
SB On-Ramp from Laurel Drive	Direct	AM PM	340 580	No No	330 480	No No
SB On-Ramp from Laurel Drive	Loop	AM PM	240 160	No No	250 150	No No

Notes:
1 Peak hour ramp capacity is 1,500 veh/hr/ln (vehicles per hour per lane) and 1,200 veh/hr/ln for direct and loop ramps, respectively.
2 Each ramp is one lane.
3 **Bold** text indicates potential need for an additional freeway ramp lane.
Source: Fehr & Peers, August 2007.

Monterey County and Caltrans Roadways

The LOS standard for Monterey County and Caltrans roadway segments is LOS C. Traffic impacts on Monterey County and Caltrans roadway segments are defined to occur when:

1. Added project traffic causes roadway segment operations to deteriorate from an acceptable level (LOS C or better) under Year 2030 Without Project Conditions to an unacceptable level (LOS D or worse); or
2. New trips are added to a facility already operating unacceptably (LOS D or worse) under Year 2030 Without Project Conditions.

SIGNIFICANT PROJECT IMPACTS

Based on the project impact criteria listed above, the proposed project would have a **significant impact** at the locations listed in **Table 26**. The explanation of potential mitigation measures and associated issues follows **Table 26**.

TABLE 26
YEAR 2030 SIGNIFICANT ROADWAY IMPACTS AND PROPOSED MITIGATION

Study Segment (Type)	Project Contribution[1] of Growth[2]	Project Contribution[1] of total Traffic[3]	Peak Hour	Jurisdiction: City	Jurisdiction: County	Jurisdiction: Caltrans	Proposed Mitigation
6. East Boronda Road between McKinnon Street and El Dorado Drive (Roadway)	>50%	>50%	Daily	X[4]			Widen to 8-lanes. Conflicts with City General Plan policy and considered infeasible due to right-of-way constraints. Alternate mitigation Alvin Drive extension to the Western Bypass.
9. W. Market Street (SR 183) between N. Davis Road and Clark Street (Roadway)	2%	1%	Daily			X	Widen to 6-lanes. Not included in *Salinas TIP* and considered infeasible due to right-of-way constraints.
10. John Street (SR 68) between Abbott Street and US 101 (Roadway)	32%	11%	Daily			X[4]	Widen to 6-lanes.[5]
12. North Main Street (SR 183) between US 101 and Rossi Street (Roadway)	>50%	8%	Daily			X[4]	Widen to 8-lanes. Conflicts with City General Plan policy and considered infeasible due to right-of-way constraints. Alternate mitigation Western Bypass and/or widening to 6-lanes as define in *Salinas TIP*.[6]
13. South Main Street (SR 68) between San Miguel Avenue and Blanco Road (Roadway)	40%	7%	Daily			X	Widen to 6-lanes. Not included in *Salinas TIP* and considered infeasible due to right-of-way constraints.[6]
14. Crazy Horse Canyon Road south of US 101 (Two-Lane Hwy)	20%	11%	AM PM		X[4] X[4]		Widen to 4-lanes.[5]
16. Hebert Road between Old Stage Road and San Juan Road (Two-Lane Hwy)	32%	21%	AM PM		X X		Widen to 4-lane. Project MYC129 defined in *Monterey County Constrained RTP*.[5, 7]
17. San Juan Grade Road between Hebert Road and Crazy Horse Canyon Road (Two-Lane Hwy)	27%	14%	AM PM		X		Widen to 4-lanes. Project MYC127 defined in *Monterey County Constrained RTP*.[5, 7]

TABLE 26
YEAR 2030 SIGNIFICANT ROADWAY IMPACTS AND PROPOSED MITIGATION

	Study Segment (Type)	Project Contribution[1] of Growth[2]	Project Contribution[1] of total Traffic[3]	Peak Hour	Jurisdiction: City	Jurisdiction: County	Jurisdiction: Caltrans	Proposed Mitigation
	20. Old Stage Road between Hebert Road and Natividad Road (Two-Lane Hwy)	33%	21%	AM PM		 X		Widen to 4-lanes. Project MYC128 defined in *Monterey County Constrained RTP*.[5, 7]
	28. Espinosa Road west of US 101 (Two-Lane Hwy)	42%	34%	AM PM		X[4] X[4]		Widen to 4-lanes. Project MYC125 defined in *Monterey County Constrained RTP*.[5, 7]
	29. Blanco Road west of Davis Road (Two-Lane Hwy)	>50%	4%	AM PM		X[4] X[4]		Required mitigation is widening to 4-lanes. However, County plans capacity improvements on Davis Road/Reservation Road as primary Salinas-Marina corridor.
NB US 101	30. John Street (SR 68) to Market Street (Freeway)	13%	5%	AM PM			 X[4]	Widen to 6-lanes. Project CT030 defined in *Monterey County Constrained RTP*.[5, 7] Alternate partial mitigation – Western Bypass and/or Eastern Bypass.
NB US 101	31. Market Street to Main Street (SR 183) (Freeway)	17%	5%	AM PM			 X[4]	
NB US 101	32. Main Street (SR 183) to Laurel Drive (Freeway)	23%	7%	AM PM			 X[4]	
NB US 101	33. Laurel Drive to Boronda Road (Freeway)	35%	10%	AM PM			 X[4]	
NB US 101	34. Boronda Road to Russell Road (Freeway)	41%	9%	AM PM			 X[4]	
NB US 101	35. South of Airport Boulevard (Multilane Hwy.)	2%	1%	AM PM			X 	Widen to 6-lanes. Project CT030 defined in *Monterey County Constrained RTP*.[5, 7] Alternate partial mitigation – Eastern Bypass.
NB US 101	36. Russell Road to SR 156 (Multilane Hwy.)	25%	9%	AM PM			X X	Widen to 6-lanes. Project CT029 defined in *Monterey County Constrained RTP*.[5,7] Alternate mitigation – Prunedale Bypass or Eastern Corridor Improvements.[3]
NB US 101	37. SR 156 to San Miguel Canyon Road (Multilane Hwy.)	25%	6%	AM PM			X X[4]	SR 156 – West Corridor. Project CT036 defined in *Monterey County Constrained RTP*.[5] Alternate mitigation – Prunedale Bypass or Eastern Corridor Improvements.[5]

TABLE 26
YEAR 2030 SIGNIFICANT ROADWAY IMPACTS AND PROPOSED MITIGATION

	Study Segment (Type)	Project Contribution[1] of Growth[2]	Project Contribution[1] of total Traffic[3]	Peak Hour	Jurisdiction: City	Jurisdiction: County	Jurisdiction: Caltrans	Proposed Mitigation
SB US 101	39. San Juan Road to Crazy Horse Canyon Road (Multilane Hwy.)	29%	6%	AM PM			 X	Widen to 5-lanes.[5] (3 SB and 2 NB lanes)
SB US 101	37. San Miguel Canyon Road to SR 156 (Multilane Hwy.)	24%	5%	AM PM			X[4] X	SR 156 - West Corridor. Project CT036 defined in *Monterey County Constrained RTP*.[7] Alternate mitigation – Prunedale Bypass or Eastern Corridor Improvements.[5]
SB US 101	36. SR 156 to Russell Road (Multilane Hwy.)	24%	8%	AM PM			X X	Widen to 6-lanes. Project CT029 defined in *Monterey County Constrained RTP*.[5,7] Alternate mitigation – Prunedale Bypass or Eastern Corridor Improvements.[5]
SB US 101	35. South of Airport Boulevard (Multilane Hwy.)	3%	1%	AM PM			 X	Widen to 6-lanes. Project CT030 defined in *Monterey County Constrained RTP*.[5,7] Alternate partial mitigation – Eastern Bypass.
SB US 101	34. Russell Road to Boronda Road (Freeway)	23%	7%	AM PM			 X[4]	Widen to 6-lanes. Project CT030 defined in *Monterey County Constrained RTP*.[5,7] Alternate partial mitigation – Western Bypass and/or Eastern Bypass.
SB US 101	33. Boronda Road to Laurel Drive (Freeway)	33%	9%	AM PM			X[4] X	
SB US 101	32. Laurel Drive to Main Street (SR 183) (Freeway)	21%	6%	AM PM			X[4] X	
SB US 101	31. Main Street (SR 183) to Market Street (Freeway)	19%	6%	AM PM			X[4] X	
SB US 101	30. Market Street to John Street (SR 68) (Freeway)	23%	8%	AM PM			X[4] X	
43. San Miguel Canyon Road between US 101 and Castroville Boulevard (Two-Lane Hwy)		18%	5%	AM PM		X[4] X[4]		Widen to 4-lanes.[5]
44. San Miguel Canyon Road between Castroville Boulevard and Strawberry Road (Two-Lane Hwy)		14%	5%	AM PM		X[4] X[4]		
NB Off-Ramp to Boronda Road		>50%	29%	AM PM			 X	Add additional ramp lane.

TABLE 26
YEAR 2030 SIGNIFICANT ROADWAY IMPACTS AND PROPOSED MITIGATION

Study Segment (Type)	Project Contribution[1] of Growth[2]	Project Contribution[1] of total Traffic[3]	Peak Hour	Jurisdiction City	Jurisdiction County	Jurisdiction Caltrans	Proposed Mitigation
SB Off-Ramp to Boronda Road	>50%	22%	AM PM			X	Add additional ramp lane.
SB On-Ramp from Boronda Road	>50%	41%	AM PM			X	

Notes:

[1] Project percent based on detailed technical calculations presented in Attachment E. Any contributions will be negotiated between appropriate agencies.

[2] Project Contribution Method 1 = $(T/(T_B - T_E))*100$; where T = Project traffic on a roadway segment, T_B = Year 2030 with Project Conditions roadway segment volumes, and T_E = Existing roadway segment volumes.

[3] Project Contribution Method 2 = $(T/T_B)*100$; where T = Project traffic on a roadway segment, and T_B = Year 2030 with Project Conditions roadway segment volumes.

[4] Deficient segments under Existing Conditions.

[5] Unless completely funded with appropriate agreements to implement the feasible roadway improvements the impacts would remain ***significant and unavoidable***.

[6] City of Salinas, *Traffic Improvement Program (TIP)*, 2005.

[7] Monterey County, *Monterey County Constrained Regional Transportation Plan*, 2005.

Source: Fehr & Peers, August 2007.

MITIGATION MEASURES

As noted above, the results of the transportation impact analysis indicates that the proposed project will cause significant impacts. The proposed mitigation measures are described below and summarized in **Table 26**. **Attachment D** contains the calculation worksheets for these mitigation measures.

Impacts to regional transportation facilities are caused by future growth within and outside Monterey County, as well as the addition of project traffic. Increased land use and changes to regional travel patterns contribute to the degradation in operations on numerous facilities. Accordingly, the Salinas SOI development shall be responsible for a fair-share contribution towards all feasible physical improvements necessary to reduce the severity of the project's significant transportation-related impacts. Project developers are expected to make financial contributions to the City of Salinas or land dedications to the appropriate agency to help fund or construct appropriate mitigation measures.

For each significantly impacted roadway segment, the project contribution is presented in **Table 26** as: 1) a percentage of future traffic growth (i.e., the growth increment between existing traffic volumes and 2030 volumes with the proposed project), and 2) a percentage of total traffic volumes forecast in Year 2030. The contribution is based on average daily traffic volumes, and the amount of project traffic on each roadway was obtained using a select zone analysis from the travel demand model. **Attachment E** contains the daily project contribution calculations.

The calculation of project traffic as a percentage of future growth is Caltrans' preferred fair share method which is described in their *Guidelines for the Preparation of Traffic Impact Studies*. However, the difference between the future Year 2030 with project volume and the existing volume on each link reflects more than just growth in traffic (i.e., redistribution). The change in volume is due to traffic growth from development in the City of Salinas, in the surrounding region, and, most importantly, redistribution of existing traffic volumes. Thus, the Caltrans method can result in a percentage that appears very high because redistribution is not accounted for.

The Salinas SOI fair share contribution towards roadway improvement costs is an acceptable mitigation measure. However, significant impacts are not reduced or eliminated until the improvement is constructed. Additional sources are needed to provide adequate funding, which can include State Transportation Improvement Program funds for projects identified in the *2005 Monterey County Constrained Regional Transportation Plan*, City impact fees, Monterey County fees, and/or the proposed Transportation Agency for Monterey County (TAMC) regional impact fee. For the roadway improvements described in **Table 26** and discussed in the text below, the Davis Road Bridge replacement over the Salinas River is the only improvement with full funding allocated in the 2006 *State Transportation Improvement Program.* TAMC is in the process of preparing a Regional Development/Traffic Impact Fee Program for consideration by Monterey County jurisdictions. Further, the Salinas *General Plan* includes an implementation policy to work with TAMC to establish a fee program that addresses regional traffic impacts. The City and County recently adopted the *Greater Salinas Area Memorandum of Understanding* (August 29, 2006) that supports the use of fees and taxes to mitigate traffic impacts on the regional and county roadway systems (see **Attachment F**, Items 9, 11, 12 & 13 and Exhibit B). Currently, City staff and SOI project representatives are working collaboratively with TAMC, Caltrans, and Monterey County representatives to prepare and develop this program. Payment of traffic impact fees or a fair share contribution is expected to fulfill the Salinas SOI obligations for mitigating regional and county traffic impacts; however, unless other funding sources such as a proposed sales tax measure for Monterey County, contributions from other developers, or state funds are made available, feasible roadway improvements will not be implemented, and all of the impacts would remain ***significant and unavoidable***.

Local Roadway Segments

The results of the local level of service analysis indicate that the proposed project would result in a **significant impact** on one local roadway segment and four Caltrans roadway segments (9, 10, 12, and 13). In one case, W. Market Street (Davis Road to Clark Street) only exceeds the planning volume threshold by 100 daily vehicles. Unless additional funding is provided by other sources to implement the feasible roadway improvements discussed below (Segments 10 and 12), the impacts would remain ***significant and unavoidable***.

6. *East Boronda Road between McKinnon Street and El Dorado Drive* – This roadway segment requires widening to an 8-lane arterial to provide acceptable operations (LOS D). Widening Boronda to 8-lanes conflicts with Salinas *General Plan* policy and is considered infeasible due to right-of-way constraints. Furthermore, wider roads can have a negative impact on bicycle and pedestrian travel by increasing exposure to vehicles and creating more conflict points. Using this approach, this impact remains **significant and unavoidable**. However, the planned Alvin Drive extension to the Western Bypass (see the *2002 Salinas General Plan* and *Traffic Improvement Program*, 2005 update) is a potential alternate mitigation that provides parallel capacity to Boronda Road.

10. *John Street (SR 68) between Abbott Street and US 101* – This roadway segment requires widening to a 6-lane arterial to provide acceptable operations (LOS A). Widening John Street will require additional right-of-way and create a wider street that can have a negative impact on bicycle and pedestrian travel as noted above. Also, this segment of John Street includes an at-grade crossing of the Union Pacific

Railroad tracks, which will require approval by the California Public Utility Commission (CPUC) and the Union Pacific Railroad.

12. *North Main Street (SR 183) between US 101 and Rossi Street* – To meet City standards this roadway segment requires widening to a 6-lane arterial (LOS D); however, to meet Caltrans operation standard this roadway segment requires widening to an 8-lane arterial (LOS B). Widening Main Street to 8-lanes conflicts with Salinas *General Plan* policy and is considered infeasible due to right-of-way constraints. Furthermore, wider roads can have a negative impact on bicycle and pedestrian travel by increasing exposure to vehicles and creating more conflict points. Using this approach, this impact remains **significant and unavoidable**. However, the Western Bypass is a potential alternate mitigation that provides parallel capacity to Main Street. Furthermore, the widening of North Main Street to a 6-lane arterial as identified in the Salinas *Traffic Improvement Program* will provide additional capacity.

For the remaining Caltrans roadway segments (9, and 13), widening these facilities beyond their existing or already planned widths will likely create significant secondary impacts such as removal or relocation of existing sidewalks, buildings and businesses. The segment of West Market Street between North Davis Road and Clark Street operates acceptably per City LOS standards. Additional widening of these roadway segments is not included in the City of Salinas *Traffic Improvement Program*. Wider roadways will require the acquisition of additional right-of-way and/or the removal or relocation of existing sidewalks, buildings and businesses. In addition, wider roads have a negative impact on bicycle and pedestrian travel by increasing exposure to vehicles and creating more conflict points. Using this approach, all of these impacts would remain **significant and unavoidable**.

The daily roadway segment evaluation used to identify potential impacts of the proposed project is not a detailed assessment of traffic operations. All of these facilities include traffic signals or stop signs at intersections that govern the overall operations more so than the number of through lanes on a given facility. As such, intersections represent the constraint points of the roadway system and mitigation measures will be further refined based on detailed intersection analysis to be prepared as part of the environmental documentation for the three Specific Plan areas.

Two-Lane Highway Segments

The results of the two-lane highway level of service analysis indicate that the proposed project would create a **significant impact** on the seven segments listed in **Table 26**. In each case the mitigation is to widen to a 4-lane multilane highway standards described in American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets* (2004) document. A brief discussion of each segment and the potential mitigation measure is presented below. Unless additional funding is provided by other sources to implement the feasible roadway improvements discussed below (Segments 14, 16, 17, 20, and 28), the impacts would remain ***significant and unavoidable***.

14. Cr*azy Horse Canyon Road segment south of US 101* – This facility is located in rolling terrain that will require substantial cut and fill to meet AASHTO design standards of a 4-lane multilane highway. The City will work with the County on determining an appropriate design for this facility, which would ultimately connect to an Eastern Corridor Improvement (see below)

16. *Hebert Road between Old Stage Road and San Juan Grade Road* – Widening to 4-lanes is consistent with the *2005 Monterey County Constrained Regional Transportation Plan* project MYC129 description to add capacity to Hebert Road.

17. *San Juan Grade Road between Hebert Road and Crazy Horse Canyon Road* – Widening to 4-lanes is consistent with the *2005 Monterey County Constrained Regional Transportation Plan* project MYC127 description to add capacity to San Juan Grade Road.

20. *Old Stage Road between Hebert Road and Natividad Road* – Widening to 4-lanes is consistent with the *2005 Monterey County Constrained Regional Transportation Plan* project MYC128 description to add capacity to Old Stage Road.

28. *Espinosa Road west of US 101* – Widening to 4-lanes is consistent with the *2005 Monterey County Constrained Regional Transportation Plan* project MYC125 description to add capacity to Espinosa Road. The Western Bypass can provide additional capacity from north Salinas to the Monterey Peninsula. Additional traffic analysis will be done with the Specific Plan EIR to further refine mitigation measures to address Espinosa Road impacts.

29. *Blanco Road west of Davis Road* – The mitigation required to achieve an acceptable level of operations is widening to 4-lanes. As defined in the forthcoming TAMC regional transportation impact program, the preferred Salinas-Marina corridor capacity enhancements will occur on Davis Road and Reservation Road per the direction of Monterey County. Thus, the widening of Blanco Road west of Salinas is not expected to occur and this impact would remain **significant and unavoidable**.

43. *San Miguel Canyon Road between US 101 and Castroville Boulevard* – Widening to four lanes is consistent with Monterey County G12 corridor improvements. This widening is not included in the *2005 Monterey County Constrained Regional Transportation Plan*.

44. *San Miguel Canyon Road between US 101 and Castroville Boulevard* – While the Monterey County G12 corridor improvements call for installation of a two-way left-turn lane (between Castroville Boulevard and Echo Valley Road), widening to four lanes is needed to fully mitigate this impact. The two-way left-turn lane will improve left-turn operations at key intersections but will not reduce the impact to a less than significant level. The widening to four lanes is not included in the *2005 Monterey County Constrained Regional Transportation Plan*.

The upgrading and widening of roadway segments 14, 16, 17, and 20 is collectively defined as the Eastern Corridor Improvements, which is an alternative mitigation to widening US 101 through the Prunedale community. The Eastern Corridor Improvements would generally extend along Crazy Horse Canyon Road, San Juan Grade Road, Hebert Road and Old Stage Road between the new US 101 interchanges at Crazy Horse Canyon Road and near Harris Road. The Eastern Corridor Improvements would include the Eastern Bypass defined in the City of Salinas *Traffic Improvement Program.* The City will work with Monterey County on determining an appropriate design for the Eastern Corridor Improvements, which are located in an area generally identified in Exhibit B of the *Greater Salinas Area Memorandum of Understanding* (see **Attachment F**).

Table 27 shows the level of service results for Year 2030 With Project and Year 2030 With Project Mitigated. The individual improvements are discussed below.

TABLE 27
YEAR 2030 MITIGATED TWO-LANE HIGHWAY LEVELS OF SERVICE

Roadway Segment	Peak Hour	Year 2030 With Project				Year 2030 With Project Mitigated		
		Two-Lane Highway				Multilane Highway		
		Class[1]	Speed[2]	PTSF[3]	LOS[4]	Direction[5]	Density[6]	LOS[4]
14. Crazy Horse Canyon Road south of US 101	AM	I	**34.8**	**65.0**	**E**	EB WB	2.0 5.1	A A
	PM		**32.9**	**74.0**	**E**	EB WB	6.1 9.0	A A
16. Hebert Road between Old Stage Road and San Juan Grade Road	AM	II	N/A	**71.4**	**D**	EB WB	4.0 6.0	A A
	PM		N/A	**79.8**	**D**	EB WB	9.0 5.0	A A
17. San Juan Grade Road between Hebert Road and Crazy Horse Canyon Road	AM	II	N/A	61.5	C	SB NB	4.0 4.0	A A
	PM		N/A	**72.2**	**D**	SB NB	8.0 4.0	A A
20. Old Stage Road between Hebert Road and Natividad Road	AM	II	N/A	56.6	C	EB WB	3.0 6.0	A A
	PM		N/A	**72.6**	**D**	EB WB	9.9 4.0	A A
28. Espinosa Road west of US 101	AM	I	**27.0**	**88.3**	**E**	EB WB	7.0 12.9	A B
	PM		**22.3**	**95.2**	**E**	EB WB	17.9 8.0	B A
29. Blanco Road west of Davis Road	AM	I	**30.4**	**90.1**	**E**	Required mitigation is widening to 4-lanes. However, County plans capacity improvements on Davis Road/Reservation Road as primary Salinas-Marina corridor.		
	PM		**25.8**	**94.5**	**E**			
43. San Miguel Canyon Road between US 101 and Castroville Boulevard	AM	I	**36.0**	**89.2**	**E**	SB NB	9.1 12.2	A B
	PM		**29.3**	**95.1**	**E**	SB NB	14.2 16.2	B B
44. San Miguel Canyon Road between Castroville Boulevard and Strawberry Road	AM	I	**40.1**	**81.6**	**D**	SB NB	7.1 8.1	A A
	PM		**34.7**	**90.1**	**E**	SB NB	12.2 10.1	B A

TABLE 27
YEAR 2030 MITIGATED TWO-LANE HIGHWAY LEVELS OF SERVICE

Roadway Segment	Peak Hour	Year 2030 With Project				Year 2030 With Project Mitigated		
		Two-Lane Highway				Multilane Highway		
		Class[1]	Speed[2]	PTSF[3]	LOS[4]	Direction[5]	Density[6]	LOS[4]

Notes:
[1] Class Designation = Class I facilities have higher speeds and primarily serve long distance trips or connect to facilities that serve long distance trips. In contrast, Class II facilities have slower travel speeds and primarily serve shorter trips where travel time is less important.
[2] Average Travel Speed reported in miles-per-hour (mph).
[3] PTSF = Percent Time-Spent-Following.
[4] LOS = Level of Service.
[5] Multilane highway operations are analyzed by direction for each peak hour (EB = eastbound, WB = westbound, SB = southbound, NB = northbound)
[6] Measured in vehicles per mile per lane (veh/mi/ln).
Bold text indicates significant impact.
Source: Fehr & Peers, August 2007.

Freeway Mainline Segments

The results of the freeway level of service analysis indicate that the proposed project would create a **significant impact** on the following mixed-flow freeway segments:

AM Peak Hour

- Southbound US 101 between Boronda Road and John Street (4 segments)

PM Peak Hour

- Northbound US 101 between John Street and Russell Road (5 segments)
- Southbound US 101 between Russell Road and John Street (5 segments)

The Salinas SOI fair share contribution shall include the City of Salinas traffic impact fee, which includes the widening of US 101 to 6-lanes between the new Russell Road interchange and Harris Road (*City of Salinas Traffic Improvement Program 2005* project number 32). Also, this improvement is consistent with the *2005 Monterey County Constrained Regional Transportation Plan* project CT030 description to add capacity through the City of Salinas. Thus, this project is eligible for State Transportation Improvement Program funding. The TAMC draft regional project list does not include the widening of US 101 through the City of Salinas in the regional transportation impact fee. However, unless completely funded with appropriate agreements to implement the feasible roadway improvements discussed below (Segments 30, 31, 32, 33, and 34) the impacts would remain ***significant and unavoidable***. **Table 28** shows the level of service results for Year 2030 With Project and Year 2030 With Project Mitigated Conditions.

TABLE 28
YEAR 2030 MITIGATED FREEWAY MAINLINE LEVELS OF SERVICE

Travel Direction	Segment[1]	Peak Hour	Year 2030 With Project Density[1]	Year 2030 With Project LOS[2]	Year 2030 With Project Mitigated Density[1]	Year 2030 With Project Mitigated LOS[2]
NB US 101	30. John Street (SR 68) to Market Street	AM PM	**26.6** **35.5**	**D** **E**	17.3 21.6	B C
	31. Market Street to Main Street (SR 183)	AM PM	24.7 **39.4**	C **E**	16.1 22.9	B C
	32. Main Street (SR 183) to Laurel Drive	AM PM	23.7 **33.9**	C **D**	15.4 21.0	B C
	33. Laurel Drive to Boronda Road	AM PM	25.6 **37.3**	C **E**	16.7 22.2	B C
	34. Boronda Road to Russell Road	AM PM	23.7 **29.8**	C **D**	15.4 19.1	B C
SB US 101	34. Russell Road to Boronda Road	AM PM	**26.6** **41.7**	**D** **E**	17.3 23.5	B C
	33. Boronda Road to Laurel Drive	AM PM	**33.9** **31.1**	**D** **D**	21.0 19.8	C C
	32. Laurel Drive to Main Street (SR 183)	AM PM	**29.8** **27.6**	**D** **D**	19.1 17.9	C B
	31. Main Street (SR 183) to Market Street	AM PM	**32.4** **27.6**	**D** **D**	20.4 17.9	C B
	30. Market Street to John Street (SR 68)	AM PM	**31.1** **29.8**	**D** **D**	19.8 19.1	C C

Notes:
1 Measured in vehicles per mile per lane (veh/mi/ln).
2 LOS = Level of Service.
3 **Bold** text indicates significant impact.
Source: Fehr & Peers, August 2007.

An alternative mitigation measure that has previously been considered is construction of the Western Bypass from north Salinas to Salinas-Marina corridor in southwest Salinas. The Western Bypass would be a 4-lane roadway extending from the US 101/Boronda Road interchange to the Davis Road and Blanco Road intersection.

To determine the potential effect on US 101, the Western Bypass was included in the Salinas sub-area travel demand model and forecasts were generated. With the change in travel patterns, the Western Bypass was estimated to reduce the volume on the freeway between Boronda Road and Laurel Drive by 200 to 400 vehicles in one direction during each peak hour. This would result in LOS D freeway operations on this segment during all peak hours except for the northbound segment during the AM peak hour. Thus, the freeway widening remains a more effective mitigation measure to address US 101 impacts. Based on initial model run with the Western Bypass and Alvin Drive overcrossing, the greatest shift in daily traffic will be on Davis Street and Main Street between Boronda Road and Blanco Road. Also, traffic on Laurel between Main Street and Davis Street and Alisal Street between Main Street and Blanco will shift to the Western Bypass. However, the Boronda Road interchange will likely see an increase in traffic, especially west of US 101. Additional alternate partial mitigation to the widening of US 101 south of Salinas includes a new 4-lane arterial Eastern Bypass that connects the intersections of Boronda Road/Williams Road and Harris Road/US 101 east of the Salinas Airport. Even with the construction of the Western and Eastern Bypasses the operation impacts to US 101 would not be fully mitigated.

Multilane Highway Segments

The results of the multilane highway level of service analysis indicate that the proposed project would result in a **significant impact** on the following segments:

AM Peak Hour

- Northbound US 101 south of Airport Boulevard (1 segment)
- Northbound US 101 between Russell Road and San Miguel Canyon Road (2 segments)
- Southbound US 101 between San Miguel Canyon Road and Russell Road (2 segments)

PM Peak Hour

- Northbound US 101 between Russell Road and San Miguel Canyon Road (2 segments)
- Southbound US 101 between San Juan Road and Crazy Horse Canyon Road (1 segment)
- Southbound US 101 between San Miguel Canyon Road and Russell Road (2 segments)
- Southbound US 101 south of Airport Boulevard (1 segment)

The recommended multilane highway segment mitigation is to:

- Widen US 101 to 6-lanes between Airport Boulevard and Harris Road
- Widen US 101 to 6-lanes between San Miguel Canyon Road and Russell Road or Prunedale Bypass or Eastern Corridor Improvements
- Widen US 101 to 6-lanes between San Juan Road and Crazy Horse Canyon Road *(Impact is in southbound direction only)* or Prunedale Bypass or Eastern Corridor Improvements

Most of the US 101 improvements are eligible for State Transportation Improvement Program (STIP) funding because they are included in the *2005 Monterey County Constrained Regional Transportation Plan*. The widening of US 101 between San Miguel Canyon Road and Russell Road is consistent with the *2005 Monterey County Constrained Regional Transportation Plan* projects CT029 and CT036. Project CT029 is to build the Prunedale Bypass or widen the existing alignment of US 101 between Echo Valley Road and the new Russell Road interchange. Project CT036 is to widen SR 156 to a 4-lane highway and modify the US 101, SR 156, and San Miguel Canyon Road connections. Finally, the widening of US 101 between San Juan Road and Crazy Horse Canyon Road is not identified in the *2005 Monterey County Constrained Regional Transportation Plan*. The SOI Project is responsible for its fair share of these impacts.

Alternate mitigation to widening US 101 through the Prunedale community include the Prunedale Bypass or an Eastern Corridor Improvements between the new US 101 interchanges at Crazy Horse Canyon Road and Harris Road via Old Stage Road. The Prunedale Bypass would be a new 4-lane freeway between the future US 101 interchanges at Crazy Horse Canyon Road and Russell Road. The Eastern Corridor Improvements would generally extend along Crazy Horse Canyon Road, San Juan Grade Road, Hebert Road and Old Stage Road between the new US 101 interchanges at Crazy Horse Canyon Road and near Harris Road.

The widening of US 101 between Airport Boulevard and Harris Road is consistent with the *2005 Monterey County Constrained Regional Transportation Plan* project CT030 description to add capacity. This improvement is also identified in the *City of Salinas Traffic Improvement Program 2005* update. Thus, the Salinas SOI shall pay the City of Salinas traffic impact fee to contribute to this improvement. **Table 29** shows the project and mitigated project level of service results for each highway segment. Alternate mitigation to the widening of US 101 south of Salinas includes a new 4-lane arterial Eastern Bypass that connects the intersections of Boronda Road/Williams Road and Harris Road/US 101 east of the Salinas Airport.

TABLE 29
YEAR 2030 MITIGATED MULTILANE HIGHWAY LEVELS OF SERVICE

Travel Direction	Segment	Peak Hour	Year 2030 With Project		Year 2030 With Project Mitigated	
			Density[1]	LOS[2]	Density[1]	LOS[2]
NB US 101	35. South of Airport Boulevard	AM PM	**31.9** 24.9	**D** C	20.5 16.5	C B
	36. Russell Road to SR 156	AM PM	**28.3** **30.7**	**D** **D**	18.5 19.8	C C
	37. SR 156 to San Miguel Canyon Road	AM PM	**29.5** **38.5**	**D** **E**	19.2 23.8	C C
	39. Crazy Horse Canyon Road to San Juan Road	AM PM	22.8 24.9	C C	22.8 24.9	B B
SB US 101	39. San Juan Road to Crazy Horse Canyon Road	AM PM	24.9 **28.3**	C **D**	16.5 18.5	B B
	37. San Miguel Canyon Road to SR 156	AM PM	**31.9** **38.5**	**D** **E**	20.5 23.8	C C
	36. SR 156 to Russell Road	AM PM	**27.1** **40.0**	**D** **E**	17.8 24.5	B C
	35. South of Airport Boulevard	AM PM	11.9 **33.2**	B **D**	7.9 21.1	A C

Notes:
1 Measured in vehicles per mile per lane (veh/mi/ln).
2 LOS = Level of Service.
3 **Bold** text indicates significant impact.
Source: Fehr & Peers, August 2007.

Ramp Segments

Measured against one-lane capacity planning level thresholds, the northbound US 101 direct off-ramp to Boronda Road, and the southbound US 101 direct off-ramp and loop on-ramp at Boronda Road may need an additional lane on each segment. More detailed analysis conducted for specific plan developments within the SOI will be used to identify particular improvements to individual ramps and ramp intersections.

ATTACHMENT A:
ROADWAY AND FREEWAY LEVEL OF SERVICE CALCULATIONS

AM PEAK HOUR

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/07
Analysis Time Period	AM Peak Hour
Highway	Crazy Horse Canyon Rd
From/To	s/o US 101
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	0.0	ft	Peak-hour factor, PHF	0.91	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	70	%
Grade: Length		mi	Access points/mi	7	/mi
Up/down		%			

Two-way hourly volume, V 437 veh/h
Directional split 70 / 30 %

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.982	
Two-way flow rate,(note-1) vp	526	pc/h
Highest directional split proportion (note-2)	368	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	1.8	mi/h
Free-flow speed, FFS	49.0	mi/h
Adjustment for no-passing zones, fnp	3.4	mi/h
Average travel speed, ATS	41.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.990	
Two-way flow rate,(note-1) vp	516	pc/h
Highest directional split proportion (note-2)	361	
Base percent time-spent-following, BPTSF	36.5	%
Adj.for directional distribution and no-passing zones, fd/np	20.7	
Percent time-spent-following, PTSF	57.2	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.16	
Peak 15-min vehicle-miles of travel, VMT15	252	veh-mi
Peak-hour vehicle-miles of travel, VMT60	918	veh-mi
Peak 15-min total travel time, TT15	6.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/2007
Analysis Time Period	AM Peak Hour
Highway	Crazy Horse Canyon Rd
From/To	s/o US 101
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 1

Shoulder width	0.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	70	%
Grade: Length		mi	Access points/mi	7	/mi
Up/down		%			

Two-way hourly volume, V 700 veh/h
Directional split 70 / 30 %

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.982	
Two-way flow rate,(note-1) vp	807	pc/h
Highest directional split proportion (note-2)	565	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	1.8	mi/h
Free-flow speed, FFS	49.0	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATS	40.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.990	
Two-way flow rate,(note-1) vp	792	pc/h
Highest directional split proportion (note-2)	554	
Base percent time-spent-following, BPTSF	50.2	%
Adj.for directional distribution and no-passing zones, fd/np	13.9	
Percent time-spent-following, PTSF	64.0	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.25	
Peak 15-min vehicle-miles of travel, VMT15	387	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1470	veh-mi
Peak 15-min total travel time, TT15	9.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
E-Mail:

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 DR
Agency/Co.              Fehr & Peers
Date Performed          8/17/2007
Analysis Time Period    AM Peak Hour
Highway                 Crazy Horse Canyon Rd
From/To                 s/o US 101
Jurisdiction            Monterey County
Analysis Year           2030
Description  Year 2030 with Project

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width       0.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       2.1     mi     % Recreational vehicles     0       %
Terrain type         Rolling        % No-passing zones          70      %
Grade:  Length               mi     Access points/mi            7       /mi
        Up/down              %

Two-way hourly volume, V    700     veh/h
Directional split       70  /   30  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                    0.93
PCE for trucks, ET                             1.9
PCE for RVs, ER                                1.1
Heavy-vehicle adjustment factor,               0.982
Two-way flow rate,(note-1) vp                  807     pc/h
Highest directional split proportion (note-2)  565     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                       -      mi/h
Observed volume, Vf                             -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                     55.0    mi/h
Adj. for lane and shoulder width, fLS          4.2     mi/h
Adj. for access points, fA                     1.8     mi/h

Free-flow speed, FFS                           49.0    mi/h

Adjustment for no-passing zones, fnp           2.5     mi/h
Average travel speed, ATS                      40.3    mi/h
```

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__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                   0.94
PCE for trucks, ET                                            1.5
PCE for RVs, ER                                               1.0
Heavy-vehicle adjustment factor, fHV                          0.990
Two-way flow rate,(note-1) vp                                 792     pc/h
Highest directional split proportion (note-2)                 554
Base percent time-spent-following, BPTSF                      50.2    %
Adj.for directional distribution and no-passing zones, fd/np 13.9
Percent time-spent-following, PTSF                            64.0    %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                         D
Volume to capacity ratio, v/c                                 0.25
Peak 15-min vehicle-miles of travel, VMT15                    387      veh-mi
Peak-hour vehicle-miles of travel, VMT60                      1470     veh-mi
Peak 15-min total travel time, TT15                           9.6      veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
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Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	11/20/2006
Analysis Time Period	AM Peak Hour
Highway	Crazy Horse Canyon Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.75	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	0	/mi
Up/down		%			

Two-way hourly volume, V 39 veh/h
Directional split 51 / 49 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	27	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.0	mi/h
Free-flow speed, FFS	45.0	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	43.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	52	pc/h
Highest directional split proportion (note-2)	27	
Base percent time-spent-following, BPTSF	4.5	%
Adj.for directional distribution and no-passing zones, fd/np	20.1	
Percent time-spent-following, PTSF	24.6	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.02	
Peak 15-min vehicle-miles of travel, VMT15	4	veh-mi
Peak-hour vehicle-miles of travel, VMT60	12	veh-mi
Peak 15-min total travel time, TT15	0.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	Crazy Horse Canyon Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	0	/mi
Up/down		%			

Two-way hourly volume, V   50   veh/h
Directional split   51 /   49 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	27	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.0	mi/h
Free-flow speed, FFS	45.0	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	43.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	27	
Base percent time-spent-following, BPTSF	4.6	%
Adj.for directional distribution and no-passing zones, fd/np	20.1	
Percent time-spent-following, PTSF	24.7	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.02	
Peak 15-min vehicle-miles of travel, VMT15	4	veh-mi
Peak-hour vehicle-miles of travel, VMT60	15	veh-mi
Peak 15-min total travel time, TT15	0.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/4/2007
Analysis Time Period	AM Peak Hour
Highway	Crazy Horse Canyon Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 with Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	0	/mi
Up/down		%			

Two-way hourly volume, V 50 veh/h
Directional split 51 / 49 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	27	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.0	mi/h
Free-flow speed, FFS	45.0	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	43.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	27	
Base percent time-spent-following, BPTSF	4.6	%
Adj.for directional distribution and no-passing zones, fd/np	20.1	
Percent time-spent-following, PTSF	24.7	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.02	
Peak 15-min vehicle-miles of travel, VMT15	4	veh-mi
Peak-hour vehicle-miles of travel, VMT60	15	veh-mi
Peak 15-min total travel time, TT15	0.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr and Peers
Date Performed	7/18/2006
Analysis Time Period	AM Peak Hour
Highway	Hebert Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Exisiting Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	75	%
Grade: Length		mi	Access points/mi	30	/mi
Up/down		%			

Two-way hourly volume, V 431 veh/h
Directional split 59 / 41 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	460	pc/h
Highest directional split proportion (note-2)	271	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.5	mi/h
Free-flow speed, FFS	37.5	mi/h
Adjustment for no-passing zones, fnp	3.7	mi/h
Average travel speed, ATS	30.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	455	pc/h
Highest directional split proportion (note-2)	268	
Base percent time-spent-following, BPTSF	33.0	%
Adj.for directional distribution and no-passing zones, fd/np	21.0	
Percent time-spent-following, PTSF	53.9	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.14	
Peak 15-min vehicle-miles of travel, VMT15	57	veh-mi
Peak-hour vehicle-miles of travel, VMT60	216	veh-mi
Peak 15-min total travel time, TT15	1.9	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr and Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	Hebert Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	75	%
Grade: Length		mi	Access points/mi	30	/mi
Up/down		%			

Two-way hourly volume, V	900	veh/h
Directional split	59 / 41	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	951	pc/h
Highest directional split proportion (note-2)	561	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.5	mi/h
Free-flow speed, FFS	37.5	mi/h
Adjustment for no-passing zones, fnp	2.3	mi/h
Average travel speed, ATS	27.9	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	949	pc/h
Highest directional split proportion (note-2)	560	
Base percent time-spent-following, BPTSF	56.6	%
Adj.for directional distribution and no-passing zones, fd/np	12.1	
Percent time-spent-following, PTSF	68.7	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	118	veh-mi
Peak-hour vehicle-miles of travel, VMT60	450	veh-mi
Peak 15-min total travel time, TT15	4.2	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr and Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Hebert Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	75	%
Grade: Length		mi	Access points/mi	30	/mi
Up/down		%			

Two-way hourly volume, V 1000 veh/h
Directional split 59 / 41 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	1057	pc/h
Highest directional split proportion (note-2)	624	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.5	mi/h
Free-flow speed, FFS	37.5	mi/h
Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATS	27.2	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	1055	pc/h
Highest directional split proportion (note-2)	622	
Base percent time-spent-following, BPTSF	60.4	%
Adj.for directional distribution and no-passing zones, fd/np	11.0	
Percent time-spent-following, PTSF	71.4	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.33	
Peak 15-min vehicle-miles of travel, VMT15	132	veh-mi
Peak-hour vehicle-miles of travel, VMT60	500	veh-mi
Peak 15-min total travel time, TT15	4.8	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	AM Peak Hour
Highway	San Juan Grade Road
From/To	Hebert Rd-Crazy Horse Cyn Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.89	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.2	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	8	/mi
Up/down		%			

Two-way hourly volume, V 507 veh/h
Directional split 52 / 48 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	578	pc/h
Highest directional split proportion (note-2)	301	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	2.0	mi/h
Free-flow speed, FFS	58.0	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATS	51.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	571	pc/h
Highest directional split proportion (note-2)	297	
Base percent time-spent-following, BPTSF	39.5	%
Adj.for directional distribution and no-passing zones, fd/np	12.6	
Percent time-spent-following, PTSF	52.1	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.18	
Peak 15-min vehicle-miles of travel, VMT15	171	veh-mi
Peak-hour vehicle-miles of travel, VMT60	608	veh-mi
Peak 15-min total travel time, TT15	3.3	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst AP
Agency/Co. Fehr & Peers
Date Performed 6/13/2007
Analysis Time Period AM Peak Hour
Highway San Juan Grade Road
From/To Hebert Rd-Crazy Horse Cyn Rd
Jurisdiction Monterey County
Analysis Year 2030
Description 2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.2	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	8	/mi
Up/down		%			

Two-way hourly volume, V 800 veh/h
Directional split 52 / 48 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	845	pc/h
Highest directional split proportion (note-2)	439	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	2.0	mi/h
Free-flow speed, FFS	58.0	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	50.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	844	pc/h
Highest directional split proportion (note-2)	439	
Base percent time-spent-following, BPTSF	52.4	%
Adj.for directional distribution and no-passing zones, fd/np	9.1	
Percent time-spent-following, PTSF	61.5	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	253	veh-mi
Peak-hour vehicle-miles of travel, VMT60	960	veh-mi
Peak 15-min total travel time, TT15	5.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	San Juan Grade Road
From/To	Hebert Rd-Crazy Horse Cyn Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.2	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	8	/mi
Up/down		%			

Two-way hourly volume, V 800 veh/h
Directional split 52 / 48 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	845	pc/h
Highest directional split proportion (note-2)	439	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	2.0	mi/h
Free-flow speed, FFS	58.0	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	50.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	844	pc/h
Highest directional split proportion (note-2)	439	
Base percent time-spent-following, BPTSF	52.4	%
Adj.for directional distribution and no-passing zones, fd/np	9.1	
Percent time-spent-following, PTSF	61.5	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	253	veh-mi
Peak-hour vehicle-miles of travel, VMT60	960	veh-mi
Peak 15-min total travel time, TT15	5.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	AM Peak Hour
Highway	San Juan Grade Road
From/To	Rogge Road-Hebert Road
Jurisdiction	Monterey County
Analysis Year	2006

Description Existing Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.71	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	29	/mi
Up/down		%			

Two-way hourly volume, V 238 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	340	pc/h
Highest directional split proportion (note-2)	204	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.3	mi/h
Free-flow speed, FFS	37.8	mi/h
Adjustment for no-passing zones, fnp	1.6	mi/h
Average travel speed, ATS	33.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	336	pc/h
Highest directional split proportion (note-2)	202	
Base percent time-spent-following, BPTSF	25.6	%
Adj.for directional distribution and no-passing zones, fd/np	12.9	
Percent time-spent-following, PTSF	38.5	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.11	
Peak 15-min vehicle-miles of travel, VMT15	176	veh-mi
Peak-hour vehicle-miles of travel, VMT60	500	veh-mi
Peak 15-min total travel time, TT15	5.3	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	San Juan Grade Road
From/To	Rogge Road-Hebert Road
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	29	/mi
Up/down		%			

Two-way hourly volume, V 500 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	534	pc/h
Highest directional split proportion (note-2)	320	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.3	mi/h
Free-flow speed, FFS	37.8	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATS	31.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	527	pc/h
Highest directional split proportion (note-2)	316	
Base percent time-spent-following, BPTSF	37.1	%
Adj.for directional distribution and no-passing zones, fd/np	12.6	
Percent time-spent-following, PTSF	49.6	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.17	
Peak 15-min vehicle-miles of travel, VMT15	276	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1050	veh-mi
Peak 15-min total travel time, TT15	8.7	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 AP
Agency/Co.              Fehr & Peers
Date Performed          6/15/2007
Analysis Time Period    AM Peak Hour
Highway                 San Juan Grade Road
From/To                 Rogge Road-Hebert Road
Jurisdiction            Monterey County
Analysis Year           2030
Description  Year 2030 with Project

___________________________________Input Data_________________________________

Highway class  Class 2
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       2.1     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          25      %
Grade:  Length               mi     Access points/mi            29      /mi
        Up/down              %

Two-way hourly volume, V    500     veh/h
Directional split       60  /   40  %

____________________________Average Travel Speed_______________________________

Grade adjustment factor, fG                       1.00
PCE for trucks, ET                                1.7
PCE for RVs, ER                                   1.0
Heavy-vehicle adjustment factor,                  0.986
Two-way flow rate,(note-1) vp                     534     pc/h
Highest directional split proportion (note-2)     320     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -      mi/h
Observed volume, Vf                                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        45.0    mi/h
Adj. for lane and shoulder width, fLS             0.0     mi/h
Adj. for access points, fA                        7.3     mi/h

Free-flow speed, FFS                              37.8    mi/h

Adjustment for no-passing zones, fnp              1.8     mi/h
Average travel speed, ATS                         31.8    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	527	pc/h
Highest directional split proportion (note-2)	316	
Base percent time-spent-following, BPTSF	37.1	%
Adj.for directional distribution and no-passing zones, fd/np	12.6	
Percent time-spent-following, PTSF	49.6	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.17	
Peak 15-min vehicle-miles of travel, VMT15	276	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1050	veh-mi
Peak 15-min total travel time, TT15	8.7	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                  PT
Agency/Co.               Fehr & Peers
Date Performed           7/18/2006
Analysis Time Period     AM Peak Hour
Highway                  Old Stage Road
From/To                  Crazy Horse Cyn Rd-Hebert Rd
Jurisdiction             Monterey County
Analysis Year            2006
Description  Existing Conditions

___________________________________Input Data_________________________________

Highway class  Class 2
Shoulder width       0.0     ft     Peak-hour factor, PHF        0.54
Lane width           12.0    ft     % Trucks and buses           2       %
Segment length       1.4     mi     % Recreational vehicles      0       %
Terrain type         Level          % No-passing zones           100     %
Grade:  Length               mi     Access points/mi             2       /mi
        Up/down              %

Two-way hourly volume, V    30      veh/h
Directional split       50  /   50  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                        1.00
PCE for trucks, ET                                 1.7
PCE for RVs, ER                                    1.0
Heavy-vehicle adjustment factor,                   0.986
Two-way flow rate,(note-1) vp                      56      pc/h
Highest directional split proportion (note-2)      28      pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                           -      mi/h
Observed volume, Vf                                 -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                         45.0    mi/h
Adj. for lane and shoulder width, fLS              4.2     mi/h
Adj. for access points, fA                         0.5     mi/h

Free-flow speed, FFS                               40.3    mi/h

Adjustment for no-passing zones, fnp               1.0     mi/h
Average travel speed, ATS                          38.9    mi/h
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Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	56	pc/h
Highest directional split proportion (note-2)	28	
Base percent time-spent-following, BPTSF	4.8	%
Adj.for directional distribution and no-passing zones, fd/np	19.6	
Percent time-spent-following, PTSF	24.4	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.02	
Peak 15-min vehicle-miles of travel, VMT15	19	veh-mi
Peak-hour vehicle-miles of travel, VMT60	42	veh-mi
Peak 15-min total travel time, TT15	0.5	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Crazy Horse Cyn Rd-Hebert Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 2

Shoulder width	0.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 50 veh/h
Directional split 50 / 50 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	27	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	40.3	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	39.0	mi/h

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__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                         1.00
PCE for trucks, ET                                                  1.1
PCE for RVs, ER                                                     1.0
Heavy-vehicle adjustment factor, fHV                                0.998
Two-way flow rate,(note-1) vp                                       53       pc/h
Highest directional split proportion (note-2)                       27
Base percent time-spent-following, BPTSF                            4.6      %
Adj.for directional distribution and no-passing zones, fd/np        19.6
Percent time-spent-following, PTSF                                  24.1     %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                               A
Volume to capacity ratio, v/c                                       0.02
Peak 15-min vehicle-miles of travel, VMT15                          18        veh-mi
Peak-hour vehicle-miles of travel, VMT60                            70        veh-mi
Peak 15-min total travel time, TT15                                 0.5       veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Crazy Horse Cyn Rd-Hebert Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	0.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 50 veh/h
Directional split 50 / 50 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	27	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	40.3	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	39.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	27	
Base percent time-spent-following, BPTSF	4.6	%
Adj.for directional distribution and no-passing zones, fd/np	19.6	
Percent time-spent-following, PTSF	24.1	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.02	
Peak 15-min vehicle-miles of travel, VMT15	18	veh-mi
Peak-hour vehicle-miles of travel, VMT60	70	veh-mi
Peak 15-min total travel time, TT15	0.5	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Hebert Road-Natividad Road
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.94	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V 411 veh/h
Directional split 55 / 45 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	443	pc/h
Highest directional split proportion (note-2)	244	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	55.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	438	pc/h
Highest directional split proportion (note-2)	241	
Base percent time-spent-following, BPTSF	32.0	%
Adj.for directional distribution and no-passing zones, fd/np	0.2	
Percent time-spent-following, PTSF	32.2	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.14	
Peak 15-min vehicle-miles of travel, VMT15	120	veh-mi
Peak-hour vehicle-miles of travel, VMT60	452	veh-mi
Peak 15-min total travel time, TT15	2.2	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Hebert Road-Natividad Road
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V 800 veh/h
Directional split 55 / 45 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	845	pc/h
Highest directional split proportion (note-2)	465	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	51.9	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	844	pc/h
Highest directional split proportion (note-2)	464	
Base percent time-spent-following, BPTSF	52.4	%
Adj.for directional distribution and no-passing zones, fd/np	0.0	
Percent time-spent-following, PTSF	52.4	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	232	veh-mi
Peak-hour vehicle-miles of travel, VMT60	880	veh-mi
Peak 15-min total travel time, TT15	4.5	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Hebert Road-Natividad Road
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V	900	veh/h
Directional split	55 / 45	%

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	951	pc/h
Highest directional split proportion (note-2)	523	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	51.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	949	pc/h
Highest directional split proportion (note-2)	522	
Base percent time-spent-following, BPTSF	56.6	%
Adj.for directional distribution and no-passing zones, fd/np	0.0	
Percent time-spent-following, PTSF	56.6	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	261	veh-mi
Peak-hour vehicle-miles of travel, VMT60	990	veh-mi
Peak 15-min total travel time, TT15	5.1	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Natividad Rd-Old Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.86	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	21	/mi
Up/down		%			

Two-way hourly volume, V 128 veh/h
Directional split 52 / 48 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	151	pc/h
Highest directional split proportion (note-2)	79	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	5.3	mi/h
Free-flow speed, FFS	44.8	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATS	43.0	mi/h

```
__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                   1.00
PCE for trucks, ET                                            1.1
PCE for RVs, ER                                               1.0
Heavy-vehicle adjustment factor, fHV                          0.998
Two-way flow rate,(note-1) vp                                 149    pc/h
Highest directional split proportion (note-2)                 77
Base percent time-spent-following, BPTSF                      12.3   %
Adj.for directional distribution and no-passing zones, fd/np 11.7
Percent time-spent-following, PTSF                            24.0   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                         A
Volume to capacity ratio, v/c                                 0.05
Peak 15-min vehicle-miles of travel, VMT15                    22      veh-mi
Peak-hour vehicle-miles of travel, VMT60                      77      veh-mi
Peak 15-min total travel time, TT15                           0.5     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                   AP
Agency/Co.                Fehr & Peers
Date Performed            6/13/2007
Analysis Time Period      AM Peak Hour
Highway                   Old Stage Road
From/To                   Natividad Rd-Old Natividad Rd
Jurisdiction              Monterey County
Analysis Year             2030
Description  2030 without Project

___________________________________Input Data_________________________________

Highway class  Class 2
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       0.6     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          25      %
Grade:  Length               mi     Access points/mi            21      /mi
        Up/down              %

Two-way hourly volume, V    300     veh/h
Directional split       52  /   48  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                        1.00
PCE for trucks, ET                                 1.7
PCE for RVs, ER                                    1.0
Heavy-vehicle adjustment factor,                   0.986
Two-way flow rate,(note-1) vp                      320     pc/h
Highest directional split proportion (note-2)      166     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                           -      mi/h
Observed volume, Vf                                 -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                         50.0    mi/h
Adj. for lane and shoulder width, fLS              0.0     mi/h
Adj. for access points, fA                         5.3     mi/h

Free-flow speed, FFS                               44.8    mi/h

Adjustment for no-passing zones, fnp               1.5     mi/h
Average travel speed, ATS                          40.8    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	316	pc/h
Highest directional split proportion (note-2)	164	
Base percent time-spent-following, BPTSF	24.3	%
Adj.for directional distribution and no-passing zones, fd/np	13.1	
Percent time-spent-following, PTSF	37.4	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.10	
Peak 15-min vehicle-miles of travel, VMT15	47	veh-mi
Peak-hour vehicle-miles of travel, VMT60	180	veh-mi
Peak 15-min total travel time, TT15	1.2	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Natividad Rd-Old Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	21	/mi
Up/down		%			

Two-way hourly volume, V 400 veh/h
Directional split 52 / 48 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	427	pc/h
Highest directional split proportion (note-2)	222	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	5.3	mi/h
Free-flow speed, FFS	44.8	mi/h
Adjustment for no-passing zones, fnp	1.9	mi/h
Average travel speed, ATS	39.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	422	pc/h
Highest directional split proportion (note-2)	219	
Base percent time-spent-following, BPTSF	31.0	%
Adj.for directional distribution and no-passing zones, fd/np	13.7	
Percent time-spent-following, PTSF	44.6	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.13	
Peak 15-min vehicle-miles of travel, VMT15	63	veh-mi
Peak-hour vehicle-miles of travel, VMT60	240	veh-mi
Peak 15-min total travel time, TT15	1.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Old Natividad Rd-Williams Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Exisiting Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.75	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.7	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V 179 veh/h
Directional split 53 / 47 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	242	pc/h
Highest directional split proportion (note-2)	128	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATS	55.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	239	pc/h
Highest directional split proportion (note-2)	127	
Base percent time-spent-following, BPTSF	18.9	%
Adj.for directional distribution and no-passing zones, fd/np	12.5	
Percent time-spent-following, PTSF	31.5	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.08	
Peak 15-min vehicle-miles of travel, VMT15	161	veh-mi
Peak-hour vehicle-miles of travel, VMT60	483	veh-mi
Peak 15-min total travel time, TT15	2.9	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Old Natividad Rd-Williams Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

___________________________________Input Data_________________________________

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.7	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V 300 veh/h
Directional split 53 / 47 %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	320	pc/h
Highest directional split proportion (note-2)	170	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	54.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	316	pc/h
Highest directional split proportion (note-2)	167	
Base percent time-spent-following, BPTSF	24.3	%
Adj.for directional distribution and no-passing zones, fd/np	13.1	
Percent time-spent-following, PTSF	37.3	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.10	
Peak 15-min vehicle-miles of travel, VMT15	213	veh-mi
Peak-hour vehicle-miles of travel, VMT60	810	veh-mi
Peak 15-min total travel time, TT15	3.9	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	Old Natividad Rd-Williams Rd
Jurisdiction	Monterey County
Analysis Year	2006

Description Exisiting Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.75	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.7	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V 179 veh/h
Directional split 53 / 47 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	242	pc/h
Highest directional split proportion (note-2)	128	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATS	55.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	239	pc/h
Highest directional split proportion (note-2)	127	
Base percent time-spent-following, BPTSF	18.9	%
Adj.for directional distribution and no-passing zones, fd/np	12.5	
Percent time-spent-following, PTSF	31.5	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.08	
Peak 15-min vehicle-miles of travel, VMT15	161	veh-mi
Peak-hour vehicle-miles of travel, VMT60	483	veh-mi
Peak 15-min total travel time, TT15	2.9	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DD
Agency/Co.	Fehr & Peers
Date Performed	9/11/2006
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	s/o Williams Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.89	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	5	/mi
Up/down		%			

Two-way hourly volume, V 199 veh/h
Directional split 51 / 49 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	227	pc/h
Highest directional split proportion (note-2)	116	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.3	mi/h
Free-flow speed, FFS	58.8	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	57.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	224	pc/h
Highest directional split proportion (note-2)	114	
Base percent time-spent-following, BPTSF	17.9	%
Adj.for directional distribution and no-passing zones, fd/np	0.1	
Percent time-spent-following, PTSF	18.0	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.07	
Peak 15-min vehicle-miles of travel, VMT15	134	veh-mi
Peak-hour vehicle-miles of travel, VMT60	478	veh-mi
Peak 15-min total travel time, TT15	2.4	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	s/o Williams Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	5	/mi
Up/down		%			

Two-way hourly volume, V 400 veh/h
Directional split 51 / 49 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	427	pc/h
Highest directional split proportion (note-2)	218	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.3	mi/h
Free-flow speed, FFS	58.8	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	55.4	mi/h

```
__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                    1.00
PCE for trucks, ET                                             1.1
PCE for RVs, ER                                                1.0
Heavy-vehicle adjustment factor, fHV                           0.998
Two-way flow rate,(note-1) vp                                  422    pc/h
Highest directional split proportion (note-2)                  215
Base percent time-spent-following, BPTSF                       31.0   %
Adj.for directional distribution and no-passing zones, fd/np   0.0
Percent time-spent-following, PTSF                             31.0   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                          A
Volume to capacity ratio, v/c                                  0.13
Peak 15-min vehicle-miles of travel, VMT15                     253     veh-mi
Peak-hour vehicle-miles of travel, VMT60                       960     veh-mi
Peak 15-min total travel time, TT15                            4.6     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
```

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Old Stage Road
From/To	s/o Williams Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	5	/mi
Up/down		%			

Two-way hourly volume, V	500	veh/h	
Directional split	51 / 49	%	

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	534	pc/h
Highest directional split proportion (note-2)	272	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.3	mi/h
Free-flow speed, FFS	58.8	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	54.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	527	pc/h
Highest directional split proportion (note-2)	269	
Base percent time-spent-following, BPTSF	37.1	%
Adj.for directional distribution and no-passing zones, fd/np	0.0	
Percent time-spent-following, PTSF	37.1	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.17	
Peak 15-min vehicle-miles of travel, VMT15	316	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1200	veh-mi
Peak 15-min total travel time, TT15	5.8	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	AM Peak Hour
Highway	Rogge Road
From/To	San Juan Grade Rd-Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2006

Description Exisiting Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.78	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	15	/mi
Up/down		%			

Two-way hourly volume, V 509 veh/h
Directional split 55 / 45 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	655	pc/h
Highest directional split proportion (note-2)	360	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	3.8	mi/h
Free-flow speed, FFS	46.3	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	41.2	mi/h

```
__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                    1.00
PCE for trucks, ET                                             1.1
PCE for RVs, ER                                                1.0
Heavy-vehicle adjustment factor, fHV                           0.998
Two-way flow rate,(note-1) vp                                  654    pc/h
Highest directional split proportion (note-2)                  360
Base percent time-spent-following, BPTSF                       43.7   %
Adj.for directional distribution and no-passing zones, fd/np 0.0
Percent time-spent-following, PTSF                             43.7   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                          B
Volume to capacity ratio, v/c                                  0.20
Peak 15-min vehicle-miles of travel, VMT15                     212     veh-mi
Peak-hour vehicle-miles of travel, VMT60                       662     veh-mi
Peak 15-min total travel time, TT15                            5.1     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
```

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	Rogge Road
From/To	San Juan Grade Rd-Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	15	/mi
Up/down		%			

Two-way hourly volume, V 600 veh/h
Directional split 55 / 45 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	634	pc/h
Highest directional split proportion (note-2)	349	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	3.8	mi/h
Free-flow speed, FFS	46.3	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	41.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	633	pc/h
Highest directional split proportion (note-2)	348	
Base percent time-spent-following, BPTSF	42.7	%
Adj.for directional distribution and no-passing zones, fd/np	0.0	
Percent time-spent-following, PTSF	42.7	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	205	veh-mi
Peak-hour vehicle-miles of travel, VMT60	780	veh-mi
Peak 15-min total travel time, TT15	5.0	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Rogge Road
From/To	San Juan Grade Rd-Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	15	/mi
Up/down		%			

Two-way hourly volume, V 700 veh/h
Directional split 55 / 45 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	740	pc/h
Highest directional split proportion (note-2)	407	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	3.8	mi/h
Free-flow speed, FFS	46.3	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	40.5	mi/h

```
__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                          1.00
PCE for trucks, ET                                                   1.1
PCE for RVs, ER                                                      1.0
Heavy-vehicle adjustment factor, fHV                                 0.998
Two-way flow rate,(note-1) vp                                        738    pc/h
Highest directional split proportion (note-2)                        406
Base percent time-spent-following, BPTSF                             47.7   %
Adj.for directional distribution and no-passing zones, fd/np 0.0
Percent time-spent-following, PTSF                                   47.7   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                                B
Volume to capacity ratio, v/c                                        0.23
Peak 15-min vehicle-miles of travel, VMT15                           239     veh-mi
Peak-hour vehicle-miles of travel, VMT60                             910     veh-mi
Peak 15-min total travel time, TT15                                  5.9     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
```

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Davis Road
From/To	Market St / Central Street
Jurisdiction	Monterey County
Analysis Year	2006

Description Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 3025 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	3191	pc/h
Highest directional split proportion (note-2)	1915	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATS	24.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3184	pc/h
Highest directional split proportion (note-2)	1910	
Base percent time-spent-following, BPTSF	93.9	%
Adj.for directional distribution and no-passing zones, fd/np	2.2	
Percent time-spent-following, PTSF	96.1	%

Level of Service and Other Performance Measures

Level of service, LOS	F	
Volume to capacity ratio, v/c	1.00	
Peak 15-min vehicle-miles of travel, VMT15	318	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1210	veh-mi
Peak 15-min total travel time, TT15	13.2	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	AM Peak Hour
Highway	Davis Road
From/To	Market Street-Central Avenue
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 3300 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	3481	pc/h
Highest directional split proportion (note-2)	2089	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3474	pc/h
Highest directional split proportion (note-2)	2084	
Base percent time-spent-following, BPTSF	95.3	%
Adj.for directional distribution and no-passing zones, fd/np	2.2	
Percent time-spent-following, PTSF	97.5	%

Level of Service and Other Performance Measures

Level of service, LOS		
Volume to capacity ratio, v/c	1.09	
Peak 15-min vehicle-miles of travel, VMT15	347	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1320	veh-mi
Peak 15-min total travel time, TT15		veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	12/06/2006
Analysis Time Period	AM Peak Hour
Highway	Davis Road
From/To	Market Street-Central Avenue
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 3025 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	3191	pc/h
Highest directional split proportion (note-2)	1915	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATS	24.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3184	pc/h
Highest directional split proportion (note-2)	1910	
Base percent time-spent-following, BPTSF	93.9	%
Adj.for directional distribution and no-passing zones, fd/np	2.2	
Percent time-spent-following, PTSF	96.1	%

Level of Service and Other Performance Measures

Level of service, LOS	F	
Volume to capacity ratio, v/c	1.00	
Peak 15-min vehicle-miles of travel, VMT15	318	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1210	veh-mi
Peak 15-min total travel time, TT15	13.2	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Urban Streets Release 5.2

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	AP
Agency/Co.:	Fehr & Peers
Date Performed:	6/15/2007
Analysis Time Period:	AM
Urban Street:	Davis Rd btn Central & Market
Direction of Travel:	
Jurisdiction:	
Analysis Year:	2030
Project ID:	2030 with Project

Traffic Characteristics

Annual average daily traffic, AADT	46100	vpd
Planning analysis hour factor, K	0.076	
Directional distribution factor, D	0.629	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	10	%

Roadway Characteristics

Number of through lanes one direction, N	2	
Free flow speed, FFS	40	mph
Urban class	2	
Section length	0.40	miles
Median	Yes	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	100.0	sec
Effective green ratio, g/C	0.800	

Results

Annual average daily traffic, AADT	46100	vpd
Two-way hourly volume	3503	vph
Hourly directional volume	2203	vph
Through-volume 15-min. flow rate	2087	v
Running time	46.0	sec
v/c ratio	0.72	
Through capacity	2880	vph
Progression factor, PF	1.000	
Uniform delay	4.8	sec
Filtering/metering factor, I	0.616	
Incremental delay	1.0	sec
Control delay	5.8	sec/v
Total travel speed, Sa	25.0	mph
Total urban street LOS	C	

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Davis Road
From/To	s-o Blanco
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 600 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	634	pc/h
Highest directional split proportion (note-2)	380	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	3.7	mi/h
Average travel speed, ATS	40.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	633	pc/h
Highest directional split proportion (note-2)	380	
Base percent time-spent-following, BPTSF	42.7	%
Adj.for directional distribution and no-passing zones, fd/np	19.7	
Percent time-spent-following, PTSF	62.3	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	63	veh-mi
Peak-hour vehicle-miles of travel, VMT60	240	veh-mi
Peak 15-min total travel time, TT15	1.5	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/15/2007
Analysis Period: AM Peak Hour
Highway: Davis Road
From/To: Reservation Road / Blanco Road
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1400	vph	600	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	368		158	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	803	pcphpl	344	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	803	pcphpl	344	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	B		A	
Density, D	13.4	pc/mi/ln	5.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/15/2007
Analysis Period: AM Peak Hour
Highway: Davis Road
From/To: Reservation Road / Blanco Road
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1600	vph	600	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	421		158	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	917	pcphpl	344	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	917	pcphpl	344	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	B		A	
Density, D	15.3	pc/mi/ln	5.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	SR 156
From/To	w-o US 101
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 1900 veh/h
Directional split 68 / 32 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2004	pc/h
Highest directional split proportion (note-2)	1363	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	32.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2000	pc/h
Highest directional split proportion (note-2)	1360	
Base percent time-spent-following, BPTSF	82.8	%
Adj.for directional distribution and no-passing zones, fd/np	4.2	
Percent time-spent-following, PTSF	87.0	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.63	
Peak 15-min vehicle-miles of travel, VMT15	200	veh-mi
Peak-hour vehicle-miles of travel, VMT60	760	veh-mi
Peak 15-min total travel time, TT15	6.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/21/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	SR 156 EB
From/To:	Cathedral Oak Road / US 101
Jurisdiction:	Salinas
Analysis Year:	2030

Description: Cumulative without project

Flow Inputs and Adjustments

Volume, V	1000	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	272	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	592	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	592	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	9.5	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/21/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	SR 156
From/To:	Cathedral Oak Road / US 101
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	2200	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	598	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1303	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1303	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	20.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	SR 156 EB
From/To:	Cathedral Oak Road / US 101
Jurisdiction:	Salinas
Analysis Year:	2030

Description: Cumulative with project

Flow Inputs and Adjustments

Volume, V	1000	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	272	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	592	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	592	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	9.5	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	SR 156
From/To:	Cathedral Oak Road / US 101
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	Cumulative with project

Flow Inputs and Adjustments

Volume, V	2200	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	598	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1303	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1303	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	20.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/2007
Analysis Time Period	AM Peak Hour
Highway	Espinosa Rd
From/To	w-o US 101
Jurisdiction	Monterey County
Analysis Year	2005
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.86	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.8	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	20	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 700 veh/h
Directional split 58 / 42 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	817	pc/h
Highest directional split proportion (note-2)	474	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATS	46.8	mi/h

```
__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                 1.00
PCE for trucks, ET                                          1.1
PCE for RVs, ER                                             1.0
Heavy-vehicle adjustment factor, fHV                        0.998
Two-way flow rate,(note-1) vp                               816    pc/h
Highest directional split proportion (note-2)               473
Base percent time-spent-following, BPTSF                    51.2   %
Adj.for directional distribution and no-passing zones, fd/np 7.8
Percent time-spent-following, PTSF                          59.0   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                       C
Volume to capacity ratio, v/c                               0.26
Peak 15-min vehicle-miles of travel, VMT15                  163     veh-mi
Peak-hour vehicle-miles of travel, VMT60                    560     veh-mi
Peak 15-min total travel time, TT15                         3.5     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
```

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/2007
Analysis Time Period	AM Peak Hour
Highway	Espinosa Rd
From/To	w-o US 101
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 without Project Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.8	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	20	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 1500 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	1582	pc/h
Highest directional split proportion (note-2)	949	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATS	41.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1579	pc/h
Highest directional split proportion (note-2)	947	
Base percent time-spent-following, BPTSF	75.0	%
Adj.for directional distribution and no-passing zones, fd/np	3.3	
Percent time-spent-following, PTSF	78.3	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.49	
Peak 15-min vehicle-miles of travel, VMT15	316	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1200	veh-mi
Peak 15-min total travel time, TT15	7.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/2007
Analysis Time Period	AM Peak Hour
Highway	Espinosa Rd
From/To	w-o US 101
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 with Project Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.8	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	20	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2000 veh/h
Directional split 65 / 35 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2109	pc/h
Highest directional split proportion (note-2)	1371	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	0.5	mi/h
Average travel speed, ATS	37.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2105	pc/h
Highest directional split proportion (note-2)	1368	
Base percent time-spent-following, BPTSF	84.3	%
Adj.for directional distribution and no-passing zones, fd/np	1.7	
Percent time-spent-following, PTSF	86.0	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.66	
Peak 15-min vehicle-miles of travel, VMT15	421	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1600	veh-mi
Peak 15-min total travel time, TT15	11.2	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Blanco Rd
From/To	w-o Davis Rd
Jurisdiction	Monterey County
Analysis Year	2006

Description Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2100 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2215	pc/h
Highest directional split proportion (note-2)	1329	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	31.2	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2211	pc/h
Highest directional split proportion (note-2)	1327	
Base percent time-spent-following, BPTSF	85.7	%
Adj.for directional distribution and no-passing zones, fd/np	3.6	
Percent time-spent-following, PTSF	89.2	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.69	
Peak 15-min vehicle-miles of travel, VMT15	221	veh-mi
Peak-hour vehicle-miles of travel, VMT60	840	veh-mi
Peak 15-min total travel time, TT15	7.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Blanco Rd
From/To	w-o Davis Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2100 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2215	pc/h
Highest directional split proportion (note-2)	1329	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	31.2	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2211	pc/h
Highest directional split proportion (note-2)	1327	
Base percent time-spent-following, BPTSF	85.7	%
Adj.for directional distribution and no-passing zones, fd/np	3.6	
Percent time-spent-following, PTSF	89.2	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.69	
Peak 15-min vehicle-miles of travel, VMT15	221	veh-mi
Peak-hour vehicle-miles of travel, VMT60	840	veh-mi
Peak 15-min total travel time, TT15	7.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	AM Peak Hour
Highway	Blanco Rd
From/To	w-o Davis Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 with Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2200 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2320	pc/h
Highest directional split proportion (note-2)	1392	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	30.4	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2316	pc/h
Highest directional split proportion (note-2)	1390	
Base percent time-spent-following, BPTSF	86.9	%
Adj.for directional distribution and no-passing zones, fd/np	3.2	
Percent time-spent-following, PTSF	90.1	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.73	
Peak 15-min vehicle-miles of travel, VMT15	232	veh-mi
Peak-hour vehicle-miles of travel, VMT60	880	veh-mi
Peak 15-min total travel time, TT15	7.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	John to Market
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	1466	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	398	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	868	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	868	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	13.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Market to John
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2844	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	773	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1685	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1685	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	27.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	John to Market
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	2800	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	761	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1659	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1659	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	26.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
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Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Market to John
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	842	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1836	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1836	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	2	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	John to Market
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with	Project

Flow Inputs and Adjustments

Volume, V	2800	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	761	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1659	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1659	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	26.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/21/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Market to John
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	3200	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	870	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1896	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1896	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.0	mi/h
Number of lanes, N	2	
Density, D	31.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Market to SR 183
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	1553	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	422	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	920	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	920	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	14.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	SR 183 to Market
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	3002	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	816	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1778	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1778	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	2	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Market to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	2600	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	707	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1540	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1540	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	SR 183 to Market
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3300	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	897	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1955	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1955	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	60.3	mi/h
Number of lanes, N	2	
Density, D	32.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Market to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	2600	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	707	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1540	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1540	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	24.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	SR 183 to Market
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	3300	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	897	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1955	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1955	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	60.3	mi/h
Number of lanes, N	2	
Density, D	32.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	SR 183 to Laurel
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	1475	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	401	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	874	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	874	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	14.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Laurel to SR 183
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2772	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	753	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1642	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1642	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	26.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	SR 183 to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	2400	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	652	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1422	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1422	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	22.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Laurel to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3200	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	870	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1896	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1896	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.0	mi/h
Number of lanes, N	2	
Density, D	31.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	SR 183 to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	2500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	679	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1481	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1481	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Laurel to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	842	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1836	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1836	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	2	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Laurel to Boronda
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	1672	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	454	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	990	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	990	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Boronda to Laurel
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2833	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	770	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1678	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1678	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	26.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Laurel to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	2500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	679	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1481	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1481	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Boronda to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3300	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	897	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1955	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1955	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	60.3	mi/h
Number of lanes, N	2	
Density, D	32.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Laurel to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project

Flow Inputs and Adjustments

Volume, V	2700	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	734	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1599	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1599	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	25.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Boronda to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project

Flow Inputs and Adjustments

Volume, V	3400	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	924	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2014	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2014	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	59.4	mi/h
Number of lanes, N	2	
Density, D	33.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Boronda to Russell
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	1747	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	475	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1035	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1035	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	16.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Russell to Boronda
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2709	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	736	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1605	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1605	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	25.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Boronda to Russell
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	2000	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	543	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1185	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1185	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	19.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Russell to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3000	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	815	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1777	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1777	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	2	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Boronda to Russell
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	2500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	679	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1481	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1481	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Russell to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project

Flow Inputs and Adjustments

Volume, V	2800	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	761	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1659	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1659	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	26.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: June 2006
Analysis Period: AM Peak Hour
Highway: US 101
From/To: s/o Airport
Jurisdiction: Monterey County
Analysis Year: 2006
Project ID: Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1066	vph	1521	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	290		413	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	631	pcphpl	901	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	631	pcphpl	901	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	A		B	
Density, D	10.6	pc/mi/ln	15.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/4/2007
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	s/o Airport
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1200	vph	3200	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	326		870	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	710	pcphpl	1895	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	710	pcphpl	1895	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	57.1	mph
Level of service, LOS	B		D	
Density, D	11.9	pc/mi/ln	33.2	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: AM Peak Hour
Highway: US 101
From/To: s/o Airport
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1200	vph	3100	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	326		842	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	710	pcphpl	1836	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	710	pcphpl	1836	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	57.5	mph
Level of service, LOS	B		D	
Density, D	11.9	pc/mi/ln	31.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: June 2006
Analysis Period: AM Peak Hour
Highway: US 101
From/To: s/o Prunedale
Jurisdiction: Monterey County
Analysis Year: 2006
Project ID: Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2565	vph	1722	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	697		468	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1519	pcphpl	1020	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1519	pcphpl	1020	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.3	mph	59.8	mph
Level of service, LOS	C		B	
Density, D	25.6	pc/mi/ln	17.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: 6/21/2007
Analysis Period: AM Peak Hour
Highway: US 101
From/To: s/o Prunedale
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2900	vph	2300	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	788		625	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1717	pcphpl	1362	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1717	pcphpl	1362	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	58.3	mph	59.8	mph
Level of service, LOS	D		C	
Density, D	29.5	pc/mi/ln	22.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/4/2007
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	s/o Prunedale
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2700	vph	2800	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	734		761	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1599	pcphpl	1658	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1599	pcphpl	1658	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	58.9	mph	58.6	mph
Level of service, LOS	D		D	
Density, D	27.1	pc/mi/ln	28.3	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DD
Agency/Co:	Fehr & Peers
Date:	June 2006
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	SR 156 to San Miguel Canyon
Jurisdiction:	Monterey County
Analysis Year:	2006
Project ID:	Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2933	vph	1941	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	797		527	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1737	pcphpl	1149	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1737	pcphpl	1149	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	58.1	mph	59.8	mph
Level of service, LOS	D		C	
Density, D	29.9	pc/mi/ln	19.2	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: AM Peak Hour
Highway: US 101
From/To: SR 156 to San Miguel Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3500	vph	2400	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	951		652	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	2073	pcphpl	1421	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2073	pcphpl	1421	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	55.8	mph	59.7	mph
Level of service, LOS	E		C	
Density, D	37.2	pc/mi/ln	23.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: AM Peak Hour
Highway: US 101
From/To: SR 156 to San Miguel Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3100	vph	2900	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	842		788	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1836	pcphpl	1717	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1836	pcphpl	1717	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	57.5	mph	58.3	mph
Level of service, LOS	D		D	
Density, D	31.9	pc/mi/ln	29.5	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DD
Agency/Co:	Fehr & Peers
Date:	June 2006
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	San Miguel Cyn-Crazy Horse Cyn
Jurisdiction:	Monterey County
Analysis Year:	2006
Project ID:	Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2168	vph	1504	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	589		409	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1284	pcphpl	890	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1284	pcphpl	890	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		B	
Density, D	21.5	pc/mi/ln	14.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/4/2007
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	San Miguel Cyn-Crazy Horse Cyn
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2600	vph	1800	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	707		489	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1540	pcphpl	1066	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1540	pcphpl	1066	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.2	mph	59.8	mph
Level of service, LOS	C		B	
Density, D	26.0-	pc/mi/ln	17.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/4/2007
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	San Miguel Cyn-Crazy Horse Cyn
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2300	vph	2000	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	625		543	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1362	pcphpl	1184	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1362	pcphpl	1184	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	22.8	pc/mi/ln	19.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DD
Agency/Co:	Fehr & Peers
Date:	July 2006
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	n/o Crazy Horse Canyon
Jurisdiction:	Monterey County
Analysis Year:	2006
Project ID:	Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2279	vph	1646	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	619		447	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1350	pcphpl	975	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1350	pcphpl	975	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		B	
Density, D	22.6	pc/mi/ln	16.3	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/4/2007
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	n/o Crazy Horse Canyon
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2900	vph	1900	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	788		516	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1717	pcphpl	1125	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1717	pcphpl	1125	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	58.3	mph	59.8	mph
Level of service, LOS	D		C	
Density, D	29.5	pc/mi/ln	18.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: AM Peak Hour
Highway: US 101
From/To: n/o Crazy Horse Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2500	vph	2300	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	679		625	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1480	pcphpl	1362	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1480	pcphpl	1362	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.5	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	24.9	pc/mi/ln	22.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/15/2007
Analysis Period:	AM Peak Hour
Highway:	SR 68
From/To:	s/o Blanco Rd
Jurisdiction:	Monterey County
Analysis Year:	2006
Project ID:	Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	900	vph	1600	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	245		435	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	533	pcphpl	947	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	533	pcphpl	947	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	A		B	
Density, D	8.9	pc/mi/ln	15.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/15/2007
Analysis Period: AM Peak Hour
Highway: SR 68
From/To: s/o Blanco Rd
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1100	vph	1800	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	299		489	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	651	pcphpl	1066	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	651	pcphpl	1066	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	A		B	
Density, D	10.9	pc/mi/ln	17.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/15/2007
Analysis Period: AM Peak Hour
Highway: SR 68
From/To: s/o Blanco Rd
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1300	vph	1800	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	353		489	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	770	pcphpl	1066	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	770	pcphpl	1066	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	B		B	
Density, D	12.9	pc/mi/ln	17.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	AM Peak Hour
Highway	San Miguel Canyon Road
From/To	US 101 to Castroville Blvd
Jurisdiction	Monterey County
Analysis Year	2004

Description Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 1593 veh/h
Directional split 57 / 43 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	1767	pc/h
Highest directional split proportion (note-2)	1007	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	1.2	mi/h
Average travel speed, ATS	39.6	mi/h

```
__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                          1.00
PCE for trucks, ET                                                   1.0
PCE for RVs, ER                                                      1.0
Heavy-vehicle adjustment factor, fHV                                 1.000
Two-way flow rate,(note-1) vp                                        1732   pc/h
Highest directional split proportion (note-2)                        987
Base percent time-spent-following, BPTSF                             78.2   %
Adj.for directional distribution and no-passing zones, fd/np 5.8
Percent time-spent-following, PTSF                                   84.0   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                                E
Volume to capacity ratio, v/c                                        0.55
Peak 15-min vehicle-miles of travel, VMT15                           260     veh-mi
Peak-hour vehicle-miles of travel, VMT60                             956     veh-mi
Peak 15-min total travel time, TT15                                  6.6     veh-h
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Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
```

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	AM Peak Hour
Highway	San Miguel Canyon Road
From/To	US 101 to Castroville Blvd
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 Without Project Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2000 veh/h
Directional split 50 / 50 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	2148	pc/h
Highest directional split proportion (note-2)	1074	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATS	36.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2105	pc/h
Highest directional split proportion (note-2)	1053	
Base percent time-spent-following, BPTSF	84.3	%
Adj.for directional distribution and no-passing zones, fd/np	3.9	
Percent time-spent-following, PTSF	88.2	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.67	
Peak 15-min vehicle-miles of travel, VMT15	316	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1200	veh-mi
Peak 15-min total travel time, TT15	8.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                  DR
Agency/Co.               Fehr & Peers
Date Performed           8/20/2007
Analysis Time Period     AM Peak Hour
Highway                  San Miguel Canyon Road
From/To                  US 101 to Castroville Blvd
Jurisdiction             Monterey County
Analysis Year            2030
Description  Year 2030 With Project Conditions

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       0.6     mi     % Recreational vehicles     0       %
Terrain type         Rolling        % No-passing zones          90      %
Grade:  Length               mi     Access points/mi            2       /mi
        Up/down              %

Two-way hourly volume, V    2100    veh/h
Directional split       57  /   43  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                        0.99
PCE for trucks, ET                                 1.5
PCE for RVs, ER                                    1.1
Heavy-vehicle adjustment factor,                   0.990
Two-way flow rate,(note-1) vp                      2255    pc/h
Highest directional split proportion (note-2)      1285    pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                           -      mi/h
Observed volume, Vf                                 -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                         55.0    mi/h
Adj. for lane and shoulder width, fLS              0.0     mi/h
Adj. for access points, fA                         0.5     mi/h

Free-flow speed, FFS                               54.5    mi/h

Adjustment for no-passing zones, fnp               1.0     mi/h
Average travel speed, ATS                          36.0    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2211	pc/h
Highest directional split proportion (note-2)	1260	
Base percent time-spent-following, BPTSF	85.7	%
Adj.for directional distribution and no-passing zones, fd/np	3.5	
Percent time-spent-following, PTSF	89.2	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.70	
Peak 15-min vehicle-miles of travel, VMT15	332	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1260	veh-mi
Peak 15-min total travel time, TT15	9.2	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

```
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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                  DR
Agency/Co.               Fehr & Peers
Date Performed           8/20/2007
Analysis Time Period     AM Peak Hour
Highway                  San Miguel Canyon Road
From/To                  Castroville to Strawberry
Jurisdiction             Monterey County
Analysis Year            2006
Description  Existing Conditions

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.85
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       1.6     mi     % Recreational vehicles     0       %
Terrain type         Rolling        % No-passing zones          90      %
Grade:  Length               mi     Access points/mi            4       /mi
        Up/down              %

Two-way hourly volume, V    1152    veh/h
Directional split        62  /   38  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                        0.99
PCE for trucks, ET                                 1.5
PCE for RVs, ER                                    1.1
Heavy-vehicle adjustment factor,                   0.990
Two-way flow rate,(note-1) vp                      1383    pc/h
Highest directional split proportion (note-2)      857     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                           -      mi/h
Observed volume, Vf                                 -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                         55.0    mi/h
Adj. for lane and shoulder width, fLS              0.0     mi/h
Adj. for access points, fA                         1.0     mi/h

Free-flow speed, FFS                               54.0    mi/h

Adjustment for no-passing zones, fnp               1.6     mi/h
Average travel speed, ATS                          41.7    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1355	pc/h
Highest directional split proportion (note-2)	840	
Base percent time-spent-following, BPTSF	69.6	%
Adj.for directional distribution and no-passing zones, fd/np	8.4	
Percent time-spent-following, PTSF	78.0	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.43	
Peak 15-min vehicle-miles of travel, VMT15	542	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1843	veh-mi
Peak 15-min total travel time, TT15	13.0	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	AM Peak Hour
Highway	San Miguel Canyon Road
From/To	Castroville to Strawberry
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 Without Project Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	4	/mi
Up/down		%			

Two-way hourly volume, V 1400 veh/h
Directional split 50 / 50 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	1503	pc/h
Highest directional split proportion (note-2)	752	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.0	mi/h
Free-flow speed, FFS	54.0	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	40.9	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1474	pc/h
Highest directional split proportion (note-2)	737	
Base percent time-spent-following, BPTSF	72.6	%
Adj.for directional distribution and no-passing zones, fd/np	7.2	
Percent time-spent-following, PTSF	79.8	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.47	
Peak 15-min vehicle-miles of travel, VMT15	589	veh-mi
Peak-hour vehicle-miles of travel, VMT60	2240	veh-mi
Peak 15-min total travel time, TT15	14.4	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	AM Peak Hour
Highway	San Miguel Canyon Road
From/To	Castroville to Strawberry
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 With Project Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	4	/mi
Up/down		%			

Two-way hourly volume, V 1500 veh/h
Directional split 50 / 50 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	1611	pc/h
Highest directional split proportion (note-2)	806	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.0	mi/h
Free-flow speed, FFS	54.0	mi/h
Adjustment for no-passing zones, fnp	1.4	mi/h
Average travel speed, ATS	40.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1579	pc/h
Highest directional split proportion (note-2)	790	
Base percent time-spent-following, BPTSF	75.0	%
Adj.for directional distribution and no-passing zones, fd/np	6.6	
Percent time-spent-following, PTSF	81.6	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.50	
Peak 15-min vehicle-miles of travel, VMT15	632	veh-mi
Peak-hour vehicle-miles of travel, VMT60	2400	veh-mi
Peak 15-min total travel time, TT15	15.8	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

PM PEAK HOUR

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/07
Analysis Time Period	PM Peak Hour
Highway	Crazy Horse Canyon Rd
From/To	s/o US 101
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	0.0	ft	Peak-hour factor, PHF	0.92	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	70	%
Grade: Length		mi	Access points/mi	7	/mi
Up/down		%			

Two-way hourly volume, V 443 veh/h
Directional split 66 / 34 %

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.982	
Two-way flow rate,(note-1) vp	527	pc/h
Highest directional split proportion (note-2)	348	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	1.8	mi/h
Free-flow speed, FFS	49.0	mi/h
Adjustment for no-passing zones, fnp	3.4	mi/h
Average travel speed, ATS	41.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.990	
Two-way flow rate,(note-1) vp	517	pc/h
Highest directional split proportion (note-2)	341	
Base percent time-spent-following, BPTSF	36.5	%
Adj.for directional distribution and no-passing zones, fd/np	20.4	
Percent time-spent-following, PTSF	57.0	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.16	
Peak 15-min vehicle-miles of travel, VMT15	253	veh-mi
Peak-hour vehicle-miles of travel, VMT60	930	veh-mi
Peak 15-min total travel time, TT15	6.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/2007
Analysis Time Period	PM Peak Hour
Highway	Crazy Horse Canyon Rd
From/To	s/o US 101
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 1

Shoulder width	0.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	70	%
Grade: Length		mi	Access points/mi	7	/mi
Up/down		%			

Two-way hourly volume, V 900 veh/h
Directional split 66 / 34 %

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.982	
Two-way flow rate,(note-1) vp	1037	pc/h
Highest directional split proportion (note-2)	684	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	1.8	mi/h
Free-flow speed, FFS	49.0	mi/h
Adjustment for no-passing zones, fnp	2.0	mi/h
Average travel speed, ATS	39.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.990	
Two-way flow rate,(note-1) vp	1018	pc/h
Highest directional split proportion (note-2)	672	
Base percent time-spent-following, BPTSF	59.1	%
Adj.for directional distribution and no-passing zones, fd/np	11.4	
Percent time-spent-following, PTSF	70.5	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.32	
Peak 15-min vehicle-miles of travel, VMT15	497	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1890	veh-mi
Peak 15-min total travel time, TT15	12.8	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/2007
Analysis Time Period	PM Peak Hour
Highway	Crazy Horse Canyon Rd
From/To	s/o US 101
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 1

Shoulder width	0.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	70	%
Grade: Length		mi	Access points/mi	7	/mi
Up/down		%			

Two-way hourly volume, V   1000   veh/h
Directional split   66 /   34 %

Average Travel Speed

Grade adjustment factor, fG	0.93	
PCE for trucks, ET	1.9	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.982	
Two-way flow rate,(note-1) vp	1152	pc/h
Highest directional split proportion (note-2)	760	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	1.8	mi/h
Free-flow speed, FFS	49.0	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATS	38.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	0.94	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.990	
Two-way flow rate,(note-1) vp	1131	pc/h
Highest directional split proportion (note-2)	746	
Base percent time-spent-following, BPTSF	63.0	%
Adj.for directional distribution and no-passing zones, fd/np	10.2	
Percent time-spent-following, PTSF	73.2	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	553	veh-mi
Peak-hour vehicle-miles of travel, VMT60	2100	veh-mi
Peak 15-min total travel time, TT15	14.4	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	11/20/2006
Analysis Time Period	PM Peak Hour
Highway	Crazy Horse Canyon Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.74	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	0	/mi
Up/down		%			

Two-way hourly volume, V 39 veh/h
Directional split 63 / 37 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	33	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.0	mi/h
Free-flow speed, FFS	45.0	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	43.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	53	pc/h
Highest directional split proportion (note-2)	33	
Base percent time-spent-following, BPTSF	4.6	%
Adj.for directional distribution and no-passing zones, fd/np	25.5	
Percent time-spent-following, PTSF	30.1	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.02	
Peak 15-min vehicle-miles of travel, VMT15	4	veh-mi
Peak-hour vehicle-miles of travel, VMT60	12	veh-mi
Peak 15-min total travel time, TT15	0.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	PM Peak Hour
Highway	Crazy Horse Canyon Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	0	/mi
Up/down		%			

Two-way hourly volume, V 80 veh/h
Directional split 63 / 37 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	85	pc/h
Highest directional split proportion (note-2)	54	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.0	mi/h
Free-flow speed, FFS	45.0	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	42.9	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	84	pc/h
Highest directional split proportion (note-2)	53	
Base percent time-spent-following, BPTSF	7.1	%
Adj.for directional distribution and no-passing zones, fd/np	25.2	
Percent time-spent-following, PTSF	32.4	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.03	
Peak 15-min vehicle-miles of travel, VMT15	6	veh-mi
Peak-hour vehicle-miles of travel, VMT60	24	veh-mi
Peak 15-min total travel time, TT15	0.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone:                                   Fax:
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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 AP
Agency/Co.              Fehr & Peers
Date Performed          6/4/2007
Analysis Time Period    PM Peak Hour
Highway                 Crazy Horse Canyon Road
From/To                 n/o San Juan Grade Rd
Jurisdiction            Monterey County
Analysis Year           2030
Description  2030 with Project

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width        6.0     ft     Peak-hour factor, PHF        0.95
Lane width            12.0    ft     % Trucks and buses           2       %
Segment length        1.8     mi     % Recreational vehicles      0       %
Terrain type          Level          % No-passing zones           75      %
Grade:  Length                mi     Access points/mi             5       /mi
        Up/down               %

Two-way hourly volume, V    1000    veh/h
Directional split       68  /   32  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                        1.00
PCE for trucks, ET                                 1.2
PCE for RVs, ER                                    1.0
Heavy-vehicle adjustment factor,                   0.996
Two-way flow rate,(note-1) vp                      1057    pc/h
Highest directional split proportion (note-2)      719     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                           -      mi/h
Observed volume, Vf                                 -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                         60.0    mi/h
Adj. for lane and shoulder width, fLS              0.0     mi/h
Adj. for access points, fA                         1.3     mi/h

Free-flow speed, FFS                               58.8    mi/h

Adjustment for no-passing zones, fnp               2.1     mi/h
Average travel speed, ATS                          48.5    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	1055	pc/h
Highest directional split proportion (note-2)	717	
Base percent time-spent-following, BPTSF	60.4	%
Adj.for directional distribution and no-passing zones, fd/np	11.2	
Percent time-spent-following, PTSF	71.6	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.33	
Peak 15-min vehicle-miles of travel, VMT15	474	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1800	veh-mi
Peak 15-min total travel time, TT15	9.8	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 PT
Agency/Co.              Fehr and Peers
Date Performed          7/18/2006
Analysis Time Period    PM Peak Hour
Highway                 Hebert Road
From/To                 San Juan Grade Rd-Old Stage Rd
Jurisdiction            Monterey County
Analysis Year           2006
Description  Exisiting Conditions

___________________________________Input Data_________________________________

Highway class  Class 2
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.91
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       0.5     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          75      %
Grade:  Length               mi     Access points/mi            30      /mi
        Up/down              %

Two-way hourly volume, V    443     veh/h
Directional split       66  /   34  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                     1.00
PCE for trucks, ET                              1.7
PCE for RVs, ER                                 1.0
Heavy-vehicle adjustment factor,                0.986
Two-way flow rate,(note-1) vp                   494     pc/h
Highest directional split proportion (note-2)   326     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                        -      mi/h
Observed volume, Vf                              -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                      45.0    mi/h
Adj. for lane and shoulder width, fLS           0.0     mi/h
Adj. for access points, fA                      7.5     mi/h

Free-flow speed, FFS                            37.5    mi/h

Adjustment for no-passing zones, fnp            3.6     mi/h
Average travel speed, ATS                       30.1    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	488	pc/h
Highest directional split proportion (note-2)	322	
Base percent time-spent-following, BPTSF	34.9	%
Adj.for directional distribution and no-passing zones, fd/np	21.0	
Percent time-spent-following, PTSF	55.9	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.15	
Peak 15-min vehicle-miles of travel, VMT15	61	veh-mi
Peak-hour vehicle-miles of travel, VMT60	222	veh-mi
Peak 15-min total travel time, TT15	2.0	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr and Peers
Date Performed	6/13/2007
Analysis Time Period	PM Peak Hour
Highway	Hebert Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	75	%
Grade: Length		mi	Access points/mi	30	/mi
Up/down		%			

Two-way hourly volume, V 1100 veh/h
Directional split 66 / 34 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	1163	pc/h
Highest directional split proportion (note-2)	768	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.5	mi/h
Free-flow speed, FFS	37.5	mi/h
Adjustment for no-passing zones, fnp	1.9	mi/h
Average travel speed, ATS	26.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	1160	pc/h
Highest directional split proportion (note-2)	766	
Base percent time-spent-following, BPTSF	63.9	%
Adj.for directional distribution and no-passing zones, fd/np	10.1	
Percent time-spent-following, PTSF	74.0	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	145	veh-mi
Peak-hour vehicle-miles of travel, VMT60	550	veh-mi
Peak 15-min total travel time, TT15	5.5	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr and Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Hebert Road
From/To	San Juan Grade Rd-Old Stage Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.5	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	75	%
Grade: Length		mi	Access points/mi	30	/mi
Up/down		%			

Two-way hourly volume, V 1400 veh/h
Directional split 66 / 34 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	1477	pc/h
Highest directional split proportion (note-2)	975	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.5	mi/h
Free-flow speed, FFS	37.5	mi/h
Adjustment for no-passing zones, fnp	1.3	mi/h
Average travel speed, ATS	24.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1474	pc/h
Highest directional split proportion (note-2)	973	
Base percent time-spent-following, BPTSF	72.6	%
Adj.for directional distribution and no-passing zones, fd/np	7.2	
Percent time-spent-following, PTSF	79.8	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.46	
Peak 15-min vehicle-miles of travel, VMT15	184	veh-mi
Peak-hour vehicle-miles of travel, VMT60	700	veh-mi
Peak 15-min total travel time, TT15	7.4	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.

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Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	PM Peak Hour
Highway	San Juan Grade Road
From/To	Hebert Rd-Crazy Horse Cyn Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.93	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.2	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	8	/mi
Up/down		%			

Two-way hourly volume, V 570 veh/h
Directional split 63 / 37 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	615	pc/h
Highest directional split proportion (note-2)	387	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	2.0	mi/h
Free-flow speed, FFS	58.0	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATS	51.4	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	614	pc/h
Highest directional split proportion (note-2)	387	
Base percent time-spent-following, BPTSF	41.7	%
Adj.for directional distribution and no-passing zones, fd/np	12.2	
Percent time-spent-following, PTSF	53.9	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.19	
Peak 15-min vehicle-miles of travel, VMT15	184	veh-mi
Peak-hour vehicle-miles of travel, VMT60	684	veh-mi
Peak 15-min total travel time, TT15	3.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 AP
Agency/Co.              Fehr & Peers
Date Performed          6/13/2007
Analysis Time Period    PM Peak Hour
Highway                 San Juan Grade Road
From/To                 Hebert Rd-Crazy Horse Cyn Rd
Jurisdiction            Monterey County
Analysis Year           2030
Description  2030 without Project

___________________________________Input Data_________________________________

Highway class  Class 2
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       1.2     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          25      %
Grade:  Length               mi     Access points/mi            8       /mi
        Up/down              %

Two-way hourly volume, V    1100    veh/h
Directional split       63  /   37  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                       1.00
PCE for trucks, ET                                1.2
PCE for RVs, ER                                   1.0
Heavy-vehicle adjustment factor,                  0.996
Two-way flow rate,(note-1) vp                     1163    pc/h
Highest directional split proportion (note-2)     733     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -      mi/h
Observed volume, Vf                                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        60.0    mi/h
Adj. for lane and shoulder width, fLS             0.0     mi/h
Adj. for access points, fA                        2.0     mi/h

Free-flow speed, FFS                              58.0    mi/h

Adjustment for no-passing zones, fnp              1.0     mi/h
Average travel speed, ATS                         48.0    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	1160	pc/h
Highest directional split proportion (note-2)	731	
Base percent time-spent-following, BPTSF	63.9	%
Adj.for directional distribution and no-passing zones, fd/np	5.8	
Percent time-spent-following, PTSF	69.8	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	347	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1320	veh-mi
Peak 15-min total travel time, TT15	7.2	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	PM Peak Hour
Highway	San Juan Grade Road
From/To	Hebert Rd-Crazy Horse Cyn Rd
Jurisdiction	Monterey County
Analysis Year	2006

Description Year 2030 With Project Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.2	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	8	/mi
Up/down		%			

Two-way hourly volume, V 1200 veh/h
Directional split 63 / 37 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	1266	pc/h
Highest directional split proportion (note-2)	798	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	2.0	mi/h
Free-flow speed, FFS	58.0	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATS	47.4	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1263	pc/h
Highest directional split proportion (note-2)	796	
Base percent time-spent-following, BPTSF	67.0	%
Adj.for directional distribution and no-passing zones, fd/np	5.1	
Percent time-spent-following, PTSF	72.2	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.40	
Peak 15-min vehicle-miles of travel, VMT15	379	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1440	veh-mi
Peak 15-min total travel time, TT15	8.0	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	PM Peak Hour
Highway	San Juan Grade Road
From/To	Rogge Road-Hebert Road
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.85	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	29	/mi
Up/down		%			

Two-way hourly volume, V 295 veh/h
Directional split 61 / 39 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	352	pc/h
Highest directional split proportion (note-2)	215	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.3	mi/h
Free-flow speed, FFS	37.8	mi/h
Adjustment for no-passing zones, fnp	1.7	mi/h
Average travel speed, ATS	33.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	348	pc/h
Highest directional split proportion (note-2)	212	
Base percent time-spent-following, BPTSF	26.4	%
Adj.for directional distribution and no-passing zones, fd/np	13.0	
Percent time-spent-following, PTSF	39.4	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.11	
Peak 15-min vehicle-miles of travel, VMT15	182	veh-mi
Peak-hour vehicle-miles of travel, VMT60	619	veh-mi
Peak 15-min total travel time, TT15	5.5	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	PM Peak Hour
Highway	San Juan Grade Road
From/To	Rogge Road-Hebert Road
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	29	/mi
Up/down		%			

Two-way hourly volume, V 800 veh/h
Directional split 61 / 39 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	845	pc/h
Highest directional split proportion (note-2)	515	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.3	mi/h
Free-flow speed, FFS	37.8	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	29.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	844	pc/h
Highest directional split proportion (note-2)	515	
Base percent time-spent-following, BPTSF	52.4	%
Adj.for directional distribution and no-passing zones, fd/np	8.0	
Percent time-spent-following, PTSF	60.4	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	442	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1680	veh-mi
Peak 15-min total travel time, TT15	14.9	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	San Juan Grade Road
From/To	Rogge Road-Hebert Road
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	29	/mi
Up/down		%			

Two-way hourly volume, V 800 veh/h
Directional split 61 / 39 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	845	pc/h
Highest directional split proportion (note-2)	515	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	7.3	mi/h
Free-flow speed, FFS	37.8	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATS	29.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	844	pc/h
Highest directional split proportion (note-2)	515	
Base percent time-spent-following, BPTSF	52.4	%
Adj.for directional distribution and no-passing zones, fd/np	8.0	
Percent time-spent-following, PTSF	60.4	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	442	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1680	veh-mi
Peak 15-min total travel time, TT15	14.9	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	Crazy Horse Cyn Rd-Hebert Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 2

Shoulder width	0.0	ft	Peak-hour factor, PHF	0.60	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 105 veh/h
Directional split 88 / 12 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	177	pc/h
Highest directional split proportion (note-2)	156	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	40.3	mi/h
Adjustment for no-passing zones, fnp	3.1	mi/h
Average travel speed, ATS	35.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	175	pc/h
Highest directional split proportion (note-2)	154	
Base percent time-spent-following, BPTSF	14.3	%
Adj.for directional distribution and no-passing zones, fd/np	37.0	
Percent time-spent-following, PTSF	51.2	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.06	
Peak 15-min vehicle-miles of travel, VMT15	61	veh-mi
Peak-hour vehicle-miles of travel, VMT60	147	veh-mi
Peak 15-min total travel time, TT15	1.7	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	Crazy Horse Cyn Rd-Hebert Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

___________________________________Input Data_________________________________

Highway class Class 2

Shoulder width	0.0 ft	Peak-hour factor, PHF	0.95	
Lane width	12.0 ft	% Trucks and buses	2	%
Segment length	1.4 mi	% Recreational vehicles	0	%
Terrain type	Level	% No-passing zones	100	%
Grade: Length	mi	Access points/mi	2	/mi
Up/down	%			

Two-way hourly volume, V 110 veh/h
Directional split 88 / 12 %

____________________________Average Travel Speed_______________________________

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	117	pc/h
Highest directional split proportion (note-2)	103	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	45.0	mi/h
Adj. for lane and shoulder width, fLS	4.2	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	40.3	mi/h
Adjustment for no-passing zones, fnp	2.0	mi/h
Average travel speed, ATS	37.3	mi/h

```
__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                  1.00
PCE for trucks, ET                                           1.1
PCE for RVs, ER                                              1.0
Heavy-vehicle adjustment factor, fHV                         0.998
Two-way flow rate,(note-1) vp                                116    pc/h
Highest directional split proportion (note-2)                102
Base percent time-spent-following, BPTSF                     9.7    %
Adj.for directional distribution and no-passing zones, fd/np 38.3
Percent time-spent-following, PTSF                           48.0   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                        B
Volume to capacity ratio, v/c                                0.04
Peak 15-min vehicle-miles of travel, VMT15                   41      veh-mi
Peak-hour vehicle-miles of travel, VMT60                     154     veh-mi
Peak 15-min total travel time, TT15                          1.1     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
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___________________Two-Way Two-Lane Highway Segment Analysis__________________

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Analyst                 AP
Agency/Co.              Fehr & Peers
Date Performed          6/15/2007
Analysis Time Period    PM Peak Hour
Highway                 Old Stage Road
From/To                 Crazy Horse Cyn Rd-Hebert Rd
Jurisdiction            Monterey County
Analysis Year           2030
Description  Year 2030 with Project
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___________________________________Input Data_________________________________

```
Highway class  Class 2
Shoulder width       0.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       1.4     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          100     %
Grade:  Length               mi     Access points/mi            2       /mi
        Up/down              %

Two-way hourly volume, V    110     veh/h
Directional split       88  /   12  %
```

____________________________Average Travel Speed_______________________________

```
Grade adjustment factor, fG                        1.00
PCE for trucks, ET                                 1.7
PCE for RVs, ER                                    1.0
Heavy-vehicle adjustment factor,                   0.986
Two-way flow rate,(note-1) vp                      117     pc/h
Highest directional split proportion (note-2)      103     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                           -      mi/h
Observed volume, Vf                                 -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                         45.0    mi/h
Adj. for lane and shoulder width, fLS              4.2     mi/h
Adj. for access points, fA                         0.5     mi/h

Free-flow speed, FFS                               40.3    mi/h

Adjustment for no-passing zones, fnp               2.0     mi/h
Average travel speed, ATS                          37.3    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	116	pc/h
Highest directional split proportion (note-2)	102	
Base percent time-spent-following, BPTSF	9.7	%
Adj.for directional distribution and no-passing zones, fd/np	38.3	
Percent time-spent-following, PTSF	48.0	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.04	
Peak 15-min vehicle-miles of travel, VMT15	41	veh-mi
Peak-hour vehicle-miles of travel, VMT60	154	veh-mi
Peak 15-min total travel time, TT15	1.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 PT
Agency/Co.              Fehr & Peers
Date Performed          7/18/2006
Analysis Time Period    PM Peak Hour
Highway                 Old Stage Road
From/To                 Hebert Road-Natividad Road
Jurisdiction            Monterey County
Analysis Year           2006
Description  Existing Conditions

___________________________________Input Data_________________________________

Highway class  Class 2
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.83
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       1.1     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          0       %
Grade:  Length               mi     Access points/mi            6       /mi
        Up/down              %

Two-way hourly volume, V    475     veh/h
Directional split       63  /   37  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                       1.00
PCE for trucks, ET                                1.7
PCE for RVs, ER                                   1.0
Heavy-vehicle adjustment factor,                  0.986
Two-way flow rate,(note-1) vp                     580     pc/h
Highest directional split proportion (note-2)     365     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -      mi/h
Observed volume, Vf                                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        60.0    mi/h
Adj. for lane and shoulder width, fLS             0.0     mi/h
Adj. for access points, fA                        1.5     mi/h

Free-flow speed, FFS                              58.5    mi/h

Adjustment for no-passing zones, fnp              0.0     mi/h
Average travel speed, ATS                         54.0    mi/h
```

```
__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                    1.00
PCE for trucks, ET                                             1.1
PCE for RVs, ER                                                1.0
Heavy-vehicle adjustment factor, fHV                           0.998
Two-way flow rate,(note-1) vp                                  573    pc/h
Highest directional split proportion (note-2)                  361
Base percent time-spent-following, BPTSF                       39.6   %
Adj.for directional distribution and no-passing zones, fd/np 0.1
Percent time-spent-following, PTSF                             39.6   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                          A
Volume to capacity ratio, v/c                                  0.18
Peak 15-min vehicle-miles of travel, VMT15                     157     veh-mi
Peak-hour vehicle-miles of travel, VMT60                       523     veh-mi
Peak 15-min total travel time, TT15                            2.9     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
```

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	Hebert Road-Natividad Road
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V 1100 veh/h
Directional split 63 / 37 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	1163	pc/h
Highest directional split proportion (note-2)	733	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	49.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	1160	pc/h
Highest directional split proportion (note-2)	731	
Base percent time-spent-following, BPTSF	63.9	%
Adj.for directional distribution and no-passing zones, fd/np	0.0	
Percent time-spent-following, PTSF	63.9	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	318	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1210	veh-mi
Peak 15-min total travel time, TT15	6.4	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	Hebert Road-Natividad Road
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.1	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V 1400 veh/h
Directional split 63 / 37 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	1477	pc/h
Highest directional split proportion (note-2)	931	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	47.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1474	pc/h
Highest directional split proportion (note-2)	929	
Base percent time-spent-following, BPTSF	72.6	%
Adj.for directional distribution and no-passing zones, fd/np	0.0	
Percent time-spent-following, PTSF	72.6	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.46	
Peak 15-min vehicle-miles of travel, VMT15	405	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1540	veh-mi
Peak 15-min total travel time, TT15	8.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	Natividad Rd-Old Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	21	/mi
Up/down		%			

Two-way hourly volume, V 159 veh/h
Directional split 65 / 35 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	179	pc/h
Highest directional split proportion (note-2)	116	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	5.3	mi/h
Free-flow speed, FFS	44.8	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATS	42.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	177	pc/h
Highest directional split proportion (note-2)	115	
Base percent time-spent-following, BPTSF	14.4	%
Adj.for directional distribution and no-passing zones, fd/np	14.1	
Percent time-spent-following, PTSF	28.5	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.06	
Peak 15-min vehicle-miles of travel, VMT15	27	veh-mi
Peak-hour vehicle-miles of travel, VMT60	95	veh-mi
Peak 15-min total travel time, TT15	0.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	Natividad Rd-Old Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	21	/mi
Up/down		%			

Two-way hourly volume, V 400 veh/h
Directional split 65 / 35 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	427	pc/h
Highest directional split proportion (note-2)	278	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	5.3	mi/h
Free-flow speed, FFS	44.8	mi/h
Adjustment for no-passing zones, fnp	1.9	mi/h
Average travel speed, ATS	39.5	mi/h

```
_________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                     1.00
PCE for trucks, ET                                              1.1
PCE for RVs, ER                                                 1.0
Heavy-vehicle adjustment factor, fHV                            0.998
Two-way flow rate,(note-1) vp                                   422    pc/h
Highest directional split proportion (note-2)                   274
Base percent time-spent-following, BPTSF                        31.0   %
Adj.for directional distribution and no-passing zones, fd/np 13.2
Percent time-spent-following, PTSF                              44.2   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                           B
Volume to capacity ratio, v/c                                   0.13
Peak 15-min vehicle-miles of travel, VMT15                      63      veh-mi
Peak-hour vehicle-miles of travel, VMT60                        240     veh-mi
Peak 15-min total travel time, TT15                             1.6     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
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Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	Natividad Rd-Old Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	21	/mi
Up/down		%			

Two-way hourly volume, V 600 veh/h
Directional split 65 / 35 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	634	pc/h
Highest directional split proportion (note-2)	412	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	5.3	mi/h
Free-flow speed, FFS	44.8	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATS	38.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	633	pc/h
Highest directional split proportion (note-2)	411	
Base percent time-spent-following, BPTSF	42.7	%
Adj.for directional distribution and no-passing zones, fd/np	11.8	
Percent time-spent-following, PTSF	54.5	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	95	veh-mi
Peak-hour vehicle-miles of travel, VMT60	360	veh-mi
Peak 15-min total travel time, TT15	2.5	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 PT
Agency/Co.              Fehr & Peers
Date Performed          7/18/2006
Analysis Time Period    PM Peak Hour
Highway                 Old Stage Road
From/To                 Old Natividad Rd-Williams Rd
Jurisdiction            Monterey County
Analysis Year           2006
Description  Exisiting Conditions

___________________________________Input Data_________________________________

Highway class  Class 2
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.85
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       2.7     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          25      %
Grade:  Length               mi     Access points/mi            6       /mi
        Up/down              %

Two-way hourly volume, V    187     veh/h
Directional split       60  /   40  %

____________________________Average Travel Speed_____________________________

Grade adjustment factor, fG                        1.00
PCE for trucks, ET                                 1.7
PCE for RVs, ER                                    1.0
Heavy-vehicle adjustment factor,                   0.986
Two-way flow rate,(note-1) vp                      223     pc/h
Highest directional split proportion (note-2)      134     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                           -      mi/h
Observed volume, Vf                                 -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                         60.0    mi/h
Adj. for lane and shoulder width, fLS              0.0     mi/h
Adj. for access points, fA                         1.5     mi/h

Free-flow speed, FFS                               58.5    mi/h

Adjustment for no-passing zones, fnp               0.9     mi/h
Average travel speed, ATS                          55.8    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	220	pc/h
Highest directional split proportion (note-2)	132	
Base percent time-spent-following, BPTSF	17.6	%
Adj.for directional distribution and no-passing zones, fd/np	13.1	
Percent time-spent-following, PTSF	30.7	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.07	
Peak 15-min vehicle-miles of travel, VMT15	148	veh-mi
Peak-hour vehicle-miles of travel, VMT60	505	veh-mi
Peak 15-min total travel time, TT15	2.7	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone:                                  Fax:
E-Mail:

___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 AP
Agency/Co.              Fehr & Peers
Date Performed          6/13/2007
Analysis Time Period    PM Peak Hour
Highway                 Old Stage Road
From/To                 Old Natividad Rd-Williams Rd
Jurisdiction            Monterey County
Analysis Year           2030
Description  2030 without Project

___________________________________Input Data_________________________________

Highway class  Class 2
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       2.7     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          25      %
Grade:  Length               mi     Access points/mi            6       /mi
        Up/down              %

Two-way hourly volume, V    400     veh/h
Directional split       60  /   40  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                       1.00
PCE for trucks, ET                                1.7
PCE for RVs, ER                                   1.0
Heavy-vehicle adjustment factor,                  0.986
Two-way flow rate,(note-1) vp                     427      pc/h
Highest directional split proportion (note-2)     256      pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -       mi/h
Observed volume, Vf                                -       veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        60.0     mi/h
Adj. for lane and shoulder width, fLS             0.0      mi/h
Adj. for access points, fA                        1.5      mi/h

Free-flow speed, FFS                              58.5     mi/h

Adjustment for no-passing zones, fnp              1.9      mi/h
Average travel speed, ATS                         53.3     mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	422	pc/h
Highest directional split proportion (note-2)	253	
Base percent time-spent-following, BPTSF	31.0	%
Adj.for directional distribution and no-passing zones, fd/np	12.8	
Percent time-spent-following, PTSF	43.8	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.13	
Peak 15-min vehicle-miles of travel, VMT15	284	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1080	veh-mi
Peak 15-min total travel time, TT15	5.3	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	Old Natividad Rd-Williams Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Exisiting Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.85	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.7	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	25	%
Grade: Length		mi	Access points/mi	6	/mi
Up/down		%			

Two-way hourly volume, V 187 veh/h
Directional split 60 / 40 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	223	pc/h
Highest directional split proportion (note-2)	134	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.5	mi/h
Free-flow speed, FFS	58.5	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	55.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	220	pc/h
Highest directional split proportion (note-2)	132	
Base percent time-spent-following, BPTSF	17.6	%
Adj.for directional distribution and no-passing zones, fd/np	13.1	
Percent time-spent-following, PTSF	30.7	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.07	
Peak 15-min vehicle-miles of travel, VMT15	148	veh-mi
Peak-hour vehicle-miles of travel, VMT60	505	veh-mi
Peak 15-min total travel time, TT15	2.7	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	DD
Agency/Co.	Fehr & Peers
Date Performed	9/11/2006
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	s/o Williams Rd
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.90	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	5	/mi
Up/down		%			

Two-way hourly volume, V 183 veh/h
Directional split 52 / 48 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	206	pc/h
Highest directional split proportion (note-2)	107	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.3	mi/h
Free-flow speed, FFS	58.8	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	57.2	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	204	pc/h
Highest directional split proportion (note-2)	106	
Base percent time-spent-following, BPTSF	16.4	%
Adj.for directional distribution and no-passing zones, fd/np	0.3	
Percent time-spent-following, PTSF	16.7	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.06	
Peak 15-min vehicle-miles of travel, VMT15	122	veh-mi
Peak-hour vehicle-miles of travel, VMT60	439	veh-mi
Peak 15-min total travel time, TT15	2.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 AP
Agency/Co.              Fehr & Peers
Date Performed          6/13/2007
Analysis Time Period    PM Peak Hour
Highway                 Old Stage Road
From/To                 s/o Williams Rd
Jurisdiction            Monterey County
Analysis Year           2030
Description  2030 without Project

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       2.4     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          0       %
Grade:  Length               mi     Access points/mi            5       /mi
        Up/down              %

Two-way hourly volume, V    700     veh/h
Directional split       52  /   48  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                       1.00
PCE for trucks, ET                                1.2
PCE for RVs, ER                                   1.0
Heavy-vehicle adjustment factor,                  0.996
Two-way flow rate,(note-1) vp                     740     pc/h
Highest directional split proportion (note-2)     385     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -      mi/h
Observed volume, Vf                                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        60.0    mi/h
Adj. for lane and shoulder width, fLS             0.0     mi/h
Adj. for access points, fA                        1.3     mi/h

Free-flow speed, FFS                              58.8    mi/h

Adjustment for no-passing zones, fnp              0.0     mi/h
Average travel speed, ATS                         53.0    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	738	pc/h
Highest directional split proportion (note-2)	384	
Base percent time-spent-following, BPTSF	47.7	%
Adj.for directional distribution and no-passing zones, fd/np	0.0	
Percent time-spent-following, PTSF	47.7	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.23	
Peak 15-min vehicle-miles of travel, VMT15	442	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1680	veh-mi
Peak 15-min total travel time, TT15	8.3	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Old Stage Road
From/To	s/o Williams Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	2.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	5	/mi
Up/down		%			

Two-way hourly volume, V 900 veh/h
Directional split 52 / 48 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	951	pc/h
Highest directional split proportion (note-2)	495	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	60.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.3	mi/h
Free-flow speed, FFS	58.8	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	51.4	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	949	pc/h
Highest directional split proportion (note-2)	493	
Base percent time-spent-following, BPTSF	56.6	%
Adj.for directional distribution and no-passing zones, fd/np	0.0	
Percent time-spent-following, PTSF	56.6	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	568	veh-mi
Peak-hour vehicle-miles of travel, VMT60	2160	veh-mi
Peak 15-min total travel time, TT15	11.1	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	PT
Agency/Co.	Fehr & Peers
Date Performed	7/18/2006
Analysis Time Period	PM Peak Hour
Highway	Rogge Road
From/To	San Juan Grade Rd-Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2006

Description Exisiting Conditions

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.89	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	15	/mi
Up/down		%			

Two-way hourly volume, V   425   veh/h
Directional split   54 /   46 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	484	pc/h
Highest directional split proportion (note-2)	261	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	3.8	mi/h
Free-flow speed, FFS	46.3	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	42.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	478	pc/h
Highest directional split proportion (note-2)	258	
Base percent time-spent-following, BPTSF	34.3	%
Adj.for directional distribution and no-passing zones, fd/np	0.1	
Percent time-spent-following, PTSF	34.4	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.15	
Peak 15-min vehicle-miles of travel, VMT15	155	veh-mi
Peak-hour vehicle-miles of travel, VMT60	552	veh-mi
Peak 15-min total travel time, TT15	3.6	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	PM Peak Hour
Highway	Rogge Road
From/To	San Juan Grade Rd-Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	15	/mi
Up/down		%			

Two-way hourly volume, V 500 veh/h
Directional split 54 / 46 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.7	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.986	
Two-way flow rate,(note-1) vp	534	pc/h
Highest directional split proportion (note-2)	288	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	3.8	mi/h
Free-flow speed, FFS	46.3	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	42.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	527	pc/h
Highest directional split proportion (note-2)	285	
Base percent time-spent-following, BPTSF	37.1	%
Adj.for directional distribution and no-passing zones, fd/np	0.1	
Percent time-spent-following, PTSF	37.1	%

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.17	
Peak 15-min vehicle-miles of travel, VMT15	171	veh-mi
Peak-hour vehicle-miles of travel, VMT60	650	veh-mi
Peak 15-min total travel time, TT15	4.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Rogge Road
From/To	San Juan Grade Rd-Natividad Rd
Jurisdiction	Monterey County
Analysis Year	2030
Description	Year 2030 with Project

Input Data

Highway class Class 2

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.3	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	0	%
Grade: Length		mi	Access points/mi	15	/mi
Up/down		%			

Two-way hourly volume, V 600 veh/h
Directional split 54 / 46 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	634	pc/h
Highest directional split proportion (note-2)	342	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	3.8	mi/h
Free-flow speed, FFS	46.3	mi/h
Adjustment for no-passing zones, fnp	0.0	mi/h
Average travel speed, ATS	41.3	mi/h

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__________________________Percent Time-Spent-Following________________________

Grade adjustment factor, fG                                 1.00
PCE for trucks, ET                                          1.1
PCE for RVs, ER                                             1.0
Heavy-vehicle adjustment factor, fHV                        0.998
Two-way flow rate,(note-1) vp                               633    pc/h
Highest directional split proportion (note-2)               342
Base percent time-spent-following, BPTSF                    42.7   %
Adj.for directional distribution and no-passing zones, fd/np 0.0
Percent time-spent-following, PTSF                          42.7   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                       B
Volume to capacity ratio, v/c                               0.20
Peak 15-min vehicle-miles of travel, VMT15                  205     veh-mi
Peak-hour vehicle-miles of travel, VMT60                    780     veh-mi
Peak 15-min total travel time, TT15                         5.0     veh-h
______________________________________________________________________________

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.
```

Phone: Fax:
E-Mail:

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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                  DR
Agency/Co.               Fehr & Peers
Date Performed           12/06/2006
Analysis Time Period     PM Peak Hour
Highway                  Davis Road
From/To                  Market Street-Central Avenue
Jurisdiction             Monterey County
Analysis Year            2006
Description  Existing Conditions

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.96
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       0.4     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          100     %
Grade:  Length               mi     Access points/mi            2       /mi
        Up/down              %

Two-way hourly volume, V    3000    veh/h
Directional split       56  /   44  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                       1.00
PCE for trucks, ET                                1.1
PCE for RVs, ER                                   1.0
Heavy-vehicle adjustment factor,                  0.998
Two-way flow rate,(note-1) vp                     3131    pc/h
Highest directional split proportion (note-2)     1753    pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -      mi/h
Observed volume, Vf                                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        50.0    mi/h
Adj. for lane and shoulder width, fLS             0.0     mi/h
Adj. for access points, fA                        0.5     mi/h

Free-flow speed, FFS                              49.5    mi/h

Adjustment for no-passing zones, fnp              0.7     mi/h
Average travel speed, ATS                         24.5    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3125	pc/h
Highest directional split proportion (note-2)	1750	
Base percent time-spent-following, BPTSF	93.6	%
Adj.for directional distribution and no-passing zones, fd/np	1.9	
Percent time-spent-following, PTSF	95.5	%

Level of Service and Other Performance Measures

Level of service, LOS	F	
Volume to capacity ratio, v/c	0.98	
Peak 15-min vehicle-miles of travel, VMT15	313	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1200	veh-mi
Peak 15-min total travel time, TT15	12.8	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/13/2007
Analysis Time Period	PM Peak Hour
Highway	Davis Road
From/To	Market Street-Central Avenue
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 3700 veh/h
Directional split 56 / 44 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	3903	pc/h
Highest directional split proportion (note-2)	2186	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp		mi/h
Average travel speed, ATS		mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3895	pc/h
Highest directional split proportion (note-2)	2181	
Base percent time-spent-following, BPTSF	96.7	%
Adj.for directional distribution and no-passing zones, fd/np	1.9	
Percent time-spent-following, PTSF	98.6	%

Level of Service and Other Performance Measures

Level of service, LOS		
Volume to capacity ratio, v/c	1.22	
Peak 15-min vehicle-miles of travel, VMT15	389	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1480	veh-mi
Peak 15-min total travel time, TT15		veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Urban Streets Release 5.2

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	AP
Agency/Co.:	Fehr & Peers
Date Performed:	6/15/2007
Analysis Time Period:	PM
Urban Street:	Davis Rd btn Central & Market
Direction of Travel:	
Jurisdiction:	
Analysis Year:	2030
Project ID:	2030 without Project

Traffic Characteristics

Annual average daily traffic, AADT	43500	vpd
Planning analysis hour factor, K	0.085	
Directional distribution factor, D	0.570	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	10	%

Roadway Characteristics

Number of through lanes one direction, N	2	
Free flow speed, FFS	40	mph
Urban class	2	
Section length	0.40	miles
Median	Yes	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	100.0	sec
Effective green ratio, g/C	0.800	

Results

Annual average daily traffic, AADT	43500	vpd
Two-way hourly volume	3697	vph
Hourly directional volume	2107	vph
Through-volume 15-min. flow rate	1996	v
Running time	46.0	sec
v/c ratio	0.69	
Through capacity	2880	vph
Progression factor, PF	1.000	
Uniform delay	4.5	sec
Filtering/metering factor, I	0.659	
Incremental delay	0.9	sec
Control delay	5.4	sec/v
Total travel speed, Sa	25.3	mph
Total urban street LOS	C	

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	12/06/2006
Analysis Time Period	PM Peak Hour
Highway	Davis Road
From/To	Market Street-Central Avenue
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.96	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 3000 veh/h
Directional split 56 / 44 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	3131	pc/h
Highest directional split proportion (note-2)	1753	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATS	24.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3125	pc/h
Highest directional split proportion (note-2)	1750	
Base percent time-spent-following, BPTSF	93.6	%
Adj.for directional distribution and no-passing zones, fd/np	1.9	
Percent time-spent-following, PTSF	95.5	%

Level of Service and Other Performance Measures

Level of service, LOS	F	
Volume to capacity ratio, v/c	0.98	
Peak 15-min vehicle-miles of travel, VMT15	313	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1200	veh-mi
Peak 15-min total travel time, TT15	12.8	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Davis Road
From/To	s-o Blanco
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 800 veh/h
Directional split 56 / 44 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	845	pc/h
Highest directional split proportion (note-2)	473	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	2.9	mi/h
Average travel speed, ATS	40.0	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	844	pc/h
Highest directional split proportion (note-2)	473	
Base percent time-spent-following, BPTSF	52.4	%
Adj.for directional distribution and no-passing zones, fd/np	14.3	
Percent time-spent-following, PTSF	66.7	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	84	veh-mi
Peak-hour vehicle-miles of travel, VMT60	320	veh-mi
Peak 15-min total travel time, TT15	2.1	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/15/2007
Analysis Period: PM Peak Hour
Highway: Davis Road
From/To: Reservation Road - Blanco Road
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	900	vph	1800	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	237		474	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	516	pcphpl	1032	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	516	pcphpl	1032	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	A		B	
Density, D	8.6	pc/mi/ln	17.3	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/15/2007
Analysis Period:	PM Peak Hour
Highway:	Davis Road
From/To:	Reservation Road - Blanco Road
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	900	vph	2000	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	237		526	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	516	pcphpl	1147	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	516	pcphpl	1147	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	A		C	
Density, D	8.6	pc/mi/ln	19.2	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	SR 156
From/To	w-o US 101
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2300 veh/h
Directional split 56 / 44 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2426	pc/h
Highest directional split proportion (note-2)	1359	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATS	29.6	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2421	pc/h
Highest directional split proportion (note-2)	1356	
Base percent time-spent-following, BPTSF	88.1	%
Adj.for directional distribution and no-passing zones, fd/np	2.9	
Percent time-spent-following, PTSF	91.0	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.76	
Peak 15-min vehicle-miles of travel, VMT15	242	veh-mi
Peak-hour vehicle-miles of travel, VMT60	920	veh-mi
Peak 15-min total travel time, TT15	8.2	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/21/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	SR 156 EB
From/To:	
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	Cumulative without project

Flow Inputs and Adjustments

Volume, V	2100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	571	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1244	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1244	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/21/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	SR 156
From/To:	Cathedral Oak Road / US 101
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	Cumulative without Project

Flow Inputs and Adjustments

Volume, V	1400	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	380	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	829	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	829	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	13.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	SR 156 EB
From/To:	
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	Cumulative with project

Flow Inputs and Adjustments

Volume, V	2100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	571	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1244	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1244	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	19.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
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Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	SR 156
From/To:	Cathedral Oak Road / US 101
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	Cumulative with Project

Flow Inputs and Adjustments

Volume, V	1400	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	380	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	829	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	829	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	13.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/17/2007
Analysis Time Period	PM Peak Hour
Highway	Espinosa Rd
From/To	w-o US 101
Jurisdiction	Monterey County
Analysis Year	2005
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.78	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.8	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	20	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 896 veh/h
Directional split 76 / 24 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.2	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.996	
Two-way flow rate,(note-1) vp	1153	pc/h
Highest directional split proportion (note-2)	876	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	44.7	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	0.998	
Two-way flow rate,(note-1) vp	1151	pc/h
Highest directional split proportion (note-2)	875	
Base percent time-spent-following, BPTSF	63.6	%
Adj.for directional distribution and no-passing zones, fd/np	6.1	
Percent time-spent-following, PTSF	69.7	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	230	veh-mi
Peak-hour vehicle-miles of travel, VMT60	717	veh-mi
Peak 15-min total travel time, TT15	5.1	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone:                                        Fax:
E-Mail:

___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                  DR
Agency/Co.               Fehr & Peers
Date Performed           8/17/2007
Analysis Time Period     PM Peak Hour
Highway                  Espinosa Rd
From/To                  w-o US 101
Jurisdiction             Monterey County
Analysis Year            2030
Description  Year 2030 without Conditions

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       0.8     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          20      %
Grade:  Length               mi     Access points/mi            2       /mi
        Up/down              %

Two-way hourly volume, V    2000    veh/h
Directional split       70  /   30  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                       1.00
PCE for trucks, ET                                1.1
PCE for RVs, ER                                   1.0
Heavy-vehicle adjustment factor,                  0.998
Two-way flow rate,(note-1) vp                     2109    pc/h
Highest directional split proportion (note-2)     1476    pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -      mi/h
Observed volume, Vf                                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        55.0    mi/h
Adj. for lane and shoulder width, fLS             0.0     mi/h
Adj. for access points, fA                        0.5     mi/h

Free-flow speed, FFS                              54.5    mi/h

Adjustment for no-passing zones, fnp              0.5     mi/h
Average travel speed, ATS                         37.6    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2105	pc/h
Highest directional split proportion (note-2)	1474	
Base percent time-spent-following, BPTSF	84.3	%
Adj.for directional distribution and no-passing zones, fd/np	1.4	
Percent time-spent-following, PTSF	85.7	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.66	
Peak 15-min vehicle-miles of travel, VMT15	421	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1600	veh-mi
Peak 15-min total travel time, TT15	11.2	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone:                                  Fax:
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___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                 DR
Agency/Co.              Fehr & Peers
Date Performed          8/17/2007
Analysis Time Period    PM Peak Hour
Highway                 Espinosa Rd
From/To                 w-o US 101
Jurisdiction            Monterey County
Analysis Year           2030
Description  Year 2030 with Conditions

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       0.8     mi     % Recreational vehicles     0       %
Terrain type         Level          % No-passing zones          20      %
Grade:  Length               mi     Access points/mi            2       /mi
        Up/down              %

Two-way hourly volume, V    2600    veh/h
Directional split       70  /   30  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                       1.00
PCE for trucks, ET                                1.1
PCE for RVs, ER                                   1.0
Heavy-vehicle adjustment factor,                  0.998
Two-way flow rate,(note-1) vp                     2742    pc/h
Highest directional split proportion (note-2)     1919    pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -      mi/h
Observed volume, Vf                                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        55.0    mi/h
Adj. for lane and shoulder width, fLS             0.0     mi/h
Adj. for access points, fA                        0.5     mi/h

Free-flow speed, FFS                              54.5    mi/h

Adjustment for no-passing zones, fnp              0.5     mi/h
Average travel speed, ATS                         32.7    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2737	pc/h
Highest directional split proportion (note-2)	1916	
Base percent time-spent-following, BPTSF	91.0	%
Adj.for directional distribution and no-passing zones, fd/np	1.4	
Percent time-spent-following, PTSF	92.4	%

Level of Service and Other Performance Measures

Level of service, LOS	F	
Volume to capacity ratio, v/c	0.86	
Peak 15-min vehicle-miles of travel, VMT15	547	veh-mi
Peak-hour vehicle-miles of travel, VMT60	2080	veh-mi
Peak 15-min total travel time, TT15	16.7	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Blanco
From/To	w-o Davis
Jurisdiction	Monterey County
Analysis Year	2006
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2600 veh/h
Directional split 56 / 44 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2742	pc/h
Highest directional split proportion (note-2)	1536	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	27.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2737	pc/h
Highest directional split proportion (note-2)	1533	
Base percent time-spent-following, BPTSF	91.0	%
Adj.for directional distribution and no-passing zones, fd/np	2.2	
Percent time-spent-following, PTSF	93.2	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.86	
Peak 15-min vehicle-miles of travel, VMT15	274	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1040	veh-mi
Peak 15-min total travel time, TT15	10.0	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Blanco
From/To	w-o Davis
Jurisdiction	Monterey County
Analysis Year	2030

Description 2030 without Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2700 veh/h
Directional split 56 / 44 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2848	pc/h
Highest directional split proportion (note-2)	1595	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATS	26.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2842	pc/h
Highest directional split proportion (note-2)	1592	
Base percent time-spent-following, BPTSF	91.8	%
Adj.for directional distribution and no-passing zones, fd/np	2.1	
Percent time-spent-following, PTSF	93.9	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.89	
Peak 15-min vehicle-miles of travel, VMT15	284	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1080	veh-mi
Peak 15-min total travel time, TT15	10.7	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Phone: Fax:
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Two-Way Two-Lane Highway Segment Analysis

Analyst	AP
Agency/Co.	Fehr & Peers
Date Performed	6/15/2007
Analysis Time Period	PM Peak Hour
Highway	Blanco
From/To	w-o Davis
Jurisdiction	Monterey County
Analysis Year	2030
Description	2030 with Project

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.4	mi	% Recreational vehicles	0	%
Terrain type	Level		% No-passing zones	100	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2800 veh/h
Directional split 56 / 44 %

Average Travel Speed

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.1	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor,	0.998	
Two-way flow rate,(note-1) vp	2953	pc/h
Highest directional split proportion (note-2)	1654	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	50.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	49.5	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATS	25.8	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2947	pc/h
Highest directional split proportion (note-2)	1650	
Base percent time-spent-following, BPTSF	92.5	%
Adj.for directional distribution and no-passing zones, fd/np	2.0	
Percent time-spent-following, PTSF	94.5	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.92	
Peak 15-min vehicle-miles of travel, VMT15	295	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1120	veh-mi
Peak 15-min total travel time, TT15	11.5	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	John to Market
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2787	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	757	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1651	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1651	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	26.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Market to John
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2116	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	575	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1254	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1254	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	20.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	John to Market
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	951	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2073	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2073	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	58.4	mi/h
Number of lanes, N	2	
Density, D	35.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Market to John
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3000	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	815	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1777	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1777	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	2	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	John to Market
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project

Flow Inputs and Adjustments

Volume, V	3500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	951	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2073	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2073	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	58.4	mi/h
Number of lanes, N	2	
Density, D	35.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
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Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Market to John
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	842	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1836	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1836	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	2	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Market to SR 183
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	3121	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	848	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1849	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1849	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.4	mi/h
Number of lanes, N	2	
Density, D	30.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	SR 183 to Market
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2276	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	618	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1348	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1348	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	21.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Market to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3700	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1005	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2192	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2192	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	55.7	mi/h
Number of lanes, N	2	
Density, D	39.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	SR 183 to Market
Jurisdiction:	Salinas
Analysis Year:	

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3000	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	815	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1777	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1777	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	2	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Market to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	3700	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1005	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2192	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2192	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	55.7	mi/h
Number of lanes, N	2	
Density, D	39.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	SR 183 to Market
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project

Flow Inputs and Adjustments

Volume, V	2900	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	788	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1718	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1718	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.2	mi/h
Number of lanes, N	2	
Density, D	27.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	SR 183 to Laurel
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	3036	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	825	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1799	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1799	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.8	mi/h
Number of lanes, N	2	
Density, D	29.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Laurel to SR 183
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2178	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	592	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1290	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1290	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	20.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	SR 183 to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	951	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2073	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2073	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	58.4	mi/h
Number of lanes, N	2	
Density, D	35.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Laurel to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3000	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	815	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1777	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1777	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	2	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	SR 183 to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	3400	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	924	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2014	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2014	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	59.4	mi/h
Number of lanes, N	2	
Density, D	33.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Laurel to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	2900	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	788	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1718	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1718	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.2	mi/h
Number of lanes, N	2	
Density, D	27.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Laurel to Boronda
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	3021	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	821	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1790	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1790	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.8	mi/h
Number of lanes, N	2	
Density, D	29.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Boronda to Laurel
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2425	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	659	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1437	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1437	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.4	mi/h
Number of lanes, N	2	
Density, D	23.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Laurel to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3600	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	978	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2133	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2133	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	57.1	mi/h
Number of lanes, N	2	
Density, D	37.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst: AP
Agency or Company: Fehr & Peers
Date Performed: 6/4/2007
Analysis Time Period: PM Peak Hour
Freeway/Direction: US 101 SB
From/To: Boronda to Laurel
Jurisdiction: Salinas
Analysis Year: 2030
Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	842	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1836	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1836	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	2	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/21/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Laurel to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	3600	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	978	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2133	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2133	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	57.1	mi/h
Number of lanes, N	2	
Density, D	37.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Boronda to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	3200	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	870	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1896	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1896	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.0	mi/h
Number of lanes, N	2	
Density, D	31.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Boronda to Russell
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2963	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	805	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1755	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1755	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.0	mi/h
Number of lanes, N	2	
Density, D	28.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	June 2006
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Russell to Boronda
Jurisdiction:	Salinas
Analysis Year:	2006

Description: Existing Conditions

Flow Inputs and Adjustments

Volume, V	2823	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	767	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1672	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1672	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	26.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Boronda to Russell
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 without Project

Flow Inputs and Adjustments

Volume, V	3000	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	815	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1777	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1777	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.9	mi/h
Number of lanes, N	2	
Density, D	28.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Russell to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 without Project

Flow Inputs and Adjustments

Volume, V	3400	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	924	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2014	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2014	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	59.4	mi/h
Number of lanes, N	2	
Density, D	33.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Boronda to Russell
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project	

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	842	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1836	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1836	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	2	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	AP
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Russell to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project

Flow Inputs and Adjustments

Volume, V	3800	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1033	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	2251	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	62.4	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	2251	pc/h/ln
Free-flow speed, FFS	62.4	mi/h
Average passenger-car speed, S	54.0	mi/h
Number of lanes, N	2	
Density, D	41.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: June 2006
Analysis Period: PM Peak Hour
Highway: US 101
From/To: s/o Airport
Jurisdiction: Monterey County
Analysis Year: 2006
Project ID: Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1758	vph	1904	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	478		517	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1041	pcphpl	1127	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1041	pcphpl	1127	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	B		C	
Density, D	17.4	pc/mi/ln	18.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: s/o Airport
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3300	vph	2500	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	897		679	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1954	pcphpl	1480	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1954	pcphpl	1480	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	56.7	mph	59.5	mph
Level of service, LOS	D		C	
Density, D	34.5	pc/mi/ln	24.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: s/o Airport
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3200	vph	2500	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	870		679	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1895	pcphpl	1480	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1895	pcphpl	1480	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	57.1	mph	59.5	mph
Level of service, LOS	D		C	
Density, D	33.2	pc/mi/ln	24.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DD
Agency/Co:	Fehr & Peers
Date:	June 2006
Analysis Period:	PM Peak Hour
Highway:	US 101
From/To:	s/o Prunedale
Jurisdiction:	Monterey County
Analysis Year:	2006
Project ID:	Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2120	vph	2466	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	576		670	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1255	pcphpl	1460	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1255	pcphpl	1460	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.6	mph
Level of service, LOS	C		C	
Density, D	21.0	pc/mi/ln	24.5	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DR
Agency/Co: Fehr & Peers
Date: 8/16/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: s/o Prunedale
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3200	vph	3000	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	870		815	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1895	pcphpl	1777	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1895	pcphpl	1777	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	57.1	mph	57.9	mph
Level of service, LOS	D		D	
Density, D	33.2	pc/mi/ln	30.7	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DR
Agency/Co: Fehr & Peers
Date: 8/16/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: s/o Prunedale
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3700	vph	3000	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	1005		815	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	2191	pcphpl	1777	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2191	pcphpl	1777	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	54.8	mph	57.9	mph
Level of service, LOS	E		D	
Density, D	40.0-	pc/mi/ln	30.7	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DD
Agency/Co:	Fehr & Peers
Date:	June 2006
Analysis Period:	PM Peak Hour
Highway:	US 101
From/To:	SR 156 to San Miguel Canyon
Jurisdiction:	Monterey County
Analysis Year:	2006
Project ID:	Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2575	vph	3014	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	700		819	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1525	pcphpl	1785	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1525	pcphpl	1785	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.3	mph	57.8	mph
Level of service, LOS	C		D	
Density, D	25.7	pc/mi/ln	30.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: SR 156 to San Miguel Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3200	vph	3800	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	870		1033	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1895	pcphpl	2251	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1895	pcphpl	2251	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	57.1	mph		mph
Level of service, LOS	D		F	
Density, D	33.2	pc/mi/ln		pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: SR 156 to San Miguel Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3600	vph	3600	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	978		978	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	2132	pcphpl	2132	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	2132	pcphpl	2132	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	55.3	mph	55.3	mph
Level of service, LOS	E		E	
Density, D	38.5	pc/mi/ln	38.5	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: June 2006
Analysis Period: PM Peak Hour
Highway: US 101
From/To: San Miguel Cyn-Crazy Horse Cyn
Jurisdiction: Monterey County
Analysis Year: 2006
Project ID: Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1942	vph	2149	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	528		584	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1150	pcphpl	1273	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1150	pcphpl	1273	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	19.2	pc/mi/ln	21.3	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/4/2007
Analysis Period:	PM Peak Hour
Highway:	US 101
From/To:	San Miguel Cyn-Crazy Horse Cyn
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2100	vph	2400	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	571		652	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1244	pcphpl	1421	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1244	pcphpl	1421	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.7	mph
Level of service, LOS	C		C	
Density, D	20.8	pc/mi/ln	23.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/4/2007
Analysis Period:	PM Peak Hour
Highway:	US 101
From/To:	San Miguel Cyn-Crazy Horse Cyn
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2300	vph	2200	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	625		598	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1362	pcphpl	1303	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1362	pcphpl	1303	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	22.8	pc/mi/ln	21.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DD
Agency/Co:	Fehr & Peers
Date:	July 2006
Analysis Period:	PM Peak Hour
Highway:	US 101
From/To:	n/o Crazy Horse Canyon
Jurisdiction:	Monterey County
Analysis Year:	2006
Project ID:	Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2140	vph	2266	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	582		616	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1267	pcphpl	1342	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1267	pcphpl	1342	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	21.2	pc/mi/ln	22.5	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/4/2007
Analysis Period:	PM Peak Hour
Highway:	US 101
From/To:	n/o Crazy Horse Canyon
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2400	vph	2700	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	652		734	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1421	pcphpl	1599	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1421	pcphpl	1599	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.7	mph	58.9	mph
Level of service, LOS	C		D	
Density, D	23.8	pc/mi/ln	27.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/4/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: n/o Crazy Horse Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2800	vph	2500	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	761		679	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1658	pcphpl	1480	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1658	pcphpl	1480	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	58.6	mph	59.5	mph
Level of service, LOS	D		C	
Density, D	28.3	pc/mi/ln	24.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: AP
Agency/Co: Fehr & Peers
Date: 6/15/2007
Analysis Period: PM Peak Hour
Highway: SR 68
From/To: s-o Blanco Rd
Jurisdiction: Monterey County
Analysis Year: 2006
Project ID: Existing Conditions

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1700	vph	1800	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	462		489	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1007	pcphpl	1066	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1007	pcphpl	1066	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	B		B	
Density, D	16.9	pc/mi/ln	17.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/15/2007
Analysis Period:	PM Peak Hour
Highway:	SR 68
From/To:	s-o Blanco Rd
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 without Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2200	vph	2000	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	598		543	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1303	pcphpl	1184	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1303	pcphpl	1184	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	21.8	pc/mi/ln	19.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	AP
Agency/Co:	Fehr & Peers
Date:	6/15/2007
Analysis Period:	PM Peak Hour
Highway:	SR 68
From/To:	s-o Blanco Rd
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 with Project

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2500	vph	2000	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	679		543	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1480	pcphpl	1184	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1480	pcphpl	1184	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.5	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	24.9	pc/mi/ln	19.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	PM Peak Hour
Highway	San Miguel Canyon Road
From/To	US 101 to Castroville Blvd
Jurisdiction	Monterey County
Analysis Year	2004
Description	Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.97	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2327 veh/h
Directional split 56 / 44 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	2447	pc/h
Highest directional split proportion (note-2)	1370	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATS	34.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2399	pc/h
Highest directional split proportion (note-2)	1343	
Base percent time-spent-following, BPTSF	87.9	%
Adj.for directional distribution and no-passing zones, fd/np	2.9	
Percent time-spent-following, PTSF	90.7	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.76	
Peak 15-min vehicle-miles of travel, VMT15	360	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1396	veh-mi
Peak 15-min total travel time, TT15	10.4	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	PM Peak Hour
Highway	San Miguel Canyon Road
From/To	US 101 to Castroville Blvd
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 Without Project Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.97	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 2900 veh/h
Directional split 55 / 45 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	3050	pc/h
Highest directional split proportion (note-2)	1678	pc/h
Free-Flow Speed from Field Measurement:		
Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATS	30.1	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2990	pc/h
Highest directional split proportion (note-2)	1645	
Base percent time-spent-following, BPTSF	92.8	%
Adj.for directional distribution and no-passing zones, fd/np	1.9	
Percent time-spent-following, PTSF	94.7	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.95	
Peak 15-min vehicle-miles of travel, VMT15	448	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1740	veh-mi
Peak 15-min total travel time, TT15	14.9	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate
   analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	PM Peak Hour
Highway	San Miguel Canyon Road
From/To	US 101 to Castroville Blvd
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 With Project Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.97	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	0.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	2	/mi
Up/down		%			

Two-way hourly volume, V 3000 veh/h
Directional split 53 / 47 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	3155	pc/h
Highest directional split proportion (note-2)	1672	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	0.5	mi/h
Free-flow speed, FFS	54.5	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATS	29.3	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	3093	pc/h
Highest directional split proportion (note-2)	1639	
Base percent time-spent-following, BPTSF	93.4	%
Adj.for directional distribution and no-passing zones, fd/np	1.7	
Percent time-spent-following, PTSF	95.1	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.99	
Peak 15-min vehicle-miles of travel, VMT15	464	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1800	veh-mi
Peak 15-min total travel time, TT15	15.8	veh-h

Notes:

1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	PM Peak Hour
Highway	San Miguel Canyon Road
From/To	Castroville to Strawberry
Jurisdiction	Monterey County
Analysis Year	2006

Description Existing Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.91	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	4	/mi
Up/down		%			

Two-way hourly volume, V 1514 veh/h
Directional split 54 / 46 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	1697	pc/h
Highest directional split proportion (note-2)	916	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.0	mi/h
Free-flow speed, FFS	54.0	mi/h
Adjustment for no-passing zones, fnp	1.3	mi/h
Average travel speed, ATS	39.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	1664	pc/h
Highest directional split proportion (note-2)	899	
Base percent time-spent-following, BPTSF	76.8	%
Adj.for directional distribution and no-passing zones, fd/np	6.2	
Percent time-spent-following, PTSF	83.0	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.53	
Peak 15-min vehicle-miles of travel, VMT15	665	veh-mi
Peak-hour vehicle-miles of travel, VMT60	2422	veh-mi
Peak 15-min total travel time, TT15	16.8	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

HCS+: Two-Lane Highways Release 5.2

Phone: Fax:
E-Mail:

Two-Way Two-Lane Highway Segment Analysis

Analyst	DR
Agency/Co.	Fehr & Peers
Date Performed	8/20/2007
Analysis Time Period	PM Peak Hour
Highway	San Miguel Canyon Road
From/To	Castroville to Strawberry
Jurisdiction	Monterey County
Analysis Year	2030

Description Year 2030 Without Project Conditions

Input Data

Highway class Class 1

Shoulder width	6.0	ft	Peak-hour factor, PHF	0.95	
Lane width	12.0	ft	% Trucks and buses	2	%
Segment length	1.6	mi	% Recreational vehicles	0	%
Terrain type	Rolling		% No-passing zones	90	%
Grade: Length		mi	Access points/mi	4	/mi
Up/down		%			

Two-way hourly volume, V 2100 veh/h
Directional split 50 / 50 %

Average Travel Speed

Grade adjustment factor, fG	0.99	
PCE for trucks, ET	1.5	
PCE for RVs, ER	1.1	
Heavy-vehicle adjustment factor,	0.990	
Two-way flow rate,(note-1) vp	2255	pc/h
Highest directional split proportion (note-2)	1128	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed, SFM	-	mi/h
Observed volume, Vf	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed, BFFS	55.0	mi/h
Adj. for lane and shoulder width, fLS	0.0	mi/h
Adj. for access points, fA	1.0	mi/h
Free-flow speed, FFS	54.0	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATS	35.5	mi/h

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2211	pc/h
Highest directional split proportion (note-2)	1106	
Base percent time-spent-following, BPTSF	85.7	%
Adj.for directional distribution and no-passing zones, fd/np	3.6	
Percent time-spent-following, PTSF	89.3	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.70	
Peak 15-min vehicle-miles of travel, VMT15	884	veh-mi
Peak-hour vehicle-miles of travel, VMT60	3360	veh-mi
Peak 15-min total travel time, TT15	24.9	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

```
                          HCS+: Two-Lane Highways Release 5.2



Phone:                                   Fax:
E-Mail:

___________________Two-Way Two-Lane Highway Segment Analysis__________________

Analyst                  DR
Agency/Co.               Fehr & Peers
Date Performed           8/20/2007
Analysis Time Period     PM Peak Hour
Highway                  San Miguel Canyon Road
From/To                  Castroville to Strawberry
Jurisdiction             Monterey County
Analysis Year            2030
Description  Year 2030 With Project Conditions

___________________________________Input Data_________________________________

Highway class  Class 1
Shoulder width       6.0     ft     Peak-hour factor, PHF       0.95
Lane width           12.0    ft     % Trucks and buses          2       %
Segment length       1.6     mi     % Recreational vehicles     0       %
Terrain type         Rolling        % No-passing zones          90      %
Grade:  Length               mi     Access points/mi            4       /mi
        Up/down              %

Two-way hourly volume, V    2200    veh/h
Directional split       54  /   46  %

____________________________Average Travel Speed______________________________

Grade adjustment factor, fG                       0.99
PCE for trucks, ET                                1.5
PCE for RVs, ER                                   1.1
Heavy-vehicle adjustment factor,                  0.990
Two-way flow rate,(note-1) vp                     2363    pc/h
Highest directional split proportion (note-2)     1276    pc/h

Free-Flow Speed from Field Measurement:
Field measured speed, SFM                          -      mi/h
Observed volume, Vf                                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed, BFFS                        55.0    mi/h
Adj. for lane and shoulder width, fLS             0.0     mi/h
Adj. for access points, fA                        1.0     mi/h

Free-flow speed, FFS                              54.0    mi/h

Adjustment for no-passing zones, fnp              1.0     mi/h
Average travel speed, ATS                         34.7    mi/h
```

Percent Time-Spent-Following

Grade adjustment factor, fG	1.00	
PCE for trucks, ET	1.0	
PCE for RVs, ER	1.0	
Heavy-vehicle adjustment factor, fHV	1.000	
Two-way flow rate,(note-1) vp	2316	pc/h
Highest directional split proportion (note-2)	1251	
Base percent time-spent-following, BPTSF	86.9	%
Adj.for directional distribution and no-passing zones, fd/np	3.2	
Percent time-spent-following, PTSF	90.1	%

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.74	
Peak 15-min vehicle-miles of travel, VMT15	926	veh-mi
Peak-hour vehicle-miles of travel, VMT60	3520	veh-mi
Peak 15-min total travel time, TT15	26.7	veh-h

Notes:
1. If vp >= 3200 pc/h, terminate analysis-the LOS is F.
2. If highest directional split vp >= 1700 pc/h, terminate analysis-the LOS is F.

ATTACHMENT B:
SUB-AREA TRAVEL DEMAND MODEL VALIDATION MEMORANDUM

MEMORANDUM

Date: March 22, 2007

To: Rob Russell and Bob Richelieu, City of Salinas

From: Daniel Rubins and Sohrab Rashid, P.E.

Subject: Sub-Area Validation for the Salinas Future Growth Area (FGA) TIA

SJ04-738

Fehr & Peers has completed a sub-area model validation for the Salinas Future Growth Area (FGA) study using the regional AMBAG travel demand model. At present, the AMBAG model is the only tool available for estimating long-range traffic forecasts for streets and highways in the greater Salinas area. The sub-area model is intended to provide more accurate forecasts than are currently available for non-regional (i.e., local) roadways in Salinas. We attempted to validate the sub-area model to Caltrans and FHWA standards to ensure that state of the practice forecasting methodology is followed and that the sub-area model forecasts are defensible given they will be used in the CEQA transportation impact analysis of the proposed Sphere of Influence (SOI) areas north and east of Boronda Road. This memorandum provides a summary of our efforts and results.

TECHNICAL APPROACH

We began with the base year (Year 2000) model described in Fehr & Peers October 6, 2006 technical memorandum titled *ERSB Sub-Area Travel Demand Forecasting Model Validation*. The ERSB model includes three key changes made from the model initially received from AMBAG:

- Woods & Poole employment land use inputs for Santa Clara County to provide more consistent data sets between Monterey and Santa Clara Counties
- Minor network modifications near the ERSB study area
- AM & PM peak hour factors from the SLOCOG Travel Demand Forecasting model

The initial sub-area validation results from this version of the model are attached and are referred to as Run 1. The statistics at the bottom of the sheet show that none of the measures are met, and the data in the table shows substantial differences on numerous street segments.

In general, the base year model underestimated volumes on most facilities in Salinas even with the modifications noted above. Since we were not able to review detailed trip generation rates and other key model inputs, we conducted numerous tests to determine the effect of modifying various parameters including household size, income levels, and K factors, which are adjustments made to better replicate County-to-County travel. When the sensitivity of each of these elements did not sufficiently improve the sub-area validation, we discussed our findings with AMBAG staff (Dean Munn), who then modified the model script to allow us to adjust the mode split or proportion of persons using each travel mode (single occupant vehicle, shared ride, bicycling, walking, and transit). Lastly, we discovered that several traffic analysis zones (TAZs) near the Mall and the retail along the northern part of Davis Road were not generating enough vehicle trips due to inaccurate land use assumptions. A summary of the adjustments we made for the final run (Run 22) are listed below:

a. Modified common files model script and logit model input file. This script deactivates the mode choice model and uses fixed mode percentages by trip purpose. As summarized below, we used the mode splits by trip purpose described in Caltrans' *2000-2001 California Statewide Household Travel Survey: Final Report* (June 2002).

    i. Home-based work purpose: Drive alone = 89%; Shared ride (2 persons) = 7%; Transit = 1%; Other = 3%

    ii. Other trip purposes: Drive alone = 56%; Shared ride (2 persons) = 35%; Transit = 2%; Other = 7%

b. Corrected number of northbound lanes on Main Street between Bernal Road and Laurel Drive.

c. Corrected number of northbound lanes on Main Street between Curtis Street and Navajo Drive.

d. Corrected number of SB US 101 lanes from Martines Road to Boronda Road.

e. Corrected direction and speed of SB US 101 off-ramp to Main Street.

f. Corrected speed for short segments of Boronda Road, Sanborn Road and Harvest Street to make speeds consistent.

g. Increased speeds on Main Street, Market Street, and Alisal Street from US 101 to downtown Salinas. This more accurately distributed traffic amongst the interchanges between and including Main Street to John Street.

h. Corrected land use in TAZs 916, 1160, 1168, 1170, 1171, and 1172. Increased the number of retail employees to generate approximately the same number of trips that would be estimated using standard trip generation rates published by Institute of Transportation Engineers (ITE). See Table 1 for the land use summary.

i. Added centroid connectors to zones 916 and 1160, and 1168 to more accurately represent loading to the adjacent streets.

j. Added turn penalties to prevent illegal movements near study intersections.

For each of the adjustments, we reviewed the traffic volume forecasts to verify that they changed in appropriate direction and magnitude. By adjusting the mode split, correcting the land use, and making the network corrections, we were able to substantially improve the validation and reduce the overall error in the model for Salinas area street and highway segments. The Run 22 results are attached.

As expected, the daily validation statistics improved with Run 22, but the number of segments within the maximum deviation (60%) and the correlation coefficient (0.77) are still not within Caltrans standards. On an individual segment basis, most of the Caltrans facilities are within the maximum deviation thresholds. The model volume on several City street segments is still substantially different than the traffic count.

TABLE 1
YEAR 2000 LAND USE CHANGES

TAZ	Employees						
	Farm	**Industrial**	**Construction**	**Retail**	**Service**	**Government**	**Total**
Initial Land Use Input (A)							
916	0	356	0	1057	136	6	1555
1160	0	0	0	854	193	36	1083
1168	0	0	0	507	9	0	516
1170	0	0	0	0	0	0	0
1171	0	0	0	0	0	0	0
1172	0	6	0	280	17	0	303
Revised Land Use Input (B)							
916	0	0	0	1400	136	6	1542
1160	0	0	0	510	120	36	666
1168	0	0	0	2000	9	0	2009
1170	0	0	0	850	0	0	850
1171	0	0	0	750	0	0	750
1172	0	6	0	903	17	0	926
Difference in Land Use Inputs (B-A)							
916	0	-356	0	+343	0	0	1542
1160	0	0	0	-344	-73	0	666
1168	0	0	0	+1493	0	0	2009
1170	0	0	0	+850	0	0	850
1171	0	0	0	+750	0	0	750
1172	0	0	0	+623	0	0	926
Source: Fehr & Peers, 2007							

Without access to all of the model parameters such as trip generation rates, trip distribution factors, and other information, plus a detailed review of the land use in every single TAZ, it would be very difficult to significantly improve the validation. We have already made substantial improvements to our ability to forecast future traffic volumes and have enhanced the best available tool. To this end, we have met the intent of CEQA as it relates to the information that will be used for the transportation analysis and we recommend proceeding with developing future forecasts using the Run 22 version of the model. Our next steps include updating the 2030 model with the network and land use corrections, and then adding the land use and roadway network for the proposed FGA.

Salinas Specific Plans SubArea Model Validation Results: Daily Two-Way Total Traffic Volumes

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	27,288	27,000	1.01	0.26	Yes	288	82,865
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	27,235	27,000	1.01	0.26	Yes	235	55,225
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	26,489	27,000	0.98	0.26	Yes	-511	260,948
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	26,968	27,000	1.00	0.26	Yes	-32	1,030
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	33,051	40,000	0.83	0.23	Yes	-6,949	48,290,932
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	33,528	40,000	0.84	0.23	Yes	-6,472	41,882,351
US 101 (SB)	SR 156	Russell Road	13337	26,179	27,000	0.97	0.26	Yes	-821	674,000
US 101 (NB)	Russell Road	SR 156	13245	26,326	27,000	0.98	0.26	Yes	-674	454,903
US 101 (SB)	Russell Road	Boronda Road	14262	27,432	30,000	0.91	0.25	Yes	-2,568	6,593,169
US 101 (NB)	Boronda Road	Russell Road	38446	29,254	30,000	0.98	0.25	Yes	-746	557,258
US 101 (SB)	Boronda Road	Laurel Drive	13333	26,609	35,000	0.76	0.24	Yes	-8,391	70,416,742
US 101 (NB)	Laurel Drive	Boronda Road	13241	26,318	35,000	0.75	0.24	No	-8,682	75,375,049
US 101 (SB)	Laurel Drive	Main Street (SR 183)	13332	26,011	31,515	0.83	0.25	Yes	-5,504	30,295,302
US 101 (NB)	Main Street (SR 183)	Laurel Drive	13240	25,428	31,529	0.81	0.25	Yes	-6,101	37,216,116
US 101 (SB)	Main Street (SR 183)	Market Street	13331	33,464	28,500	1.17	0.26	Yes	4,964	24,642,597
US 101 (NB)	Market Street	Main Street (SR 183)	13252	28,564	28,500	1.00	0.26	Yes	64	4,054
US 101 (SB)	Market Street	John Street	13343	33,512	26,000	1.29	0.26	No	7,512	56,433,786
US 101 (NB)	John Street	Market Street	13253	24,121	26,000	0.93	0.26	Yes	-1,879	3,530,600
US 101 (SB)	Airport Boulevard	Abbott Street	13827	16,663	17,750	0.94	0.30	Yes	-1,087	1,180,504
US 101 (NB)	Abbott Street	Airport Boulevard	39032	15,563	17,750	0.88	0.30	Yes	-2,187	4,781,977
Main Street	Russell Road	Outlook Lane	13202	18	7,150	0.00	0.42	No	-7,132	50,870,167
Main Street	San Juan Grade Road	Harden Parkway	13454	13,981	23,400	0.60	0.27	No	-9,419	88,726,771
Main Street	Rochex Avenue	Laurel Drive	13167	22,362	28,600	0.78	0.26	Yes	-6,238	38,913,908
Main Street	Laurel Drive	Iris Drive	37331	18,791	29,750	0.63	0.26	No	-10,959	120,109,717
Main Street (SB)	Bernal Drive	US 101	9927 & 13169	13,930	20,000	0.70	0.28	No	-6,070	36,840,317
Main Street (NB)	US 101	Bernal Drive	13169	13,076	16,350	0.80	0.30	Yes	-3,274	10,720,503
Main Street (SR 183)	US 101	Casentini Street	35673	17,165	39,450	0.44	0.23	No	-22,285	496,636,250
Main Street (SR 183)	John Street	Clay Street	13180	13,807	25,650	0.54	0.26	No	-11,843	140,251,268
Main Street (SR 183)	Lake Street	Monterey Street	13205	22,083	32,200	0.69	0.24	No	-10,117	102,352,070
Main Street (SR 68)	Plaza Circle	Blanco Road	13198	17,912	26,700	0.67	0.26	No	-8,788	77,237,212
Main Street (SR 68)	Blanco Road	Stephanie Drive	12746	23,766	32,250	0.74	0.24	No	-8,484	71,979,261
San Juan Grade Road	Augusta Drive	Rogge Road	9969	5,148	3,400	1.51	0.60	Yes	1,748	3,055,785
San Juan Grade Road	Van Buren Avenue	Northridge Way	795	3,618	14,700	0.25	0.31	No	-11,082	122,807,428
San Juan Grade Road	Boronda Road	Main Street	13457	1,890	10,000	0.19	0.37	No	-8,110	65,775,128
Natividad Road	Rogge Road	Boronda Road	39346	3,798	7,150	0.53	0.42	No	-3,352	11,233,581
Natividad Road	Boronda Road	Arcadia Way	12918	4,005	10,400	0.39	0.37	No	-6,395	40,894,135
Natividad Road	Pacheco Street	Laurel Drive	1726	14,711	31,150	0.47	0.25	No	-16,439	270,227,494
Natividad Road	Laurel Drive	Sorrentini Drive	10556	13,829	31,900	0.43	0.25	No	-18,071	326,575,650
Bernal Drive	Alpine Drive	Main Street	2021	5,997	13,550	0.44	0.32	No	-7,553	57,040,474
Sherwood Drive	Sherwood Place	Navajo Way	13800	10,259	22,150	0.46	0.27	No	-11,891	141,389,986
Sherwood Drive	Rossi Street	Cherry Drive	13799	6,222	22,900	0.27	0.27	No	-16,678	278,156,938
Independence Boulevard	Boronda Road	Danbury Street	937	1,755	6,450	0.27	0.44	No	-4,695	22,039,017
Constitution Boulevard	Boronda Road	Nantucket Boulevard	12249	2,421	6,300	0.38	0.44	No	-3,879	15,043,940
Constitution Boulevard	Natividad Medical Center	Laurel Drive	10555	11,727	15,950	0.74	0.31	Yes	-4,223	17,831,618
Sanborn Road	Freedom Parkway	Paseo Grande	13716	2,546	4,300	0.59	0.60	Yes	-1,754	3,077,741
Sanborn Road	Del Monte Avenue	Garner Avenue	13720	15,441	11,250	1.37	0.35	No	4,191	17,564,492
Sanborn Road	Laurel Drive	Oregon Street	13726	31,432	24,150	1.30	0.26	No	7,282	53,022,564
Sanborn Road	Mayfair Drive	US 101	13738	22,717	26,600	0.85	0.26	Yes	-3,883	15,079,143
Williams Road	Old Stage Road	Boronda Road	2125	2,351	2,350	1.00	0.60	Yes	1	1
Williams Road	Badger Way	Freedom Parkway	12210	4,021	5,700	0.71	0.45	Yes	-1,679	2,817,956
Williams Road	Freedom Parkway	Del Monte Avenue	10539	6,055	9,600	0.63	0.38	Yes	-3,545	12,570,165
Williams Road	Del Monte Avenue	Wiren Street	2501	6,626	17,650	0.38	0.30	No	-11,024	121,537,349
Davis Road	Boronda Road	Auto Center Circle	13451	415	16,200	0.03	0.30	No	-15,785	249,179,343
Davis Road	Westridge Parkway	Laurel Drive	13411	3,413	23,450	0.15	0.27	No	-20,037	401,481,377
Davis Road	Rossi Street	Market Street	13422	18,532	35,450	0.52	0.24	No	-16,918	286,228,449
Davis Road	Market Street	Central Avenue	13423	14,795	34,250	0.43	0.24	No	-19,455	378,481,967
Davis Road	Ambrose Drive	Blanco Road	13420	14,326	25,500	0.56	0.26	No	-11,174	124,862,446
Davis Road	Blanco Road	Hitchcock Road	13428	4,025	9,250	0.44	0.38	No	-5,225	27,305,480
Airport Boulevard	Moffet Street	US 101	9922	5,736	10,000	0.57	0.37	No	-4,264	18,179,036
Airport Boulevard	Terven Avenue	Hansen Street	4034	16,269	18,200	0.89	0.29	Yes	-1,931	3,729,402
Russell Road	Paul Avenue	San Juan Grade Road	658	3,827	5,800	0.66	0.45	Yes	-1,973	3,894,673
Boronda Road	US 101	Main Street	13483	23,294	43,000	0.54	0.22	No	-19,706	388,312,425
Boronda Road	Dartmouth Way	McKinnon Street	13482	9,322	20,450	0.46	0.28	No	-11,128	123,841,665
Boronda Road	McKinnon Street	El Dorado Drive	13460	8,684	18,950	0.46	0.29	No	-10,266	105,394,125
Boronda Road	El Dorado Drive	Natividad Road	13481	7,918	15,100	0.52	0.31	No	-7,182	51,575,798
Boronda Road	Natividad Road	Independence Boulevard	39332	8,390	20,750	0.40	0.28	No	-12,360	152,768,485
Boronda Road	Independence Boulevard	Hemingway Drive	13461	6,635	18,400	0.36	0.29	No	-11,765	138,424,209
Boronda Road	Constitution Boulevard	Rider Avenue	13472	4,884	7,850	0.62	0.41	Yes	-2,966	8,794,532
Alvin Drive	Christensen Avenue	McKinnon Street	1130	6,591	10,700	0.62	0.36	No	-4,109	16,886,083
Alvin Drive	Marin Avenue	Natividad Road	1393	3,211	14,550	0.22	0.31	No	-11,339	128,577,452
Laurel Drive	Davis Road	US 101	13792	27,804	41,550	0.67	0.23	No	-13,746	188,951,625
Laurel Drive	US 101	Adams Street	13771	20,836	24,500	0.85	0.26	Yes	-3,664	13,427,428
Laurel Drive	Terra Drive	Loma Drive	13769	19,158	21,200	0.90	0.27	Yes	-2,042	4,167,771
Laurel Drive	Natividad Road	Constitution Boulevard	13790	16,494	31,950	0.52	0.25	No	-15,456	238,889,658
Laurel Drive	Constitution Boulevard	Ranch View Lane	13780	15,130	21,000	0.72	0.27	No	-5,870	34,455,170
Market Street (SR 68)	Davis Road	Clark Street	2283	13,831	20,000	0.69	0.28	No	-6,169	38,061,352
Market Street	Sherwood Drive	Peach Drive	13138	6,640	18,600	0.36	0.29	No	-11,960	143,047,083
Market Street	Kern Street	Kings Street	2721	25,400	21,500	1.18	0.27	Yes	3,900	15,213,141
Central Avenue	Davis Road	University Avenue	11152	3,431	4,300	0.80	0.60	Yes	-869	755,455
Alisal Street	Blanco Road	Montecito Way	3683	8,788	8,400	1.05	0.40	Yes	388	150,743
Alisal Street	Front Street	Prader Street	13152	6,408	18,900	0.34	0.29	No	-12,492	156,037,905
Alisal Street	Sanborn Road	Eucalyptus Drive	3193	3,958	17,200	0.23	0.30	No	-13,242	175,342,185
Alisal Street	Bardin Road	City Limit	13755	3,126	5,650	0.55	0.45	Yes	-2,524	6,369,765
John Street (SR 68)	Front Street	Abbott Street	13815	34,893	11,100	3.14	0.35	No	23,793	566,127,839
John Street (SR 68)	Work Street	US 101	13806	43,408	24,650	1.76	0.26	No	18,758	351,871,703
John Street	Magnola Drive	Sanborn Road	13821	7,071	10,350	0.68	0.37	Yes	-3,279	10,751,967
Abbott Street	John Street	Maple Street	3521	11,288	26,000	0.43	0.26	No	-14,712	216,454,058
Abbott Street	Sanborn Road	Merrill Street	13832	15,640	17,450	0.90	0.30	Yes	-1,810	3,275,551
Blanco Road	Hitchcock Road	Davis Road	13445	23,527	22,100	1.06	0.27	Yes	1,427	2,036,803
Blanco Road	Padre Drive	Main Street	13437	7,570	21,700	0.35	0.27	No	-14,130	199,651,336
Blanco Road	Main Street	Pajaro Street	13438	13,136	30,100	0.44	0.25	No	-16,964	287,761,153
Blanco Road	La Mesa	Abbott Street	13442	9,954	25,550	0.39	0.26	No	-15,596	243,225,051
			Subtotal	**1,391,221**	**1,950,244**			**Model/Count Ratio =**	**0.71**	
								Percent Within Caltrans Maximum Deviation =	**42%**	> 75%
								Percent Root Mean Square Error =	**46%**	< 40%
								Correlation Coefficient =	**0.71**	> 0.88

Total Count	**92**
Link Within Deviation	**39**
Link Outside Deviation	**53**

Salinas Specific Plans SubArea Model Validation Results: AM Two-Way Total Traffic Volumes

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	1,641	2,280	0.72	0.27	No	-639	407,695
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	1,595	1,650	0.97	0.30	Yes	-55	3,041
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	1,698	2,170	0.78	0.27	Yes	-472	222,761
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	1,550	1,500	1.03	0.31	Yes	50	2,467
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	2,028	2,930	0.69	0.26	No	-902	814,160
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	2,079	1,940	1.07	0.28	Yes	139	19,205
US 101 (SB)	SR 156	Russell Road	13337	1,385	2,570	0.54	0.26	No	-1,185	1,404,178
US 101 (NB)	Russell Road	SR 156	13245	1,881	1,720	1.09	0.30	Yes	161	26,009
US 101 (SB)	Russell Road	Boronda Road	14262	1,508	2,710	0.56	0.26	No	-1,202	1,444,800
US 101 (NB)	Boronda Road	Russell Road	38446	2,000	1,750	1.14	0.30	Yes	250	62,274
US 101 (SB)	Boronda Road	Laurel Drive	13333	1,706	2,830	0.60	0.26	No	-1,124	1,263,462
US 101 (NB)	Laurel Drive	Boronda Road	13241	1,570	1,670	0.94	0.30	Yes	-100	9,970
US 101 (SB)	Laurel Drive	Main Street (SR 183)	13332	1,636	2,770	0.59	0.26	No	-1,134	1,286,521
US 101 (NB)	Main Street (SR 183)	Laurel Drive	13240	1,470	1,480	0.99	0.31	Yes	-10	99
US 101 (SB)	Main Street (SR 183)	Market Street	13331	2,199	3,000	0.73	0.25	No	-801	641,999
US 101 (NB)	Market Street	Main Street (SR 183)	13252	1,647	1,550	1.06	0.31	Yes	97	9,422
US 101 (SB)	Market Street	John Street	13343	2,463	2,850	0.86	0.26	Yes	-387	149,763
US 101 (NB)	John Street	Market Street	13253	1,227	1,470	0.84	0.31	Yes	-243	58,813
US 101 (SB)	Airport Boulevard	Abbott Street	13827	725	1,070	0.68	0.36	Yes	-345	119,247
US 101 (NB)	Abbott Street	Airport Boulevard	39032	942	1,520	0.62	0.31	No	-578	334,032
Main Street	Russell Road	Outlook Lane	13202	1	630	0.00	0.44	No	-629	395,719
Main Street	San Juan Grade Road	Harden Parkway	13454	786	670	1.17	0.43	Yes	116	13,405
Main Street	Rochex Avenue	Laurel Drive	13167	1,314	1,190	1.10	0.34	Yes	124	15,308
Main Street	Laurel Drive	Iris Drive	37331	1,145	1,080	1.06	0.36	Yes	65	4,181
Main Street (SB)	Bernal Drive	US 101	9927 & 13169	1,028	1,570	0.65	0.31	No	-542	294,113
Main Street (NB)	US 101	Bernal Drive	13169	647	890	0.73	0.39	Yes	-243	59,063
Main Street (SR 183)	US 101	Casentini Street	35673	965	2,540	0.38	0.26	No	-1,575	2,479,208
Main Street (SR 183)	John Street	Clay Street	13181	1,005	1,020	0.98	0.37	Yes	-15	239
Main Street (SR 183)	Lake Street	Monterey Street	13205	1,293	1,850	0.70	0.29	No	-557	309,922
Main Street (SR 68)	Plaza Circle	Blanco Road	13198	1,140	2,120	0.54	0.27	No	-980	959,783
Main Street (SR 68)	Blanco Road	Stephanie Drive	12746	1,548	2,510	0.62	0.26	No	-962	924,717
San Juan Grade Road	Augusta Drive	Rogge Road	9969	300	500	0.60	0.47	Yes	-200	39,905
San Juan Grade Road	Van Buren Avenue	Northridge Way	795	242	710	0.34	0.42	No	-468	219,094
San Juan Grade Road	Boronda Road	Main Street	13457	109	310	0.35	0.60	No	-201	40,341
Natividad Road	Rogge Road	Boronda Road	39346	206	420	0.49	0.60	Yes	-214	45,885
Natividad Road	Boronda Road	Arcadia Way	12918	236	540	0.44	0.46	No	-304	92,204
Natividad Road	Pacheco Street	Laurel Drive	1726	972	1,800	0.54	0.29	No	-828	685,127
Natividad Road	Laurel Drive	Sorrentini Drive	10556	873	2,310	0.38	0.27	No	-1,437	2,066,175
Bernal Drive	Alpine Drive	Main Street	2021	380	1,070	0.35	0.36	No	-690	476,464
Sherwood Drive	Rossi Street	Cherry Drive	13799	376	1,880	0.20	0.29	No	-1,504	2,263,273
Independence Boulevard	Boronda Road	Danbury Street	937	90	1,200	0.07	0.33	No	-1,110	1,233,150
Constitution Boulevard	Boronda Road	Nantucket Boulevard	12249	150	270	0.55	0.60	Yes	-120	14,470
Constitution Boulevard	Natividad Medical Center	Laurel Drive	10555	700	1,490	0.47	0.31	No	-790	623,807
Sanborn Road	Freedom Parkway	Paseo Grande	13716	151	1,090	0.14	0.36	No	-939	881,805
Sanborn Road	Del Monte Avenue	Garner Avenue	13720	983	760	1.29	0.41	Yes	223	49,836
Sanborn Road	Laurel Drive	Oregon Street	13726	1,858	1,090	1.70	0.36	No	768	590,218
Sanborn Road	Mayfair Drive	US 101	13738	1,430	1,480	0.97	0.31	Yes	-50	2,493
Williams Road	Old Stage Road	Boronda Road	2125	140	140	1.00	0.60	Yes	0	0
Williams Road	Freedom Parkway	Del Monte Avenue	10539	365	1,200	0.30	0.33	No	-835	697,462
Williams Road	Del Monte Avenue	Wiren Street	2501	401	1,230	0.33	0.33	No	-829	686,519
Davis Road	Boronda Road	Auto Center Circle	13451	26	1,080	0.02	0.36	No	-1,054	1,111,711
Davis Road	Westridge Parkway	Laurel Drive	13411	179	930	0.19	0.38	No	-751	563,320
Davis Road	Market Street	Central Avenue	13423	877	2,760	0.32	0.26	No	-1,883	3,544,955
Davis Road	Ambrose Drive	Blanco Road	13420	851	1,820	0.47	0.29	No	-969	938,295
Davis Road	Blanco Road	Hitchcock Road	13428	261	750	0.35	0.41	No	-489	238,839
Airport Boulevard	Moffet Street	US 101	9922	359	840	0.43	0.40	No	-481	231,742
Airport Boulevard	Terven Avenue	Hansen Street	4034	1,054	1,130	0.93	0.35	Yes	-76	5,804
Russell Road	Paul Avenue	San Juan Grade Road	658	208	920	0.23	0.38	No	-712	507,126
Boronda Road	US 101	Main Street	13483	1,494	2,960	0.50	0.26	No	-1,466	2,149,364
Boronda Road	Dartmouth Way	McKinnon Street	13482	576	1,720	0.33	0.30	No	-1,144	1,309,569
Boronda Road	McKinnon Street	El Dorado Drive	13460	530	1,220	0.43	0.33	No	-690	476,419
Boronda Road	El Dorado Drive	Natividad Road	13480	479	720	0.67	0.42	Yes	-241	58,135
Boronda Road	Natividad Road	Independence Boulevard	39332	478	2,030	0.24	0.28	No	-1,552	2,409,126
Boronda Road	Independence Boulevard	Hemingway Drive	13461	388	1,230	0.32	0.33	No	-842	708,397
Boronda Road	Constitution Boulevard	Rider Avenue	13472	298	590	0.51	0.45	No	-292	85,057
Alvin Drive	Marin Avenue	Natividad Road	1393	175	610	0.29	0.44	No	-435	188,963
Laurel Drive	Davis Road	US 101	13792	1,677	2,060	0.81	0.28	Yes	-383	146,557
Laurel Drive	US 101	Adams Street	13771	1,322	1,710	0.77	0.30	Yes	-388	150,244
Laurel Drive	Natividad Road	Constitution Boulevard	13790	928	2,170	0.43	0.27	No	-1,242	1,541,721
Laurel Drive	Constitution Boulevard	Ranch View Lane	13780	879	1,150	0.76	0.34	Yes	-271	73,225
Market Street	Davis Road	Clark Street	2283	849	1,240	0.68	0.33	Yes	-391	153,080
Market Street	Sherwood Drive	Peach Drive	13138	394	1,060	0.37	0.36	No	-666	443,530
Market Street	Kern Street	Kings Street	2721	1,597	970	1.65	0.38	No	627	392,915
Central Avenue	Davis Road	University Avenue	11152	168	460	0.36	0.60	No	-292	85,394
Alisal Street	Blanco Road	Montecito Way	3683	467	870	0.54	0.39	No	-403	162,074
Alisal Street	Front Street	Prader Street	13152	389	1,220	0.32	0.33	No	-831	690,293
Alisal Street	Sanborn Road	Eucalyptus Drive	3193	244	690	0.35	0.43	No	-446	198,643
John Street	Front Street	Abbott Street	13815	2,126	1,210	1.76	0.33	No	916	838,387
John Street	Work Street	US 101	13806	2,669	2,140	1.25	0.27	Yes	529	280,303
John Street	Magnola Drive	Sanborn Road	13821	401	760	0.53	0.41	No	-359	128,715
Abbott Street	John Street	Maple Street	3521	693	1,660	0.42	0.30	No	-967	934,143
Abbott Street	Sanborn Road	Merrill Street	13832	1,055	1,540	0.68	0.31	No	-485	235,674
Blanco Road	Hitchcock Road	Davis Road	13445	1,352	2,050	0.66	0.28	No	-698	486,909
Blanco Road	Padre Drive	Main Street	13437	461	1,880	0.25	0.29	No	-1,419	2,012,213
Blanco Road	Main Street	Pajaro Street	13438	847	2,260	0.37	0.27	No	-1,413	1,997,189
			Subtotal	**80,536**	**125,400**			**Model/Count Ratio =**	**0.64**	
								Percent Within Caltrans Maximum Deviation =	**35%**	> 75%
								Percent Root Mean Square Error =	**52%**	< 40%
								Correlation Coefficient =	**0.67**	> 0.88

Total Count	**85**
Link Within Deviation	**30**
Link Outside Deviation	**55**

Salinas Specific Plans SubArea Model Validation Results: PM Two-Way Total Traffic Volumes

Roadway	Segment		Model	Model	Traffic	Model	Maximum	Within	Model	Difference
	From	To	Link ID	Volume	Count	/Count	Deviation	Deviation	- Count	Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	2,053	2,140	0.96	0.27	Yes	-87	7,599
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	2,034	2,270	0.90	0.27	Yes	-236	55,776
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	1,894	1,940	0.98	0.28	Yes	-46	2,091
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	2,098	2,150	0.98	0.27	Yes	-52	2,677
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	2,620	2,580	1.02	0.26	Yes	40	1,617
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	2,518	3,010	0.84	0.25	Yes	-492	241,693
US 101 (SB)	SR 156	Russell Road	13337	2,300	2,120	1.08	0.27	Yes	180	32,253
US 101 (NB)	Russell Road	SR 156	13245	1,745	2,470	0.71	0.26	No	-725	525,378
US 101 (SB)	Russell Road	Boronda Road	14262	2,403	2,820	0.85	0.26	Yes	-417	173,960
US 101 (NB)	Boronda Road	Russell Road	38446	2,119	2,960	0.72	0.26	No	-841	706,904
US 101 (SB)	Boronda Road	Laurel Drive	13333	2,148	2,430	0.88	0.26	Yes	-282	79,444
US 101 (NB)	Laurel Drive	Boronda Road	13241	2,112	3,020	0.70	0.25	No	-908	825,177
US 101 (SB)	Laurel Drive	Main Street/SR 183	13332	2,116	2,180	0.97	0.27	Yes	-64	4,078
US 101 (NB)	Main Street/SR 183	Laurel Drive	13240	2,072	3,040	0.68	0.25	No	-968	937,366
US 101 (SB)	Main Street/SR 183	Market Street	13331	2,734	2,280	1.20	0.27	Yes	454	206,167
US 101 (NB)	Market Street	Main Street/SR 183	13252	2,365	3,120	0.76	0.25	Yes	-755	569,531
US 101 (SB)	Market Street	John Street	13343	2,356	2,120	1.11	0.27	Yes	236	55,866
US 101 (NB)	John Street	Market Street	13253	2,155	2,790	0.77	0.26	Yes	-635	403,145
US 101 (SB)	Airport Boulevard	Abbott Street	13827	1,344	1,760	0.76	0.30	Yes	-416	173,056
US 101 (NB)	Abbott Street	Airport Boulevard	39032	943	1,900	0.50	0.28	No	-957	916,241
Main Street	Russell Road	Outlook Lane	13202	2	550	0.00	0.45	No	-548	300,425
Main Street	San Juan Grade Road	Harden Parkway	13454	1,296	1,540	0.84	0.31	Yes	-244	59,640
Main Street	Rochex Avenue	Laurel Drive	13167	2,047	2,360	0.87	0.27	Yes	-313	97,945
Main Street	Laurel Drive	Iris Drive	37331	1,748	2,190	0.80	0.27	Yes	-442	195,780
Main Street (SB)	Bernal Drive	US 101	9927 & 13169	1,138	1,510	0.75	0.31	Yes	-372	138,659
Main Street (NB)	US 101	Bernal Drive	13169	1,336	2,030	0.66	0.28	No	-694	481,329
c	US 101	Casentini Street	35673	1,651	3,340	0.49	0.24	No	-1,689	2,851,656
Main Street (SR 183)	John Street	Clay Street	13181	1,501	1,760	0.85	0.30	Yes	-259	66,875
Main Street (SR 183)	Lake Street	Monterey Street	13205	2,051	3,050	0.67	0.25	No	-999	997,454
Main Street (SR 68)	Plaza Circle	Blanco Road	13198	1,611	3,380	0.48	0.24	No	-1,769	3,128,878
Main Street (SR 68)	Blanco Road	Stephanie Drive	12746	2,071	3,540	0.58	0.24	No	-1,469	2,158,602
San Juan Grade Road	Augusta Drive	Rogge Road	9969	453	660	0.69	0.43	Yes	-207	42,978
San Juan Grade Road	Van Buren Avenue	Northridge Way	795	289	1,070	0.27	0.36	No	-781	610,035
San Juan Grade Road	Boronda Road	Main Street	13457	160	920	0.17	0.38	No	-760	577,204
Natividad Road	Rogge Road	Boronda Road	39346	356	640	0.56	0.44	No	-284	80,516
Natividad Road	Boronda Road	Arcadia Way	12918	347	970	0.36	0.38	No	-623	388,033
Natividad Road	Pacheco Street	Laurel Drive	1726	1,297	2,270	0.57	0.27	No	-973	946,726
Natividad Road	Laurel Drive	Sorrentini Drive	10556	1,196	2,640	0.45	0.26	No	-1,444	2,085,664
Bernal Drive	Alpine Drive	Main Street	2021	507	1,410	0.36	0.31	No	-903	815,441
Sherwood Drive	Rossi Street	Cherry Drive	13799	586	2,370	0.25	0.27	No	-1,784	3,181,807
Independence Boulevard	Boronda Road	Danbury Street	937	139	700	0.20	0.42	No	-561	314,198
Constitution Boulevard	Boronda Road	Nantucket Boulevard	12249	204	390	0.52	0.60	Yes	-186	34,730
Constitution Boulevard	Natividad Medical Center	Laurel Drive	10555	1,014	2,100	0.48	0.27	No	-1,086	1,178,877
Sanborn Road	Freedom Parkway	Paseo Grande	13716	215	2,110	0.10	0.27	No	-1,895	3,592,178
Sanborn Road	Del Monte Avenue	Garner Avenue	13720	1,174	1,580	0.74	0.31	Yes	-406	164,447
Sanborn Road	Laurel Drive	Oregon Street	13726	2,663	2,110	1.26	0.27	Yes	553	305,786
Sanborn Road	Mayfair Drive	US 101	13738	1,896	2,040	0.93	0.28	Yes	-144	20,808
Williams Road	Old Stage Road	Boronda Road	2125	200	460	0.43	0.60	Yes	-260	67,592
Williams Road	Freedom Parkway	Del Monte Avenue	10539	513	830	0.62	0.40	Yes	-317	100,284
Williams Road	Del Monte Avenue	Wiren Street	2501	561	1,160	0.48	0.34	No	-599	358,607
Davis Road	Boronda Road	Auto Center Circle	13451	36	1,860	0.02	0.29	No	-1,824	3,328,189
Davis Road	Westridge Parkway	Laurel Drive	13411	331	2,350	0.14	0.27	No	-2,019	4,074,395
Davis Road	Rossi Street	Market Street	13422	1,579	2,970	0.53	0.26	No	-1,391	1,935,055
Davis Road	Market Street	Central Avenue	13423	1,174	3,820	0.31	0.23	No	-2,646	7,002,051
Davis Road	Ambrose Drive	Blanco Road	13420	1,124	2,640	0.43	0.26	No	-1,516	2,299,665
Davis Road	Blanco Road	Hitchcock Road	13428	397	930	0.43	0.38	No	-533	284,003
Airport Boulevard	Moffet Street	US 101	9922	621	1,100	0.56	0.35	No	-479	229,709
Airport Boulevard	Terven Avenue	Hansen Street	4034	1,600	1,370	1.17	0.32	Yes	230	53,124
Russell Road	Paul Avenue	San Juan Grade Road	658	360	690	0.52	0.43	No	-330	109,117
Boronda Road	US 101	Main Street	13483	2,027	4,190	0.48	0.23	No	-2,163	4,679,209
Boronda Road	Dartmouth Way	McKinnon Street	13482	733	2,000	0.37	0.28	No	-1,267	1,606,358
Boronda Road	McKinnon Street	El Dorado Drive	13460	681	1,550	0.44	0.31	No	-869	755,815
Boronda Road	El Dorado Drive	Natividad Road	13480	677	1,370	0.49	0.32	No	-693	480,664
Boronda Road	Natividad Road	Independence Boulevard	39332	675	2,070	0.33	0.28	No	-1,395	1,945,226
Boronda Road	Independence Boulevard	Hemingway Drive	13461	536	1,450	0.37	0.31	No	-914	835,725
Boronda Road	Constitution Boulevard	Rider Avenue	13472	405	1,020	0.40	0.37	No	-615	378,532
Alvin Drive	Marin Avenue	Natividad Road	1393	336	950	0.35	0.38	No	-614	377,461
Laurel Drive	Davis Road	US 101	13792	2,461	3,550	0.69	0.24	No	-1,089	1,185,836
Laurel Drive	US 101	Adams Street	13771	1,778	3,140	0.57	0.25	No	-1,362	1,856,199
Laurel Drive	Natividad Road	Constitution Boulevard	13790	1,362	3,290	0.41	0.24	No	-1,928	3,719,068
Laurel Drive	Constitution Boulevard	Ranch View Lane	13780	1,306	1,650	0.79	0.30	Yes	-344	118,165
Market Street	Davis Road	Clark Street	2283	1,123	1,300	0.86	0.32	Yes	-177	31,358
Market Street	Sherwood Drive	Peach Drive	13138	596	1,410	0.42	0.31	No	-814	663,168
Market Street	Kern Street	Kings Street	2721	2,032	1,660	1.22	0.30	Yes	372	138,590
Central Avenue	Davis Road	University Avenue	11152	256	360	0.71	0.60	Yes	-104	10,805
Alisal Street	Blanco Road	Montecito Way	3683	706	1,010	0.70	0.37	Yes	-304	92,349
Alisal Street	Front Street	Prader Street	13152	517	1,640	0.32	0.30	No	-1,123	1,261,683
Alisal Street	Sanborn Road	Eucalyptus Drive	3193	314	1,320	0.24	0.32	No	-1,006	1,011,336
John Street	Front Street	Abbott Street	13815	2,953	2,370	1.25	0.27	Yes	583	339,590
John Street	Work Street	US 101	13806	3,683	2,440	1.51	0.26	No	1,243	1,545,630
John Street	Magnola Drive	Sanborn Road	13821	658	1,120	0.59	0.35	No	-462	213,799
Abbott Street	John Street	Maple Street	3521	1,057	2,470	0.43	0.26	No	-1,413	1,996,420
Abbott Street	Sanborn Road	Merrill Street	13832	1,413	1,790	0.79	0.30	Yes	-377	142,196
Blanco Road	Hitchcock Road	Davis Road	13445	1,808	2,550	0.71	0.26	No	-742	550,389
Blanco Road	Padre Drive	Main Street	13437	710	2,290	0.31	0.27	No	-1,580	2,495,398
Blanco Road	Main Street	Pajaro Street	13438	1,138	2,270	0.50	0.27	No	-1,132	1,280,739
			Subtotal	**111,513**	**170,740**			**Model/Count Ratio =**	**0.65**	
								Percent Within Caltrans Maximum Deviation =	**41%**	> 75%
								Percent Root Mean Square Error =	**49%**	< 40%
								Correlation Coefficient =	**0.68**	> 0.88

Total Count	**86**
Link Within Deviation	**35**
Link Outside Deviation	**51**

Salinas Specific Plans SubArea Model Validation Results: AM Directional Traffic Volumes

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	1,641	2,280	0.72	0.27	No	-639	407,695
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	1,595	1,650	0.97	0.30	Yes	-55	3,041
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	1,698	2,170	0.78	0.27	Yes	-472	222,761
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	1,550	1,500	1.03	0.31	Yes	50	2,467
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	2,028	2,930	0.69	0.26	No	-902	814,160
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	2,079	1,940	1.07	0.28	Yes	139	19,205
US 101 (SB)	SR 156	Russell Road	13337	1,385	2,570	0.54	0.26	No	-1,185	1,404,178
US 101 (NB)	Russell Road	SR 156	13245	1,881	1,720	1.09	0.30	Yes	161	26,009
US 101 (SB)	Russell Road	Boronda Road	14262	1,508	2,710	0.56	0.26	No	-1,202	1,444,800
US 101 (NB)	Boronda Road	Russell Road	38446	2,000	1,750	1.14	0.30	Yes	250	62,274
US 101 (SB)	Boronda Road	Laurel Drive	13333	1,706	2,830	0.60	0.26	No	-1,124	1,263,462
US 101 (NB)	Laurel Drive	Boronda Road	13241	1,570	1,670	0.94	0.30	Yes	-100	9,970
US 101 (SB)	Laurel Drive	Main Street/SR 183	13332	1,636	2,770	0.59	0.26	No	-1,134	1,286,521
US 101 (NB)	Main Street/SR 183	Laurel Drive	13240	1,470	1,480	0.99	0.31	Yes	-10	99
US 101 (SB)	Main Street/SR 183	Market Street	13331	2,199	3,000	0.73	0.25	No	-801	641,999
US 101 (NB)	Market Street	Main Street/SR 183	13252	1,647	1,550	1.06	0.31	Yes	97	9,422
US 101 (SB)	Market Street	John Street	13343	2,463	2,850	0.86	0.26	Yes	-387	149,763
US 101 (NB)	John Street	Market Street	13253	1,227	1,470	0.84	0.31	Yes	-243	58,813
US 101 (SB)	Airport Boulevard	Abbott Street	13827	725	1,070	0.68	0.36	Yes	-345	119,247
US 101 (NB)	Abbott Street	Airport Boulevard	39032	942	1,520	0.62	0.31	No	-578	334,032
Main Street (SB)	Russell Road	Outlook Lane	13202	1	440	0.00	0.60	No	-439	192,775
Main Street (NB)	Outlook Lane	Russell Road	13202	0	190	0.00	0.60	No	-190	36,100
Main Street (SB)	San Juan Grade Road	Harden Parkway	13454	370	340	1.09	0.60	Yes	30	896
Main Street (NB)	Harden Parkway	San Juan Grade Road	13454	416	330	1.26	0.60	Yes	86	7,370
Main Street (SB)	Rochex Avenue	Laurel Drive	13167	751	680	1.10	0.43	Yes	71	5,040
Main Street (NB)	Laurel Drive	Rochex Avenue	13167	563	510	1.10	0.47	Yes	53	2,781
Main Street (SB)	Laurel Drive	Iris Drive	37331	747	650	1.15	0.43	Yes	97	9,342
Main Street (NB)	Iris Drive	Laurel Drive	37331	398	430	0.93	0.60	Yes	-32	1,023
Main Street (SB)	Bernal Drive	US 101	9927 & 13169	1,028	1,570	0.65	0.31	No	-542	294,113
Main Street (NB)	US 101	Bernal Drive	13169	647	890	0.73	0.39	Yes	-243	59,063
Main Street (SB) (SR 183)	US 101	Casentini Street	35673	490	1,710	0.29	0.30	No	-1,220	1,487,339
Main Street (NB) (SR 183)	Casentini	US 101	35673	475	830	0.57	0.40	No	-355	126,014
Main Street (SB) (SR 183)	John Street	Clay Street	13181	611	520	1.18	0.47	Yes	91	8,288
Main Street (NB) (SR 183)	Clay Street	John Street	13181	394	500	0.79	0.47	Yes	-106	11,340
Main Street (SB) (SR 183)	Lake Street	Monterey Street	13205	707	1,350	0.52	0.32	No	-643	413,909
Main Street (NB) (SR 183)	Monterey Street	Lake Street	13205	587	500	1.17	0.47	Yes	87	7,508
Main Street (SB) (SR 68)	Plaza Circle	Blanco Road	13198	655	770	0.85	0.41	Yes	-115	13,273
Main Street (NB) (SR 68)	Blanco Road	Plaza Circle	13198	486	1,350	0.36	0.32	No	-864	747,321
Main Street (SB) (SR 68)	Blanco Road	Stephanie Drive	12746	854	900	0.95	0.38	Yes	-46	2,108
Main Street (NB) (SR 68)	Stephanie Drive	Blanco Road	12746	694	1,610	0.43	0.30	No	-916	838,524
San Juan Grade Road (SB)	Augusta Drive	Rogge Road	9969	178	300	0.59	0.60	Yes	-122	15,005
San Juan Grade Road (NB)	Rogge Road	Augusta Drive	9969	123	200	0.61	0.60	Yes	-77	5,970
San Juan Grade Road (SB)	Van Buren Avenue	Northridge Way	795	202	490	0.41	0.60	Yes	-288	83,218
San Juan Grade Road (NB)	Northridge Way	Van Buren Avenue	795	40	220	0.18	0.60	No	-180	32,256
San Juan Grade Road (SB)	Boronda Road	Main Street	13457	77	180	0.43	0.60	Yes	-103	10,585
San Juan Grade Road (NB)	Main Street	Boronda Road	13457	32	130	0.25	0.60	No	-98	9,597
Natividad Road (SB)	Rogge Road	Boronda Road	39346	89	190	0.47	0.60	Yes	-101	10,290
Natividad Road (NB)	Boronda Road	Rogge Road	39346	117	230	0.51	0.60	Yes	-113	12,716
Natividad Road (SB)	Boronda Road	Arcadia Way	12918	95	300	0.32	0.60	No	-205	41,880
Natividad Road (NB)	Arcadia Way	Boronda Road	12918	141	240	0.59	0.60	Yes	-99	9,802
Natividad Road (SB)	Pacheco Street	Laurel Drive	1726	533	990	0.54	0.38	No	-457	208,516
Natividad Road (NB)	Laurel Drive	Pacheco Street	1726	439	810	0.54	0.40	No	-371	137,706
Natividad Road (SB)	Laurel Drive	Sorrentini Drive	10556	590	1,500	0.39	0.31	No	-910	827,831
Natividad Road (NB)	Sorrentini Drive	Laurel Drive	10556	282	810	0.35	0.40	No	-528	278,327
Bernal Drive (SB)	Alpine Drive	Main Street	2021	256	710	0.36	0.42	No	-454	206,269
Bernal Drive (NB)	Main Street	Alpine	2021	124	360	0.34	0.60	No	-236	55,741
Sherwood Drive (SB)	Rossi Street	Cherry Drive	13799	217	1,220	0.18	0.33	No	-1,003	1,005,406
Sherwood Drive (NB)	Cherry Drive	Rossi Street	13799	158	660	0.24	0.43	No	-502	251,721
Independence Boulevard (SB)	Boronda Road	Danbury Street	937	32	500	0.06	0.47	No	-468	218,908
Independence Boulevard (NB)	Danbury Street	Boronda Road	937	57	700	0.08	0.42	No	-643	412,930
Constitution Boulevard (SB)	Boronda Road	Nantucket Boulevard	12249	46	120	0.38	0.60	No	-74	5,505
Constitution Boulevard (NB)	Nantucket Boulevard	Boronda Road	12249	104	150	0.69	0.60	Yes	-46	2,125
Constitution Boulevard (SB)	Natividad Medical Center	Laurel Drive	10555	413	980	0.42	0.38	No	-567	321,631
Constitution Boulevard (NB)	Laurel Drive	Natividad Medical Center	10555	287	510	0.56	0.47	Yes	-223	49,591
Sanborn Road (SB)	Freedom Parkway	Paseo Grande	13716	76	430	0.18	0.60	No	-354	125,459
Sanborn Road (NB)	Paseo Grande	Freedom Parkway	13716	75	660	0.11	0.43	No	-585	342,041
Sanborn Road (SB)	Del Monte Avenue	Garner Avenue	13720	810	530	1.53	0.46	No	280	78,566
Sanborn Road (NB)	Garner Avenue	Del Monte Avenue	13720	173	230	0.75	0.60	Yes	-57	3,255
Sanborn Road (SB)	Laurel Drive	Oregon Street	13726	1,404	430	3.26	0.60	No	974	948,556
Sanborn Road (NB)	Oregon Street	Laurel Drive	13726	454	660	0.69	0.43	Yes	-206	42,305
Sanborn Road (SB)	Mayfair Drive	US 101	13738	1,042	800	1.30	0.40	Yes	242	58,750
Sanborn Road (NB)	US 101	Mayfair Drive	13738	388	680	0.57	0.43	Yes	-292	85,448
Williams Road (SB)	Old Stage Road	Boronda Road	2125	63	70	0.89	0.60	Yes	-7	55
Williams Road (NB)	Boronda Road	Old Stage Road	2125	77	70	1.10	0.60	Yes	7	51
Williams Road (SB)	Freedom Parkway	Del Monte Avenue	10539	241	640	0.38	0.44	No	-399	159,007
Williams Road (NB)	Del Monte Avenue	Freedom Parkway	10539	124	560	0.22	0.45	No	-436	190,432
Williams Road (SB)	Del Monte Avenue	Wiren Street	2501	270	680	0.40	0.43	No	-410	168,159
Williams Road (NB)	Wiren Street	Del Monte Avenue	2501	132	550	0.24	0.45	No	-418	175,136
Davis Road (SB)	Boronda Road	Auto Center Circle	13451	10	780	0.01	0.41	No	-770	592,407
Davis Road (NB)	Auto Center Circle	Boronda Road	13451	15	300	0.05	0.60	No	-285	81,053
Davis Road (SB)	Westridge Parkway	Laurel Drive	13411	69	490	0.14	0.60	No	-421	177,257
Davis Road (NB)	Laurel Drive	Westridge Parkway	13411	110	440	0.25	0.60	No	-330	108,588
Davis Road (SB)	Market Street	Central Avenue	13423	558	1,700	0.33	0.30	No	-1,142	1,305,173
Davis Road (NB)	Central Avenue	Market Street	13423	320	1,060	0.30	0.36	No	-740	548,138
Davis Road (SB)	Ambrose Drive	Blanco Road	13420	577	1,020	0.57	0.37	No	-443	196,665
Davis Road (NB)	Blanco Road	Ambrose Drive	13420	275	800	0.34	0.40	No	-525	275,821
Davis Road (SB)	Blanco Road	Hitchcock Road	13428	142	360	0.39	0.60	No	-218	47,715
Davis Road (NB)	Hitchcock Road	Blanco Road	13428	120	390	0.31	0.60	No	-270	73,047
Airport Boulevard (SB)	Moffet Street	US 101	9922	113	310	0.36	0.60	No	-197	38,903
Airport Boulevard (NB)	US 101	Moffet Street	9922	246	530	0.46	0.46	No	-284	80,745
Airport Boulevard (SB)	Terven Avenue	Hansen Street	4034	753	840	0.90	0.40	Yes	-87	7,498
Airport Boulevard (NB)	Hansen Street	Terven Avenue	4034	300	290	1.04	0.60	Yes	10	108
Russell Road (EB)	Paul Avenue	San Juan Grade Road	658	113	450	0.25	0.60	No	-337	113,898
Russell Road (WB)	San Juan Grade Road	Paul Avenue	658	95	470	0.20	0.60	No	-375	140,355

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
Boronda Road (EB)	US 101	Main Street	13483	465	1,140	0.41	0.35	No	-675	456,098
Boronda Road (WB)	Main Street	US 101	13483	1,029	1,820	0.57	0.29	No	-791	625,239
Boronda Road (EB)	Dartmouth Way	McKinnon Street	13482	139	750	0.19	0.41	No	-611	372,957
Boronda Road (WB)	McKinnon Street	Dartmouth Way	13482	436	970	0.45	0.38	No	-534	284,795
Boronda Road (EB)	McKinnon Street	El Dorado Drive	13460	128	500	0.26	0.47	No	-372	138,076
Boronda Road (WB)	El Dorado Drive	McKinnon Street	13460	401	720	0.56	0.42	No	-319	101,535
Boronda Road (EB)	El Dorado Drive	Natividad Road	13480	133	320	0.42	0.60	Yes	-187	34,834
Boronda Road (WB)	Natividad Road	El Dorado Drive	13480	346	400	0.86	0.60	Yes	-54	2,967
Boronda Road (EB)	Natividad Road	Independence Boulevard	39332	133	930	0.14	0.38	No	-797	635,907
Boronda Road (WB)	Independence Boulevard	Natividad Road	39332	345	1,100	0.31	0.35	No	-755	569,569
Boronda Road (EB)	Independence Boulevard	Hemingway Drive	13461	100	630	0.16	0.44	No	-530	280,435
Boronda Road (WB)	Hemingway Drive	Independence Boulevard	13461	288	600	0.48	0.44	No	-312	97,407
Boronda Road (EB)	Constitution Boulevard	Rider Avenue	13472	113	310	0.36	0.60	No	-197	38,960
Boronda Road (WB)	Rider Avenue	Constitution Boulevard	13472	186	280	0.66	0.60	Yes	-94	8,886
Alvin Drive (WB)	Marin Avenue	Natividad Road	1393	94	350	0.27	0.60	No	-256	65,549
Alvin Drive (EB)	Natividad Road	Marin Avenue	1393	81	260	0.31	0.60	No	-179	31,924
Laurel Drive (EB)	Davis Road	US 101	13792	694	940	0.74	0.38	Yes	-246	60,294
Laurel Drive (WB)	US 101	Davis Road	13792	983	1,120	0.88	0.35	Yes	-137	18,845
Laurel Drive (EB)	US 101	Adams Street	13771	502	700	0.72	0.42	Yes	-198	39,155
Laurel Drive (WB)	Adams Street	US 101	13771	820	1,010	0.81	0.37	Yes	-190	36,000
Laurel Drive (EB)	Natividad Road	Constitution Boulevard	13790	267	820	0.33	0.40	No	-553	306,339
Laurel Drive (WB)	Constitution Boulevard	Natividad Road	13790	662	1,350	0.49	0.32	No	-688	473,593
Laurel Drive (EB)	Constitution Boulevard	Ranch View Lane	13780	305	590	0.52	0.45	No	-285	81,320
Laurel Drive (WB)	Ranch View Lane	Constitution Boulevard	13780	575	560	1.03	0.45	Yes	15	212
Market Street (EB) (SR 68)	Davis Road	Clark Street	2283	329	700	0.47	0.42	No	-371	137,783
Market Street (WB) (SR 68)	Clark Street	Davis Road	2283	520	540	0.96	0.46	Yes	-20	403
Market Street (EB)	Sherwood Drive	Peach Drive	13138	110	420	0.26	0.60	No	-310	96,394
Market Street (WB)	Peach Drive	Sherwood Drive	13138	284	640	0.44	0.44	No	-356	126,385
Market Street (EB)	Kern Street	Kings Street	2721	318	360	0.88	0.60	Yes	-42	1,751
Market Street (WB)	Kings Street	Kern Street	2721	1,279	610	2.10	0.44	No	669	447,119
Central Avenue (EB)	Davis Road	University Avenue	11152	97	340	0.28	0.60	No	-243	59,179
Central Avenue (WB)	University Avenue	Davis Road	11152	71	120	0.59	0.60	Yes	-49	2,397
Alisal Street (EB)	Blanco Road	Montecito Way	3683	143	410	0.35	0.60	No	-267	71,430
Alisal Street (WB)	Montecito Way	Blanco Road	3683	325	460	0.71	0.60	Yes	-135	18,312
Alisal Street (EB)	Front Street	Prader Street	13152	67	580	0.12	0.45	No	-513	262,865
Alisal Street (WB)	Prader Street	Front Street	13152	322	640	0.50	0.44	No	-318	101,210
Alisal Street (EB)	Sanborn Road	Eucalyptus Drive	3193	52	270	0.19	0.60	No	-218	47,684
Alisal Street (WB)	Eucalyptus Drive	Sanborn Road	3193	193	420	0.46	0.60	Yes	-227	51,677
John Street (EB) (SR 68)	Front Street	Abbott Street	13815	674	490	1.38	0.60	Yes	184	33,846
John Street (WB) (SR 68)	Abbott Street	Front Street	13815	1,452	720	2.02	0.42	No	732	535,328
John Street (EB) (SR 68)	Work Street	US 101	13806	787	560	1.40	0.45	Yes	227	51,410
John Street (WB) (SR 68)	US 101	Work Street	13806	1,883	1,580	1.19	0.31	Yes	303	91,626
John Street (EB)	Magnola Drive	Sanborn Road	13821	127	290	0.44	0.60	Yes	-163	26,547
John Street (WB)	Sanborn Road	Magnola Drive	13821	274	470	0.58	0.60	Yes	-196	38,352
Abbott Street (EB)	John Street	Maple Street	3521	488	1,170	0.42	0.34	No	-682	464,751
Abbott Street (WB)	Maple Street	John Street	3521	205	490	0.42	0.60	Yes	-285	81,102
Abbott Street (EB)	Sanborn Road	Merrill Street	13832	694	610	1.14	0.44	Yes	84	7,024
Abbott Street (WB)	Merrill Street	Sanborn Road	13832	361	930	0.39	0.38	No	-569	324,072
Blanco Road (EB)	Hitchcock Road	Davis Road	13445	436	970	0.45	0.38	No	-534	285,171
Blanco Road (WB)	Davis Road	Hitchcock Road	13445	916	1,080	0.85	0.36	Yes	-164	26,822
Blanco Road (EB)	Padre Drive	Main Street	13437	252	1,000	0.25	0.37	No	-748	559,082
Blanco Road (WB)	Main Street	Padere Drive	13437	209	880	0.24	0.39	No	-671	449,982
Blanco Road (EB)	Main Street	Pajaro Street	13438	450	1,250	0.36	0.33	No	-800	640,527
Blanco Road (WB)	Pajaro Street	Main Street	13438	397	1,010	0.39	0.37	No	-613	375,634
			Subtotal	**80,536**	**125,400**			**Model/Count Ratio =**	**0.64**	
								Percent Within Caltrans Maximum Deviation =	**42%**	> 75%
								Percent Root Mean Square Error =	**56%**	< 40%
								Correlation Coefficient =	**0.82**	> 0.88

Total Count	**148**
Link Within Deviation	**62**
Link Outside Deviation	**86**

Salinas Specific Plans SubArea Model Validation Results: PM Directional Traffic Volumes

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	2,053	2,140	0.96	0.27	Yes	-87	7,599
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	2,034	2,270	0.90	0.27	Yes	-236	55,776
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	1,894	1,940	0.98	0.28	Yes	-46	2,091
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	2,098	2,150	0.98	0.27	Yes	-52	2,677
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	2,620	2,580	1.02	0.26	Yes	40	1,617
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	2,518	3,010	0.84	0.25	Yes	-492	241,693
US 101 (SB)	SR 156	Russell Road	13337	2,300	2,120	1.08	0.27	Yes	180	32,253
US 101 (NB)	Russell Road	SR 156	13245	1,745	2,470	0.71	0.26	No	-725	525,378
US 101 (SB)	Russell Road	Boronda Road	14262	2,403	2,820	0.85	0.26	Yes	-417	173,960
US 101 (NB)	Boronda Road	Russell Road	38446	2,119	2,960	0.72	0.26	No	-841	706,904
US 101 (SB)	Boronda Road	Laurel Drive	13333	2,148	2,430	0.88	0.26	Yes	-282	79,444
US 101 (NB)	Laurel Drive	Boronda Road	13241	2,112	3,020	0.70	0.25	No	-908	825,177
US 101 (SB)	Laurel Drive	Main Street (SR 183)	13332	2,116	2,180	0.97	0.27	Yes	-64	4,078
US 101 (NB)	Main Street (SR 183)	Laurel Drive	13240	2,072	3,040	0.68	0.25	No	-968	937,366
US 101 (SB)	Main Street (SR 183)	Market Street	13331	2,734	2,280	1.20	0.27	Yes	454	206,167
US 101 (NB)	Market Street	Main Street (SR 183)	13252	2,365	3,120	0.76	0.25	Yes	-755	569,531
US 101 (SB)	Market Street	John Street	13343	2,356	2,120	1.11	0.27	Yes	236	55,866
US 101 (NB)	John Street	Market Street	13253	2,155	2,790	0.77	0.26	Yes	-635	403,145
US 101 (SB)	Airport Boulevard	Abbott Street	13827	1,344	1,760	0.76	0.30	Yes	-416	173,056
US 101 (NB)	Abbott Street	Airport Boulevard	39032	943	1,900	0.50	0.28	No	-957	916,241
Main Street (SB)	Russell Road	Outlook Lane	13202	2	320	0.01	0.60	No	-318	101,194
Main Street (NB)	Outlook Lane	Russell Road	13202	0	230	0.00	0.60	No	-230	52,900
Main Street (SB)	San Juan Grade Road	Harden Parkway	13454	690	830	0.83	0.40	Yes	-140	19,694
Main Street (NB)	Harden Parkway	San Juan Grade Road	13454	606	710	0.85	0.42	Yes	-104	10,791
Main Street (SB)	Rochex Avenue	Laurel Drive	13167	1,021	1,130	0.90	0.35	Yes	-109	11,866
Main Street (NB)	Laurel Drive	Rochex Avenue	13167	1,026	1,230	0.83	0.33	Yes	-204	41,629
Main Street (SB)	Laurel Drive	Iris Drive	37331	787	940	0.84	0.38	Yes	-153	23,393
Main Street (NB)	Iris Drive	Laurel Drive	37331	960	1,250	0.77	0.33	Yes	-290	83,824
Main Street (SB)	Bernal Drive	US 101	9927 & 13169	1,138	1,510	0.75	0.31	Yes	-372	138,659
Main Street (NB)	US 101	Bernal Drive	13169	1,336	2,030	0.66	0.28	No	-694	481,329
Main Street (SB) (SR 183)	US 101	Casentini Street	35673	564	1,480	0.38	0.31	No	-916	838,858
Main Street (NB) (SR 183)	Casentini	US 101	35673	1,087	1,860	0.58	0.29	No	-773	597,209
Main Street (SB) (SR 183)	John Street	Clay Street	13181	515	850	0.61	0.39	No	-335	111,937
Main Street (NB) (SR 183)	Clay Street	John Street	13181	986	910	1.08	0.38	Yes	76	5,771
Main Street (SB) (SR 183)	Lake Street	Monterey Street	13205	687	1,320	0.52	0.32	No	-633	400,061
Main Street (NB) (SR 183)	Monterey Street	Lake Street	13205	1,364	1,730	0.79	0.30	Yes	-366	134,119
Main Street (SB) (SR 68)	Plaza Circle	Blanco Road	13198	749	1,770	0.42	0.30	No	-1,021	1,043,414
Main Street (NB) (SR 68)	Blanco Road	Plaza Circle	13198	863	1,610	0.54	0.30	No	-747	558,587
Main Street (SB) (SR 68)	Blanco Road	Stephanie Drive	12746	937	1,690	0.55	0.30	No	-753	566,502
Main Street (NB) (SR 68)	Stephanie Drive	Blanco Road	12746	1,133	1,850	0.61	0.29	No	-717	513,450
San Juan Grade Road (SB)	Augusta Drive	Rogge Road	9969	210	400	0.52	0.60	Yes	-190	36,232
San Juan Grade Road (NB)	Rogge Road	Augusta Drive	9969	243	260	0.93	0.60	Yes	-17	288
San Juan Grade Road (SB)	Van Buren Avenue	Northridge Way	795	185	560	0.33	0.45	No	-375	140,838
San Juan Grade Road (NB)	Northridge Way	Van Buren Avenue	795	104	510	0.20	0.47	No	-406	164,644
San Juan Grade Road (SB)	Boronda Road	Main Street	13457	77	380	0.20	0.60	No	-303	91,542
San Juan Grade Road (NB)	Main Street	Boronda Road	13457	83	540	0.15	0.46	No	-457	209,014
Natividad Road (SB)	Rogge Road	Boronda Road	39346	230	390	0.59	0.60	Yes	-160	25,549
Natividad Road (NB)	Boronda Road	Rogge Road	39346	126	250	0.50	0.60	Yes	-124	15,355
Natividad Road (SB)	Boronda Road	Arcadia Way	12918	205	470	0.44	0.60	Yes	-265	70,066
Natividad Road (NB)	Arcadia Way	Boronda Road	12918	142	500	0.28	0.47	No	-358	128,323
Natividad Road (SB)	Pacheco Street	Laurel Drive	1726	523	1,010	0.52	0.37	No	-487	237,347
Natividad Road (NB)	Laurel Drive	Pacheco Street	1726	774	1,260	0.61	0.33	No	-486	236,017
Natividad Road (SB)	Laurel Drive	Sorrentini Drive	10556	411	1,210	0.34	0.33	No	-799	637,801
Natividad Road (NB)	Sorrentini Drive	Laurel Drive	10556	784	1,430	0.55	0.31	No	-646	416,745
Bernal Drive (SB)	Alpine Drive	Main Street	2021	161	640	0.25	0.44	No	-479	229,005
Bernal Drive (NB)	Main Street	Alpine	2021	346	770	0.45	0.41	No	-424	180,177
Sherwood Drive (SB)	Rossi Street	Cherry Drive	13799	275	930	0.30	0.38	No	-655	428,689
Sherwood Drive (NB)	Cherry Drive	Rossi Street	13799	311	1,440	0.22	0.31	No	-1,129	1,274,683
Independence Boulevard (SB)	Boronda Road	Danbury Street	937	84	370	0.23	0.60	No	-286	81,991
Independence Boulevard (NB)	Danbury Street	Boronda Road	937	56	330	0.17	0.60	No	-274	75,182
Constitution Boulevard (SB)	Boronda Road	Nantucket Boulevard	12249	129	220	0.59	0.60	Yes	-91	8,194
Constitution Boulevard (NB)	Nantucket Boulevard	Boronda Road	12249	74	170	0.44	0.60	Yes	-96	9,185
Constitution Boulevard (SB)	Natividad Medical Center	Laurel Drive	10555	464	760	0.61	0.41	Yes	-296	87,868
Constitution Boulevard (NB)	Laurel Drive	Natividad Medical Center	10555	551	1,340	0.41	0.32	No	-789	623,049
Sanborn Road (SB)	Freedom Parkway	Paseo Grande	13716	106	1,320	0.08	0.32	No	-1,214	1,474,589
Sanborn Road (NB)	Paseo Grande	Freedom Parkway	13716	109	790	0.14	0.41	No	-681	463,730
Sanborn Road (SB)	Del Monte Avenue	Garner Avenue	13720	424	710	0.60	0.42	Yes	-286	81,865
Sanborn Road (NB)	Garner Avenue	Del Monte Avenue	13720	751	870	0.86	0.39	Yes	-119	14,256
Sanborn Road (SB)	Laurel Drive	Oregon Street	13726	823	1,320	0.62	0.32	No	-497	246,597
Sanborn Road (NB)	Oregon Street	Laurel Drive	13726	1,840	790	2.33	0.41	No	1,050	1,101,585
Sanborn Road (SB)	Mayfair Drive	US 101	13738	661	760	0.87	0.41	Yes	-99	9,756
Sanborn Road (NB)	US 101	Mayfair Drive	13738	1,235	1,280	0.96	0.33	Yes	-45	2,068
Williams Road (SB)	Old Stage Road	Boronda Road	2125	111	340	0.33	0.60	No	-229	52,393
Williams Road (NB)	Boronda Road	Old Stage Road	2125	89	120	0.74	0.60	Yes	-31	967
Williams Road (SB)	Freedom Parkway	Del Monte Avenue	10539	184	430	0.43	0.60	Yes	-246	60,448
Williams Road (NB)	Del Monte Avenue	Freedom Parkway	10539	329	400	0.82	0.60	Yes	-71	5,015
Williams Road (SB)	Del Monte Avenue	Wiren Street	2501	204	530	0.38	0.46	No	-326	106,297
Williams Road (NB)	Wiren Street	Del Monte Avenue	2501	357	630	0.57	0.44	Yes	-273	74,423
Davis Road (SB)	Boronda Road	Auto Center Circle	13451	20	840	0.02	0.40	No	-820	672,409
Davis Road (NB)	Auto Center Circle	Boronda Road	13451	16	1,020	0.02	0.37	No	-1,004	1,008,673
Davis Road (SB)	Westridge Parkway	Laurel Drive	13411	196	1,110	0.18	0.35	No	-914	835,000
Davis Road (NB)	Laurel Drive	Westridge Parkway	13411	135	1,240	0.11	0.33	No	-1,105	1,220,428
Davis Road (SB)	Rossi Street	Market Street	13422	615	1,190	0.52	0.34	No	-575	330,770
Davis Road (NB)	Market Street	Rossi Street	13422	964	1,780	0.54	0.30	No	-816	665,752
Davis Road (SB)	Market Street	Central Avenue	13423	469	1,680	0.28	0.30	No	-1,211	1,466,309
Davis Road (NB)	Central Avenue	Market Street	13423	705	2,140	0.33	0.27	No	-1,435	2,059,875
Davis Road (SB)	Ambrose Drive	Blanco Road	13420	418	1,090	0.38	0.36	No	-672	451,697
Davis Road (NB)	Blanco Road	Ambrose Drive	13420	706	1,550	0.46	0.31	No	-844	712,978
Davis Road (SB)	Blanco Road	Hitchcock Road	13428	144	320	0.45	0.60	Yes	-176	31,048
Davis Road (NB)	Hitchcock Road	Blanco Road	13428	253	610	0.42	0.44	No	-357	127,245
Airport Boulevard (SB)	Moffet Street	US 101	9922	312	610	0.51	0.44	No	-298	88,816
Airport Boulevard (NB)	US 101	Moffet Street	9922	309	490	0.63	0.60	Yes	-181	32,855
Airport Boulevard (SB)	Terven Avenue	Hansen Street	4034	509	460	1.11	0.60	Yes	49	2,372
Airport Boulevard (NB)	Hansen Street	Terven Avenue	4034	1,092	910	1.20	0.38	Yes	182	33,046
Russell Road (EB)	Paul Avenue	San Juan Grade Road	658	288	390	0.74	0.60	Yes	-102	10,421
Russell Road (WB)	San Juan Grade Road	Paul Avenue	658	72	300	0.24	0.60	No	-228	52,095

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
Boronda Road (EB)	US 101	Main Street	13483	1,114	2,410	0.46	0.26	No	-1,296	1,679,540
Boronda Road (WB)	Main Street	US 101	13483	913	1,780	0.51	0.30	No	-867	751,996
Boronda Road (EB)	Dartmouth Way	McKinnon Street	13482	479	1,120	0.43	0.35	No	-641	410,339
Boronda Road (WB)	McKinnon Street	Dartmouth Way	13482	253	880	0.29	0.39	No	-627	392,934
Boronda Road (EB)	McKinnon Street	El Dorado Drive	13460	440	780	0.56	0.41	No	-340	115,405
Boronda Road (WB)	El Dorado Drive	McKinnon Street	13460	240	770	0.31	0.41	No	-530	280,543
Boronda Road (EB)	El Dorado Drive	Natividad Road	13480	435	710	0.61	0.42	Yes	-275	75,565
Boronda Road (WB)	Natividad Road	El Dorado Drive	13480	242	660	0.37	0.43	No	-418	175,065
Boronda Road (EB)	Natividad Road	Independence Boulevard	39332	435	1,190	0.37	0.34	No	-755	570,394
Boronda Road (WB)	Independence Boulevard	Natividad Road	39332	241	880	0.27	0.39	No	-639	408,921
Boronda Road (EB)	Independence Boulevard	Hemingway Drive	13461	351	860	0.41	0.39	No	-509	258,984
Boronda Road (WB)	Hemingway Drive	Independence Boulevard	13461	185	590	0.31	0.45	No	-405	164,248
Boronda Road (EB)	Constitution Boulevard	Rider Avenue	13472	228	600	0.38	0.44	No	-372	138,752
Boronda Road (WB)	Rider Avenue	Constitution Boulevard	13472	177	420	0.42	0.60	Yes	-243	58,930
Alvin Drive (WB)	Marin Avenue	Natividad Road	1393	126	450	0.28	0.60	No	-324	105,249
Alvin Drive (EB)	Natividad Road	Marin Avenue	1393	210	500	0.42	0.47	No	-290	84,075
Laurel Drive (EB)	Davis Road	US 101	13792	1,455	1,920	0.76	0.28	Yes	-465	215,897
Laurel Drive (WB)	US 101	Davis Road	13792	1,006	1,630	0.62	0.30	No	-624	389,767
Laurel Drive (EB)	US 101	Adams Street	13771	1,110	1,850	0.60	0.29	No	-740	547,998
Laurel Drive (WB)	Adams Street	US 101	13771	668	1,290	0.52	0.33	No	-622	387,077
Laurel Drive (EB)	Natividad Road	Constitution Boulevard	13790	883	1,740	0.51	0.30	No	-857	734,159
Laurel Drive (WB)	Constitution Boulevard	Natividad Road	13790	478	1,550	0.31	0.31	No	-1,072	1,148,451
Laurel Drive (EB)	Constitution Boulevard	Ranch View Lane	13780	812	840	0.97	0.40	Yes	-28	784
Laurel Drive (WB)	Ranch View Lane	Constitution Boulevard	13780	494	810	0.61	0.40	Yes	-316	99,694
Market Street (EB) (SR 68)	Davis Road	Clark Street	2283	648	740	0.88	0.42	Yes	-92	8,387
Market Street (WB) (SR 68)	Clark Street	Davis Road	2283	474	560	0.85	0.45	Yes	-86	7,311
Market Street (EB)	Sherwood Drive	Peach Drive	13138	406	730	0.56	0.42	No	-324	104,695
Market Street (WB)	Peach Drive	Sherwood Drive	13138	189	680	0.28	0.43	No	-491	240,870
Market Street (EB)	Kern Street	Kings Street	2721	1,262	860	1.47	0.39	No	402	161,582
Market Street (WB)	Kings Street	Kern Street	2721	770	800	0.96	0.40	Yes	-30	882
Central Avenue (EB)	Davis Road	University Avenue	11152	113	210	0.54	0.60	Yes	-97	9,319
Central Avenue (WB)	University Avenue	Davis Road	11152	143	150	0.95	0.60	Yes	-7	55
Alisal Street (EB)	Blanco Road	Montecito Way	3683	503	550	0.91	0.45	Yes	-47	2,249
Alisal Street (WB)	Montecito Way	Blanco Road	3683	204	460	0.44	0.60	Yes	-256	65,776
Alisal Street (EB)	Front Street	Prader Street	13152	358	890	0.40	0.39	No	-532	282,881
Alisal Street (WB)	Prader Street	Front Street	13152	159	750	0.21	0.41	No	-591	349,731
Alisal Street (EB)	Sanborn Road	Eucalyptus Drive	3193	167	720	0.23	0.42	No	-553	306,196
Alisal Street (WB)	Eucalyptus Drive	Sanborn Road	3193	148	600	0.25	0.44	No	-452	204,577
John Street (EB) (SR 68)	Front Street	Abbott Street	13815	1,667	1,660	1.00	0.30	Yes	7	47
John Street (WB) (SR 68)	Abbott Street	Front Street	13815	1,286	710	1.81	0.42	No	576	331,670
John Street (EB) (SR 68)	Work Street	US 101	13806	2,168	1,430	1.52	0.31	No	738	544,426
John Street (WB) (SR 68)	US 101	Work Street	13806	1,515	1,010	1.50	0.37	No	505	255,411
John Street (EB)	Magnola Drive	Sanborn Road	13821	401	540	0.74	0.46	Yes	-139	19,377
John Street (WB)	Sanborn Road	Magnola Drive	13821	257	580	0.44	0.45	No	-323	104,447
Abbott Street (EB)	John Street	Maple Street	3521	388	1,490	0.26	0.31	No	-1,102	1,214,087
Abbott Street (WB)	Maple Street	John Street	3521	669	980	0.68	0.38	Yes	-311	96,778
Abbott Street (EB)	Sanborn Road	Merrill Street	13832	635	970	0.65	0.38	Yes	-335	112,538
Abbott Street (WB)	Merrill Street	Sanborn Road	13832	778	820	0.95	0.40	Yes	-42	1,732
Blanco Road (EB)	Hitchcock Road	Davis Road	13445	1,118	1,380	0.81	0.32	Yes	-262	68,668
Blanco Road (WB)	Davis Road	Hitchcock Road	13445	690	1,170	0.59	0.34	No	-480	230,243
Blanco Road (EB)	Padre Drive	Main Street	13437	309	1,220	0.25	0.33	No	-911	830,099
Blanco Road (WB)	Main Street	Padere Drive	13437	401	1,070	0.38	0.36	No	-669	447,006
Blanco Road (EB)	Main Street	Pajaro Street	13438	564	1,370	0.41	0.32	No	-806	649,789
Blanco Road (WB)	Pajaro Street	Main Street	13438	574	900	0.64	0.38	Yes	-326	106,017
			Subtotal	**111,513**	**170,740**		**Model/Count Ratio =**		**0.65**	
							Percent Within Caltrans Maximum Deviation =		**43%**	> 75%
							Percent Root Mean Square Error =		**49%**	< 40%
							Correlation Coefficient =		**0.84**	> 0.88

Total Count	**150**
Link Within Deviation	**64**
Link Outside Deviation	**86**

Salinas Specific Plans SubArea Model Validation Results: Daily Two-Way Total Traffic Volumes

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	21,657	27,000	0.80	0.26	Yes	-5,343	28,551,501
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	21,676	27,000	0.80	0.26	Yes	-5,324	28,346,487
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	22,434	27,000	0.83	0.26	Yes	-4,566	20,845,237
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	22,662	27,000	0.84	0.26	Yes	-4,338	18,820,207
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	28,588	40,000	0.71	0.23	No	-11,412	130,243,141
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	28,736	40,000	0.72	0.23	No	-11,264	126,878,115
US 101 (SB)	SR 156	Russell Road	13337	21,270	27,000	0.79	0.26	Yes	-5,730	32,828,244
US 101 (NB)	Russell Road	SR 156	13245	21,130	27,000	0.78	0.26	Yes	-5,870	34,458,440
US 101 (SB)	Russell Road	Boronda Road	14262	22,706	30,000	0.76	0.25	Yes	-7,294	53,200,868
US 101 (NB)	Boronda Road	Russell Road	38446	28,004	30,000	0.93	0.25	Yes	-1,996	3,983,811
US 101 (SB)	Boronda Road	Laurel Drive	13333	30,547	35,000	0.87	0.24	Yes	-4,453	19,826,520
US 101 (NB)	Laurel Drive	Boronda Road	13241	28,768	35,000	0.82	0.24	Yes	-6,232	38,833,110
US 101 (SB)	Laurel Drive	Main Street (SR 183)	13332	34,403	31,515	1.09	0.25	Yes	2,888	8,338,942
US 101 (NB)	Main Street (SR 183)	Laurel Drive	13240	30,807	31,529	0.98	0.25	Yes	-722	521,973
US 101 (SB)	Main Street (SR 183)	Market Street	13331	35,247	28,500	1.24	0.26	Yes	6,747	45,524,661
US 101 (NB)	Market Street	Main Street (SR 183)	13252	31,523	28,500	1.11	0.26	Yes	3,023	9,139,477
US 101 (SB)	Market Street	John Street	13343	38,095	26,000	1.47	0.26	No	12,095	146,295,716
US 101 (NB)	John Street	Market Street	13253	29,557	26,000	1.14	0.26	Yes	3,557	12,652,869
US 101 (SB)	Airport Boulevard	Abbott Street	13827	19,381	17,750	1.09	0.30	Yes	1,631	2,660,930
US 101 (NB)	Abbott Street	Airport Boulevard	39032	17,802	17,750	1.00	0.30	Yes	52	2,673
Main Street	Russell Road	Outlook Lane	40529	3,240	7,150	0.45	0.42	No	-3,910	15,292,002
Main Street	San Juan Grade Road	Harden Parkway	13454	18,845	23,400	0.81	0.27	Yes	-4,555	20,749,880
Main Street	Rochex Avenue	Laurel Drive	13167	30,493	28,600	1.07	0.26	Yes	1,893	3,582,771
Main Street	Laurel Drive	Iris Drive	37331	23,627	29,750	0.79	0.26	Yes	-6,123	37,494,576
Main Street (SB)	Bernal Drive	US 101	40568	16,171	20,000	0.81	0.28	Yes	-3,829	14,663,690
Main Street (NB)	US 101	Bernal Drive	40568	16,378	16,350	1.00	0.30	Yes	28	767
Main Street (SR 183)	US 101	Casentini Street	35673	30,920	39,450	0.78	0.23	Yes	-8,530	72,758,440
Main Street (SR 183)	John Street	Clay Street	13180	21,680	25,650	0.85	0.26	Yes	-3,970	15,757,266
Main Street (SR 183)	Lake Street	Monterey Street	13205	38,783	32,200	1.20	0.24	Yes	6,583	43,342,397
Main Street (SR 68)	Plaza Circle	Blanco Road	13198	22,007	26,700	0.82	0.26	Yes	-4,693	22,024,253
Main Street (SR 68)	Blanco Road	Stephanie Drive	12746	28,138	32,250	0.87	0.24	Yes	-4,112	16,904,836
San Juan Grade Road	Augusta Drive	Rogge Road	9969	3,617	3,400	1.06	0.60	Yes	217	47,214
San Juan Grade Road	Van Buren Avenue	Northridge Way	795	6,250	14,700	0.43	0.31	No	-8,450	71,409,177
San Juan Grade Road	Boronda Road	Main Street	13457	2,347	10,000	0.23	0.37	No	-7,653	58,569,182
Natividad Road	Rogge Road	Boronda Road	39346	4,353	7,150	0.61	0.42	Yes	-2,797	7,821,963
Natividad Road	Boronda Road	Arcadia Way	12918	5,465	10,400	0.53	0.37	No	-4,935	24,353,096
Natividad Road	Pacheco Street	Laurel Drive	1726	12,982	31,150	0.42	0.25	No	-18,168	330,059,172
Natividad Road	Laurel Drive	Sorrentini Drive	10556	16,945	31,900	0.53	0.25	No	-14,955	223,654,433
Bernal Drive	Alpine Drive	Main Street	2021	7,904	13,550	0.58	0.32	No	-5,646	31,881,659
Sherwood Drive	Sherwood Place	Navajo Way	13800	12,449	22,150	0.56	0.27	No	-9,701	94,115,315
Sherwood Drive	Rossi Street	Cherry Drive	13799	9,281	22,900	0.41	0.27	No	-13,619	185,465,808
Independence Boulevard	Boronda Road	Danbury Street	937	2,714	6,450	0.42	0.44	No	-3,736	13,956,134
Constitution Boulevard	Boronda Road	Nantucket Boulevard	12249	3,081	6,300	0.49	0.44	No	-3,219	10,361,356
Constitution Boulevard	Natividad Medical Center	Laurel Drive	10555	15,309	15,950	0.96	0.31	Yes	-641	411,007
Sanborn Road	Freedom Parkway	Paseo Grande	13716	4,938	4,300	1.15	0.60	Yes	638	407,541
Sanborn Road	Del Monte Avenue	Garner Avenue	13720	18,940	11,250	1.68	0.35	No	7,690	59,137,477
Sanborn Road	Laurel Drive	Oregon Street	13726	38,615	24,150	1.60	0.26	No	14,465	209,237,287
Sanborn Road	Mayfair Drive	US 101	13738	26,323	26,600	0.99	0.26	Yes	-277	76,621
Williams Road	Old Stage Road	Boronda Road	2125	2,845	2,350	1.21	0.60	Yes	495	245,288
Williams Road	Badger Way	Freedom Parkway	12210	5,123	5,700	0.90	0.45	Yes	-577	333,229
Williams Road	Freedom Parkway	Del Monte Avenue	10539	10,862	9,600	1.13	0.38	Yes	1,262	1,592,040
Williams Road	Del Monte Avenue	Wiren Street	2501	11,677	17,650	0.66	0.30	No	-5,973	35,675,890
Davis Road	Boronda Road	Auto Center Circle	13451	11,777	16,200	0.73	0.30	Yes	-4,423	19,565,060
Davis Road	Westridge Parkway	Laurel Drive	13411	17,995	23,450	0.77	0.27	Yes	-5,455	29,755,247
Davis Road	Rossi Street	Market Street	13422	20,290	35,450	0.57	0.24	No	-15,160	229,813,548
Davis Road	Market Street	Central Avenue	13423	17,083	34,250	0.50	0.24	No	-17,167	294,689,189
Davis Road	Ambrose Drive	Blanco Road	13420	16,853	25,500	0.66	0.26	No	-8,647	74,769,929
Davis Road	Blanco Road	Hitchcock Road	13428	5,475	9,250	0.59	0.38	No	-3,775	14,254,042
Airport Boulevard	Moffet Street	US 101	9922	6,576	10,000	0.66	0.37	Yes	-3,424	11,721,280
Airport Boulevard	Terven Avenue	Hansen Street	4034	19,223	18,200	1.06	0.29	Yes	1,023	1,046,475
Russell Road	Paul Avenue	San Juan Grade Road	658	3,312	5,800	0.57	0.45	Yes	-2,488	6,189,915
Boronda Road	US 101	Main Street	13483	34,098	43,000	0.79	0.22	Yes	-8,902	79,253,641
Boronda Road	Dartmouth Way	McKinnon Street	13482	14,492	20,450	0.71	0.28	No	-5,958	35,494,345
Boronda Road	McKinnon Street	El Dorado Drive	13460	12,237	18,950	0.65	0.29	No	-6,713	45,066,986
Boronda Road	El Dorado Drive	Natividad Road	13481	11,746	15,100	0.78	0.31	Yes	-3,354	11,248,968
Boronda Road	Natividad Road	Independence Boulevard	39332	12,170	20,750	0.59	0.28	No	-8,580	73,622,765
Boronda Road	Independence Boulevard	Hemingway Drive	13461	9,455	18,400	0.51	0.29	No	-8,945	80,005,511
Boronda Road	Constitution Boulevard	Rider Avenue	13472	7,656	7,850	0.98	0.41	Yes	-194	37,630
Alvin Drive	Christensen Avenue	McKinnon Street	1130	8,988	10,700	0.84	0.36	Yes	-1,712	2,930,171
Alvin Drive	Marin Avenue	Natividad Road	1393	3,861	14,550	0.27	0.31	No	-10,689	114,264,914
Laurel Drive	Davis Road	US 101	13792	41,653	41,550	1.00	0.23	Yes	103	10,508
Laurel Drive	US 101	Adams Street	13771	26,241	24,500	1.07	0.26	Yes	1,741	3,032,529
Laurel Drive	Terra Drive	Loma Drive	13769	27,838	21,200	1.31	0.27	No	6,638	44,057,138
Laurel Drive	Natividad Road	Constitution Boulevard	13790	30,156	31,950	0.94	0.25	Yes	-1,794	3,219,824
Laurel Drive	Constitution Boulevard	Ranch View Lane	13780	21,772	21,000	1.04	0.27	Yes	772	596,044
Market Street (SR 68)	Davis Road	Clark Street	2283	16,541	20,000	0.83	0.28	Yes	-3,459	11,961,684
Market Street	Sherwood Drive	Peach Drive	13138	22,650	18,600	1.22	0.29	Yes	4,050	16,405,236
Market Street	Kern Street	Kings Street	2721	34,596	21,500	1.61	0.27	No	13,096	171,511,764
Central Avenue	Davis Road	University Avenue	11152	3,973	4,300	0.92	0.60	Yes	-327	106,921
Alisal Street	Blanco Road	Montecito Way	3683	12,304	8,400	1.46	0.40	No	3,904	15,243,311
Alisal Street	Front Street	Prader Street	13152	12,792	18,900	0.68	0.29	No	-6,108	37,311,877
Alisal Street	Sanborn Road	Eucalyptus Drive	3193	9,026	17,200	0.52	0.30	No	-8,174	66,816,179
Alisal Street	Bardin Road	City Limit	13755	4,036	5,650	0.71	0.45	Yes	-1,614	2,606,408
John Street (SR 68)	Front Street	Abbott Street	13815	29,161	11,100	2.63	0.35	No	18,061	326,198,952
John Street (SR 68)	Work Street	US 101	13806	39,673	24,650	1.61	0.26	No	15,023	225,693,975
John Street	Magnola Drive	Sanborn Road	13821	6,954	10,350	0.67	0.37	Yes	-3,396	11,533,615
Abbott Street	John Street	Maple Street	3521	13,875	26,000	0.53	0.26	No	-12,125	147,003,699
Abbott Street	Sanborn Road	Merrill Street	13832	17,882	17,450	1.02	0.30	Yes	432	187,025
Blanco Road	Hitchcock Road	Davis Road	13445	27,500	22,100	1.24	0.27	Yes	5,400	29,159,510
Blanco Road	Padre Drive	Main Street	13437	8,536	21,700	0.39	0.27	No	-13,164	173,289,656
Blanco Road	Main Street	Pajaro Street	13438	14,420	30,100	0.48	0.25	No	-15,680	245,857,270
Blanco Road	La Mesa	Abbott Street	13442	10,800	25,550	0.42	0.26	No	-14,750	217,565,480
			Subtotal	**1,672,963**	**1,950,244**		**Model/Count Ratio =**		**0.86**	
							Percent Within Caltrans Maximum Deviation =		**60%**	> 75%
							Percent Root Mean Square Error =		**36%**	< 40%
							Correlation Coefficient =		**0.77**	> 0.88

Total Count **92**
Link Within Deviation **55**
Link Outside Deviation **37**

Salinas Specific Plans SubArea Model Validation Results: AM Two-Way Total Traffic Volumes

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	1,800	2,280	0.79	0.27	Yes	-480	230,137
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	822	1,650	0.50	0.30	No	-828	685,499
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	1,886	2,170	0.87	0.27	Yes	-284	80,781
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	835	1,500	0.56	0.31	No	-665	442,525
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	2,230	2,930	0.76	0.26	Yes	-700	489,784
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	1,271	1,940	0.66	0.28	No	-669	447,554
US 101 (SB)	SR 156	Russell Road	13337	1,482	2,570	0.58	0.26	No	-1,088	1,183,955
US 101 (NB)	Russell Road	SR 156	13245	1,199	1,720	0.70	0.30	No	-521	271,187
US 101 (SB)	Russell Road	Boronda Road	14262	1,596	2,710	0.59	0.26	No	-1,114	1,240,572
US 101 (NB)	Boronda Road	Russell Road	38446	1,464	1,750	0.84	0.30	Yes	-286	81,659
US 101 (SB)	Boronda Road	Laurel Drive	13333	2,126	2,830	0.75	0.26	Yes	-704	495,033
US 101 (NB)	Laurel Drive	Boronda Road	13241	1,539	1,670	0.92	0.30	Yes	-131	17,069
US 101 (SB)	Laurel Drive	Main Street (SR 183)	13332	2,182	2,770	0.79	0.26	Yes	-588	345,662
US 101 (NB)	Main Street (SR 183)	Laurel Drive	13240	1,691	1,480	1.14	0.31	Yes	211	44,400
US 101 (SB)	Main Street (SR 183)	Market Street	13331	2,189	3,000	0.73	0.25	No	-811	657,955
US 101 (NB)	Market Street	Main Street (SR 183)	13252	1,726	1,550	1.11	0.31	Yes	176	30,982
US 101 (SB)	Market Street	John Street	13343	2,730	2,850	0.96	0.26	Yes	-120	14,358
US 101 (NB)	John Street	Market Street	13253	1,508	1,470	1.03	0.31	Yes	38	1,447
US 101 (SB)	Airport Boulevard	Abbott Street	13827	837	1,070	0.78	0.36	Yes	-233	54,385
US 101 (NB)	Abbott Street	Airport Boulevard	39032	1,057	1,520	0.70	0.31	Yes	-463	214,097
Main Street	Russell Road	Outlook Lane	40529	150	630	0.24	0.44	No	-480	230,209
Main Street	San Juan Grade Road	Harden Parkway	13454	976	670	1.46	0.43	No	306	93,906
Main Street	Rochex Avenue	Laurel Drive	13167	1,614	1,190	1.36	0.34	No	424	179,599
Main Street	Laurel Drive	Iris Drive	37331	1,298	1,080	1.20	0.36	Yes	218	47,491
Main Street (SB)	Bernal Drive	US 101	40568	1,115	1,570	0.71	0.31	Yes	-455	207,157
Main Street (NB)	US 101	Bernal Drive	40568	761	890	0.86	0.39	Yes	-129	16,616
Main Street (SR 183)	US 101	Casentini Street	35673	1,825	2,540	0.72	0.26	No	-715	511,902
Main Street (SR 183)	John Street	Clay Street	13181	1,398	1,020	1.37	0.37	No	378	143,179
Main Street (SR 183)	Lake Street	Monterey Street	13205	2,337	1,850	1.26	0.29	Yes	487	237,370
Main Street (SR 68)	Plaza Circle	Blanco Road	13198	1,368	2,120	0.65	0.27	No	-752	564,979
Main Street (SR 68)	Blanco Road	Stephanie Drive	12746	1,784	2,510	0.71	0.26	No	-726	526,352
San Juan Grade Road	Augusta Drive	Rogge Road	9969	218	500	0.44	0.47	No	-282	79,463
San Juan Grade Road	Van Buren Avenue	Northridge Way	795	377	710	0.53	0.42	No	-333	110,976
San Juan Grade Road	Boronda Road	Main Street	13457	125	310	0.40	0.60	Yes	-185	34,091
Natividad Road	Rogge Road	Boronda Road	39346	249	420	0.59	0.60	Yes	-171	29,359
Natividad Road	Boronda Road	Arcadia Way	12918	290	540	0.54	0.46	No	-250	62,641
Natividad Road	Pacheco Street	Laurel Drive	1726	810	1,800	0.45	0.29	No	-990	980,258
Natividad Road	Laurel Drive	Sorrentini Drive	10556	1,035	2,310	0.45	0.27	No	-1,275	1,626,614
Bernal Drive	Alpine Drive	Main Street	2021	488	1,070	0.46	0.36	No	-582	338,658
Sherwood Drive	Rossi Street	Cherry Drive	13799	497	1,880	0.26	0.29	No	-1,383	1,912,443
Independence Boulevard	Boronda Road	Danbury Street	937	126	1,200	0.11	0.33	No	-1,074	1,152,714
Constitution Boulevard	Boronda Road	Nantucket Boulevard	12249	176	270	0.65	0.60	Yes	-94	8,807
Constitution Boulevard	Natividad Medical Center	Laurel Drive	10555	850	1,490	0.57	0.31	No	-640	409,683
Sanborn Road	Freedom Parkway	Paseo Grande	13716	269	1,090	0.25	0.36	No	-821	673,697
Sanborn Road	Del Monte Avenue	Garner Avenue	13720	1,139	760	1.50	0.41	No	379	143,588
Sanborn Road	Laurel Drive	Oregon Street	13726	2,149	1,090	1.97	0.36	No	1,059	1,121,830
Sanborn Road	Mayfair Drive	US 101	13738	1,607	1,480	1.09	0.31	Yes	127	16,023
Williams Road	Old Stage Road	Boronda Road	2125	174	140	1.24	0.60	Yes	34	1,139
Williams Road	Freedom Parkway	Del Monte Avenue	10539	591	1,200	0.49	0.33	No	-609	370,322
Williams Road	Del Monte Avenue	Wiren Street	2501	640	1,230	0.52	0.33	No	-590	348,291
Davis Road	Boronda Road	Auto Center Circle	13451	586	1,080	0.54	0.36	No	-494	244,361
Davis Road	Westridge Parkway	Laurel Drive	13411	905	930	0.97	0.38	Yes	-25	605
Davis Road	Market Street	Central Avenue	13423	999	2,760	0.36	0.26	No	-1,761	3,099,430
Davis Road	Ambrose Drive	Blanco Road	13420	1,007	1,820	0.55	0.29	No	-813	661,067
Davis Road	Blanco Road	Hitchcock Road	13428	289	750	0.38	0.41	No	-461	212,837
Airport Boulevard	Moffet Street	US 101	9922	405	840	0.48	0.40	No	-435	189,516
Airport Boulevard	Terven Avenue	Hansen Street	4034	1,227	1,130	1.09	0.35	Yes	97	9,464
Russell Road	Paul Avenue	San Juan Grade Road	658	172	920	0.19	0.38	No	-748	559,635
Boronda Road	US 101	Main Street	13483	2,137	2,960	0.72	0.26	No	-823	677,219
Boronda Road	Dartmouth Way	McKinnon Street	13482	759	1,720	0.44	0.30	No	-961	922,669
Boronda Road	McKinnon Street	El Dorado Drive	13460	644	1,220	0.53	0.33	No	-576	332,237
Boronda Road	El Dorado Drive	Natividad Road	13480	628	720	0.87	0.42	Yes	-92	8,496
Boronda Road	Natividad Road	Independence Boulevard	39332	627	2,030	0.31	0.28	No	-1,403	1,969,449
Boronda Road	Independence Boulevard	Hemingway Drive	13461	500	1,230	0.41	0.33	No	-730	532,499
Boronda Road	Constitution Boulevard	Rider Avenue	13472	420	590	0.71	0.45	Yes	-170	28,824
Alvin Drive	Marin Avenue	Natividad Road	1393	217	610	0.36	0.44	No	-393	154,606
Laurel Drive	Davis Road	US 101	13792	2,289	2,060	1.11	0.28	Yes	229	52,408
Laurel Drive	US 101	Adams Street	13771	1,526	1,710	0.89	0.30	Yes	-184	33,686
Laurel Drive	Natividad Road	Constitution Boulevard	13790	1,626	2,170	0.75	0.27	Yes	-544	295,412
Laurel Drive	Constitution Boulevard	Ranch View Lane	13780	1,168	1,150	1.02	0.34	Yes	18	326
Market Street	Davis Road	Clark Street	2283	996	1,240	0.80	0.33	Yes	-244	59,485
Market Street	Sherwood Drive	Peach Drive	13138	1,252	1,060	1.18	0.36	Yes	192	36,691
Market Street	Kern Street	Kings Street	2721	2,054	970	2.12	0.38	No	1,084	1,174,868
Central Avenue	Davis Road	University Avenue	11152	178	460	0.39	0.60	No	-282	79,750
Alisal Street	Blanco Road	Montecito Way	3683	624	870	0.72	0.39	Yes	-246	60,606
Alisal Street	Front Street	Prader Street	13152	721	1,220	0.59	0.33	No	-499	249,489
Alisal Street	Sanborn Road	Eucalyptus Drive	3193	492	690	0.71	0.43	Yes	-198	39,177
John Street	Front Street	Abbott Street	13815	1,654	1,210	1.37	0.33	No	444	197,102
John Street	Work Street	US 101	13806	2,301	2,140	1.08	0.27	Yes	161	25,973
John Street	Magnola Drive	Sanborn Road	13821	375	760	0.49	0.41	No	-385	148,266
Abbott Street	John Street	Maple Street	3521	827	1,660	0.50	0.30	No	-833	694,333
Abbott Street	Sanborn Road	Merrill Street	13832	1,164	1,540	0.76	0.31	Yes	-376	141,575
Blanco Road	Hitchcock Road	Davis Road	13445	1,611	2,050	0.79	0.28	Yes	-439	192,771
Blanco Road	Padre Drive	Main Street	13437	511	1,880	0.27	0.29	No	-1,369	1,873,651
Blanco Road	Main Street	Pajaro Street	13438	902	2,260	0.40	0.27	No	-1,358	1,843,787
			Subtotal	**92,401**	**125,400**			**Model/Count Ratio =**	**0.74**	
								Percent Within Caltrans Maximum Deviation =	**44%**	> 75%
								Percent Root Mean Square Error =	**44%**	< 40%
								Correlation Coefficient =	**0.72**	> 0.88

Total Count	**85**
Link Within Deviation	**37**
Link Outside Deviation	**48**

Salinas Specific Plans SubArea Model Validation Results: PM Two-Way Total Traffic Volumes

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	1,069	2,140	0.50	0.27	No	-1,071	1,146,862
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	2,111	2,270	0.93	0.27	Yes	-159	25,392
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	1,089	1,940	0.56	0.28	No	-851	724,788
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	2,232	2,150	1.04	0.27	Yes	82	6,669
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	1,634	2,580	0.63	0.26	No	-946	894,617
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	2,548	3,010	0.85	0.25	Yes	-462	213,747
US 101 (SB)	SR 156	Russell Road	13337	1,463	2,120	0.69	0.27	No	-657	431,808
US 101 (NB)	Russell Road	SR 156	13245	1,780	2,470	0.72	0.26	No	-690	476,003
US 101 (SB)	Russell Road	Boronda Road	14262	1,617	2,820	0.57	0.26	No	-1,203	1,446,485
US 101 (NB)	Boronda Road	Russell Road	38446	2,599	2,960	0.88	0.26	Yes	-361	130,627
US 101 (SB)	Boronda Road	Laurel Drive	13333	2,323	2,430	0.96	0.26	Yes	-107	11,364
US 101 (NB)	Laurel Drive	Boronda Road	13241	2,566	3,020	0.85	0.25	Yes	-454	205,990
US 101 (SB)	Laurel Drive	Main Street/SR 183	13332	2,820	2,180	1.29	0.27	No	640	409,201
US 101 (NB)	Main Street/SR 183	Laurel Drive	13240	2,710	3,040	0.89	0.25	Yes	-330	108,672
US 101 (SB)	Main Street/SR 183	Market Street	13331	2,936	2,280	1.29	0.27	No	656	430,696
US 101 (NB)	Market Street	Main Street/SR 183	13252	2,684	3,120	0.86	0.25	Yes	-436	190,486
US 101 (SB)	Market Street	John Street	13343	2,740	2,120	1.29	0.27	No	620	383,983
US 101 (NB)	John Street	Market Street	13253	2,623	2,790	0.94	0.26	Yes	-167	27,807
US 101 (SB)	Airport Boulevard	Abbott Street	13827	1,614	1,760	0.92	0.30	Yes	-146	21,345
US 101 (NB)	Abbott Street	Airport Boulevard	39032	1,101	1,900	0.58	0.28	No	-799	637,895
Main Street	Russell Road	Outlook Lane	40529	333	550	0.61	0.45	Yes	-217	47,006
Main Street	San Juan Grade Road	Harden Parkway	13454	1,749	1,540	1.14	0.31	Yes	209	43,581
Main Street	Rochex Avenue	Laurel Drive	13167	2,704	2,360	1.15	0.27	Yes	344	118,457
Main Street	Laurel Drive	Iris Drive	37331	2,176	2,190	0.99	0.27	Yes	-14	192
Main Street (SB)	Bernal Drive	US 101	40568	1,312	1,510	0.87	0.31	Yes	-198	39,222
Main Street (SB)	US 101	Bernal Dri ve	40568	1,623	2,030	0.80	0.28	Yes	-407	165,873
Main Street (SR 183)	US 101	Casentini Street	35673	2,840	3,340	0.85	0.24	Yes	-500	249,985
Main Street (SR 183)	John Street	Clay Street	13181	2,236	1,760	1.27	0.30	Yes	476	226,412
Main Street (SR 183)	Lake Street	Monterey Street	13205	3,471	3,050	1.14	0.25	Yes	421	177,567
Main Street (SR 68)	Plaza Circle	Blanco Road	13198	1,998	3,380	0.59	0.24	No	-1,382	1,910,555
Main Street (SR 68)	Blanco Road	Stephanie Drive	12746	2,512	3,540	0.71	0.24	No	-1,028	1,055,757
San Juan Grade Road	Augusta Drive	Rogge Road	9969	343	660	0.52	0.43	No	-317	100,594
San Juan Grade Road	Van Buren Avenue	Northridge Way	795	504	1,070	0.47	0.36	No	-566	319,953
San Juan Grade Road	Boronda Road	Main Street	13457	254	920	0.28	0.38	No	-666	443,672
Natividad Road	Rogge Road	Boronda Road	39346	377	640	0.59	0.44	Yes	-263	69,028
Natividad Road	Boronda Road	Arcadia Way	12918	445	970	0.46	0.38	No	-525	275,331
Natividad Road	Pacheco Street	Laurel Drive	1726	1,165	2,270	0.51	0.27	No	-1,105	1,220,760
Natividad Road	Laurel Drive	Sorrentini Drive	10556	1,447	2,640	0.55	0.26	No	-1,193	1,423,416
Bernal Drive	Alpine Drive	Main Street	2021	664	1,410	0.47	0.31	No	-746	556,413
Sherwood Drive	Rossi Street	Cherry Drive	13799	861	2,370	0.36	0.27	No	-1,509	2,278,259
Independence Boulevard	Boronda Road	Danbury Street	937	209	700	0.30	0.42	No	-491	240,974
Constitution Boulevard	Boronda Road	Nantucket Boulevard	12249	266	390	0.68	0.60	Yes	-124	15,369
Constitution Boulevard	Natividad Medical Center	Laurel Drive	10555	1,293	2,100	0.62	0.27	No	-807	651,561
Sanborn Road	Freedom Parkway	Paseo Grande	13716	377	2,110	0.18	0.27	No	-1,733	3,003,160
Sanborn Road	Del Monte Avenue	Garner Avenue	13720	1,385	1,580	0.88	0.31	Yes	-195	37,947
Sanborn Road	Laurel Drive	Oregon Street	13726	3,237	2,110	1.53	0.27	No	1,127	1,269,511
Sanborn Road	Mayfair Drive	US 101	13738	2,216	2,040	1.09	0.28	Yes	176	30,967
Williams Road	Old Stage Road	Boronda Road	2125	244	460	0.53	0.60	Yes	-216	46,441
Williams Road	Freedom Parkway	Del Monte Avenue	10539	889	830	1.07	0.40	Yes	59	3,451
Williams Road	Del Monte Avenue	Wiren Street	2501	954	1,160	0.82	0.34	Yes	-206	42,318
Davis Road	Boronda Road	Auto Center Circle	13451	1,112	1,860	0.60	0.29	No	-748	560,117
Davis Road	Westridge Parkway	Laurel Drive	13411	1,670	2,350	0.71	0.27	No	-680	462,901
Davis Road	Rossi Street	Market Street	13422	1,737	2,970	0.58	0.26	No	-1,233	1,521,123
Davis Road	Market Street	Central Avenue	13423	1,405	3,820	0.37	0.23	No	-2,415	5,830,476
Davis Road	Ambrose Drive	Blanco Road	13420	1,355	2,640	0.51	0.26	No	-1,285	1,651,641
Davis Road	Blanco Road	Hitchcock Road	13428	559	930	0.60	0.38	No	-371	137,875
Airport Boulevard	Moffet Street	US 101	9922	715	1,100	0.65	0.35	No	-385	148,414
Airport Boulevard	Terven Avenue	Hansen Street	4034	1,871	1,370	1.37	0.32	No	501	250,545
Russell Road	Paul Avenue	San Juan Grade Road	658	313	690	0.45	0.43	No	-377	142,070
Boronda Road	US 101	Main Street	13483	2,967	4,190	0.71	0.23	No	-1,223	1,496,735
Boronda Road	Dartmouth Way	McKinnon Street	13482	1,137	2,000	0.57	0.28	No	-863	745,292
Boronda Road	McKinnon Street	El Dorado Drive	13460	955	1,550	0.62	0.31	No	-595	354,304
Boronda Road	El Dorado Drive	Natividad Road	13480	959	1,370	0.70	0.32	Yes	-411	168,671
Boronda Road	Natividad Road	Independence Boulevard	39332	958	2,070	0.46	0.28	No	-1,112	1,237,489
Boronda Road	Independence Boulevard	Hemingway Drive	13461	748	1,450	0.52	0.31	No	-702	492,149
Boronda Road	Constitution Boulevard	Rider Avenue	13472	603	1,020	0.59	0.37	No	-417	174,270
Alvin Drive	Marin Avenue	Natividad Road	1393	427	950	0.45	0.38	No	-523	273,882
Laurel Drive	Davis Road	US 101	13792	3,720	3,550	1.05	0.24	Yes	170	29,032
Laurel Drive	US 101	Adams Street	13771	2,208	3,140	0.70	0.25	No	-932	869,219
Laurel Drive	Natividad Road	Constitution Boulevard	13790	2,387	3,290	0.73	0.24	No	-903	815,688
Laurel Drive	Constitution Boulevard	Ranch View Lane	13780	1,777	1,650	1.08	0.30	Yes	127	16,003
Market Street	Davis Road	Clark Street	2283	1,342	1,300	1.03	0.32	Yes	42	1,756
Market Street	Sherwood Drive	Peach Drive	13138	1,871	1,410	1.33	0.31	No	461	212,562
Market Street	Kern Street	Kings Street	2721	2,709	1,660	1.63	0.30	No	1,049	1,100,894
Central Avenue	Davis Road	University Avenue	11152	296	360	0.82	0.60	Yes	-64	4,144
Alisal Street	Blanco Road	Montecito Way	3683	975	1,010	0.97	0.37	Yes	-35	1,237
Alisal Street	Front Street	Prader Street	13152	1,043	1,640	0.64	0.30	No	-597	356,529
Alisal Street	Sanborn Road	Eucalyptus Drive	3193	699	1,320	0.53	0.32	No	-621	385,805
John Street	Front Street	Abbott Street	13815	2,592	2,370	1.09	0.27	Yes	222	49,327
John Street	Work Street	US 101	13806	3,515	2,440	1.44	0.26	No	1,075	1,155,558
John Street	Magnola Drive	Sanborn Road	13821	622	1,120	0.56	0.35	No	-498	248,347
Abbott Street	John Street	Maple Street	3521	1,303	2,470	0.53	0.26	No	-1,167	1,362,705
Abbott Street	Sanborn Road	Merrill Street	13832	1,616	1,790	0.90	0.30	Yes	-174	30,310
Blanco Road	Hitchcock Road	Davis Road	13445	2,098	2,550	0.82	0.26	Yes	-452	203,983
Blanco Road	Padre Drive	Main Street	13437	787	2,290	0.34	0.27	No	-1,503	2,258,827
Blanco Road	Main Street	Pajaro Street	13438	1,263	2,270	0.56	0.27	No	-1,007	1,014,302
			Subtotal	**134,653**	**170,740**			**Model/Count Ratio =**	**0.79**	
								Percent Within Caltrans Maximum Deviation =	**41%**	> 75%
								Percent Root Mean Square Error =	**38%**	< 40%
								Correlation Coefficient =	**0.74**	> 0.88

Total Count	**86**
Link Within Deviation	**35**
Link Outside Deviation	**51**

Salinas Specific Plans SubArea Model Validation Results: AM Directional Traffic Volumes

	Segment		Model	Model	Traffic	Model	Maximum	Within	Model	Difference
Roadway	From	To	Link ID	Volume	Count	/Count	Deviation	Deviation	- Count	Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	1,800	2,280	0.79	0.27	Yes	-480	230,137
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	822	1,650	0.50	0.30	No	-828	685,499
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	1,886	2,170	0.87	0.27	Yes	-284	80,781
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	835	1,500	0.56	0.31	No	-665	442,525
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	2,230	2,930	0.76	0.26	Yes	-700	489,784
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	1,271	1,940	0.66	0.28	No	-669	447,554
US 101 (SB)	SR 156	Russell Road	13337	1,482	2,570	0.58	0.26	No	-1,088	1,183,955
US 101 (NB)	Russell Road	SR 156	13245	1,199	1,720	0.70	0.30	No	-521	271,187
US 101 (SB)	Russell Road	Boronda Road	14262	1,596	2,710	0.59	0.26	No	-1,114	1,240,572
US 101 (NB)	Boronda Road	Russell Road	38446	1,464	1,750	0.84	0.30	Yes	-286	81,659
US 101 (SB)	Boronda Road	Laurel Drive	13333	2,126	2,830	0.75	0.26	Yes	-704	495,033
US 101 (NB)	Laurel Drive	Boronda Road	13241	1,539	1,670	0.92	0.30	Yes	-131	17,069
US 101 (SB)	Laurel Drive	Main Street/SR 183	13332	2,182	2,770	0.79	0.26	Yes	-588	345,662
US 101 (NB)	Main Street/SR 183	Laurel Drive	13240	1,691	1,480	1.14	0.31	Yes	211	44,400
US 101 (SB)	Main Street/SR 183	Market Street	13331	2,189	3,000	0.73	0.25	No	-811	657,955
US 101 (NB)	Market Street	Main Street/SR 183	13252	1,726	1,550	1.11	0.31	Yes	176	30,982
US 101 (SB)	Market Street	John Street	13343	2,730	2,850	0.96	0.26	Yes	-120	14,358
US 101 (NB)	John Street	Market Street	13253	1,508	1,470	1.03	0.31	Yes	38	1,447
US 101 (SB)	Airport Boulevard	Abbott Street	13827	837	1,070	0.78	0.36	Yes	-233	54,385
US 101 (NB)	Abbott Street	Airport Boulevard	39032	1,057	1,520	0.70	0.31	Yes	-463	214,097
Main Street (SB)	Russell Road	Outlook Lane	40529	86	440	0.20	0.60	No	-354	125,163
Main Street (NB)	Outlook Lane	Russell Road	40529	64	190	0.34	0.60	No	-126	15,880
Main Street (SB)	San Juan Grade Road	Harden Parkway	13454	381	340	1.12	0.60	Yes	41	1,679
Main Street (NB)	Harden Parkway	San Juan Grade Road	13454	595	330	1.80	0.60	No	265	70,474
Main Street (SB)	Rochex Avenue	Laurel Drive	13167	848	680	1.25	0.43	Yes	168	28,322
Main Street (NB)	Laurel Drive	Rochex Avenue	13167	766	510	1.50	0.47	No	256	65,281
Main Street (SB)	Laurel Drive	Iris Drive	37331	784	650	1.21	0.43	Yes	134	17,878
Main Street (NB)	Iris Drive	Laurel Drive	37331	514	430	1.20	0.60	Yes	84	7,093
Main Street (SB)	Bernal Drive	US 101	40568	1,115	1,570	0.71	0.31	Yes	-455	207,157
Main Street (NB)	US 101	Bernal Drive	40568	761	890	0.86	0.39	Yes	-129	16,616
Main Street (SB) (SR 183)	US 101	Casentini Street	35673	1,099	1,710	0.64	0.30	No	-611	372,810
Main Street (NB) (SR 183)	Casentini	US 101	35673	725	830	0.87	0.40	Yes	-105	11,002
Main Street (SB) (SR 183)	John Street	Clay Street	13181	900	520	1.73	0.47	No	380	144,277
Main Street (NB) (SR 183)	Clay Street	John Street	13181	499	500	1.00	0.47	Yes	-1	2
Main Street (SB) (SR 183)	Lake Street	Monterey Street	13205	1,470	1,350	1.09	0.32	Yes	120	14,385
Main Street (NB) (SR 183)	Monterey Street	Lake Street	13205	867	500	1.73	0.47	No	367	134,886
Main Street (SB) (SR 68)	Plaza Circle	Blanco Road	13198	791	770	1.03	0.41	Yes	21	426
Main Street (NB) (SR 68)	Blanco Road	Plaza Circle	13198	578	1,350	0.43	0.32	No	-772	596,415
Main Street (SB) (SR 68)	Blanco Road	Stephanie Drive	12746	990	900	1.10	0.38	Yes	90	8,052
Main Street (NB) (SR 68)	Stephanie Drive	Blanco Road	12746	795	1,610	0.49	0.30	No	-815	664,604
San Juan Grade Road (SB)	Augusta Drive	Rogge Road	9969	125	300	0.42	0.60	Yes	-175	30,617
San Juan Grade Road (NB)	Rogge Road	Augusta Drive	9969	93	200	0.47	0.60	Yes	-107	11,431
San Juan Grade Road (SB)	Van Buren Avenue	Northridge Way	795	312	490	0.64	0.60	Yes	-178	31,788
San Juan Grade Road (NB)	Northridge Way	Van Buren Avenue	795	65	220	0.30	0.60	No	-155	23,975
San Juan Grade Road (SB)	Boronda Road	Main Street	13457	76	180	0.42	0.60	Yes	-104	10,714
San Juan Grade Road (NB)	Main Street	Boronda Road	13457	49	130	0.38	0.60	No	-81	6,582
Natividad Road (SB)	Rogge Road	Boronda Road	39346	108	190	0.57	0.60	Yes	-82	6,779
Natividad Road (NB)	Boronda Road	Rogge Road	39346	141	230	0.61	0.60	Yes	-89	7,923
Natividad Road (SB)	Boronda Road	Arcadia Way	12918	118	300	0.39	0.60	No	-182	33,151
Natividad Road (NB)	Arcadia Way	Boronda Road	12918	172	240	0.72	0.60	Yes	-68	4,653
Natividad Road (SB)	Pacheco Street	Laurel Drive	1726	547	990	0.55	0.38	No	-443	196,528
Natividad Road (NB)	Laurel Drive	Pacheco Street	1726	263	810	0.32	0.40	No	-547	298,952
Natividad Road (SB)	Laurel Drive	Sorrentini Drive	10556	681	1,500	0.45	0.31	No	-819	671,394
Natividad Road (NB)	Sorrentini Drive	Laurel Drive	10556	354	810	0.44	0.40	No	-456	207,937
Bernal Drive (SB)	Alpine Drive	Main Street	2021	331	710	0.47	0.42	No	-379	143,911
Bernal Drive (NB)	Main Street	Alpine	2021	157	360	0.44	0.60	Yes	-203	41,041
Sherwood Drive (SB)	Rossi Street	Cherry Drive	13799	247	1,220	0.20	0.33	No	-973	946,755
Sherwood Drive (NB)	Cherry Drive	Rossi Street	13799	250	660	0.38	0.43	No	-410	168,016
Independence Boulevard (SB)	Boronda Road	Danbury Street	937	57	500	0.11	0.47	No	-443	196,481
Independence Boulevard (NB)	Danbury Street	Boronda Road	937	70	700	0.10	0.42	No	-630	397,384
Constitution Boulevard (SB)	Boronda Road	Nantucket Boulevard	12249	57	120	0.47	0.60	Yes	-63	4,031
Constitution Boulevard (NB)	Nantucket Boulevard	Boronda Road	12249	120	150	0.80	0.60	Yes	-30	922
Constitution Boulevard (SB)	Natividad Medical Center	Laurel Drive	10555	490	980	0.50	0.38	No	-490	240,343
Constitution Boulevard (NB)	Laurel Drive	Natividad Medical Center	10555	360	510	0.71	0.47	Yes	-150	22,445
Sanborn Road (SB)	Freedom Parkway	Paseo Grande	13716	133	430	0.31	0.60	No	-297	88,386
Sanborn Road (NB)	Paseo Grande	Freedom Parkway	13716	137	660	0.21	0.43	No	-523	274,044
Sanborn Road (SB)	Del Monte Avenue	Garner Avenue	13720	922	530	1.74	0.46	No	392	153,757
Sanborn Road (NB)	Garner Avenue	Del Monte Avenue	13720	217	230	0.94	0.60	Yes	-13	174
Sanborn Road (SB)	Laurel Drive	Oregon Street	13726	1,581	430	3.68	0.60	No	1,151	1,324,530
Sanborn Road (NB)	Oregon Street	Laurel Drive	13726	568	660	0.86	0.43	Yes	-92	8,412
Sanborn Road (SB)	Mayfair Drive	US 101	13738	1,151	800	1.44	0.40	No	351	122,852
Sanborn Road (NB)	US 101	Mayfair Drive	13738	456	680	0.67	0.43	Yes	-224	50,140
Williams Road (SB)	Old Stage Road	Boronda Road	2125	84	70	1.20	0.60	Yes	14	204
Williams Road (NB)	Boronda Road	Old Stage Road	2125	89	70	1.28	0.60	Yes	19	380
Williams Road (SB)	Freedom Parkway	Del Monte Avenue	10539	373	640	0.58	0.44	Yes	-267	71,532
Williams Road (NB)	Del Monte Avenue	Freedom Parkway	10539	219	560	0.39	0.45	No	-341	116,339
Williams Road (SB)	Del Monte Avenue	Wiren Street	2501	410	680	0.60	0.43	Yes	-270	72,955
Williams Road (NB)	Wiren Street	Del Monte Avenue	2501	230	550	0.42	0.45	No	-320	102,438
Davis Road (SB)	Boronda Road	Auto Center Circle	13451	395	780	0.51	0.41	No	-385	148,321
Davis Road (NB)	Auto Center Circle	Boronda Road	13451	191	300	0.64	0.60	Yes	-109	11,926
Davis Road (SB)	Westridge Parkway	Laurel Drive	13411	270	490	0.55	0.60	Yes	-220	48,301
Davis Road (NB)	Laurel Drive	Westridge Parkway	13411	635	440	1.44	0.60	Yes	195	38,093
Davis Road (SB)	Market Street	Central Avenue	13423	606	1,700	0.36	0.30	No	-1,094	1,197,456
Davis Road (NB)	Central Avenue	Market Street	13423	394	1,060	0.37	0.36	No	-666	443,871
Davis Road (SB)	Ambrose Drive	Blanco Road	13420	658	1,020	0.64	0.37	Yes	-362	131,164
Davis Road (NB)	Blanco Road	Ambrose Drive	13420	349	800	0.44	0.40	No	-451	203,306
Davis Road (SB)	Blanco Road	Hitchcock Road	13428	165	360	0.46	0.60	Yes	-195	38,186
Davis Road (NB)	Hitchcock Road	Blanco Road	13428	124	390	0.32	0.60	No	-266	70,720
Airport Boulevard (SB)	Moffet Street	US 101	9922	127	310	0.41	0.60	Yes	-183	33,439
Airport Boulevard (NB)	US 101	Moffet Street	9922	278	530	0.52	0.46	No	-252	63,742
Airport Boulevard (SB)	Terven Avenue	Hansen Street	4034	863	840	1.03	0.40	Yes	23	550
Airport Boulevard (NB)	Hansen Street	Terven Avenue	4034	364	290	1.25	0.60	Yes	74	5,452
Russell Road (EB)	Paul Avenue	San Juan Grade Road	658	109	450	0.24	0.60	No	-341	116,582
Russell Road (WB)	San Juan Grade Road	Paul Avenue	658	63	470	0.13	0.60	No	-407	165,361

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
Boronda Road (EB)	US 101	Main Street	13483	737	1,140	0.65	0.35	No	-403	162,303
Boronda Road (WB)	Main Street	US 101	13483	1,400	1,820	0.77	0.29	Yes	-420	176,454
Boronda Road (EB)	Dartmouth Way	McKinnon Street	13482	206	750	0.27	0.41	No	-544	295,669
Boronda Road (WB)	McKinnon Street	Dartmouth Way	13482	553	970	0.57	0.38	No	-417	173,724
Boronda Road (EB)	McKinnon Street	El Dorado Drive	13460	175	500	0.35	0.47	No	-325	105,627
Boronda Road (WB)	El Dorado Drive	McKinnon Street	13460	469	720	0.65	0.42	Yes	-251	63,201
Boronda Road (EB)	El Dorado Drive	Natividad Road	13480	196	320	0.61	0.60	Yes	-124	15,340
Boronda Road (WB)	Natividad Road	El Dorado Drive	13480	432	400	1.08	0.60	Yes	32	1,004
Boronda Road (EB)	Natividad Road	Independence Boulevard	39332	195	930	0.21	0.38	No	-735	539,903
Boronda Road (WB)	Independence Boulevard	Natividad Road	39332	431	1,100	0.39	0.35	No	-669	447,012
Boronda Road (EB)	Independence Boulevard	Hemingway Drive	13461	138	630	0.22	0.44	No	-492	241,591
Boronda Road (WB)	Hemingway Drive	Independence Boulevard	13461	362	600	0.60	0.44	Yes	-238	56,742
Boronda Road (EB)	Constitution Boulevard	Rider Avenue	13472	158	310	0.51	0.60	Yes	-152	23,041
Boronda Road (WB)	Rider Avenue	Constitution Boulevard	13472	262	280	0.94	0.60	Yes	-18	323
Alvin Drive (WB)	Marin Avenue	Natividad Road	1393	124	350	0.35	0.60	No	-226	51,188
Alvin Drive (EB)	Natividad Road	Marin Avenue	1393	93	260	0.36	0.60	No	-167	27,873
Laurel Drive (EB)	Davis Road	US 101	13792	869	940	0.92	0.38	Yes	-71	5,098
Laurel Drive (WB)	US 101	Davis Road	13792	1,420	1,120	1.27	0.35	Yes	300	90,196
Laurel Drive (EB)	US 101	Adams Street	13771	535	700	0.76	0.42	Yes	-165	27,152
Laurel Drive (WB)	Adams Street	US 101	13771	991	1,010	0.98	0.37	Yes	-19	352
Laurel Drive (EB)	Natividad Road	Constitution Boulevard	13790	616	820	0.75	0.40	Yes	-204	41,682
Laurel Drive (WB)	Constitution Boulevard	Natividad Road	13790	1,011	1,350	0.75	0.32	Yes	-339	115,163
Laurel Drive (EB)	Constitution Boulevard	Ranch View Lane	13780	376	590	0.64	0.45	Yes	-214	45,685
Laurel Drive (WB)	Ranch View Lane	Constitution Boulevard	13780	792	560	1.41	0.45	Yes	232	53,730
Market Street (EB) (SR 68)	Davis Road	Clark Street	2283	368	700	0.53	0.42	No	-332	110,459
Market Street (WB) (SR 68)	Clark Street	Davis Road	2283	628	540	1.16	0.46	Yes	88	7,825
Market Street (EB)	Sherwood Drive	Peach Drive	13138	497	420	1.18	0.60	Yes	77	5,899
Market Street (WB)	Peach Drive	Sherwood Drive	13138	755	640	1.18	0.44	Yes	115	13,167
Market Street (EB)	Kern Street	Kings Street	2721	463	360	1.29	0.60	Yes	103	10,672
Market Street (WB)	Kings Street	Kern Street	2721	1,591	610	2.61	0.44	No	981	961,587
Central Avenue (EB)	Davis Road	University Avenue	11152	93	340	0.27	0.60	No	-247	61,021
Central Avenue (WB)	University Avenue	Davis Road	11152	85	120	0.71	0.60	Yes	-35	1,251
Alisal Street (EB)	Blanco Road	Montecito Way	3683	171	410	0.42	0.60	Yes	-239	56,976
Alisal Street (WB)	Montecito Way	Blanco Road	3683	453	460	0.98	0.60	Yes	-7	56
Alisal Street (EB)	Front Street	Prader Street	13152	138	580	0.24	0.45	No	-442	195,619
Alisal Street (WB)	Prader Street	Front Street	13152	583	640	0.91	0.44	Yes	-57	3,272
Alisal Street (EB)	Sanborn Road	Eucalyptus Drive	3193	113	270	0.42	0.60	Yes	-157	24,744
Alisal Street (WB)	Eucalyptus Drive	Sanborn Road	3193	379	420	0.90	0.60	Yes	-41	1,651
John Street (EB) (SR 68)	Front Street	Abbott Street	13815	557	490	1.14	0.60	Yes	67	4,493
John Street (WB) (SR 68)	Abbott Street	Front Street	13815	1,097	720	1.52	0.42	No	377	142,080
John Street (EB) (SR 68)	Work Street	US 101	13806	702	560	1.25	0.45	Yes	142	20,046
John Street (WB) (SR 68)	US 101	Work Street	13806	1,600	1,580	1.01	0.31	Yes	20	383
John Street (EB)	Magnola Drive	Sanborn Road	13821	130	290	0.45	0.60	Yes	-160	25,703
John Street (WB)	Sanborn Road	Magnola Drive	13821	245	470	0.52	0.60	Yes	-225	50,505
Abbott Street (EB)	John Street	Maple Street	3521	571	1,170	0.49	0.34	No	-599	358,293
Abbott Street (WB)	Maple Street	John Street	3521	255	490	0.52	0.60	Yes	-235	55,080
Abbott Street (EB)	Sanborn Road	Merrill Street	13832	760	610	1.25	0.44	Yes	150	22,511
Abbott Street (WB)	Merrill Street	Sanborn Road	13832	404	930	0.43	0.38	No	-526	276,995
Blanco Road (EB)	Hitchcock Road	Davis Road	13445	529	970	0.55	0.38	No	-441	194,357
Blanco Road (WB)	Davis Road	Hitchcock Road	13445	1,082	1,080	1.00	0.36	Yes	2	3
Blanco Road (EB)	Padre Drive	Main Street	13437	287	1,000	0.29	0.37	No	-713	508,136
Blanco Road (WB)	Main Street	Padere Drive	13437	224	880	0.25	0.39	No	-656	430,306
Blanco Road (EB)	Main Street	Pajaro Street	13438	492	1,250	0.39	0.33	No	-758	575,153
Blanco Road (WB)	Pajaro Street	Main Street	13438	411	1,010	0.41	0.37	No	-599	359,367
			Subtotal	**92,401**	**125,400**		**Model/Count Ratio =**		**0.74**	
					Percent Within Caltrans Maximum Deviation =				**56%**	> 75%
					Percent Root Mean Square Error =				**49%**	< 40%
					Correlation Coefficient =				**0.84**	> 0.88

Total Count	**148**
Link Within Deviation	**83**
Link Outside Deviation	**65**

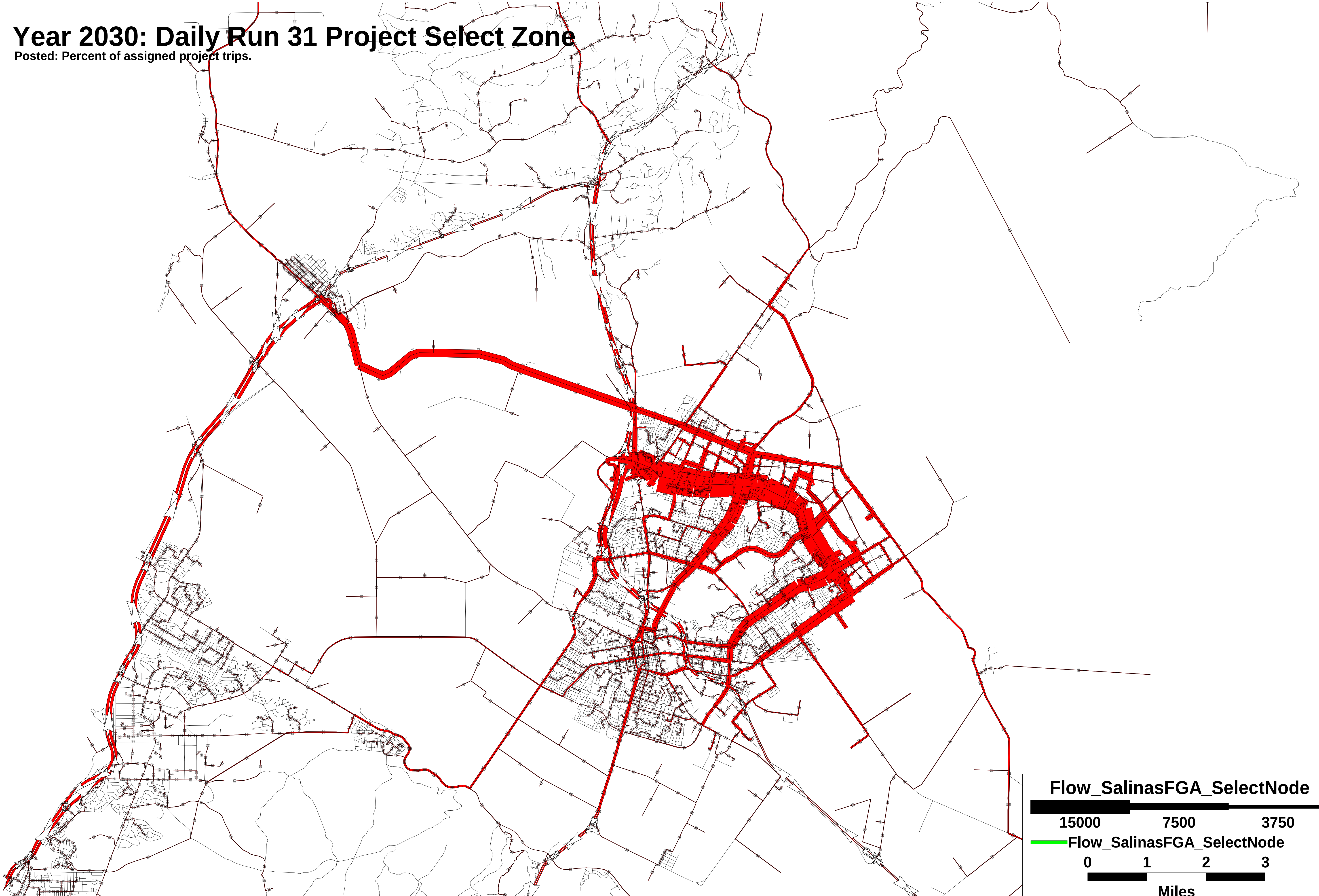
Salinas Specific Plans SubArea Model Validation Results: PM Directional Traffic Volumes

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
US 101 (SB)	Dunbarton Road	Echo Valley Road	14190	1,069	2,140	0.50	0.27	No	-1,071	1,146,862
US 101 (NB)	Echo Valley Road	Dunbarton Road	14189	2,111	2,270	0.93	0.27	Yes	-159	25,392
US 101 (SB)	Crazy Horse Canyon Road	San Miguel Canyon Road	14204	1,089	1,940	0.56	0.28	No	-851	724,788
US 101 (NB)	San Miguel Canyon Road	Crazy Horse Canyon Road	14201	2,232	2,150	1.04	0.27	Yes	82	6,669
US 101 (SB)	San Miguel Canyon Road	SR 156	13338	1,634	2,580	0.63	0.26	No	-946	894,617
US 101 (NB)	SR 156	San Miguel Canyon Road	14212	2,548	3,010	0.85	0.25	Yes	-462	213,747
US 101 (SB)	SR 156	Russell Road	13337	1,463	2,120	0.69	0.27	No	-657	431,808
US 101 (NB)	Russell Road	SR 156	13245	1,780	2,470	0.72	0.26	No	-690	476,003
US 101 (SB)	Russell Road	Boronda Road	14262	1,617	2,820	0.57	0.26	No	-1,203	1,446,485
US 101 (NB)	Boronda Road	Russell Road	38446	2,599	2,960	0.88	0.26	Yes	-361	130,627
US 101 (SB)	Boronda Road	Laurel Drive	13333	2,323	2,430	0.96	0.26	Yes	-107	11,364
US 101 (NB)	Laurel Drive	Boronda Road	13241	2,566	3,020	0.85	0.25	Yes	-454	205,990
US 101 (SB)	Laurel Drive	Main Street (SR 183)	13332	2,820	2,180	1.29	0.27	No	640	409,201
US 101 (NB)	Main Street (SR 183)	Laurel Drive	13240	2,710	3,040	0.89	0.25	Yes	-330	108,672
US 101 (SB)	Main Street (SR 183)	Market Street	13331	2,936	2,280	1.29	0.27	No	656	430,696
US 101 (NB)	Market Street	Main Street (SR 183)	13252	2,684	3,120	0.86	0.25	Yes	-436	190,486
US 101 (SB)	Market Street	John Street	13343	2,740	2,120	1.29	0.27	No	620	383,983
US 101 (NB)	John Street	Market Street	13253	2,623	2,790	0.94	0.26	Yes	-167	27,807
US 101 (SB)	Airport Boulevard	Abbott Street	13827	1,614	1,760	0.92	0.30	Yes	-146	21,345
US 101 (NB)	Abbott Street	Airport Boulevard	39032	1,101	1,900	0.58	0.28	No	-799	637,895
Main Street (SB)	Russell Road	Outlook Lane	40529	295	320	0.92	0.60	Yes	-25	609
Main Street (NB)	Outlook Lane	Russell Road	40529	38	230	0.16	0.60	No	-192	36,917
Main Street (SB)	San Juan Grade Road	Harden Parkway	13454	1,025	830	1.23	0.40	Yes	195	38,026
Main Street (NB)	Harden Parkway	San Juan Grade Road	13454	724	710	1.02	0.42	Yes	14	189
Main Street (SB)	Rochex Avenue	Laurel Drive	13167	1,336	1,130	1.18	0.35	Yes	206	42,524
Main Street (NB)	Laurel Drive	Rochex Avenue	13167	1,368	1,230	1.11	0.33	Yes	138	19,034
Main Street (SB)	Laurel Drive	Iris Drive	37331	943	940	1.00	0.38	Yes	3	7
Main Street (NB)	Iris Drive	Laurel Drive	37331	1,233	1,250	0.99	0.33	Yes	-17	274
Main Street (SB)	Bernal Drive	US 101	40568	1,312	1,510	0.87	0.31	Yes	-198	39,222
Main Street (NB)	US 101	Bernal Drive	40568	1,623	2,030	0.80	0.28	Yes	-407	165,873
Main Street (SB) (SR 183)	US 101	Casentini Street	35673	1,173	1,480	0.79	0.31	Yes	-307	94,034
Main Street (NB) (SR 183)	Casentini	US 101	35673	1,667	1,860	0.90	0.29	Yes	-193	37,378
Main Street (SB) (SR 183)	John Street	Clay Street	13181	775	850	0.91	0.39	Yes	-75	5,648
Main Street (NB) (SR 183)	Clay Street	John Street	13181	1,461	910	1.61	0.38	No	551	303,579
Main Street (SB) (SR 183)	Lake Street	Monterey Street	13205	1,465	1,320	1.11	0.32	Yes	145	21,151
Main Street (NB) (SR 183)	Monterey Street	Lake Street	13205	2,006	1,730	1.16	0.30	Yes	276	76,150
Main Street (SB) (SR 68)	Plaza Circle	Blanco Road	13198	877	1,770	0.50	0.30	No	-893	797,484
Main Street (NB) (SR 68)	Blanco Road	Plaza Circle	13198	1,121	1,610	0.70	0.30	No	-489	239,326
Main Street (SB) (SR 68)	Blanco Road	Stephanie Drive	12746	1,056	1,690	0.63	0.30	No	-634	401,604
Main Street (NB) (SR 68)	Stephanie Drive	Blanco Road	12746	1,456	1,850	0.79	0.29	Yes	-394	155,061
San Juan Grade Road (SB)	Augusta Drive	Rogge Road	9969	151	400	0.38	0.60	No	-249	62,172
San Juan Grade Road (NB)	Rogge Road	Augusta Drive	9969	192	260	0.74	0.60	Yes	-68	4,600
San Juan Grade Road (SB)	Van Buren Avenue	Northridge Way	795	305	560	0.54	0.45	No	-255	65,009
San Juan Grade Road (NB)	Northridge Way	Van Buren Avenue	795	199	510	0.39	0.47	No	-311	96,519
San Juan Grade Road (SB)	Boronda Road	Main Street	13457	113	380	0.30	0.60	No	-267	71,060
San Juan Grade Road (NB)	Main Street	Boronda Road	13457	140	540	0.26	0.46	No	-400	159,614
Natividad Road (SB)	Rogge Road	Boronda Road	39346	219	390	0.56	0.60	Yes	-171	29,148
Natividad Road (NB)	Boronda Road	Rogge Road	39346	158	250	0.63	0.60	Yes	-92	8,465
Natividad Road (SB)	Boronda Road	Arcadia Way	12918	255	470	0.54	0.60	Yes	-215	46,038
Natividad Road (NB)	Arcadia Way	Boronda Road	12918	190	500	0.38	0.47	No	-310	96,197
Natividad Road (SB)	Pacheco Street	Laurel Drive	1726	453	1,010	0.45	0.37	No	-557	310,011
Natividad Road (NB)	Laurel Drive	Pacheco Street	1726	712	1,260	0.57	0.33	No	-548	300,407
Natividad Road (SB)	Laurel Drive	Sorrentini Drive	10556	519	1,210	0.43	0.33	No	-691	478,156
Natividad Road (NB)	Sorrentini Drive	Laurel Drive	10556	928	1,430	0.65	0.31	No	-502	251,584
Bernal Drive (SB)	Alpine Drive	Main Street	2021	230	640	0.36	0.44	No	-410	168,035
Bernal Drive (NB)	Main Street	Alpine	2021	434	770	0.56	0.41	No	-336	112,903
Sherwood Drive (SB)	Rossi Street	Cherry Drive	13799	429	930	0.46	0.38	No	-501	251,296
Sherwood Drive (NB)	Cherry Drive	Rossi Street	13799	432	1,440	0.30	0.31	No	-1,008	1,016,258
Independence Boulevard (SB)	Boronda Road	Danbury Street	937	113	370	0.31	0.60	No	-257	66,038
Independence Boulevard (NB)	Danbury Street	Boronda Road	937	96	330	0.29	0.60	No	-234	54,715
Constitution Boulevard (SB)	Boronda Road	Nantucket Boulevard	12249	174	220	0.79	0.60	Yes	-46	2,156
Constitution Boulevard (NB)	Nantucket Boulevard	Boronda Road	12249	92	170	0.54	0.60	Yes	-78	6,012
Constitution Boulevard (SB)	Natividad Medical Center	Laurel Drive	10555	607	760	0.80	0.41	Yes	-153	23,314
Constitution Boulevard (NB)	Laurel Drive	Natividad Medical Center	10555	685	1,340	0.51	0.32	No	-655	428,377
Sanborn Road (SB)	Freedom Parkway	Paseo Grande	13716	172	1,320	0.13	0.32	No	-1,148	1,319,004
Sanborn Road (NB)	Paseo Grande	Freedom Parkway	13716	206	790	0.26	0.41	No	-584	341,621
Sanborn Road (SB)	Del Monte Avenue	Garner Avenue	13720	520	710	0.73	0.42	Yes	-190	36,131
Sanborn Road (NB)	Garner Avenue	Del Monte Avenue	13720	865	870	0.99	0.39	Yes	-5	22
Sanborn Road (SB)	Laurel Drive	Oregon Street	13726	1,048	1,320	0.79	0.32	Yes	-272	74,201
Sanborn Road (NB)	Oregon Street	Laurel Drive	13726	2,189	790	2.77	0.41	No	1,399	1,957,552
Sanborn Road (SB)	Mayfair Drive	US 101	13738	779	760	1.02	0.41	Yes	19	343
Sanborn Road (NB)	US 101	Mayfair Drive	13738	1,437	1,280	1.12	0.33	Yes	157	24,791
Williams Road (SB)	Old Stage Road	Boronda Road	2125	122	340	0.36	0.60	No	-218	47,385
Williams Road (NB)	Boronda Road	Old Stage Road	2125	122	120	1.02	0.60	Yes	2	5
Williams Road (SB)	Freedom Parkway	Del Monte Avenue	10539	346	430	0.80	0.60	Yes	-84	7,042
Williams Road (NB)	Del Monte Avenue	Freedom Parkway	10539	543	400	1.36	0.60	Yes	143	20,352
Williams Road (SB)	Del Monte Avenue	Wiren Street	2501	374	530	0.71	0.46	Yes	-156	24,268
Williams Road (NB)	Wiren Street	Del Monte Avenue	2501	580	630	0.92	0.44	Yes	-50	2,493
Davis Road (SB)	Boronda Road	Auto Center Circle	13451	391	840	0.47	0.40	No	-449	201,416
Davis Road (NB)	Auto Center Circle	Boronda Road	13451	720	1,020	0.71	0.37	Yes	-300	89,770
Davis Road (SB)	Westridge Parkway	Laurel Drive	13411	1,060	1,110	0.96	0.35	Yes	-50	2,495
Davis Road (NB)	Laurel Drive	Westridge Parkway	13411	610	1,240	0.49	0.33	No	-630	397,430
Davis Road (SB)	Rossi Street	Market Street	13422	677	1,190	0.57	0.34	No	-513	263,438
Davis Road (NB)	Market Street	Rossi Street	13422	1,060	1,780	0.60	0.30	No	-720	518,509
Davis Road (SB)	Market Street	Central Avenue	13423	564	1,680	0.34	0.30	No	-1,116	1,244,614
Davis Road (NB)	Central Avenue	Market Street	13423	841	2,140	0.39	0.27	No	-1,299	1,687,440
Davis Road (SB)	Ambrose Drive	Blanco Road	13420	536	1,090	0.49	0.36	No	-554	306,733
Davis Road (NB)	Blanco Road	Ambrose Drive	13420	819	1,550	0.53	0.31	No	-731	534,839
Davis Road (SB)	Blanco Road	Hitchcock Road	13428	178	320	0.56	0.60	Yes	-142	20,235
Davis Road (NB)	Hitchcock Road	Blanco Road	13428	381	610	0.62	0.44	Yes	-229	52,470
Airport Boulevard (SB)	Moffet Street	US 101	9922	357	610	0.59	0.44	Yes	-253	63,764
Airport Boulevard (NB)	US 101	Moffet Street	9922	357	490	0.73	0.60	Yes	-133	17,617
Airport Boulevard (SB)	Terven Avenue	Hansen Street	4034	628	460	1.36	0.60	Yes	168	28,143
Airport Boulevard (NB)	Hansen Street	Terven Avenue	4034	1,243	910	1.37	0.38	Yes	333	110,747
Russell Road (EB)	Paul Avenue	San Juan Grade Road	658	253	390	0.65	0.60	Yes	-137	18,653
Russell Road (WB)	San Juan Grade Road	Paul Avenue	658	60	300	0.20	0.60	No	-240	57,766

Roadway	Segment From	Segment To	Model Link ID	Model Volume	Traffic Count	Model /Count	Maximum Deviation	Within Deviation	Model - Count	Difference Squared
Boronda Road (EB)	US 101	Main Street	13483	1,293	2,410	0.54	0.26	No	-1,117	1,248,117
Boronda Road (WB)	Main Street	US 101	13483	1,674	1,780	0.94	0.30	Yes	-106	11,283
Boronda Road (EB)	Dartmouth Way	McKinnon Street	13482	727	1,120	0.65	0.35	No	-393	154,643
Boronda Road (WB)	McKinnon Street	Dartmouth Way	13482	410	880	0.47	0.39	No	-470	220,953
Boronda Road (EB)	McKinnon Street	El Dorado Drive	13460	604	780	0.77	0.41	Yes	-176	30,882
Boronda Road (WB)	El Dorado Drive	McKinnon Street	13460	350	770	0.46	0.41	No	-420	175,981
Boronda Road (EB)	El Dorado Drive	Natividad Road	13480	584	710	0.82	0.42	Yes	-126	15,863
Boronda Road (WB)	Natividad Road	El Dorado Drive	13480	375	660	0.57	0.43	No	-285	81,081
Boronda Road (EB)	Natividad Road	Independence Boulevard	39332	584	1,190	0.49	0.34	No	-606	367,747
Boronda Road (WB)	Independence Boulevard	Natividad Road	39332	374	880	0.42	0.39	No	-506	256,040
Boronda Road (EB)	Independence Boulevard	Hemingway Drive	13461	471	860	0.55	0.39	No	-389	151,666
Boronda Road (WB)	Hemingway Drive	Independence Boulevard	13461	278	590	0.47	0.45	No	-312	97,400
Boronda Road (EB)	Constitution Boulevard	Rider Avenue	13472	330	600	0.55	0.44	No	-270	72,681
Boronda Road (WB)	Rider Avenue	Constitution Boulevard	13472	272	420	0.65	0.60	Yes	-148	21,863
Alvin Drive (WB)	Marin Avenue	Natividad Road	1393	193	450	0.43	0.60	Yes	-257	66,215
Alvin Drive (EB)	Natividad Road	Marin Avenue	1393	234	500	0.47	0.47	No	-266	70,763
Laurel Drive (EB)	Davis Road	US 101	13792	2,274	1,920	1.18	0.28	Yes	354	125,588
Laurel Drive (WB)	US 101	Davis Road	13792	1,446	1,630	0.89	0.30	Yes	-184	33,855
Laurel Drive (EB)	US 101	Adams Street	13771	1,342	1,850	0.73	0.29	Yes	-508	258,075
Laurel Drive (WB)	Adams Street	US 101	13771	866	1,290	0.67	0.33	Yes	-424	180,038
Laurel Drive (EB)	Natividad Road	Constitution Boulevard	13790	1,442	1,740	0.83	0.30	Yes	-298	88,522
Laurel Drive (WB)	Constitution Boulevard	Natividad Road	13790	944	1,550	0.61	0.31	No	-606	366,786
Laurel Drive (EB)	Constitution Boulevard	Ranch View Lane	13780	1,095	840	1.30	0.40	Yes	255	65,114
Laurel Drive (WB)	Ranch View Lane	Constitution Boulevard	13780	681	810	0.84	0.40	Yes	-129	16,557
Market Street (EB) (SR 68)	Davis Road	Clark Street	2283	775	740	1.05	0.42	Yes	35	1,217
Market Street (WB) (SR 68)	Clark Street	Davis Road	2283	567	560	1.01	0.45	Yes	7	49
Market Street (EB)	Sherwood Drive	Peach Drive	13138	1,189	730	1.63	0.42	No	459	210,358
Market Street (WB)	Peach Drive	Sherwood Drive	13138	682	680	1.00	0.43	Yes	2	6
Market Street (EB)	Kern Street	Kings Street	2721	1,683	860	1.96	0.39	No	823	677,243
Market Street (WB)	Kings Street	Kern Street	2721	1,026	800	1.28	0.40	Yes	226	51,206
Central Avenue (EB)	Davis Road	University Avenue	11152	106	210	0.51	0.60	Yes	-104	10,725
Central Avenue (WB)	University Avenue	Davis Road	11152	189	150	1.26	0.60	Yes	39	1,536
Alisal Street (EB)	Blanco Road	Montecito Way	3683	662	550	1.20	0.45	Yes	112	12,589
Alisal Street (WB)	Montecito Way	Blanco Road	3683	313	460	0.68	0.60	Yes	-147	21,717
Alisal Street (EB)	Front Street	Prader Street	13152	674	890	0.76	0.39	Yes	-216	46,517
Alisal Street (WB)	Prader Street	Front Street	13152	369	750	0.49	0.41	No	-381	145,483
Alisal Street (EB)	Sanborn Road	Eucalyptus Drive	3193	413	720	0.57	0.42	No	-307	94,040
Alisal Street (WB)	Eucalyptus Drive	Sanborn Road	3193	286	600	0.48	0.44	No	-314	98,893
John Street (EB) (SR 68)	Front Street	Abbott Street	13815	1,564	1,660	0.94	0.30	Yes	-96	9,234
John Street (WB) (SR 68)	Abbott Street	Front Street	13815	1,028	710	1.45	0.42	No	318	101,245
John Street (EB) (SR 68)	Work Street	US 101	13806	2,165	1,430	1.51	0.31	No	735	540,337
John Street (WB) (SR 68)	US 101	Work Street	13806	1,350	1,010	1.34	0.37	Yes	340	115,527
John Street (EB)	Magnola Drive	Sanborn Road	13821	350	540	0.65	0.46	Yes	-190	36,004
John Street (WB)	Sanborn Road	Magnola Drive	13821	271	580	0.47	0.45	No	-309	95,232
Abbott Street (EB)	John Street	Maple Street	3521	501	1,490	0.34	0.31	No	-989	979,058
Abbott Street (WB)	Maple Street	John Street	3521	802	980	0.82	0.38	Yes	-178	31,640
Abbott Street (EB)	Sanborn Road	Merrill Street	13832	733	970	0.76	0.38	Yes	-237	55,962
Abbott Street (WB)	Merrill Street	Sanborn Road	13832	882	820	1.08	0.40	Yes	62	3,902
Blanco Road (EB)	Hitchcock Road	Davis Road	13445	1,237	1,380	0.90	0.32	Yes	-143	20,553
Blanco Road (WB)	Davis Road	Hitchcock Road	13445	862	1,170	0.74	0.34	Yes	-308	95,037
Blanco Road (EB)	Padre Drive	Main Street	13437	344	1,220	0.28	0.33	No	-876	766,539
Blanco Road (WB)	Main Street	Padere Drive	13437	443	1,070	0.41	0.36	No	-627	393,652
Blanco Road (EB)	Main Street	Pajaro Street	13438	660	1,370	0.48	0.32	No	-710	503,459
Blanco Road (WB)	Pajaro Street	Main Street	13438	602	900	0.67	0.38	Yes	-298	88,552
			Subtotal	**134,653**	**170,740**		**Model/Count Ratio =**		**0.79**	
							Percent Within Caltrans Maximum Deviation =		**54%**	> 75%
							Percent Root Mean Square Error =		**41%**	< 40%
							Correlation Coefficient =		**0.84**	> 0.88

Total Count	**150**
Link Within Deviation	**81**
Link Outside Deviation	**69**

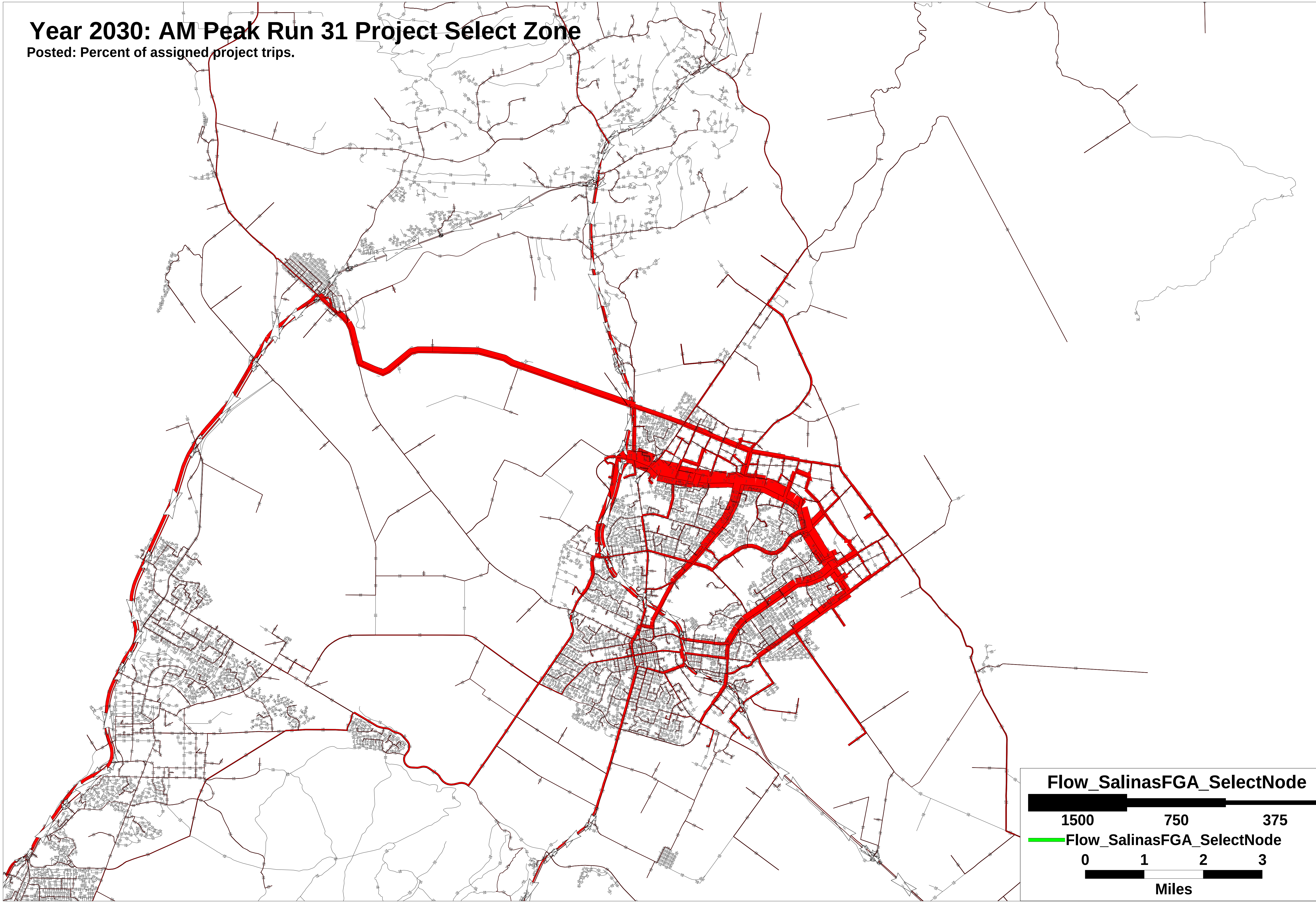
ATTACHMENT C:
SAMPLE DAILY SELECT ZONE PLOT



Year 2030: Daily Run 31 Project Select Zone
Posted: Percent of assigned project trips.
Flow_SalinasFGA_SelectNode
15000
7500
3750
Flow_SalinasFGA_SelectNode
0
1
2
3
Miles

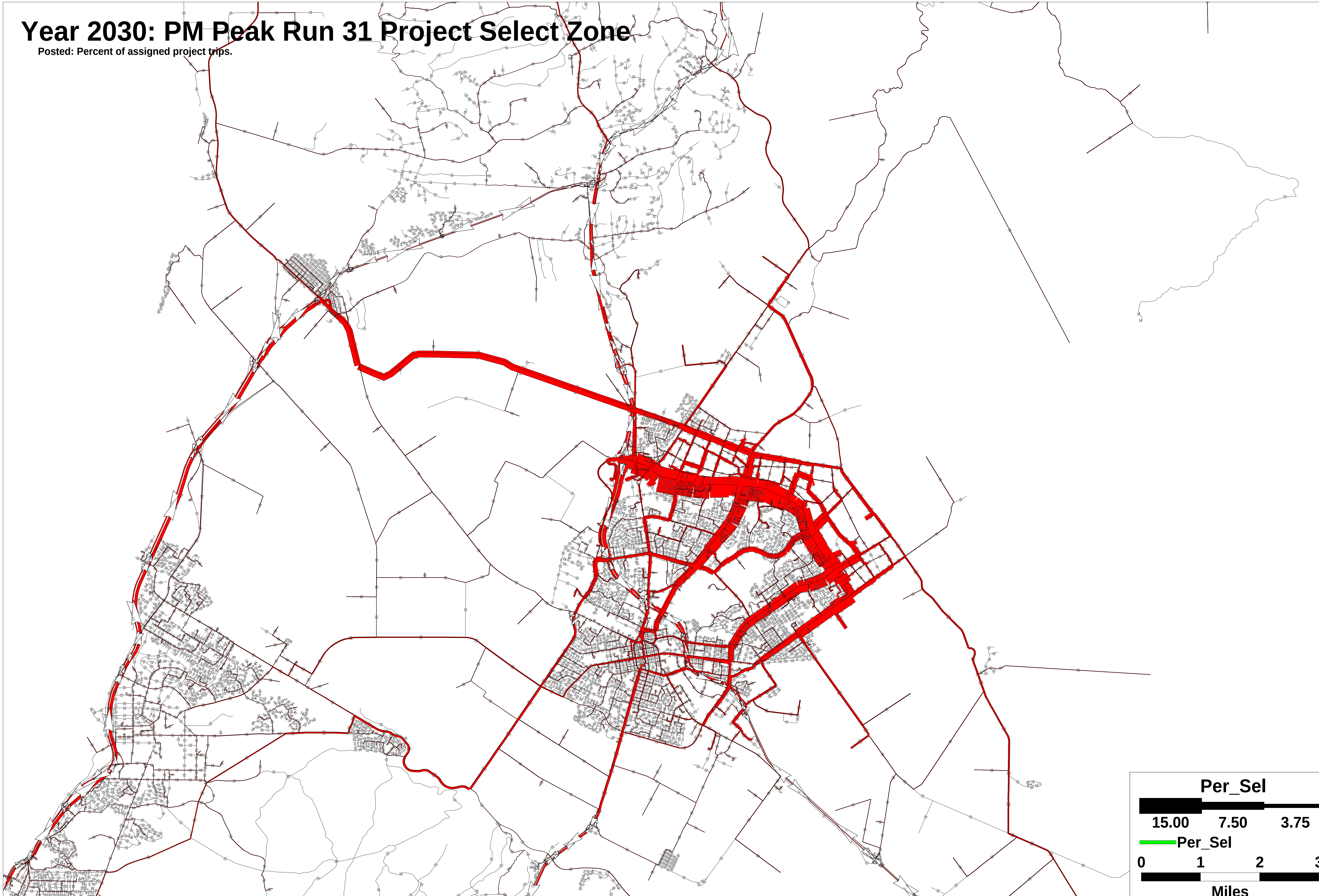
Year 2030: AM Peak Run 31 Project Select Zone

Posted: Percent of assigned project trips.



Year 2030: PM Peak Run 31 Project Select Zone

Posted: Percent of assigned project trips.



ATTACHMENT D:
MITIGATED ROADWAY AND FREEWAY LEVEL OF SERVICE CALCULATIONS

AM PEAK HOUR

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: AM Peak Hour
Highway: Crazy Horse Canyon Road
From/To: s/o US101
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	200	vph	500	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	53		132	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Rolling		Rolling	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.5		2.5	
Recreational vehicles PCE, ER	2.0		2.0	
Heavy vehicle adjustment, fHV	0.971		0.971	
Flow rate, vp	108	pcphpl	271	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	108	pcphpl	271	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	2.0	pc/mi/ln	5.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	FH
Agency/Co:	Fehr & Peers
Date:	6/18/2007
Analysis Period:	AM Peak Hour
Highway:	Crazy Horse Canyon Road
From/To:	San Juan Grade - Old Stage
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	30	vph	30	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	8		8	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	15	pcphpl	15	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	15	pcphpl	15	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	0.3	pc/mi/ln	0.3	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: AM Peak Hour
Highway: Herbert Road
From/To: San Jusan Grade - Old Stage
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	400	vph	600	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	105		158	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	212	pcphpl	318	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	212	pcphpl	318	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	4.0	pc/mi/ln	6.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	FH
Agency/Co:	Fehr & Peers
Date:	6/18/2007
Analysis Period:	AM Peak Hour
Highway:	San Juan Grade Road
From/To:	Hebert - Crazy Horse Canyon
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	400	vph	400	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	105		105	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	212	pcphpl	212	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	212	pcphpl	212	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	4.0	pc/mi/ln	4.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	FH
Agency/Co:	Fehr & Peers
Date:	6/18/2007
Analysis Period:	AM Peak Hour
Highway:	Old Stage Road
From/To:	Hebert - Natividad
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	300	vph	600	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	79		158	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	159	pcphpl	318	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	159	pcphpl	318	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	3.0	pc/mi/ln	6.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: AM Peak Hour
Highway: Espinosa Road
From/To: w-o US 101
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	700	vph	1300	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	184		342	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	372	pcphpl	691	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	372	pcphpl	691	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		B	
Density, D	7.0	pc/mi/ln	12.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

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OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: AM Peak Hour
Highway: Blanco Road
From/To: w/o Davis
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	1000	vph	1200	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	263		316	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	531	pcphpl	637	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	531	pcphpl	637	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		B	
Density, D	9.9	pc/mi/ln	11.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	John to Market
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	2800	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	761	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1106	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1106	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Market to John
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	3200	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	870	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1264	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1264	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	19.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Market to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	2600	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	707	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1027	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1027	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	16.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	SR 183 to Market
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with	Project Mitigated

Flow Inputs and Adjustments

Volume, V	3300	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	897	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1303	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1303	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	20.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	SR 183 to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	2500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	679	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	987	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	987	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	15.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Laurel to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	842	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1224	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1224	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Laurel to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	2700	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	734	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1066	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1066	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	16.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Boronda to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	3400	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	924	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1343	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1343	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	21.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Boronda to Russell
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with	Project Mitigated

Flow Inputs and Adjustments

Volume, V	2500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	679	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	987	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	987	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	15.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Russell to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project Mitigated	

Flow Inputs and Adjustments

Volume, V	2800	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	761	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1106	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1106	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
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OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: AM Peak Hour
Highway: US 101
From/To: s/o Airport
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project Mitigated

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	1200	vph	3100	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	326		842	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	473	pcphpl	1224	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	473	pcphpl	1224	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	A		C	
Density, D	7.9	pc/mi/ln	20.5	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: AM Peak Hour
Highway: US 101
From/To: s/o Prunedale
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project Mitigated

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2700	vph	2800	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	734		761	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1066	pcphpl	1105	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1066	pcphpl	1105	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	B		C	
Density, D	17.8	pc/mi/ln	18.5	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DD
Agency/Co:	Fehr & Peers
Date:	6/18/2007
Analysis Period:	AM Peak Hour
Highway:	US 101
From/To:	SR 156 to San Miguel Canyon
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 with Project Mitigated

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3100	vph	2900	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	842		788	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1224	pcphpl	1145	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1224	pcphpl	1145	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	20.5	pc/mi/ln	19.2	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: AM Peak Hour
Highway: US 101
From/To: n/o Crazy Horse Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project Mitigated

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2500	vph	2300	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	679		625	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	987	pcphpl	1362	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	987	pcphpl	1362	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	B		C	
Density, D	16.5	pc/mi/ln	22.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:

E-mail:

OPERATIONAL ANALYSIS

Analyst: DR
Agency/Co: Fehr & Peers
Date: 8/20/2007
Analysis Period: AM Peak Hour
Highway: San Miguel Canyon Road
From/To: n-o US 101
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	900	vph	1200	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	237		316	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Rolling		Rolling	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.5		2.5	
Recreational vehicles PCE, ER	2.0		2.0	
Heavy vehicle adjustment, fHV	0.971		0.971	
Flow rate, vp	487	pcphpl	650	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	487	pcphpl	650	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		B	
Density, D	9.1	pc/mi/ln	12.2	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DR
Agency/Co: Fehr & Peers
Date: 8/20/2007
Analysis Period: AM Peak Hour
Highway: San Miguel Canyon Road
From/To: n-o Castroville Boulevard
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	700	vph	800	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	184		211	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Rolling		Rolling	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.5		2.5	
Recreational vehicles PCE, ER	2.0		2.0	
Heavy vehicle adjustment, fHV	0.971		0.971	
Flow rate, vp	379	pcphpl	433	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	379	pcphpl	433	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	7.1	pc/mi/ln	8.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

PM PEAK HOUR

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: PM Peak Hour
Highway: Crazy Horse Canyon Road
From/To: s/o US101
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	600	vph	400	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	158		105	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Rolling		Rolling	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.5		2.5	
Recreational vehicles PCE, ER	2.0		2.0	
Heavy vehicle adjustment, fHV	0.971		0.971	
Flow rate, vp	325	pcphpl	216	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	325	pcphpl	216	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	6.1	pc/mi/ln	4.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: PM Peak Hour
Highway: Crazy Horse Canyon Road
From/To: San Juan Grade - Old Stage
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	50	vph	40	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	13		11	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	26	pcphpl	21	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	26	pcphpl	21	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	0.5	pc/mi/ln	0.4	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: PM Peak Hour
Highway: Herbert Road
From/To: San Juan Grade - Old Stage
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	900	vph	500	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	237		132	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	478	pcphpl	265	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	478	pcphpl	265	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	9.0	pc/mi/ln	5.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: PM Peak Hour
Highway: San Juan Grade Road
From/To: Hebert - Crazy Horse Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	800	vph	400	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	211		105	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	425	pcphpl	212	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	425	pcphpl	212	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	8.0	pc/mi/ln	4.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: PM Peak Hour
Highway: Old Stage Road
From/To: Hebert - Natividad
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	1000	vph	400	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	263		105	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	531	pcphpl	212	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	531	pcphpl	212	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	A		A	
Density, D	9.9	pc/mi/ln	4.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: FH
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: PM Peak Hour
Highway: Espinosa Road
From/To: w-o US 101
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	1800	vph	800	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	474		211	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	956	pcphpl	425	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	956	pcphpl	425	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	B		A	
Density, D	17.9	pc/mi/ln	8.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	FH
Agency/Co:	Fehr & Peers
Date:	6/18/2007
Analysis Period:	PM Peak Hour
Highway:	Blanco Road
From/To:	w/o Davis
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	1500	vph	1300	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	395		342	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.990		0.990	
Flow rate, vp	797	pcphpl	691	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	797	pcphpl	691	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	B		B	
Density, D	14.9	pc/mi/ln	12.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	John to Market
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	3500	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	951	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1382	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1382	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	21.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Market to John
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	842	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1224	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1224	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Market to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	3700	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1005	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1461	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1461	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	22.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	SR 183 to Market
Jurisdiction:	Salinas
Analysis Year:	2030
Description:	2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	2900	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	788	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1145	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1145	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	17.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	SR 183 to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	3400	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	924	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1343	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1343	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	21.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Laurel to SR 183
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project Mitigated	

Flow Inputs and Adjustments

Volume, V	2900	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	788	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1145	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1145	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	17.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Laurel to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with Project Mitigated	

Flow Inputs and Adjustments

Volume, V	3600	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	978	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1422	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1422	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	22.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Boronda to Laurel
Jurisdiction:	Salinas
Analysis Year:	2030

Description: 2030 with Project Mitigated

Flow Inputs and Adjustments

Volume, V	3200	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	870	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1264	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1264	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	19.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/4/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 NB
From/To:	Boronda to Russell
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with	Project Mitigated

Flow Inputs and Adjustments

Volume, V	3100	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	842	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1224	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1224	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Basic Freeway Segments Release 5.2

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	DD
Agency or Company:	Fehr & Peers
Date Performed:	6/18/2007
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101 SB
From/To:	Russell to Boronda
Jurisdiction:	Salinas
Analysis Year:	2030
Description: 2030 with	Project Mitigated

Flow Inputs and Adjustments

Volume, V	3800	veh/h
Peak-hour factor, PHF	0.92	
Peak 15-min volume, v15	1033	v
Trucks and buses	18	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.917	
Driver population factor, fp	1.00	
Flow rate, vp	1501	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	1.12	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	70.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	3.1	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	63.9	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1501	pc/h/ln
Free-flow speed, FFS	63.9	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	3	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: s/o Airport
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project Mitigated

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3200	vph	2500	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	870		679	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1263	pcphpl	987	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1263	pcphpl	987	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.8	mph
Level of service, LOS	C		B	
Density, D	21.1	pc/mi/ln	16.5	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DR
Agency/Co: Fehr & Peers
Date: 8/16/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: s/o Prunedale
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project Mitigated

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3700	vph	3000	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	1005		815	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1461	pcphpl	1184	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1461	pcphpl	1184	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.6	mph	59.8	mph
Level of service, LOS	C		C	
Density, D	24.5	pc/mi/ln	19.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst: DD
Agency/Co: Fehr & Peers
Date: 6/18/2007
Analysis Period: PM Peak Hour
Highway: US 101
From/To: SR 156 to San Miguel Canyon
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: 2030 with Project Mitigated

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	3600	vph	3600	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	978		978	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		3	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1421	pcphpl	1421	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1421	pcphpl	1421	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.7	mph	59.7	mph
Level of service, LOS	C		C	
Density, D	23.8	pc/mi/ln	23.8	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DD
Agency/Co:	Fehr & Peers
Date:	6/18/2007
Analysis Period:	PM Peak Hour
Highway:	US 101
From/To:	n/o Crazy Horse Canyon
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	2030 with Project Mitigated

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	1		1	
Median type	Divided		Divided	
Free-flow speed:	Base		Base	
FFS or BFFS	60.0	mph	60.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	0.0	mph	0.0	mph
Access points adjustment, FA	0.3	mph	0.3	mph
Free-flow speed	59.8	mph	59.8	mph

VOLUME

Direction	1		2	
Volume, V	2800	vph	2500	vph
Peak-hour factor, PHF	0.92		0.92	
Peak 15-minute volume, v15	761		679	
Trucks and buses	18	%	18	%
Recreational vehicles	0	%	0	%
Terrain type	Level		Level	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	3		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	1.5		1.5	
Recreational vehicles PCE, ER	1.2		1.2	
Heavy vehicle adjustment, fHV	0.917		0.917	
Flow rate, vp	1105	pcphpl	1480	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	1105	pcphpl	1480	pcphpl
Free-flow speed, FFS	59.8	mph	59.8	mph
Avg. passenger-car travel speed, S	59.8	mph	59.5	mph
Level of service, LOS	C		C	
Density, D	18.5	pc/mi/ln	24.9	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:

E-mail:

OPERATIONAL ANALYSIS

Analyst: DR
Agency/Co: Fehr & Peers
Date: 8/20/2007
Analysis Period: PM Peak Hour
Highway: San Miguel Canyon Road
From/To: n-o US 101
Jurisdiction: Monterey County
Analysis Year: 2030
Project ID: Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	1400	vph	1600	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	368		421	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Rolling		Rolling	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.5		2.5	
Recreational vehicles PCE, ER	2.0		2.0	
Heavy vehicle adjustment, fHV	0.971		0.971	
Flow rate, vp	758	pcphpl	867	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	758	pcphpl	867	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	B		B	
Density, D	14.2	pc/mi/ln	16.2	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

HCS+: Multilane Highways Release 5.2

Phone: Fax:
E-mail:

OPERATIONAL ANALYSIS

Analyst:	DR
Agency/Co:	Fehr & Peers
Date:	8/20/2007
Analysis Period:	PM Peak Hour
Highway:	San Miguel Canyon Road
From/To:	n-o Castroville Boulevard
Jurisdiction:	Monterey County
Analysis Year:	2030
Project ID:	Year 2030 with Project (Mitigated)

FREE-FLOW SPEED

Direction	1		2	
Lane width	12.0	ft	12.0	ft
Lateral clearance:				
Right edge	6.0	ft	6.0	ft
Left edge	6.0	ft	6.0	ft
Total lateral clearance	12.0	ft	12.0	ft
Access points per mile	0		0	
Median type	Undivided		Undivided	
Free-flow speed:	Base		Base	
FFS or BFFS	55.0	mph	55.0	mph
Lane width adjustment, FLW	0.0	mph	0.0	mph
Lateral clearance adjustment, FLC	0.0	mph	0.0	mph
Median type adjustment, FM	1.6	mph	1.6	mph
Access points adjustment, FA	0.0	mph	0.0	mph
Free-flow speed	53.4	mph	53.4	mph

VOLUME

Direction	1		2	
Volume, V	1200	vph	1000	vph
Peak-hour factor, PHF	0.95		0.95	
Peak 15-minute volume, v15	316		263	
Trucks and buses	2	%	2	%
Recreational vehicles	0	%	0	%
Terrain type	Rolling		Rolling	
Grade	0.00	%	0.00	%
Segment length	0.00	mi	0.00	mi
Number of lanes	2		2	
Driver population adjustment, fP	1.00		1.00	
Trucks and buses PCE, ET	2.5		2.5	
Recreational vehicles PCE, ER	2.0		2.0	
Heavy vehicle adjustment, fHV	0.971		0.971	
Flow rate, vp	650	pcphpl	542	pcphpl

RESULTS

Direction	1		2	
Flow rate, vp	650	pcphpl	542	pcphpl
Free-flow speed, FFS	53.4	mph	53.4	mph
Avg. passenger-car travel speed, S	53.4	mph	53.4	mph
Level of service, LOS	B		A	
Density, D	12.2	pc/mi/ln	10.1	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

ATTACHMENT E:
PROJECT CONTRIBUTION CALCULATIONS

Salinas Draft Roadway Segment Results: Daily Two-Way Traffic Counts, Forecasts and Project Calculations

Roadway	From	To	ADT_CNT	ADT_Prj_Vol	ADT_Prj_Trips	Project Contribution of Growth	Project Contribution of Total Traffic
Boronda Road	McKinnon Street	El Dorado Drive	18900	57200	32655	85%	57%
Market Street	Davis Road	Clark Street	20000	29100	162	2%	1%
John Street	Abbott Street	US 101	24700	36900	3918	32%	11%
Main Street	US 101	Rossi Street	39500	45100	3457	62%	8%
Main Street	Plaza Circle	Blanco Road	26700	32700	2423	40%	7%
Crazy Horse Canyon Road	US 101	Cole Road	5800	13200	1463	20%	11%
Hebert Road	Old Stage Road	San Juan Grade Road	5600	16100	3313	32%	21%
San Juan Grade Road	Hebert Road	Crazy Horse Canyon Road	6700	13800	1930	27%	14%
Old Stage Road	Hebert Road	Natividad Road	5600	16200	3468	33%	21%
Espinosa Road	US 101	Foxwood Lane	5100	26500	8902	42%	34%
Blanco Road	Hitchcock Road	Davis Road	22100	23300	1037	86%	4%
US 101 (NB)	John Street	Market Street	26000	42000	2056	13%	5%
US 101 (NB)	Market Street	Main Street (SR 183)	28500	42200	2266	17%	5%
US 101 (NB)	Main Street (SR 183)	Laurel Drive	31500	44400	2945	23%	7%
US 101 (NB)	Laurel Drive	Boronda Road	35000	49300	4983	35%	10%
US 101 (NB)	Boronda Road	Russell Road	30000	38500	3495	41%	9%
US 101 (NB)	Abbott Street	Airport Boulevard	17800	38500	508	2%	1%
US 101 (NB)	Russell Road	SR 156	27000	41200	3505	25%	9%
US 101 (NB)	SR 156	San Miguel Canyon Road	40000	51200	2846	25%	6%
US 101 (SB)	San Juan Road	Crazy Horse Canyon Road	27000	34600	2228	29%	6%
US 101 (SB)	San Miguel Canyon Road	SR 156	40000	51700	2759	24%	5%
US 101 (SB)	SR 156	Russell Road	27000	41800	3497	24%	8%
US 101 (SB)	Airport Boulevard	Abbott Street	17800	37300	502	3%	1%
US 101 (SB)	Russell Road	Boronda Road	30000	43100	2982	23%	7%
US 101 (SB)	Boronda Road	Laurel Drive	35000	48200	4376	33%	9%
US 101 (SB)	Laurel Drive	Main Street (SR 183)	31500	43600	2519	21%	6%
US 101 (SB)	Main Street (SR 183)	Market Street	28500	40700	2266	19%	6%
US 101 (SB)	Market Street	John Street	26000	40400	3273	23%	8%
San Miguel Canyon Road	US 101	Castroville Boulevard	27300	38400	1983	18%	5%
San Miguel Canyon Road	Castroville Boulevard	Strawberry Road	18800	28800	1398	14%	5%
NB Off-Ramp to Boronda Road	US 101	Boronda Road	9300	17300	4983	62%	29%
SB Off-Ramp to Boronda Road	US 101	Boronda Road	11800	13700	2981	157%	22%
SB On-Ramp from Boronda Road (Loop)	Boronda Road	US 101	9700	10700	4376	438%	41%

Notes:

[1] Project Contribution of Growth is a numeric method that does not account for redistribution of traffic.

[2] Project Contribution of Growth = $(T/(T_B - T_E))*100$; where T = Project traffic on a roadway segment, T_B = Year 2030 with Project Conditions roadway segment volumes, and T_E = Existing roadway segment volumes.

[3] Project Contribution of Total Traffic = $(T/T_B)*100$; where T = Project traffic on a roadway segment, and T_B = Year 2030 with Project Conditions roadway segment volumes.

Source: Fehr & Peers, August 2007.

ATTACHMENT F:
GREATER SALINAS AREA MEMORANDUM OF UNDERSTANDING

GREATER SALINAS AREA
MEMORANDUM OF UNDERSTANDING

Preface

The negotiated terms of the Greater Salinas Area Memorandum of Understanding (MOU) will replace the previous Boronda Memorandum of Understanding between the City of Salinas and the County of Monterey and shall be adopted only after a joint public meeting of the Monterey County Board of Supervisors and the Salinas City Council. In the event of a successful challenge to any provision of this MOU by a third party, such provision shall be removed from the Greater Salinas Area MOU.

This Memorandum of Understanding (MOU), by and between the County of Monterey (County) and the City of Salinas (City), is to set forth certain agreements between the parties to express their intent to jointly pursue action to assure orderly and appropriate land use development in the area designated in the General Plan of Monterey County as the Greater Salinas Area Plan area and in the City of Salinas. Specific objectives to be achieved through the implementation of the land use and associated policies included in this MOU are the preservation of certain agriculture land, the provision of future growth areas, and the provision of adequate financing for the services and facilities of benefit to the residents of the Greater Salinas Area Plan area and the City. It is recognized that, with respect to some of the provisions set forth herein, numerous actions must be taken pursuant to State and local laws and regulations before such policies can be implemented. Such actions include, in some instances, the need to comply with the California Environmental Quality Act (CEQA), the need to hold public hearings and/or otherwise seek public input before reaching binding decisions, and the need to obtain approvals from other agencies such as the Local Agency Formation Commission (LAFCO). For all such provisions, this MOU shall be understood to constitute tentative policy commitments that can only become fully binding after all such legal prerequisites have been satisfied. Even so, both parties agree to make a good faith effort to follow and implement the provisions of this MOU subject to the foregoing.

The City and County do hereby mutually agree to the following:

City Growth

1. City and County agree that the future growth direction of the City shall be to the north and east of the current City limits, except as otherwise provided for in this MOU.

2. County supports the City's 2005 Preliminary Sphere of Influence/Annexation Proposal to LAFCO to the north and east of the City's existing City Limits (Exhibit A).

3. County supports the City's 2005 Preliminary Sphere of Influence/Annexation Proposal to LAFCO to the south of the City's existing City Limits (Exhibit A) for the exclusive purpose of agricultural processing and processing capacity (Fresh Express). County further supports future City Sphere of Influence / Annexation proposals to the

south of the City's existing City Limit for the exclusive purpose of agricultural processing and processing capacity (Unikool), subject to the establishment of appropriate agricultural conservation easements.

4. City and County agree to the creation and implementation of agricultural conservation easements in the unincorporated areas to the west and south of the City's Sphere of Influence insofar as the easements are consistent with the adopted General Plans of the two jurisdictions.

5. City and County agree to work cooperatively and in concert with the affected property owners to annex developed unincorporated areas (e.g. Bolsa Knolls) adjacent to or within the City's Sphere of Influence as shown in Exhibit A and to transfer existing County sanitation facilities (e.g. Boronda) upon future City annexation that support these areas subject to the property owners paying any required sanitation system connection fees established by MRWPCA. It is anticipated that an initial effort consistent with this annexation commitment shall be cooperation by all parties to consider and facilitate the proposed Chapin Rogge Road annexation application insofar as the annexation is consistent with the provisions of LAFCO.

6. City and County agree that developments within the City's 2005 Preliminary Sphere of Influence/Annexation Proposal shall only occur after annexation to the City and that the City shall consult with the County in the planning process. City and County also agree that the developments within the area designated by the County General Plan as the Greater Salinas Planning Area shall only occur after consultation with the City in the planning process.

7. City and County agree that the County shall not process any proposals for development in areas contiguous (immediately adjacent) to the City's City Limit if those proposals would require either or both a County General Plan amendment or a rezoning. Proposals for development requiring a General Plan amendment or a rezoning shall be referred to the City for consideration and possible annexation to the City.

8. City and County agree to work cooperatively and expeditiously in annexation matters consistent with this agreement.

9. 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.

10. 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 fee program will be developed in consultation with TAMC and Monterey County cities. It is recognized that there

will be development within the City of Salinas related to the anticipated annexation of land to the north and east of the existing City Limits, and it is the desire of both jurisdictions that the County not rely upon the imposition of an ad hoc traffic fee on City development. Therefore the development of the Traffic Impact Fee for the Salinas Area, as shown in Exhibit B, will be a priority and a nexus study and hearing process should be completed within 18 months of adoption of the 2006 County General Plan. The County Traffic Impact Fee will be imposed on development in affected cities and unincorporated areas.

11. City and County agree to work cooperatively on establishing the alignment, phasing and financing of the regional roadway facility commonly referred to as the Westside Bypass and will expedite the completion of a Project Study Report for this future roadway. City and County agree that the ultimate alignment of the future Westside Bypass shall establish the development boundary for the City. It is the intent of both parties to minimize the impact on agricultural land in establishing the Westside Bypass alignment so that the ultimate alignment shall not result in the development of acres of agricultural land in excess of that anticipated in the Westside Bypass alignment as shown in the City of Salinas 2002 adopted General Plan (<u>Exhibit C</u>).

12. City and County agree that future development between the area west of Davis Road and east of the future Westside Bypass, excluding the Boronda Redevelopment Project area, shall be limited to expansion of the City' retail sales capacity and shall take place after annexation.

13. City and County agree to work cooperatively to address the collective impact of current and anticipated land uses in the Reclamation Ditch Watershed Area. There is a recognition that a comprehensive financing program is needed that includes grants, benefit assessments, appropriate development impact fees, and special taxes required to address current and anticipated impacts. The County, in consultation with the City, should complete a nexus study and hearing process, assessing benefit of current and existing land uses, within 36 months of adoption of this MOU. The adopted impact fee will be imposed on current and existing land uses in both the City and unincorporated areas.

<u>Boronda Redevelopment Project Area</u>

14. City and County agree that in the undeveloped southern portion of the Boronda Redevelopment Project Area (<u>Exhibit D</u>) the County shall take the lead in the planning, review, and approval process subject to concurrent City review so that the final approved project is consistent with existing City development standards. City recognizes the County's desire and intent to assure development that is consistent with commitments made to the Boronda community regarding required amendments to the current adopted Boronda Community Plan and that the anticipated development is assumed to provide financial benefit (i.e. tax increment) to the Boronda Development Area. City and County will work

cooperatively to assure that those commitments will result from and through the final approvals for development and annexation to the City of Salinas. City and County further agree that there will be no final development approvals prior to the completion of all requirements (including final LAFCO approval) for annexation of the subject area to the City of Salinas.

City and County agree that infill development in the northern portion of the Boronda Redevelopment Project Area (Exhibit D) will continue to be processed by the County subject to consultation with the City.

15. City and County agree that property tax generated within the Boronda Redevelopment Area shall continue to accrue to the Boronda Redevelopment Area for implementation of the current (January 1, 2006) adopted Redevelopment Area Plan. Upon completion of the aforementioned Plan, the former Redevelopment Property Tax increment shall be allocated between the City and the County on a 50/50 basis.

Affordable Housing

16. City and County agree to support each other's efforts to construct affordable housing throughout the County necessary to achieve the Fair Share Housing Allocation as approved by the Association of Monterey Bay Area Government (AMBAG).

17. City and County agree that if the 100% affordable housing project on Rogge Road approved by the County in 2006 is annexed to the City that the project shall be credited to the County's Fair Share Housing Allocation.

Other

18. City and County mutually agree that neither will pursue future development related litigation against the other insofar as the subject development is consistent with this agreement.

CITY OF SALINAS A municipal corporation of the State of California By: Anna M. Caballero Anna M. Caballero, Mayor Dated: 8-29-06	COUNTY OF MONTEREY A political subdivision of the State of California By: Jerry Smith Jerry Smith Chairman of the Board of Supervisors Dated: 8-29-06

ATTESTED TO:

Amy Carroll
City Clerk

By: Deputy
County Clerk

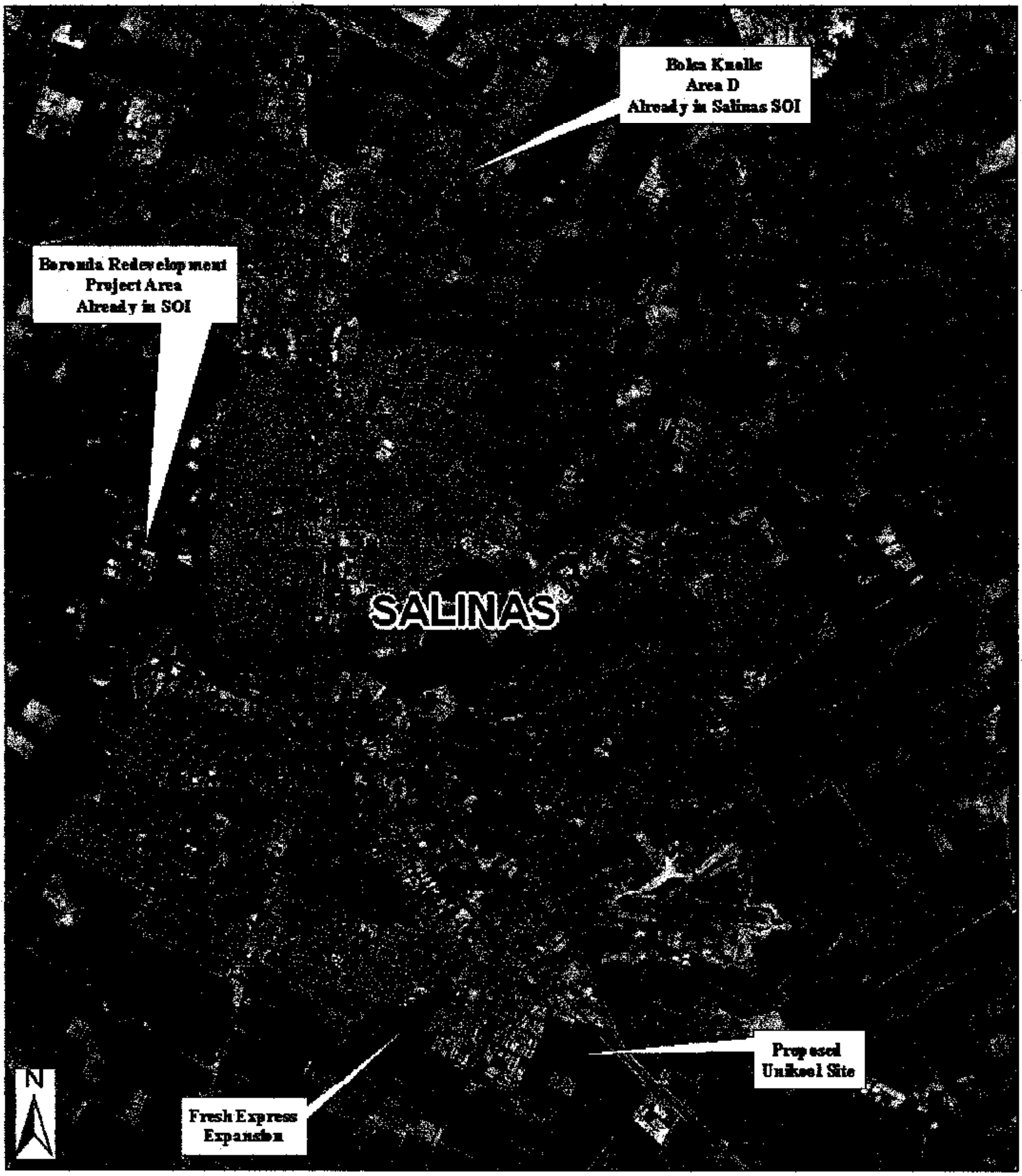


EXHIBIT A

Salinas 2005 Preliminary Sphere of Influence (SOI)/
Annexation Proposal Map

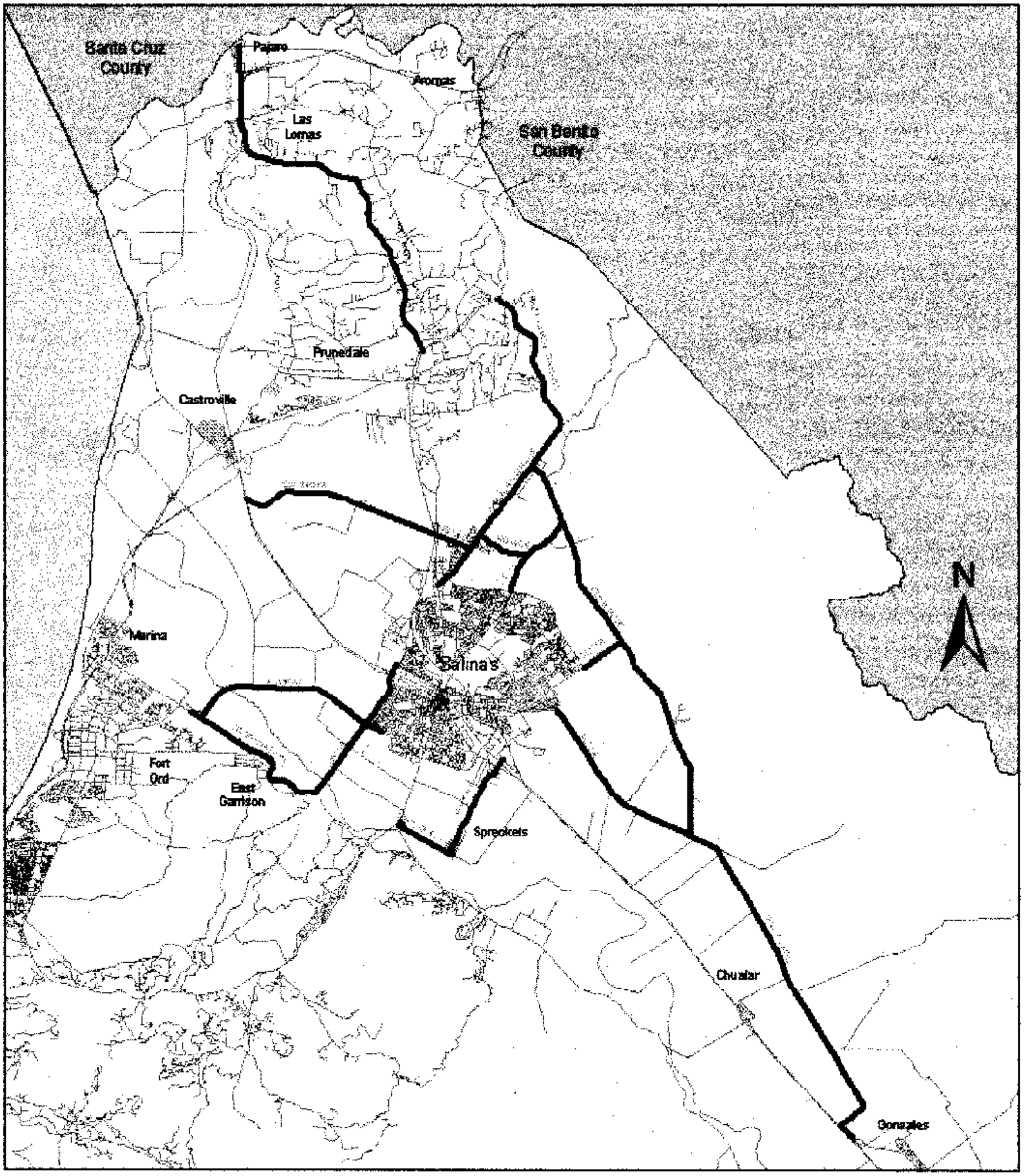


EXHIBIT B

Salinas Area Traffic Impact Fee
Affected Major County Roads

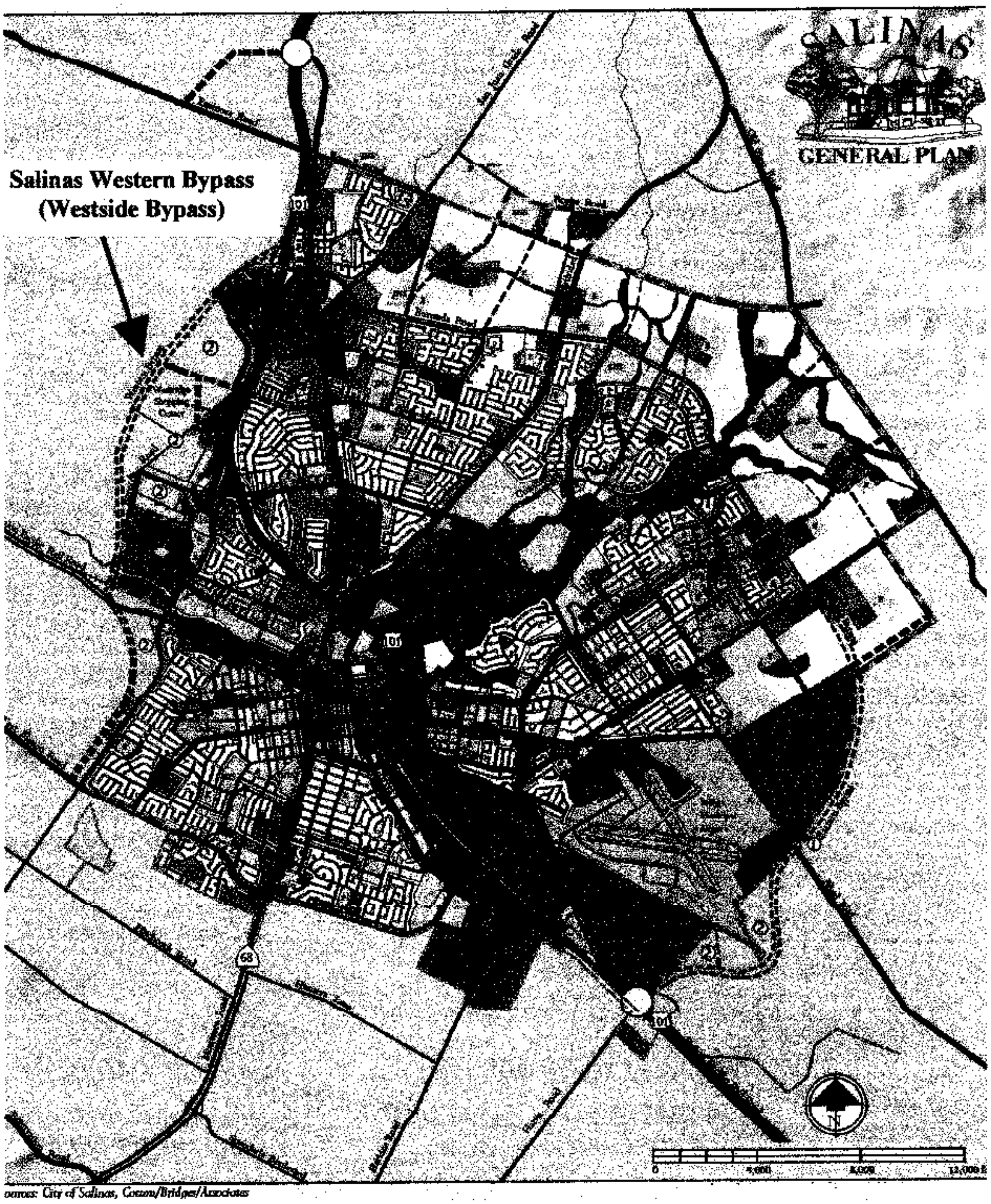


EXHIBIT C

Westside Bypass Alignment
City Salinas 2002 General Plan

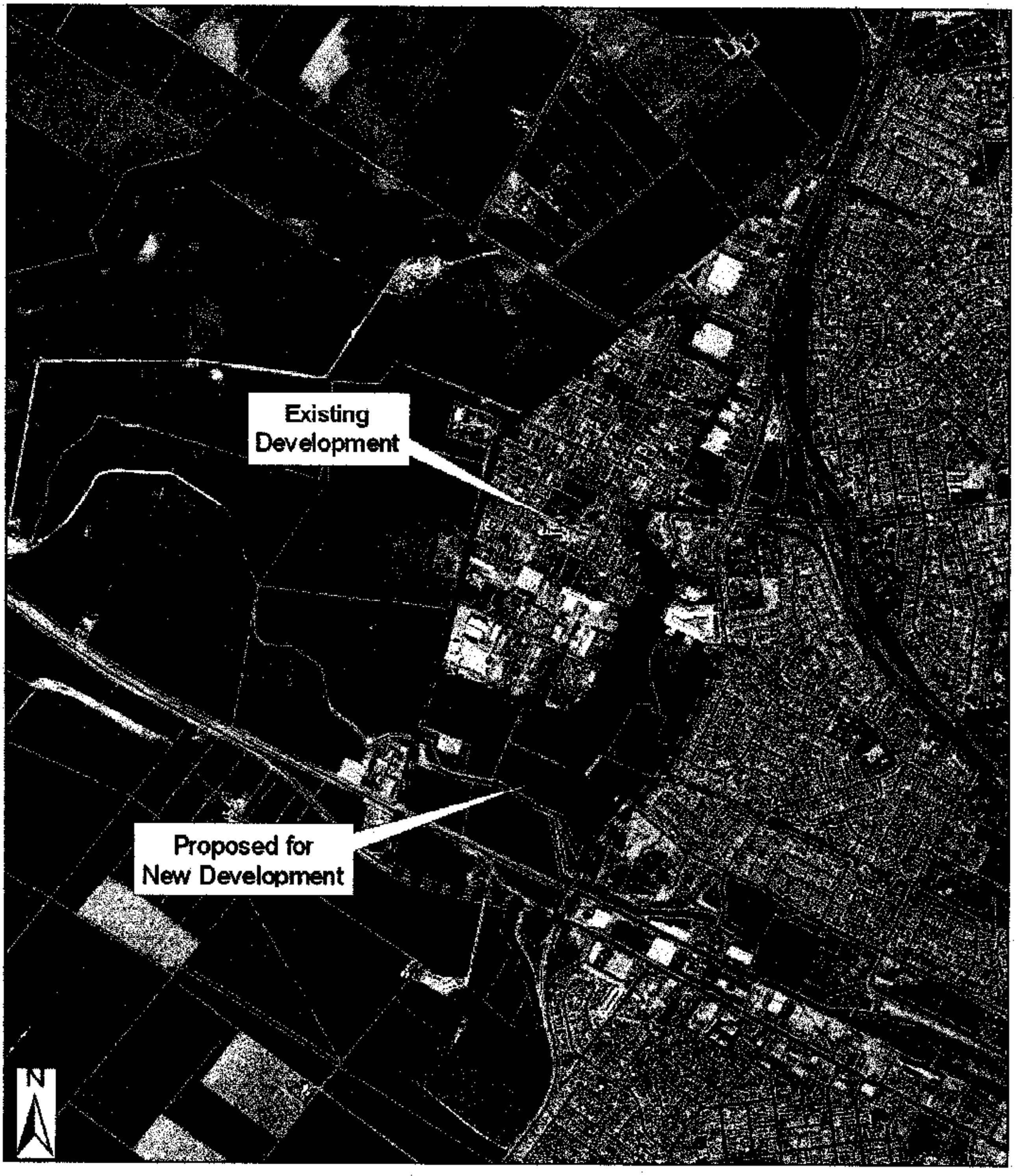
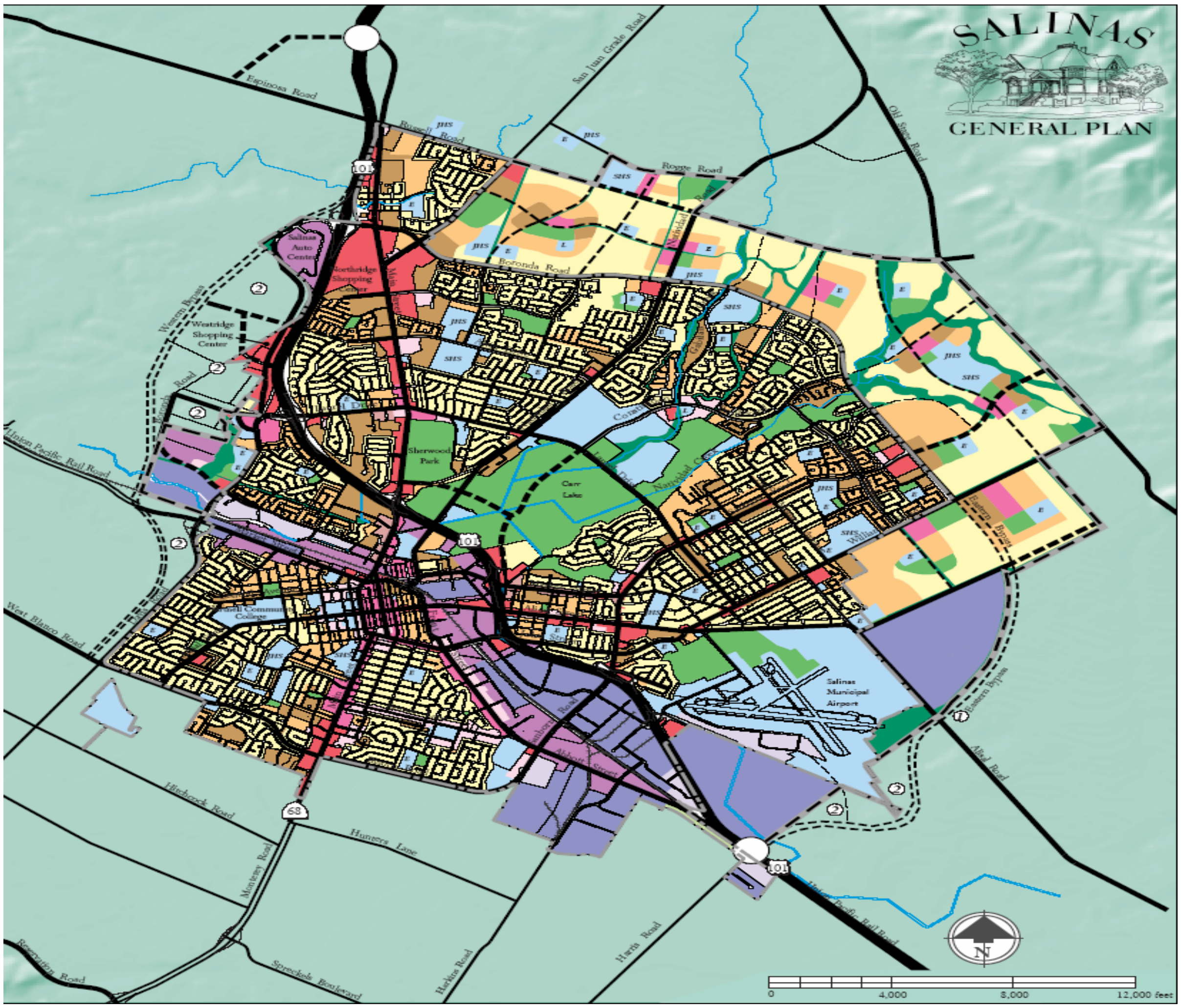


EXHIBIT D

North Boronda Redevelopment Project Area
South Boronda Redevelopment Project Area

APPENDIX D
WASTEWATER TREATMENT CAPACITY ANALYSIS

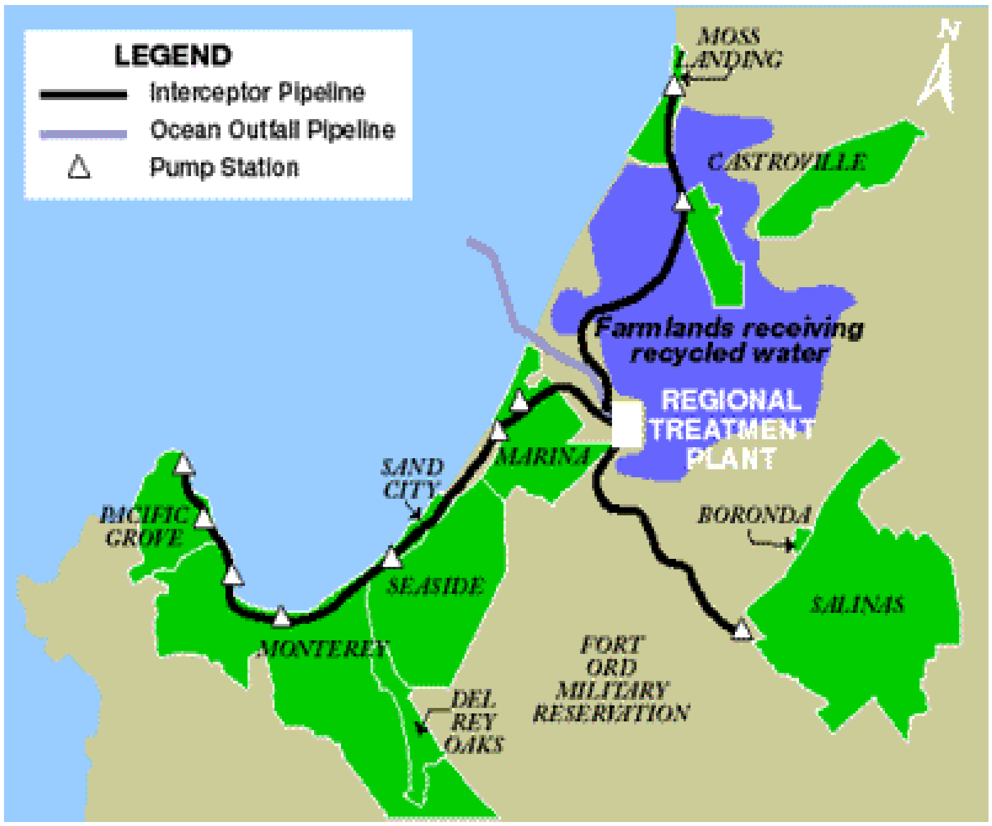
SALINAS FUTURE GROWTH AREA
WASTEWATER TREATMENT FACILITY



PREPARED FOR:
P&D CONSULTANTS

PREPARED BY:
MARK THOMAS & COMPANY, INC.

July, 2007



LOCATION MAP

Table of Contents

I. Introduction

The City of Salinas and surrounding areas of North Monterey County continue to grow in population, economy and physical boundaries. The anticipated growth by the City of Salinas requires infrastructure analysis and a study of current capacity of agency facilities. Phase I annexation in the currently proposed SOI (sphere of influence) involves approximately 2,400 acres of land north and east of Boronda Road as shown in Figure 1. This report evaluates the availability of wastewater treatment capacity at the Regional Treatment Plant (RTP) operated by the Monterey Regional Water Pollution Control Agency (MRWPCA). This facility treats wastewater generated in the greater North Monterey County including its main contributor, the City of Salinas. The sewage collection system, pump stations and interceptors capacities are not covered with this report.

This report shows that with 15% additional water conservation in the Salinas area, the MPWPCA's treatment plant does not need to be expanded to accommodate the Phase I annexation. In addition, the MRWPCA's capacity analysis of its RTP indicates that no expansion will be needed until 2023 at the earliest, but more likely not until about 2030.

The projected flows included in this report are calculated based on historic US census data, 2004 AMBAG forecast, Salinas annexation area build out schedule, City of Salinas 2002 General Plan, and 5.7 mgd (million gallons per day) wastewater flow calculated for the Salinas Phase I annexation area. The recently prepared projected flows to the RTP by the MRWPCA are also incorporated in this report. The average dry weather per capita flow values developed by MRWPCA are used to project flows for every member agency.

Although all figures, charts and tables are listed and included in the Appendix, to assist the reader, some are reproduced in the body of the report.

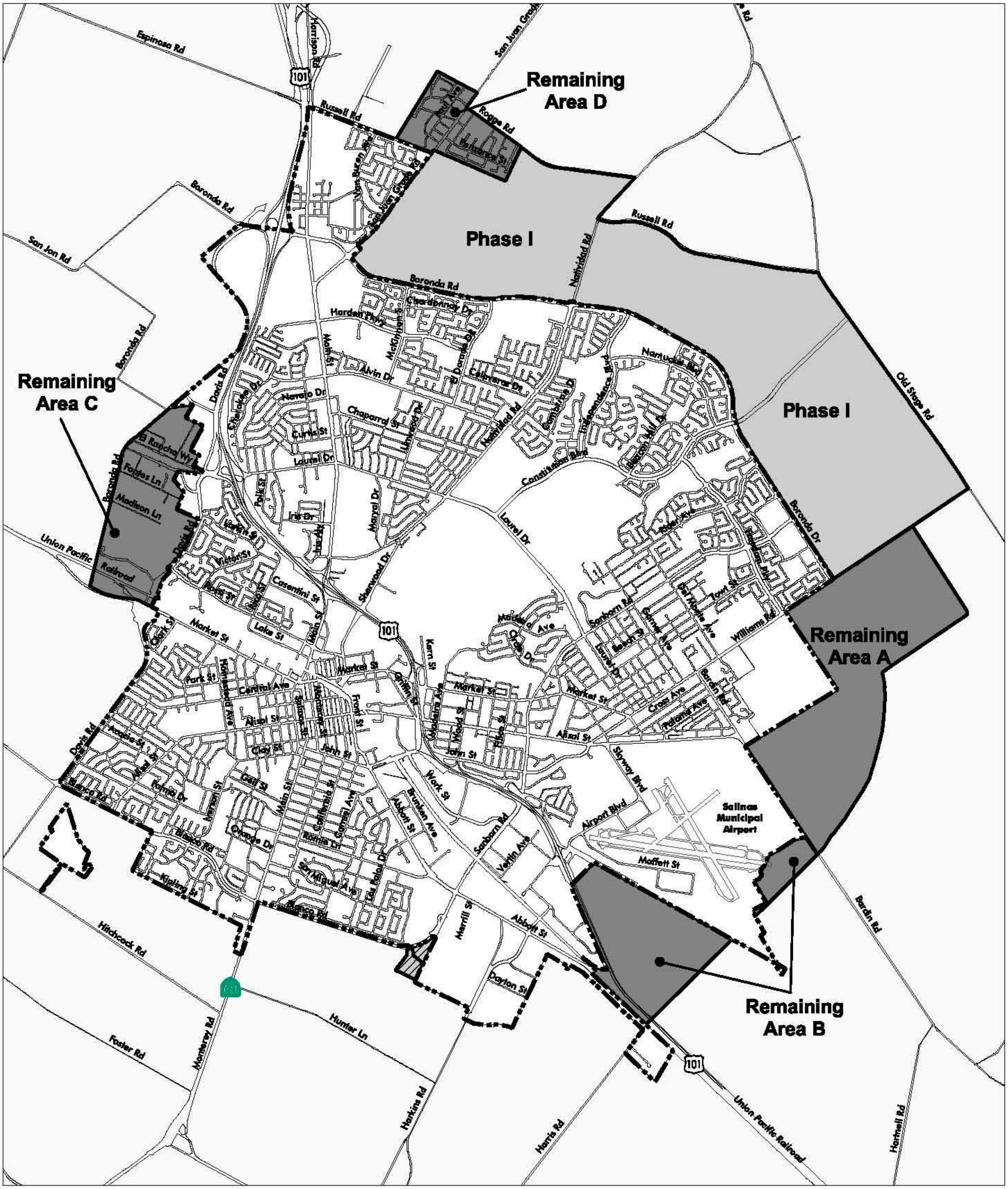
II. Purpose

The purpose of this report is to:

1. Identify the current permitted capacity, which is approved by regulatory bodies, and current design capacity of the MRWPCA's treatment plant.

2. Examine the availability of sufficient capacity to treat an additional 5.7 mgd of wastewater flow from the Salinas Phase I annexation at a full build-out of the development activities; and

3. Recommend water conservation actions needed to accommodate the wastewater flow from the Salinas annexation at full build-out.



Legend

City Boundary

Phase I

Phase I-A

Remaining Areas

NORTH 0 0.5 1 1.5 2 Miles

Figure I
City of Salinas
Phased Annexation Areas

III. Methodology

This report is prepared based on discussions with the MRWPCA and the City of Salinas Public Works Department. Information is extracted for the March 15, 2005 report titled *Updated Flow Projections and Capacity Analysis for the Regional Wastewater System*, by MRWPCA and from *Final Supplemental Environmental Impact Report* prepared by EMC Planning Groups Inc, in January 2006. There is some variation between the City of Salinas 2002 General Plan and 2004 AMBAG forecast in terms of when the full build out of the General Plan would happen. As shown in Table LU-3 (see Table LU-3 in Appendix Section) of the City General Plan, the population of Salinas would reach 213,063 by 2020. However, according to AMBAG forecast a population of 213,063 would be reached by 2030 (2004 AMBAG Population, Housing Unit and Employment Forecast – See Table 1). To address this difference, the City of Salinas commented that the AMBAG forecast may underestimate Salinas's future growth. For this reason, in this report, the flow projections are not solely based on 2004 AMBAG forecast. Historic US Census data, the City General Plan, the future growth area build out schedule and flow anticipated from Salinas's annexation area are used in addition to the AMBAG forecast.

IV. Analysis and Conclusions

1. Initially, flow projections are made by the different approaches which are indicated in Table 5 through Table 12. These Tables are located in the appendix. The merits and limitations of these approaches are discussed under Section X. Among the different tables developed for flow projections Table 10 and Table 12 control the earliest and the latest time to trigger the plant physical capacity expansion. The projected flows from the remaining Tables lie within these two boundaries. Therefore, only flow projections from Table 10 and Table 12 are used to make the final conclusions. Projected flows, from the different approaches, are extracted from all the Tables (5 through 12) and summarized in Table 13. Chart 2: RTP Wastewater Treatment Demands are reproduced in this section showing the summary of flow projections used for the conclusions.

Table 10: Salinas General Plan Projection with Flow Projected Based on 2004 AMBAG Forecast for other Cities																
	1990	2000	2005	2010	2015	2020	2025	2030	1990	2000	2005	2010	2015	2020	2025	2030
Population									**flows**							
Del Rey Oaks		1,650	1,652	1,594	1,586	1,577	1,586	1,594		0.13	0.13	0.12	0.12	0.12	0.12	0.12
Marina		19,163	23,172	30,567	32,465	34,362	34,860	35,357		1.38	1.67	2.20	2.34	2.47	2.51	2.55
Monterey		29,674	29,863	28,824	28,653	28,481	28,648	28,815		3.65	3.67	3.55	3.52	3.50	3.52	3.54
Pacific Grove		15,522	15,586	15,049	14,963	14,880	14,976	15,073		0.98	0.98	0.95	0.94	0.94	0.94	0.95
Salinas		143,776	158,154	173,969	191,366	210,502	231,553	254,708		12.80	14.08	15.48	17.03	18.73	20.61	22.67
Sand City		261	384	370	368	365	367	369		0.02	0.03	0.03	0.03	0.03	0.03	0.03
Seaside		33,097	34,221	34,886	34,871	34,855	35,002	35,148		2.55	2.64	2.69	2.69	2.68	2.70	2.71
Moss Landing		300	440	424	422	419	421	423		0.03	0.04	0.04	0.04	0.04	0.04	0.04
Castroville WD		6,724	7,364	8,004	8,644	9,284	9,924	10,564		0.66	0.72	0.78	0.85	0.91	0.97	1.04
		250,167	**270,836**	**293,687**	**313,338**	**334,725**	**357,337**	**382,051**		**22.19**	**23.95**	**25.84**	**27.56**	**29.43**	**31.44**	**33.64**

Table 12: Flow Projected Based on 2004 AMBAG Population Forecast																
	1990	2000	2005	2010	2015	2020	2025	2030	1990	2000	2005	2010	2015	2020	2025	2030
Population									**flows**							
Del Rey Oaks		1,650	1,652	1,594	1,586	1,577	1,586	1,594		0.13	0.13	0.12	0.12	0.12	0.12	0.12
Marina		19,163	23,172	30,567	32,465	34,362	34,860	35,357		1.38	1.67	2.20	2.34	2.47	2.51	2.55
Monterey		29,674	29,863	28,824	28,653	28,481	28,648	28,815		3.65	3.67	3.55	3.52	3.50	3.52	3.54
Pacific Grove		15,522	15,586	15,049	14,963	14,880	14,976	15,073		0.98	0.98	0.95	0.94	0.94	0.94	0.95
Salinas		143,776	146,687	165,141	174,788	184,434	198,749	213,063		12.80	13.06	14.70	15.56	16.41	17.69	18.96
Sand City		261	384	370	368	365	367	369		0.02	0.03	0.03	0.03	0.03	0.03	0.03
Seaside		33,097	34,221	34,886	34,871	34,855	35,002	35,148		2.55	2.64	2.69	2.69	2.68	2.70	2.71
Moss Landing		300	440	424	422	419	421	423		0.03	0.04	0.04	0.04	0.04	0.04	0.04
Castroville WD		6,724	7,364	8,004	8,644	9,284	9,924	10,564		0.66	0.72	0.78	0.85	0.91	0.97	1.04
		250,167	**259,369**	**284,859**	**296,760**	**308,657**	**324,533**	**340,406**		**22.19**	**22.93**	**25.05**	**26.08**	**27.11**	**28.52**	**29.93**

Item No.	Table 13: Projected Flows (mgd) Extracted from Table 5 through Table 12										
	Forecast Methodology	1990	2000	2004	2005	2010	2015	2020	2025	2030	Remark
1	Historic Flow Projection (HFP)	20.18	23.15		25.45	28.31	31.82	36.11	41.33	47.66	From Table 5
2	HFP with SFGA Build Out	20.18	23.15		22.84	22.83	24.45	27.21	30.71	34.28	From Table 6
3	HFP with 2004 Estimated Population	20.18	23.15	22.65	22.66	22.31	22.12	22.06	22.12	22.27	From Table 7
4	HFP with 2004 Estimated Population with SFGA Build Out	20.18	23.15	22.65	22.72	22.94	24.64	25.97	26.97	27.41	From Table 8
5	Salinas General Plan Projection	10.50	23.15		24.19	25.40	26.81	28.44	30.31	32.45	From Table 9
6	Salinas General Plan with 2004 AMBAG Projection		22.19		23.95	**25.84**	**27.56**	**29.43**	**31.44**	33.64	From Table 10
7	2004 AMBAG with 5.7 mgd for Salinas		22.19		22.93	25.18	27.03	28.63	30.38	31.79	From Table 11
8	AMBAG		22.19		22.93	25.05	**26.08**	**27.11**	**28.52**	**29.93**	From Table 12
9	MRWPCA (2005)		22.80		21.00	26.60	27.84	29.08	30.58	32.06	From a report titled ***Updated Flow Projections and Capacity Analysis for the Regional Wastewater System,*** March 15, 2005 by MRWPCA
10	MRWPCA (2003)		21.90		22.40	24.90	27.30	29.20	31.39	33.75	From a report titled ***Wastewater Service Area Study Update***, November 2003, by MRWPCA
11	Current Flow	21.50	21.50	21.50	21.50	21.50	21.50	21.50	21.50	21.50	Current Flow in mgd to the RTP from all member agencies
12	Current County Use Permit	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	Monterey County Use Permit
13	Plant Physical Capacity	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	Plant Physical Design Capacity

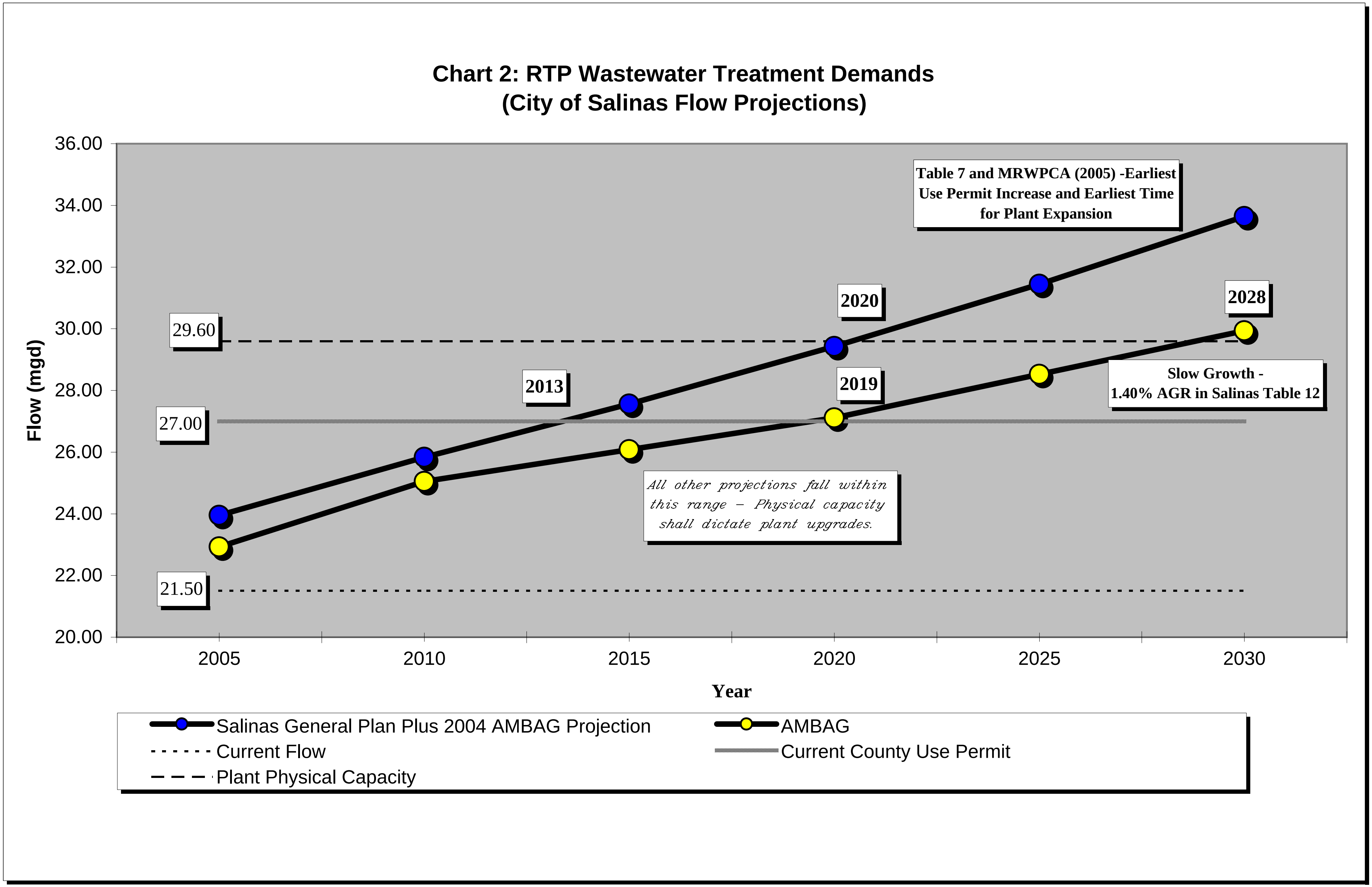


Chart 2: RTP Wastewater Treatment Demands
(City of Salinas Flow Projections)
Flow (mgd)
36.00
34.00
32.00
30.00
28.00
26.00
24.00
22.00
20.00
2005
2010
2015
2020
2025
2030
Year
Table 7 and MRWPCA (2005) -Earliest Use Permit Increase and Earliest Time for Plant Expansion
2020
2028
29.60
2013
2019
Slow Growth - 1.40% AGR in Salinas Table 12
27.00
All other projections fall within this range – Physical capacity shall dictate plant upgrades.
21.50
Salinas General Plan Plus 2004 AMBAG Projection
AMBAG
Current Flow
Current County Use Permit
Plant Physical Capacity

The reasons for choosing projected flows only from Table 10 and Table 12 are:

- The flow projections in Table 5, which is based on the US Census for 1990 and 2000, resulted in a 25.45 mgd for 2005 and a 47.66 mgd for 2030. A 25.45 mgd flow in 2005 according to Table 5 is much higher than the approximate 21.5 mgd current flow to the RTP. The 3.89% annual population growth rate between 1990 and 2000 is much higher than the 2% average annual population growth rate of the Salinas General plan and 1.4% average annual population growth rate in Salinas according to 2004 AMBAG projection. Therefore, this approach is found to be very conservation.

- The flow projections in Table 7 are based on the US Census Bureau population estimate for 2004. In the case of Salinas the population estimate resulted in a negative growth rate. Projected flow based on this approach for 2030 is 22.2 mgd and this flow is slightly higher than the current 21.5 mgd flow to the RTP. Therefore, like Table 5 the projected flow from Table 7 does not reflect actual conditions. The projection in Table 8 is also associated with the declining population growth in Salinas and as a result its significance is very less.

- Flow projections from Table 6, Table 9 and Table 11 lie between flow projections from Table 10 and Table 12.

2. The 27 mgd, current Monterey County Use Permit for the RTP, will be exceeded at the earliest by the projected flow at 2013 (Interpolated between projected flow data for 2010 and 2015 – Item 6 of table 13) and at latest at 2019 (Interpolated between projected flow data for 2015 and 2020 – Item 8 of Table 13). See Chart 2 for a diagrammatic representation of the earliest and the latest times. The MRWPCA has already started the process to increase the County Use Permit to current design capacity of 29.6 mgd. Therefore, this wide time range will not be a critical factor on the City of Salinas future growth area developments.

3. The 29.6 mgd, current RTP physical capacity, will be exceeded by the projected at the earliest by the projected flow at 2020 (Interpolated between projected flow data for 2020 and 2025 – Item 6 of table 13) and at latest at 2028 (Interpolated between projected flow data for 2025 and 2030 – Item 8 of Table 13). See Chart 2 for a diagrammatic representation of the earliest and the latest times. The decisive factor on when the projected flow to the RTP reaches 29.6 mgd will depend on the future population growth rate in member agencies. City of Salinas is the major contributor of the wastewater flow to the RTP. Therefore, the execution rate of the Salinas future growth area developments will significantly control the time. In the process of calculating this time frame, the 15% additional water conservation in the Salinas area is not accounted. MRWPCA also made the flow projection with and with out the 15% additional water conservation.

4. According to Item 6 in Table 13 the discharge to the RTP will reach at 33.64 mgd by the year 2030. The equivalent amount of discharge to the RTP with 15% water conservation in the Salinas area during that time would be 28.6 mgd. Therefore, the MRWPCA plant will have enough capacity to accept projected flow until 2030 as long as the Agency's 15% additional water conservation in the Salinas area is implemented in a timely manner. Also, the Agency's restriction not to expand the service area, which is stated in the March 15, 2005 flow projection report, needs to be maintained.

5. The agency is currently in the process of implementing projects to enhance the Plant's biosolids processing capacity both through mechanical and process improvements. The Agency is also currently replacing the digester mixing systems that will improve the solids handling capacity, and the digesters are not anticipated to reach their design capacity until at least 2030. The Agency will also modify the existing Sludge Thickeners to increase solids handling capacities through 2030.

V. Study Area

A report prepared by P&D Consultants identified the amount of wastewater flow from the Salinas Phase I annexation area which covers 2,488 acres. The current Salinas annexation area is divided into three Specific Plan Areas as follows:

1. **West Specific Plan Area** – Adds an additional 2.1 million gallons per day to the system and a demand of 5.9 cubic feet per second during peak hours.

2. **Central Specific Plan Area** – Adds an additional 1.6 million gallons per day to the system and a demand of 4.6 cubic feet per second during peak hours.

3. **East Specific Plan Area** – Adds an additional 2.0 million gallons per day to the system and a demand of 5.6 cubic feet per second during peak hours.

In total, 5.7 million gallons per day of wastewater will be generated from the three Specific Plan Areas. The sewer lines from these plan areas will be connected to the existing collection system of the City of Salinas, which flows to the MRWPCA plant.

The locations of connections to the existing City collection system are proposed to be at McKinnon Street, Independent Street, Constitution Boulevard and Sanborn Street. Parallel pipelines to the existing lines will be used where there is a deficit in the existing pipeline capacity as described in the P&D Sewer Study.

VI. Regional Treatment Plant Capacity

MRWPCA's RTP is located two miles north of Marina. The Agency owns, operates and maintains the regional wastewater system. The system includes: treatment plant, 10 pump stations, 35 pressure-vacuum stations and approximately 30 miles of pipeline (from each pump station to the treatment plant). The agency provides collection, treatment and disposal service for 12 member agencies. The member entities operate and maintain their own internal sewer collection systems. The member agencies are:

- Boronda County Sanitation District
- Castroville Water District (WD)
- City of Del Rey Oaks
- Marina Coast Water District
- City of Monterey
- Moss Landing County Sanitation District
- City of Pacific Grove
- City of Seaside
- City of Salinas
- City of Sand City
- The former Fort Ord
- Unincorporated areas of Northern Monterey County

The current design capacity of the RTP is 29.6 mgd. Original upgrade design of the plant calls for expansion in three stages. The first expansion stage of the RTP was completed simultaneously with the construction of the original RTP in 1990. The first stage expansion increased the capacity from its originally planned 20.9 mgd to its current 29.6 mgd. The implementation of the second and the third expansion stages are yet to come. The second expansion will increase the plant capacity to 35 mgd and the third expansion will increase it to 37 mgd. There is no specific period established for each of the plant expansions. However, MRWPCA is expected to initiate the expansion five years ahead of the time that the plant reaches its design capacity. Now, approximately 21.5 million gallons of wastewater are being processed at the plant each day. The plant is now serving a population of over 250,000 people from the member communities.

The plant also has a water recycling facility and has a recycled water distribution system, which includes 45 miles of pipeline and 22 supplemental wells. The recycled water supplied from this plant irrigates 12,000 acres of farmland in the Northern Salinas Valley. This has benefited North Monterey County since seawater intrusion to the aquifers is a concern for the area. This use of the recycled water enables the farmers to reduce the amount of water drawn from the underground aquifers in the region.

The scope of this report does not include evaluation of the capability of the Salinas' Pump Station (PS) and Interceptors.

VII. Population Forecasts

According to the 2004 AMBAG regional population forecast, almost 26,000 less people will live in the region (Monterey, Santa Cruz, and San Benito Counties) than are forecasted in the 1997 AMBAG forecast. In Monterey County, the average annual growth rate between 2000 and 2020 is 1.41 percent according to the 2004 AMBAG regional forecast instead of 1.51 percent in the 1997 AMBAG regional forecast.

Table 1 - 2004 AMBAG Population Forecast in MRWPCA Service Areas

Area	Census 2000	2005	2010	2015	2020	2025	2030
Del Rey Oaks	1,650	1,652	1,594	1,586	1,577	1,586	1,594
Marina	19,163	23,172	30,567	32,465	34,362	34,860	35,357
Monterey	29,674	29,863	28,824	28,653	28,481	28,648	28,815
Pacific Grove	15,522	15,586	15,049	14,963	14,880	14,976	15,073
Salinas	143,776	146,687	165,141	174,788	184,434	198,749	213,063
Sand City	261	384	370	368	365	367	369
Seaside	33,097	34,221	34,886	34,871	34,855	35,002	35,148
Unincorporated Monterey County	100,252	110,083	105,485	114,776	124,067	129,721	135,375
Moss Landing CDP*	300	440	424	422	419	421	423
Castroville WD*	6,724	7,364	8,004	8,644	9,284	9,924	10,564

** Current and forecast data is not available for this geography.*

The population for the Castroville WD was 5,272 people according to 1990 Census and 6,724 in the 2000 Census. The area had a 2.75 percent annual growth rate between 1990 and 2000. Unincorporated Monterey County has an average forecasted growth of 1.05 percent between 2000 and 2030. To fill the missing forecast for Castroville WD a 1.9 percent annual growth rate is calculated, which is the average of the 2.75 percent and 1.05 percent. According to the draft Castroville Community Plan, published in December 2004, there will be 0.64 mgd dry weather flow from the development of the future development areas and infill areas within the 20 year Community Plan boundary. For Moss Landing CDP, the same growth rate as Sand City is assumed.

It is projected that there will be fewer people living in the City of Del Rey Oaks, Monterey and Pacific Grove in the year 2030 than in the year 2000. The 2000 population will decrease by 56, 859 and 449 in the City of Del Rey Oaks, the City of Monterey and the City of Pacific Grove, respectively, by 2030. During the same period, there will be significant growth in the City of Salinas. The Salinas population is anticipated to grow by more than 69,000 people by 2030 as compared to Census 2000.

VIII. Dry Weather Wastewater Flow Factor

Table 2 shows a summary of the average dry weather per-capita flows for MRWPCA's member communities. MRWPCA developed the per capita flows based on the flow monitoring study it performed between 1996 and 1998 at each of its pump stations in conjunction with the AMBAG historic population data for 1996-1998. These dry weather per capita flow values are used in this report to project future dry weather flows in conjunction with population data.

According to Fort Ord Reuse Authority (FORA) Annual Report, (July 1, 2004 to June 30, 2005), 8,638 acres transferred to the County of Monterey, 2,708 acres transferred to the City of Marina, and 1,424 acres transferred to the City of Seaside. This situation is reflected in a significant 4.18 percent and 0.68 percent annual population growth in Marina and Seaside, respectively, from the year 2000 to 2005. Therefore, a per capita flow shown for Former Fort Ord in Table 2 does not reflect existing situation of the area.

Table 2 - Per Capita Flows

City or District	Average Dry Weather Flow Factor, Gallons Per Capita Per Day*
Pacific Grove	63
Monterey	124
Seaside, Del Rey Oaks, and Sand City	77
Former Fort Ord	134
Marina	72
Moss Landing	88
Castroville WD	98
Salinas and Boronda CSD	89
Overall Regional System	90

** Based on flow monitoring study performed by MRWPCA between 1996 and 1998*

IX. Projected Wastewater Flow

The MRWPCA in March 15, 2005 completed a report titled *Updated Flow Projections and Capacity Analysis for the Regional Wastewater System*. The March 15, 2005 report aimed at updating the Agency's 2000 flows and loadings projections that the Regional wastewater system would be expected to experience through the year 2020. The 2000 projections were made using The 1997 AMBAG population forecast where as the March, 2005 report was based on the 2004 AMBAG forecast, which is shown in Table 1.

Table 3 – MRWPCA's Dry Weather Flow Projections, March 15, 2005

	2000	2005	2010	2015	2020	2025	2030
Flows (mgd) (No service area expansion & No water conservation)		21.0	26.60	27.84	29.08	30.58	32.06
Flows (mgd) (No service area expansion & 15% water conservation in the Salinas Area)	NA	NA	24.37	25.47	26.58	27.68	29.17

Source: MRWPCA & EMC Planning Group Inc

The City of Salinas expressed its concern over the projection in Table 3 with a letter dated November 18, 2005 to MRWPCA. The City suggested that the AMBAG projections underestimate future growths. According to the 2004 AMBAG population forecast, Salinas's population will be 213,063 by 2030. However, the City of Salinas' 2002 General Plan anticipated the population to grow to 213,063 by 2020.

The March 15, 2005 flow projection has two restrictions. First, there will be no expansion in the Agency's service area and second there is an ambitious 15% water conservation in the Salinas area.

In this report, it is assumed that the no service area expansion restriction is not referring to expansion in member cities. The no service area expansion restriction excludes areas outside the member Cities from using the RTP. This is designed to support growth within member agencies, especially the Salinas future growth area.

According to the Agency projection, the plant will reach its limit by 2021 with out having the 15% additional water conservation in the Salinas area. However, the plant capacity will support additional growth to 2030 with effective implementation of an additional 15% water conservation.

To address the City of Salinas concern over the mismatch between the City General Plan and AMBAG forecast, the following information is used to project flows:

1. Historic US Census data
2. AMBAG forecast
3. SFGA developer build out schedule
4. City of Salinas General Plan and
5. The 5.7 mgd additional flow calculated by P&D Consultants for SFGA

The projected flow obtained from the above data and from the March 15, 2005 and November 2003 projected flows from MRWPCA reports are analyzed to determine earliest/latest time for the Current County Use Permit increase and the earliest/latest time to initiate the plant's physical expansion.

X. Available Capacity vs. Projected Flows

1. Flow Projection Using US Census for 1990 and 2000 (Table 5)

According to US Census for 1990 and 2000, the City of Salinas had an average annual growth rate of 3.89%. This growth rate is much higher than the 2% average annual growth rate of the 2002 City's General Plan and the 1.4% average annual growth rate of the AMBAG projection. The flow projection with this growth rate for Salinas will exceed the current County Use Permit before 2010 (See Table 5) and the current plant capacity before 2015 (See Table 5). According to Table 5 the projected flow from all member agencies will reach at 47.66 mgd by 2030. Also, the projected flow for 2005 according to Table 5 is 25.45 mgd and which is much higher than the approximate 21.5 mgd current flow to the RTP from service areas. Therefore, this approach is very conservative and does not represent actual conditions.

2. Flow Projection Using US Census 2000 and US Census Bureau Estimated Population for 2004 (Table 7)

According to Table 7, the estimated 2004 population of Salinas according to US Census was 148,183. The corresponding annual growth rate is -0.48%. The projected flow with this growth rate for Salinas resulted in an overall flow of 22.2 mgd by 2030. As compared to the approximate 21.5 mgd current flow to the RTP the 22.2 mgd flow by 2030 does not reflect actual conditions.

Values of flow projections from Table 5 and 7 are the two worst scenarios: Table 5 has an aggressive population growth and Table 7 has a very slow population growth in Salinas. Projected flows from these two approaches are excluded from further evaluation because of their unrealistic nature.

3. Flow Projection Using the Salinas general Plan with 2004 AMBAG projection (Table 10)

In Table 10 the 2004 AMBAG population forecast is used to get projected flow in each member agency except the City Salinas. Whereas for Salinas, the average 2% annual growth rate in population is used from the City's General Plan. The projected flow obtained from this approach is the highest of all projected flows from Table 6, Table 8, Table 9 and Table 11. The exception to the above finding is projected flow from Table 6 in 2030 is slightly higher than the corresponding flow from Table 10. However, projected flow from Table 10 exceeds the plant physical capacity in 2020 versus that of Table 6, which is sometime between 2020 and 2025. Therefore, Table 10 governs the earliest time for plant expansion.

4. Flow Projection Using 2004 AMBAG Population Projection (Table 12)

The projected flow from Table 12 is the least of all except that shown in Table 8, which is associated with the 2004 very slow (declining) population growth in the Agency's member communities, which is the discarded option from Item 2 above.

All flow projection from Table 6, 9 and 11 fall within the range of projected flows from Table 10 and Table 12. Therefore, the conclusion of this report will be mainly governed by projected flows from these two Tables. See summary of projected flows in Table 13.

XI. Findings

1. The 27 mgd, current Monterey County Use Permit for the RTP, will be exceeded at earliest by the projected flow at 2013 (Interpolated between projected flow data for 2010 and 2015 – Item 6 of table 13) and at latest 2019 (Interpolated between projected flow data for 2015 and 2020 – Item 8 of Table 13). The MRWPCA has already started the process to increase the County Use Permit to current design capacity of 29.6 mgd. Therefore, this wide time range will not be a critical factor on the City of Salinas future growth area developments.

   The current design capacity of the RTP is 29.6 mgd. Original upgrade design of the plant calls for expansion in three stages. The first expansion stage of the RTP was completed simultaneously with the construction of the original RTP in 1990. The first stage expansion increased the capacity from its originally planned 20.9 mgd to its current 29.6 mgd. The implementation of the second and the third expansion stages are yet to come. The second expansion will increase the plant capacity to 35 mgd and the third expansion will increase it to 37 mgd. There is no specific period established for each of the plant expansions. However, MRWPCA is expected to initiate the expansion five years ahead of the time that the plant reaches its design capacity. Now, approximately 21.5 million gallons of wastewater are being processed at the plant each day. The plant is now serving a population of over 250,000 people from the member communities.

2. The agency has confirmed that the biosolids handling processes are currently nearing their capacity. However, the agency is currently in the process of implementing projects to enhance capacity for biosolids both through mechanical and process improvements. The Agency is also currently replacing the digester mixing systems that will improve the solids handling capacity, and the digesters are not anticipated to reach their design capacity until at least 2030. The Agency is also made clear its capacity to modify the existing Sludge Thickeners to increase solids handling capabilities through 2030.

3. With 15% additional water conservation in the Salinas area, the MRWPCA's treatment plant does not need to be expanded to accommodate the Phase I annexation. In addition, the MRWPCA's capacity analysis of its RTP indicates that no expansion will be needed until 2023 at the earliest, but more likely not until about 2030 (MRWPCA March 15, 2005).

APPENDIX

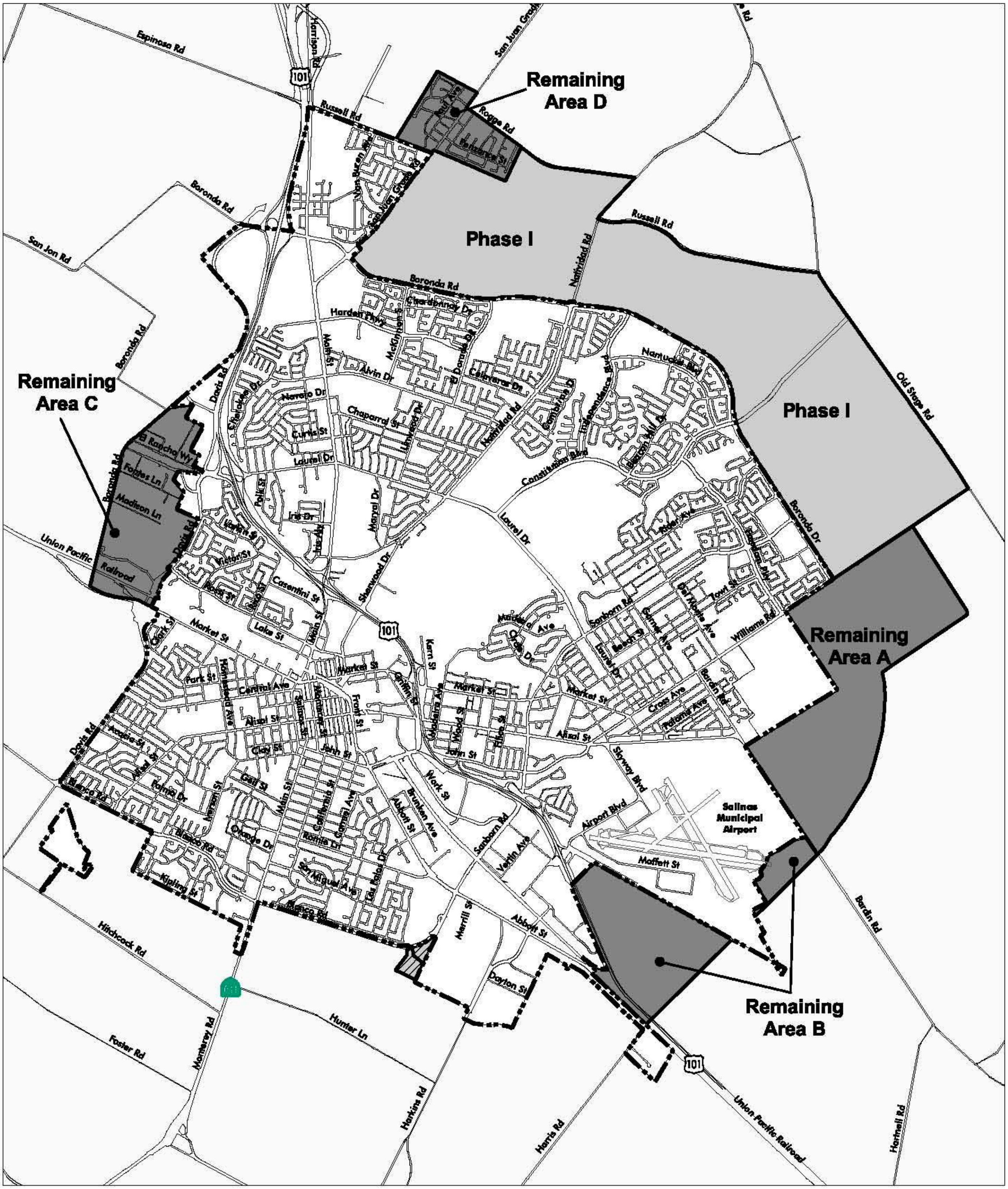
FIGURE

TABLES

CHARTS

EXCERPTS

FIGURE



Legend

City Boundary

Phase I

Phase I-A

Remaining Areas

NORTH 0 0.5 1 1.5 2 Miles

Figure I

City of Salinas Phased Annexation Areas

TABLES

Table 1 - 2004 AMBAG Population Forecast in MRWPCA Service Areas

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Salinas	143,776	146,687	165,141	174,788	184,434	198,749	213,063
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** Current and forecast data is not available for this geography.*

Table 2 - Per Capita Flows

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Overall Regional System	90

** Based on flow monitoring study performed by MRWPCA between 1996 and 1998*

Table 3 – MRWPCA's Dry Weather Flow Projections, March 15, 2005

	2000	2005	2010	2015	2020	2025	2030
Flows (mgd) (No service area expansion & No water conservation)		21.0	26.60	27.84	29.08	30.58	32.06
Flows (mgd) (No service area expansion & 15% water conservation in the Salinas Area)	NA	NA	24.37	25.47	26.58	27.68	29.17

Source: MRWPCA & EMC Planning Group Inc

Table 4: Salinas Future Growth Area (SFGA)
Projected Build Out*

Land Owner	First Home Occupied	Number Occupied By 2010	Number Occupied By 2015	Number Occupied By 2020	Number Occupied By 2025	Total Homes
Matthews (EASP)	2009	180	1,500	2,600	2,600	2,600
Pulte (EASP)	2010	295	1,058	1,058	1,058	1,058
Christensen (CASP)	2012	0	507	507	507	507
CreekBridge (CASP)	2009	100	1,100	2,100	2,597	2,597
Settrini (CASP)	2024	0	0	0	276	276
West Area SP	2010	200	1,450	2,700	3,950	3,950
Total (Cumulative)		**775**	**5,615**	**8,965**	**10,988**	**10,988**
Build Out Rate		7%	44%	30%	18%	
Cumulative Population**		2,844	20,607	32,902	40,326	40,326

** - From developers of West, Central and East Specific Plan Areas. P&D Consultants*

** - 3.67 Persons per Household*

Table 5: Historical Flow Projection*

	Population								Flows							
	1990	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**1990**	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Del Rey Oaks	1,661	1,650	1,645	1,639	1,634	1,628	1,623	1,617	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.12
Marina	26,436	25,101	24,467	23,849	23,247	22,660	22,088	21,530	1.90	1.81	1.76	1.72	1.67	1.63	1.59	1.55
Monterey	31,954	29,674	28,615	27,594	26,610	25,661	24,745	23,862	3.93	3.65	3.52	3.39	3.27	3.16	3.04	2.94
Pacific Grove	16,117	15,522	15,235	14,954	14,678	14,407	14,141	13,880	1.02	0.98	0.96	0.94	0.92	0.91	0.89	0.87
Salinas	108,777	151,060	180,419	215,485	257,366	307,387	367,129	438,483	9.68	13.44	16.06	19.18	22.91	27.36	32.67	39.03
Sand City	192	261	308	363	428	505	596	703	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.05
Seaside	38,901	31,696	28,761	26,097	23,681	21,488	19,498	17,692	3.00	2.44	2.21	2.01	1.82	1.65	1.50	1.36
Moss Landing	0	300	450	675	1,013	1,519	2,278	3,417	0.00	0.03	0.04	0.06	0.09	0.14	0.21	0.31
Castroville	5,272	6,724	7,650	8,703	9,902	11,266	12,817	14,582	0.52	0.66	0.75	0.85	0.97	1.10	1.26	1.43
	229,310	261,988	287,551	319,361	358,559	406,520	464,916	535,768	20.18	23.15	25.45	28.31	31.82	36.11	41.33	47.66

** - Data obtained from the US Census Bureau website, 2000 Census, 1990 to 2000 trends, April 2006. Trend shows a 3.89% (annually) increase in population in Salinas.*

Table 6: Historical Flow Projection* With SFGA Build out**

	Population								Flows							
	1990	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**1990**	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Del Rey Oaks	1,661	1,650	1,645	1,639	1,634	1,628	1,623	1,617	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.12
Marina	26,436	25,101	24,467	23,849	23,247	22,660	22,088	21,530	1.90	1.81	1.76	1.72	1.67	1.63	1.59	1.55
Monterey	31,954	29,674	28,615	27,594	26,610	25,661	24,745	23,862	3.93	3.65	3.52	3.39	3.27	3.16	3.04	2.94
Pacific Grove	16,117	15,522	15,235	14,954	14,678	14,407	14,141	13,880	1.02	0.98	0.96	0.94	0.92	0.91	0.89	0.87
Salinas	108,777	151,060	151,060	153,904	174,511	207,413	247,739	288,065	9.68	13.44	13.44	13.70	15.53	18.46	22.05	25.64
Sand City	192	261	308	363	428	505	596	703	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.05
Seaside	38,901	31,696	28,761	26,097	23,681	21,488	19,498	17,692	3.00	2.44	2.21	2.01	1.82	1.65	1.50	1.36
Moss Landing	0	300	450	675	1,013	1,519	2,278	3,417	0.00	0.03	0.04	0.06	0.09	0.14	0.21	0.31
Castroville	5,272	6,724	7,650	8,703	9,902	11,266	12,817	14,582	0.52	0.66	0.75	0.85	0.97	1.10	1.26	1.43
	229,310	261,988	258,191	257,780	275,704	306,547	345,525	385,350	20.18	23.15	22.84	22.83	24.45	27.21	30.71	34.28

** - Data obtained from the US Census Bureau website, 2000 Census, 1990 to 2000 trends, April 2006.*

*** - Data obtained from FGA members and P&D Consultants. See Table 4 for population data added to 2000 census from SFGA. Population from SFGA is zero for year 2005. The population of the other Cities is maintained the same as Table 5.*

Highlight indicates adjusted data

Table 7: Historical Flow Projection With 2004 Estimated Population*

	Population									Flows								
	1990	2000	2004*	2005	2010	2015	2020	2025	2030	1990	2000	2004*	2005	2010	2015	2020	2025	2030
Del Rey Oaks	1,661	1,650	1,614	1,605	1,561	1,519	1,477	1,437	1,398	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11	0.11
Marina	26,436	25,101	19,324	18,212	12,973	9,241	6,582	4,689	3,340	1.90	1.81	1.39	1.31	0.93	0.67	0.47	0.34	0.24
Monterey	31,954	29,674	29,669	29,668	29,662	29,655	29,649	29,643	29,637	3.93	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65
Pacific Grove	16,117	15,522	15,280	15,220	14,924	14,633	14,348	14,068	13,794	1.02	0.98	0.96	0.96	0.94	0.92	0.90	0.89	0.87
Salinas	108,777	151,060	148,183	147,477	143,966	140,539	137,193	133,927	130,739	9.68	13.44	13.19	13.13	12.81	12.51	12.21	11.92	11.64
Sand City	192	261	307	321	391	477	582	711	867	0.01	0.02	0.02	0.02	0.03	0.04	0.04	0.05	0.07
Seaside	38,901	31,696	34,130	34,785	38,124	41,784	45,795	50,190	55,008	3.00	2.44	2.63	2.68	2.94	3.22	3.53	3.86	4.24
Moss Landing	0	300	300	450	450	450	450	450	450	0.00	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
Castroville	5,272	6,724	6,724	7,650	8,703	9,902	11,266	12,817	14,582	0.52	0.66	0.66	0.75	0.85	0.97	1.10	1.26	1.43
	229,310	261,988	255,531	255,389	250,755	248,200	247,342	247,932	249,815	20.18	23.15	22.65	22.66	22.31	22.12	22.06	22.12	22.27

** - Data obtained from the US Census Bureau website, 2000 Census, 1990 to 2000 trends with 2004 estimate, April 2006. The 2004 population estimate shows -0.48% (annually) decline in population in Salinas.*

Table 8: Historical Flow Projection With Estimated Population* With SFGA Build out**

	Population									Flows								
	1990	2000	2004*	2005	2010	2015	2020	2025	2030	1990	2000	2004*	2005	2010	2015	2020	2025	2030
Del Rey Oaks	1,661	1,650	1,614	1,605	1,561	1,519	1,477	1,437	1,398	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11	0.11
Marina	26,436	25,101	19,324	18,212	12,973	9,241	6,582	4,689	3,340	1.90	1.81	1.39	1.31	0.93	0.67	0.47	0.34	0.24
Monterey	31,954	29,674	29,669	29,668	29,662	29,655	29,649	29,643	29,637	3.93	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65
Pacific Grove	16,117	15,522	15,280	15,220	14,924	14,633	14,348	14,068	13,794	1.02	0.98	0.96	0.96	0.94	0.92	0.90	0.89	0.87
Salinas	108,777	151,060	148,183	148,183	151,027	168,790	181,085	188,509	188,509	9.68	13.44	13.19	13.19	13.44	15.02	16.12	16.78	16.78
Sand City	192	261	307	321	391	477	582	711	867	0.01	0.02	0.02	0.02	0.03	0.04	0.04	0.05	0.07
Seaside	38,901	31,696	34,130	34,785	38,124	41,784	45,795	50,190	55,008	3.00	2.44	2.63	2.68	2.94	3.22	3.53	3.86	4.24
Moss Landing	0	300	300	450	450	450	450	450	450	0.00	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
Castroville	5,272	6,724	6,724	7,650	8,703	9,902	11,266	12,817	14,582	0.52	0.66	0.66	0.75	0.85	0.97	1.10	1.26	1.43
	229,310	261,988	255,531	256,094	257,816	276,451	291,234	302,514	307,585	20.18	23.15	22.65	22.72	22.94	24.64	25.97	26.97	27.41

** - Data obtained from the US Census Bureau website, 2000 Census, 1990 to 2000 trends with 2004 estimate, April 2006.*

*** - Data obtained from FGA members and P&D Consultants, See Table 4 for data added to 2004 census (estimate). Population from SFGA is zero for year 2005.The population of the other Cities is maintained the same as table 7.*

Highlight indicates adjusted data

Table 9: Salinas General Plan Projection* With Historic Population Data from Table 5 for Other Cities

	Population								Flows							
	1990	2000	2005	2010	2015	2020	2025	2030	1990	2000	2005	2010	2015	2020	2025	2030
Del Rey Oaks	1,661	1,650	1,645	1,639	1,634	1,628	1,623	1,617	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.12
Marina	26,436	25,101	24,467	23,849	23,247	22,660	22,088	21,530	1.90	1.81	1.76	1.72	1.67	1.63	1.59	1.55
Monterey	31,954	29,674	28,615	27,594	26,610	25,661	24,745	23,862	3.93	3.65	3.52	3.39	3.27	3.16	3.04	2.94
Pacific Grove	16,117	15,522	15,235	14,954	14,678	14,407	14,141	13,880	1.02	0.98	0.96	0.94	0.92	0.91	0.89	0.87
Salinas		151,060	166,166	182,783	201,061	221,167	243,284	267,612	0.00	13.44	14.79	16.27	17.89	19.68	21.65	23.82
Sand City	192	261	308	363	428	505	596	703	0.01	0.02	0.02	0.03	0.03	0.04	0.05	0.05
Seaside	38,901	31,696	28,761	26,097	23,681	21,488	19,498	17,692	3.00	2.44	2.21	2.01	1.82	1.65	1.50	1.36
Moss Landing	0	300	450	675	1,013	1,519	2,278	3,417	0.00	0.03	0.04	0.06	0.09	0.14	0.21	0.31
Castroville	5,272	6,724	7,650	8,703	9,902	11,266	12,817	14,582	0.52	0.66	0.75	0.85	0.97	1.10	1.26	1.43
	120,533	261,988	273,297	286,659	302,253	320,301	341,070	364,897	10.50	23.15	24.19	25.40	26.81	28.44	30.31	32.45

** - Estimated values obtained from the Salinas General Plan. Salinas estimated growth trend is +2% (annually) as discussed with City Staff. The population of the other Cities is maintained the same as Table 5*

Highlight indicates adjusted data

Table 10: Salinas General Plan Projection* With Flow Projected Based on 2004 AMBAG Forecast for Other Cities																
	Population								Flows							
	1990	2000	2005	2010	2015	2020	2025	2030	1990	2000	2005	2010	2015	2020	2025	2030
Del Rey Oaks		1,650	1,652	1,594	1,586	1,577	1,586	1,594		0.13	0.13	0.12	0.12	0.12	0.12	0.12
Marina		19,163	23,172	30,567	32,465	34,362	34,860	35,357		1.38	1.67	2.20	2.34	2.47	2.51	2.55
Monterey		29,674	29,863	28,824	28,653	28,481	28,648	28,815		3.65	3.67	3.55	3.52	3.50	3.52	3.54
Pacific Grove		15,522	15,586	15,049	14,963	14,880	14,976	15,073		0.98	0.98	0.95	0.94	0.94	0.94	0.95
Salinas		143,776	158,154	173,969	191,366	210,502	231,553	254,708		12.80	14.08	15.48	17.03	18.73	20.61	22.67
	2.00%															
Sand City		261	384	370	368	365	367	369		0.02	0.03	0.03	0.03	0.03	0.03	0.03
Seaside		33,097	34,221	34,886	34,871	34,855	35,002	35,148		2.55	2.64	2.69	2.69	2.68	2.70	2.71
Moss Landing		300	440	424	422	419	421	423		0.03	0.04	0.04	0.04	0.04	0.04	0.04
Castroville		6,724	7,364	8,004	8,644	9,284	9,924	10,564		0.66	0.72	0.78	0.85	0.91	0.97	1.04
		250,167	270,836	293,687	313,338	334,725	357,337	382,051		22.19	23.95	25.84	27.56	29.43	31.44	33.64

** - Estimated values obtained from the Salinas General Plan. Salinas estimated growth trend is +2% (annually) as discussed with City Staff. The population of the other Cities is based on AMBAG 2004 Population Forecast.*

Highlight indicates adjusted data

Table 11: Flow Projection based on 2004 AMBAG Forecast With Salinas' Flow Adjusted with 5.7 mgd Calculated by P&D for SFGA																
	Population								Flows							
	1990	2000	2005	2010	2015	2020	2025	2030	1990	2000	2005	2010	2015	2020	2025	2030
Del Rey Oaks		1,650	1,652	1,594	1,586	1,577	1,586	1,594		0.13	0.13	0.12	0.12	0.12	0.12	0.12
Marina		19,163	23,172	30,567	32,465	34,362	34,860	35,357		1.38	1.67	2.20	2.34	2.47	2.51	2.55
Monterey		29,674	29,863	28,824	28,653	28,481	28,648	28,815		3.65	3.67	3.55	3.52	3.50	3.52	3.54
Pacific Grove		15,522	15,586	15,049	14,963	14,880	14,976	15,073		0.98	0.98	0.95	0.94	0.94	0.94	0.95
Salinas		143,776	146,687	165,141	174,788	184,434	198,749	213,063		12.80	13.06	14.83	16.50	17.93	19.55	20.82
Sand City		261	384	370	368	365	367	369		0.02	0.03	0.03	0.03	0.03	0.03	0.03
Seaside		33,097	34,221	34,886	34,871	34,855	35,002	35,148		2.55	2.64	2.69	2.69	2.68	2.70	2.71
Moss Landing		300	440	424	422	419	421	423		0.03	0.04	0.04	0.04	0.04	0.04	0.04
Castroville		6,724	7,364	8,004	8,644	9,284	9,924	10,564		0.66	0.72	0.78	0.85	0.91	0.97	1.04
		250,167	259,369	284,859	296,760	308,657	324,533	340,406		22.19	22.93	25.18	27.03	28.63	30.38	31.79

The population of all Cities is maintained the same as 2004 AMBAG population forecast.

Highlight indicates adjusted data

Note on Table 11:

Total number of homes = 10,988 (Developers projected build out).

2005 to 2010 = 775 homes will be occupied. Rate of build out: 775/10,988 = 7%

2010 to 2015 = 4,840 homes will be occupied. Rate of build out: 4,840/10,988 = 44%

2015 to 2020 = 3,350 homes will be occupied. Rate of build out: 3,350/10,988 = 30%

2020 to 2025 = 2,023 homes will be occupied. Rate of build out: 2,023/10,988 = 18%

The above rates are used to distribute the 5.7 mgd flow from SFGA calculated by P&D Consultants. Total # dwelling units = 11,761 (P&D Report) Versus 15,873 Dwelling units of Salinas General Plan.

Persons per dwelling unit = 3.67 (P&D Report). Population = 11,761*3.67 = 43,163 Versus 15,873*3.67=58,253 Salinas General Plan.

Year	Rate	Flow	Cumulative Flow *	Population	Cumulative Population	
2005 - 2010	7%	0.40	0.40	3,044	3,044	Deduct this population figure from 2010 population and add 0.4 mgd to the flow to calculate the projected flow for 2010.
2010 - 2015	44%	2.51	2.91	19,012	22,056	Deduct this population figure from 2015 population and add 2.91 mgd to the flow to calculate the projected flow for 2015.
2015 - 2020	30%	1.74	4.64	13,159	35,215	Deduct this population figure from 2020 population and add 4.64 mgd to the flow to calculate the projected flow for 2020.
2020 - 2025	18%	1.05	5.70	7,947	43,162	Deduct this population figure from 2025 & 2030 population and add 5.70 mgd to the flow to calculate the projected flow for 2025 & 2030.

** - Additional flow generated from the SFGA. Distributed based on the projected build out.*

Note: FGA project build out - 2025

Table 12: Flow Projected Based on 2004 AMBAG Population Forecast

	Population								Flows							
	1990	2000	2005	2010	2015	2020	2025	2030	1990	2000	2005	2010	2015	2020	2025	2030
Del Rey Oaks		1,650	1,652	1,594	1,586	1,577	1,586	1,594		0.13	0.13	0.12	0.12	0.12	0.12	0.12
Marina		19,163	23,172	30,567	32,465	34,362	34,860	35,357		1.38	1.67	2.20	2.34	2.47	2.51	2.55
Monterey		29,674	29,863	28,824	28,653	28,481	28,648	28,815		3.65	3.67	3.55	3.52	3.50	3.52	3.54
Pacific Grove		15,522	15,586	15,049	14,963	14,880	14,976	15,073		0.98	0.98	0.95	0.94	0.94	0.94	0.95
Salinas		143,776	146,687	165,141	174,788	184,434	198,749	213,063		12.80	13.06	14.70	15.56	16.41	17.69	18.96
Sand City		261	384	370	368	365	367	369		0.02	0.03	0.03	0.03	0.03	0.03	0.03
Seaside		33,097	34,221	34,886	34,871	34,855	35,002	35,148		2.55	2.64	2.69	2.69	2.68	2.70	2.71
Moss Landing		300	440	424	422	419	421	423		0.03	0.04	0.04	0.04	0.04	0.04	0.04
Castroville		6,724	7,364	8,004	8,644	9,284	9,924	10,564		0.66	0.72	0.78	0.85	0.91	0.97	1.04
		250,167	259,369	284,859	296,760	308,657	324,533	340,406		22.19	22.93	25.05	26.08	27.11	28.52	29.93

Table 13: SUMMARY OF FLOW (mgd)

Forecast Methodology	1990	2000	2004*	2005	2010	2015	2020	2025	2030	
Historical Flow Projection (HFP)	20.18	23.15		25.45	28.31	31.82	36.11	41.33	47.66	From table 5 with a 3.89% annual growth rate in Salinas
HFP Plus SFGA Build out	20.18	23.15		22.84	22.83	24.45	27.21	30.71	34.28	From Table 6.
HFP with 2004 Estimated Population	20.18	23.15	22.65	22.66	22.31	22.12	22.06	22.12	22.27	From Table 7.
HFP with 2004 Estimated Population Plus SFGA Build out	20.18	23.15	22.65	22.72	22.94	24.64	25.97	26.97	27.41	From table 8.
Salinas General Plan Projection	10.50	23.15		24.19	25.40	26.81	28.44	30.31	32.45	From Table 9.
Salinas General Plan Plus 2004 AMBAG Projection		22.19		23.95	25.84	27.56	29.43	31.44	33.64	From Table 10.
2004 AMBAG Plus 5.7 mgd for Salinas		22.19		22.93	25.18	27.03	28.63	30.38	31.79	From Table 11.
AMBAG		22.19		22.93	25.05	26.08	27.11	28.52	29.93	From Table 12. 1.4% average growth rate in Salinas.
MRWPCA (2005)		22.80		21.00	26.60	27.84	29.08	30.58	32.06	From a report
MRWPCA (2003)		21.90		22.40	24.90	27.30	29.20	31.39	33.75	From a report titled *Wastewater Service Area Study Update* , November 2003, by MRWPCA
Current Flow	21.50	21.50	21.50	21.50	21.50	21.50	21.50	21.50	21.50	Current Flow in mgd to the RTP from all member agencies.
Current County Use Permit	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	Monterey County Use Permit
Plant Physical Capacity	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	29.60	Plant Physical Design Capacity

Highlight - County Use Permit Milestone

Highlight - expansion milestone

Notes:

1. In 2010 only Historical Flow Projection (from table 5) exceeded County Use Permit - Salinas growth rate per City Staff/records is considerably lower than previous 10 year census annual rate of 3.89%.

2. In 2015 Historical Flow Projection (from Table 5) exceeded plant capacity - Salinas growth rate per City Staff/records is considerably lower than previous 10 year census period rate of 3.89%. Salinas General Plan Plus 2004 AMBAG (Table 10), 2004 AMBAG Plus 5.7 mgd (Table 11) and MRWPCA Projections exceeded Current County Use Permit. This is inline with the recent MRWPCA's initiation for SEIR for County Use Permit increase.

3. In 2020 Historical Flow Projection With SFGA (from Table 6), Salinas General Plan (Table 9), Salinas General Plan Plus 2004 AMBAG (Table 10), 2004 AMBAG plus 5.7 mgd (Table 11), AMBAG (Table 12) and MRWPCA Projections exceeded Current County Use Permit. Recent permit initiation of the capacity increase (SEIR dated, November 2005/January 2006) shall satisfy these increases without expansion requirements. Historical Flow Projection (from table 5) exceeds second MRWPCA expansion of 35 mgd - as stated previously, this projection is very aggressive for actual City growth.

4. In 2025 Historical Flow Projection With SFGA (Table 6) Salinas General Plan Projection (Table 9), Salinas General Plan Plus 2004 AMBAG (Table 10), 2004 AMBAG Plus 5.7 mgd (Table 11) and MRWPCA Projections exceeded current plant capacity. Data shown indicates that MRWPCA to initiate expansion alternatives roughly 2020 (water conservation not included due to the uncertainty of a water conservation program implementation).

5. Except projection from Table 7 and Table 8, all projections exceeded plant capacity. Table 7 and Table 8 are based on declining population growth in the City of Salinas.
SEIR - Refers to Supplemental Environmental Impact Report

CHARTS

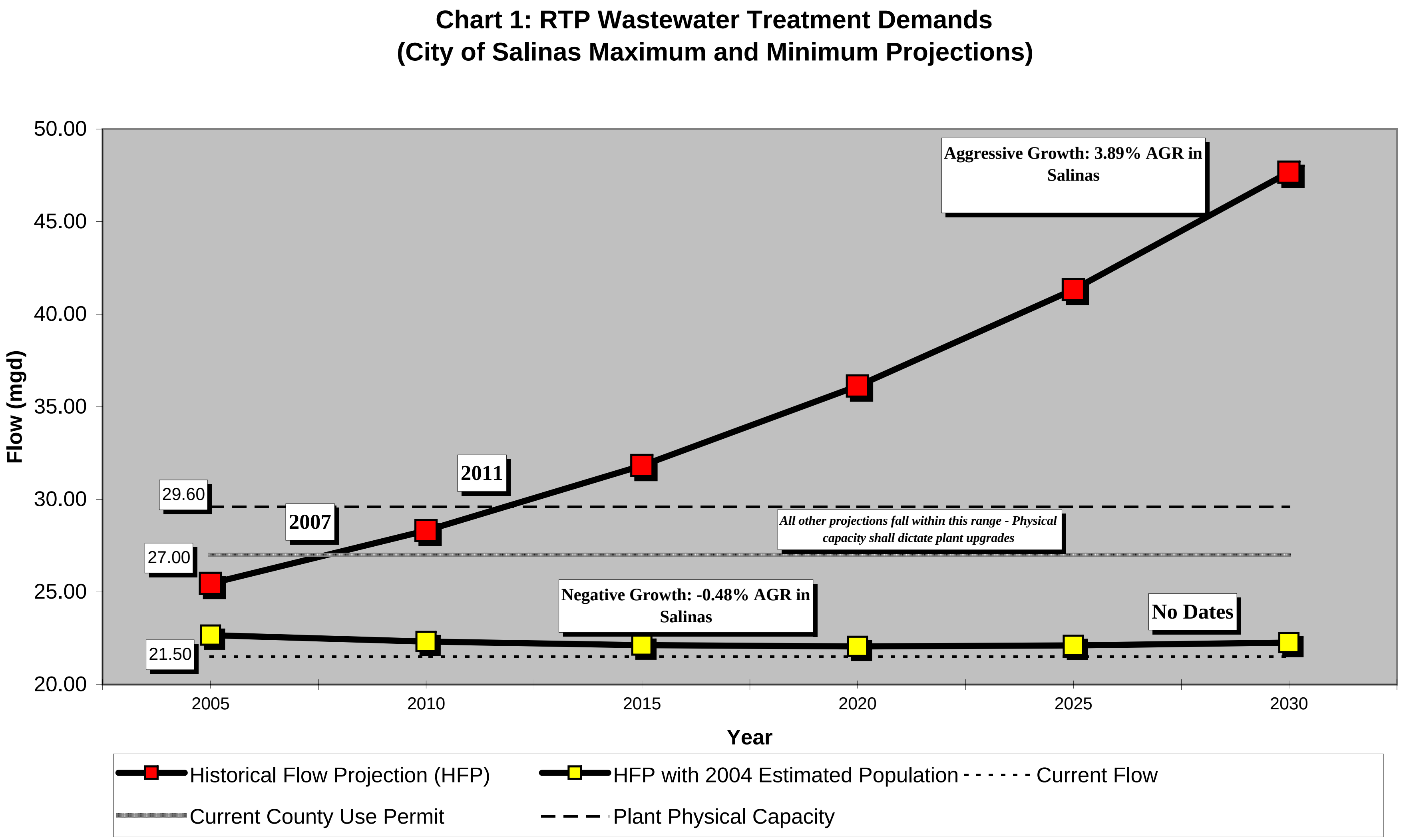


Chart 1: RTP Wastewater Treatment Demands
(City of Salinas Maximum and Minimum Projections)
Aggressive Growth: 3.89% AGR in Salinas
2011
29.60
2007
All other projections fall within this range - Physical capacity shall dictate plant upgrades
27.00
Negative Growth: -0.48% AGR in Salinas
No Dates
21.50
50.00
45.00
40.00
35.00
30.00
25.00
20.00
Flow (mgd)
2005
2010
2015
2020
2025
2030
Year
Historical Flow Projection (HFP)
HFP with 2004 Estimated Population
Current Flow
Current County Use Permit
Plant Physical Capacity

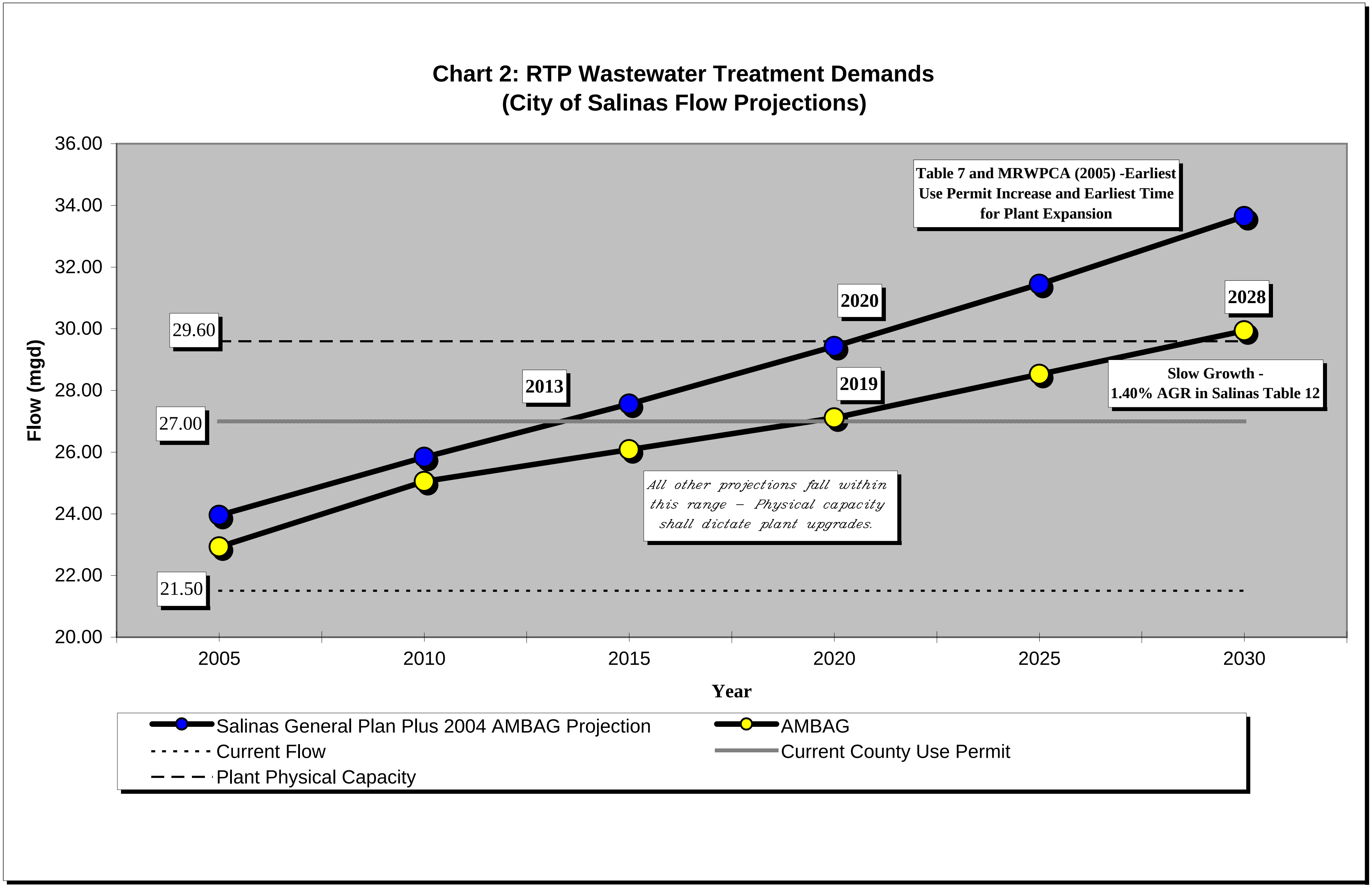


Chart 2: RTP Wastewater Treatment Demands
(City of Salinas Flow Projections)
Flow (mgd)
36.00
34.00
32.00
30.00
28.00
26.00
24.00
22.00
20.00
2005
2010
2015
2020
2025
2030
Year
Table 7 and MRWPCA (2005) -Earliest Use Permit Increase and Earliest Time for Plant Expansion
2020
2028
29.60
2013
2019
Slow Growth - 1.40% AGR in Salinas Table 12
27.00
All other projections fall within this range - Physical capacity shall dictate plant upgrades.
21.50
Salinas General Plan Plus 2004 AMBAG Projection
AMBAG
Current Flow
Current County Use Permit
Plant Physical Capacity

EXCERPTS

GRAPH 2

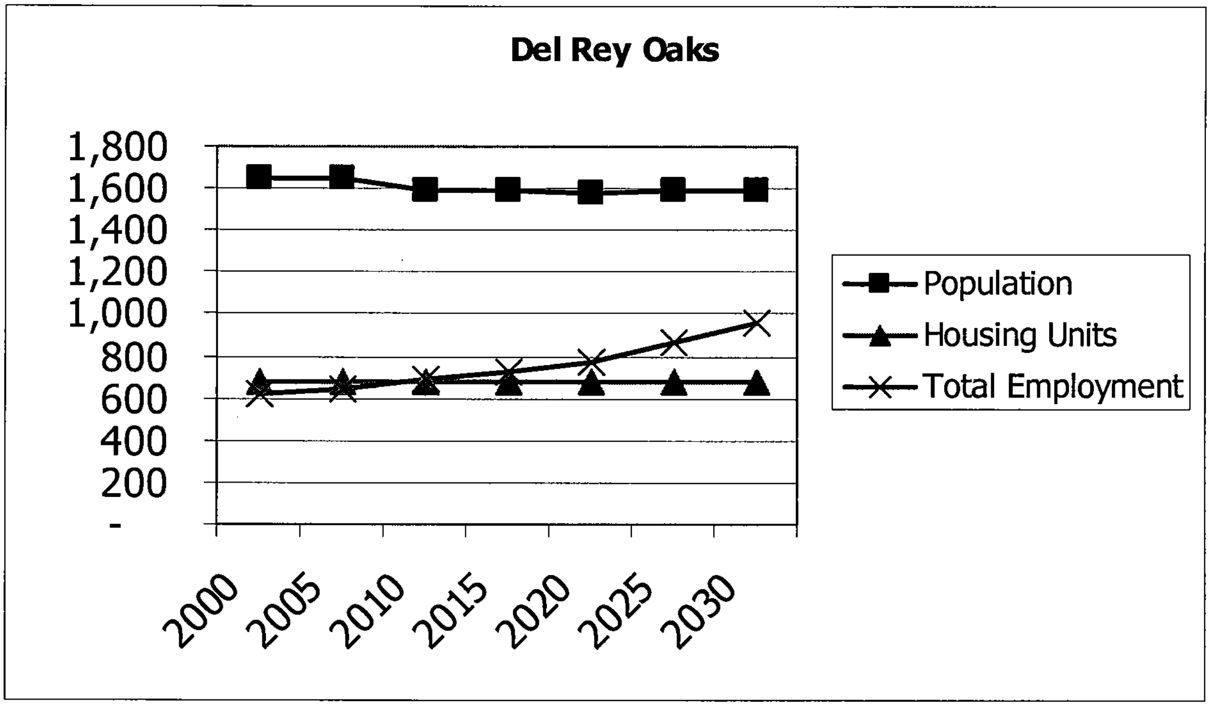
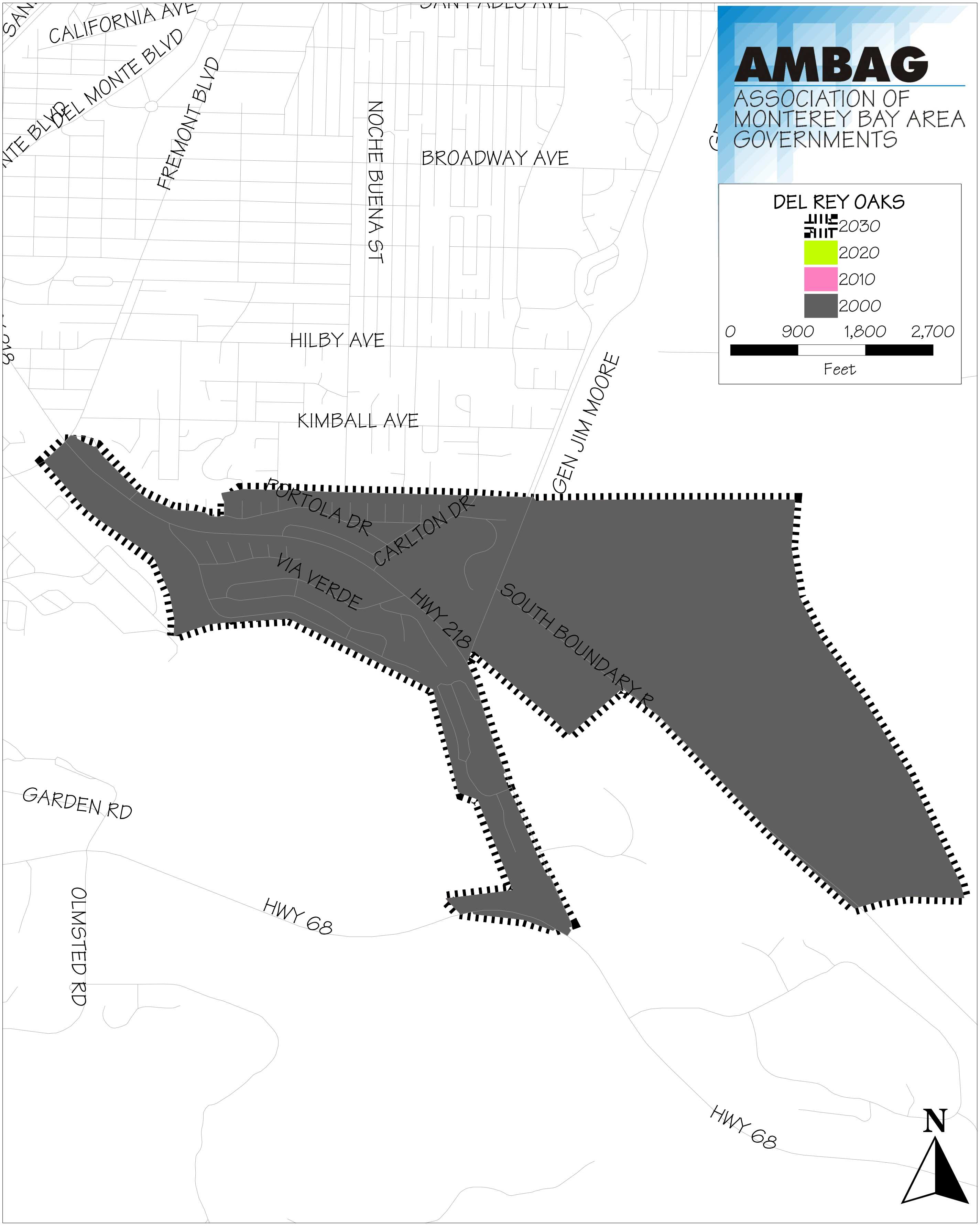


TABLE 8

Del Rey Oaks

Data	2000	2005	2010	2015	2020	2025	2030
Population	1,650	1,652	1,594	1,586	1,577	1,586	1,594
Housing Units	680	680	680	680	680	680	680
Total Employment	616	648	685	730	774	865	955
Construction Employment	12	12	13	13	13	17	20
Farm Employment	-	-	-	-	-	-	-
Government Employment	7	11	13	16	19	39	60
Industrial Employment	47	50	53	53	53	53	53
Retail Employment	378	380	403	403	403	399	395
Service Employment	172	195	203	245	286	357	427
Jobs-Housing Ratio	0.91	0.95	1.01	1.07	1.14	1.27	1.40


AMBAG
ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS
DEL REY OAKS
2030
2020
2010
2000
0
900
1,800
2,700
Feet
CALIFORNIA AVE
DEL MONTE BLVD
FREMONT BLVD
NOCHE BUENA ST
BROADWAY AVE
HILBY AVE
KIMBALL AVE
GEN JIM MOORE
PORTOLA DR
CARLTON DR
VIA VERDE
HWY 218
SOUTH BOUNDARY R
GARDEN RD
OLMSTED RD
HWY 68
HWY 68
N

GRAPH 6

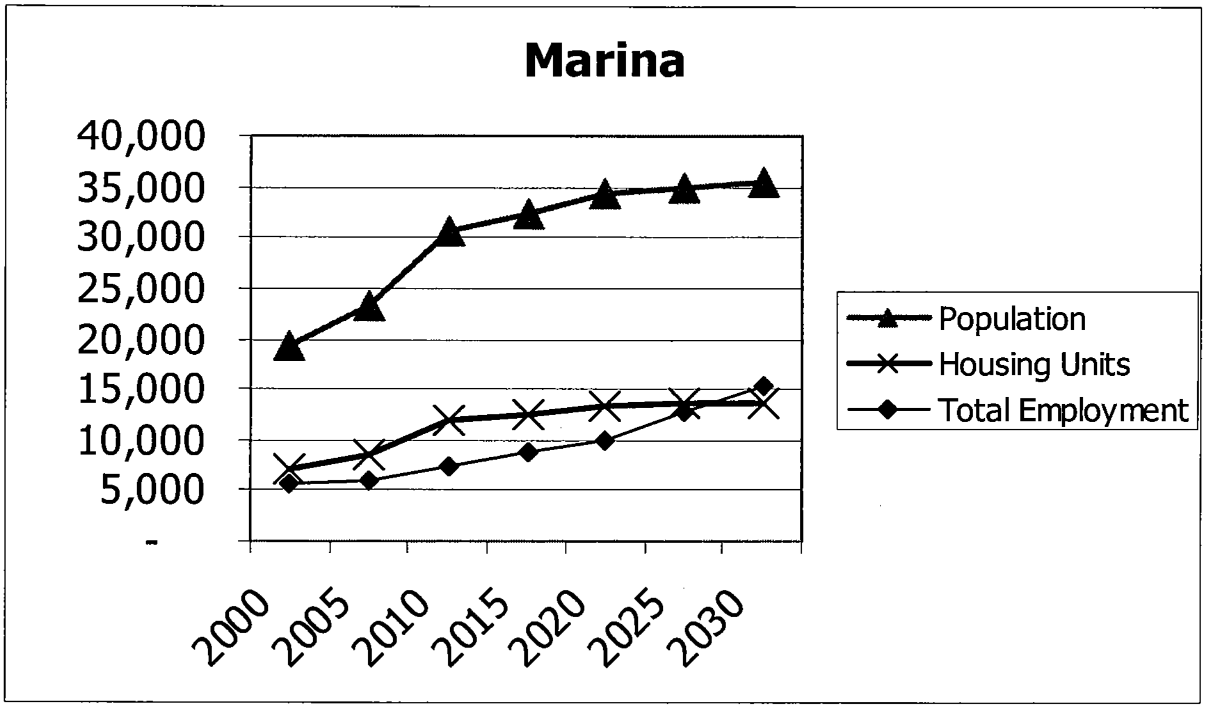
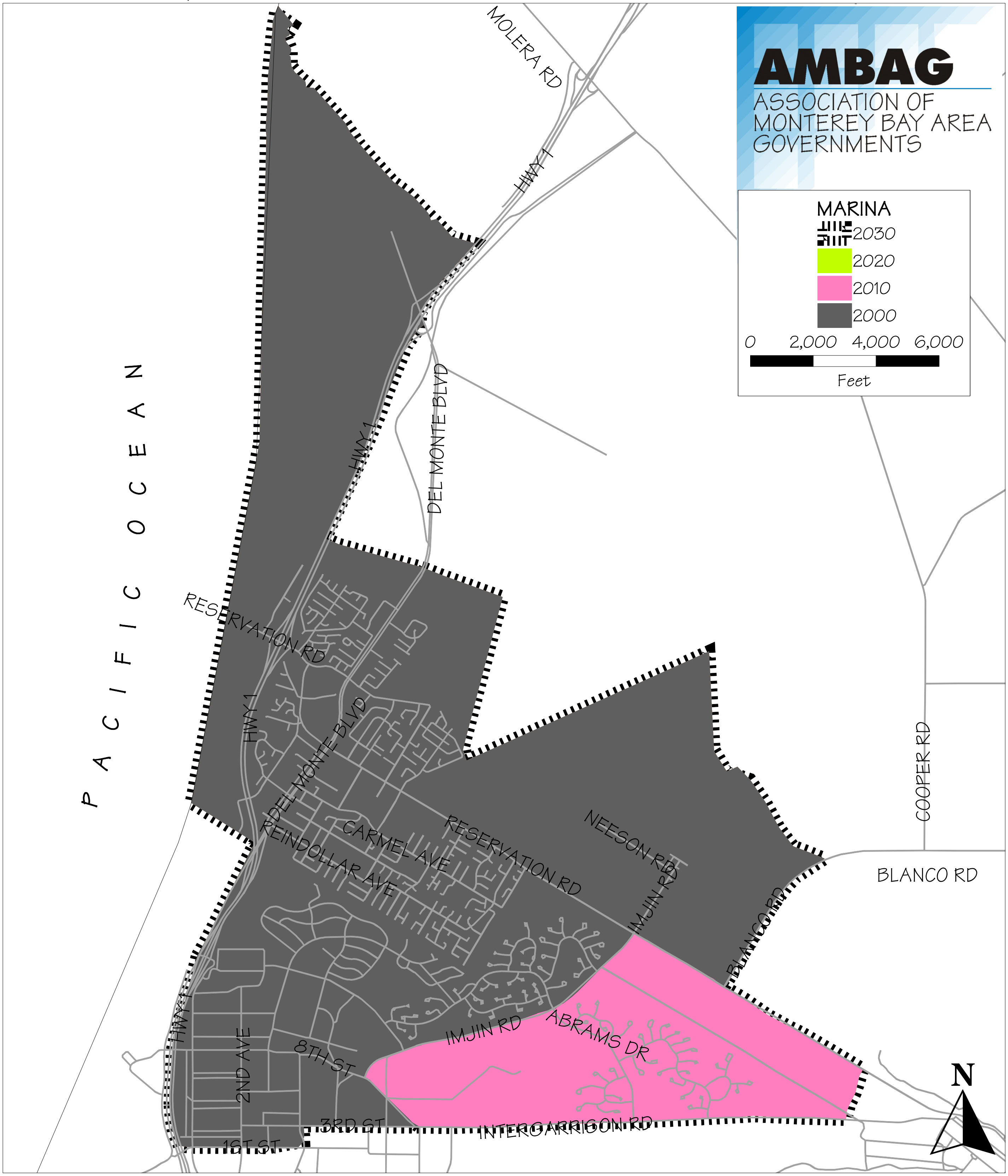


TABLE 12

Marina

Data	2000	2005	2010	2015	2020	2025	2030
Population	19,163	23,172	30,567	32,465	34,362	34,860	35,357
Housing Units	7,100	8,553	11,799	12,600	13,400	13,498	13,596
Total Employment	5,557	5,894	7,277	8,658	10,038	12,643	15,248
Construction Employment	830	836	895	916	937	969	1,000
Farm Employment	51	53	54	54	54	54	54
Government Employment	1,439	1,447	1,835	2,442	3,051	3,311	3,573
Industrial Employment	743	791	1,032	1,183	1,333	1,527	1,721
Retail Employment	879	881	1,007	1,201	1,394	1,468	1,541
Service Employment	1,615	1,886	2,454	2,862	3,269	5,314	7,359
Jobs-Housing Ratio	0.78	0.69	0.62	0.69	0.75	0.94	1.12


AMBAG
ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS
MARINA
2030
2020
2010
2000
0
2,000
4,000
6,000
Feet
PACIFIC OCEAN
MOLERA RD
HWY 1
DEL MONTE BLVD
RESERVATION RD
CARMEL AVE
REINDOLLAR AVE
NEESON RD
IMJIN RD
BLANCO RD
COOPER RD
ABRAMS DR
8TH ST
2ND AVE
3RD ST
1ST ST
INTERGARRISON RD
N

GRAPH 7

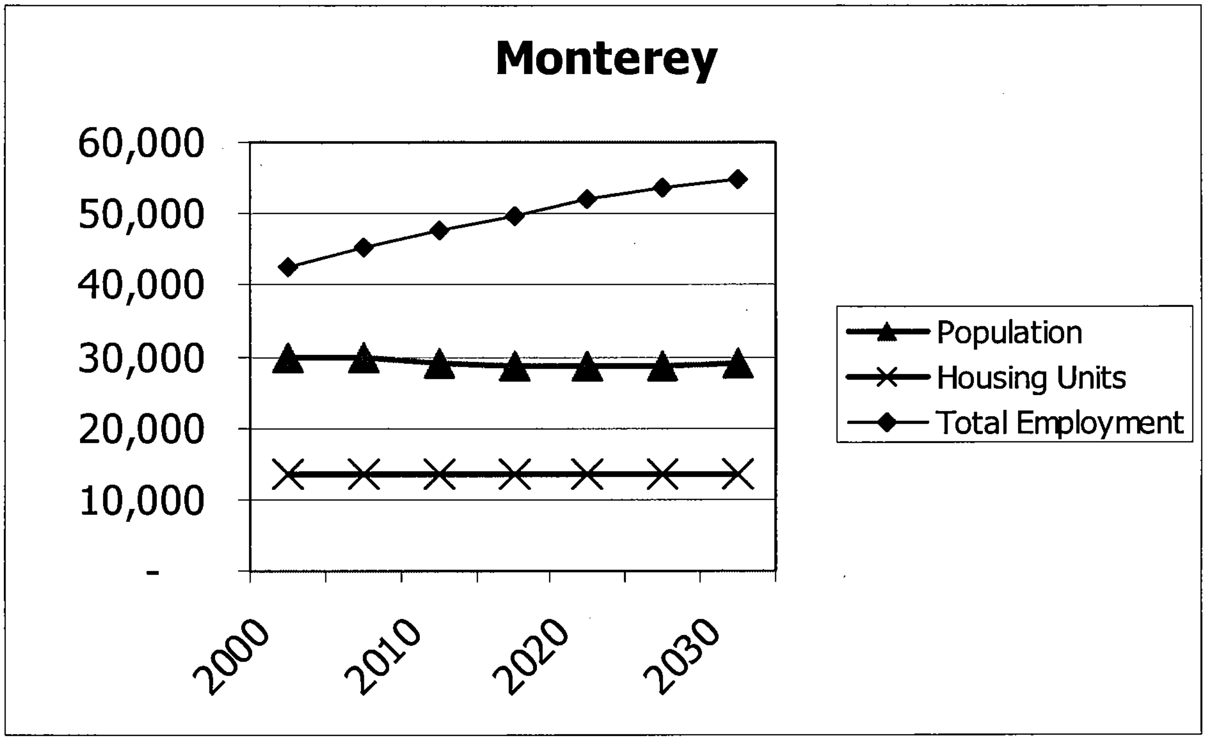


TABLE 13

Monterey

Data	2000	2005	2010	2015	2020	2025	2030
Population	29,674	29,863	28,824	28,653	28,481	28,648	28,815
Housing Units	13,478	13,516	13,545	13,545	13,545	13,545	13,545
Total Employment	42,488	45,327	47,493	49,714	51,934	53,471	55,008
Construction Employment	1,897	2,003	2,070	2,129	2,187	2,228	2,268
Farm Employment	-	-	-	-	-	-	-
Government Employment	9,652	10,518	11,257	12,447	13,637	14,688	15,742
Industrial Employment	4,577	4,866	5,307	5,456	5,605	5,675	5,744
Retail Employment	8,188	8,547	8,497	8,538	8,579	8,602	8,625
Service Employment	18,174	19,393	20,362	21,144	21,926	22,278	22,629
Jobs-Housing Ratio	3.15	3.35	3.51	3.67	3.83	3.95	4.06

2004 AMBAG POPULATION, HOUSING UNIT & EMPLOYMENT FORECASTS

GRAPH 8

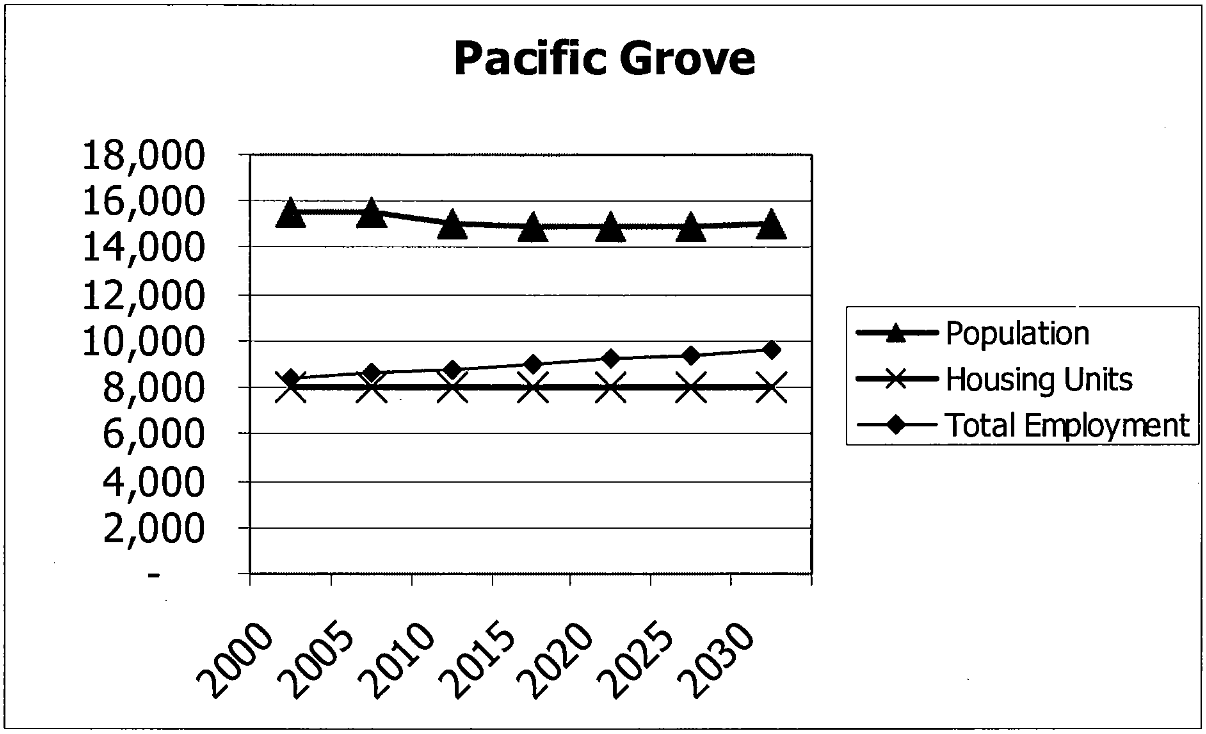
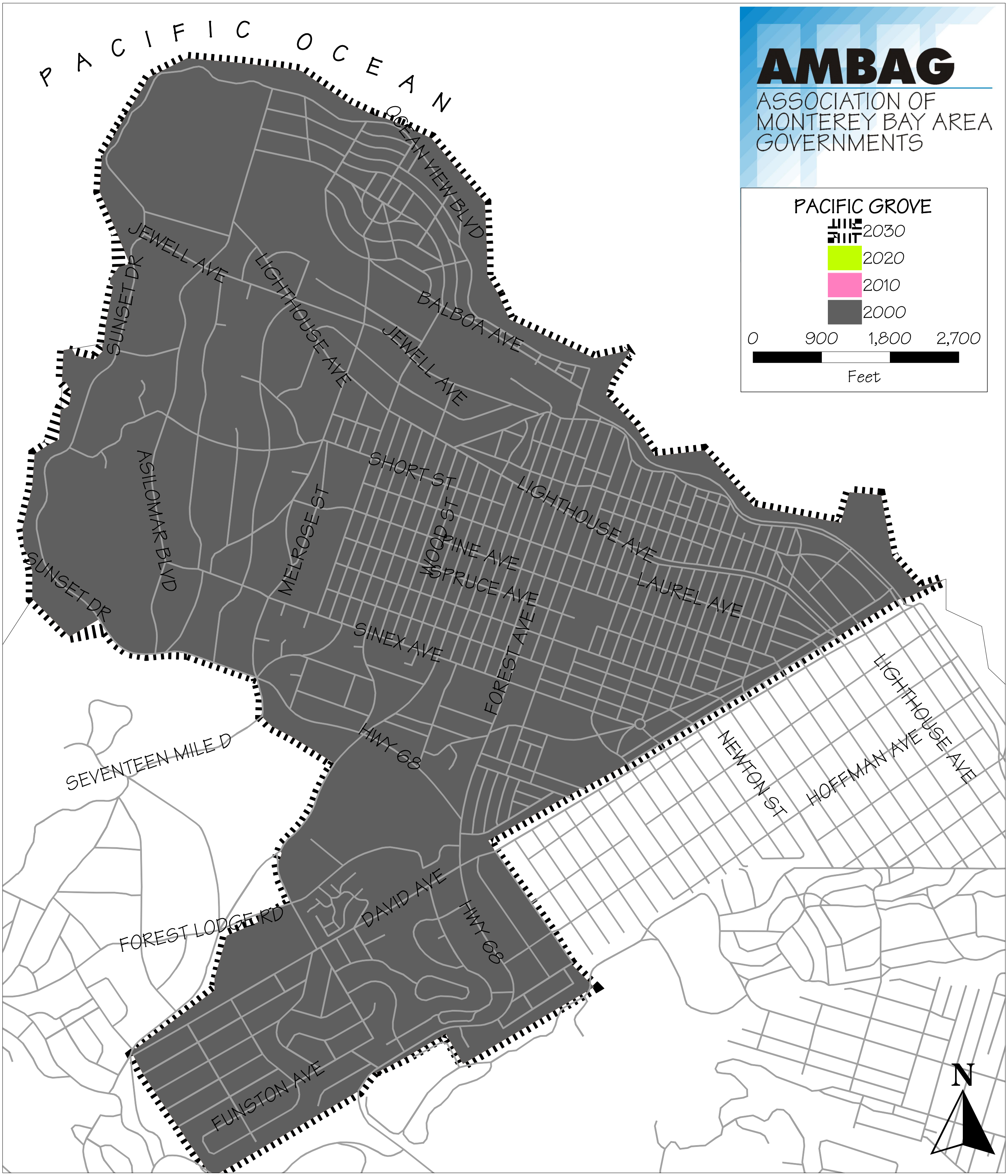


TABLE 14

Pacific Grove

Data	2000	2005	2010	2015	2020	2025	2030
Population	15,522	15,586	15,046	14,963	14,880	14,976	15,073
Housing Units	8,009	8,058	8,066	8,068	8,070	8,073	8,075
Total Employment	8,323	8,598	8,815	9,002	9,188	9,415	9,641
Construction Employment	535	540	546	548	549	555	560
Farm Employment	-	-	-	-	-	-	-
Government Employment	922	958	964	998	1,034	1,251	1,468
Industrial Employment	841	855	878	879	879	879	879
Retail Employment	1,954	1,957	1,957	1,957	1,957	1,957	1,957
Service Employment	4,071	4,288	4,470	4,620	4,769	4,773	4,777
Jobs-Housing Ratio	1.04	1.07	1.09	1.12	1.14	1.17	1.19


AMBAG
ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS
PACIFIC GROVE
2030
2020
2010
2000
0
900
1,800
2,700
Feet
N
PACIFIC OCEAN
OCEAN VIEW BLVD
JEWELL AVE
SUNSET DR
LIGHTHOUSE AVE
BALBOA AVE
JEWELL AVE
ASILOMAR BLVD
SHORT ST
MELROSE ST
WOOD ST
PINE AVE
SPRUCE AVE
LIGHTHOUSE AVE
LAUREL AVE
SUNSET DR
SINEX AVE
FOREST AVE
HWY 68
SEVENTEEN MILE D
NEWTON ST
HOFFMAN AVE
LIGHTHOUSE AVE
DAVID AVE
HWY 68
FOREST LODGE RD
FUNSTON AVE

GRAPH 9

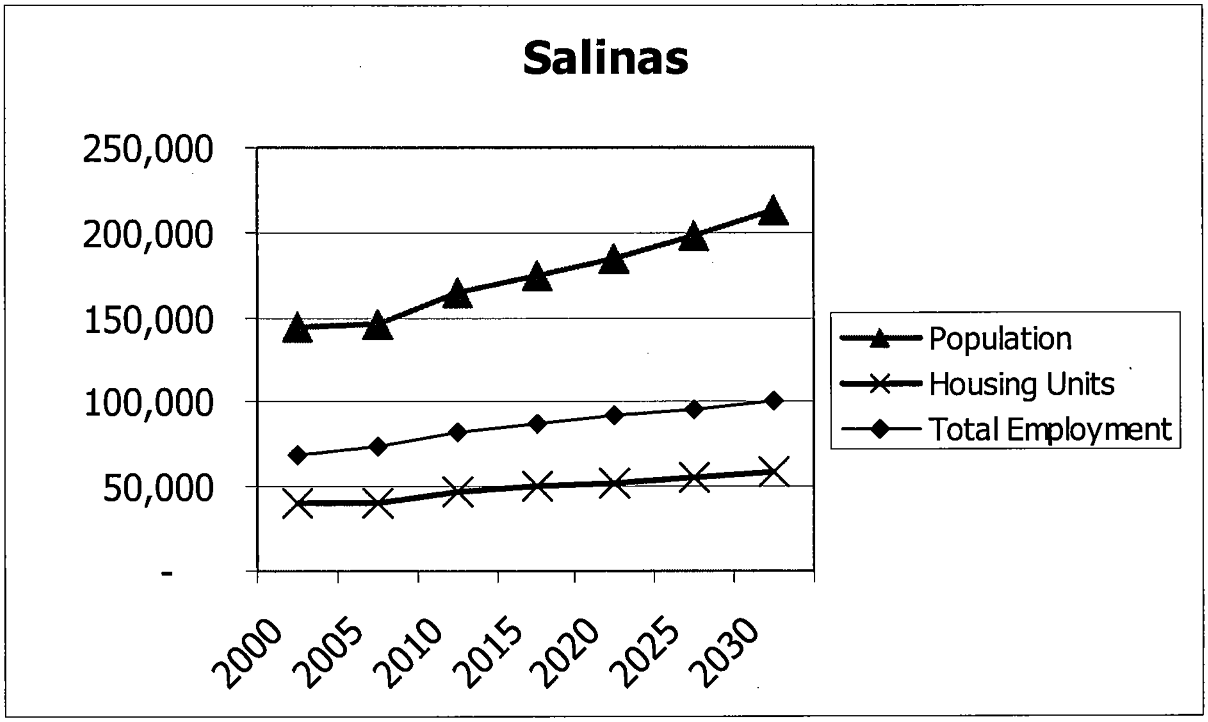
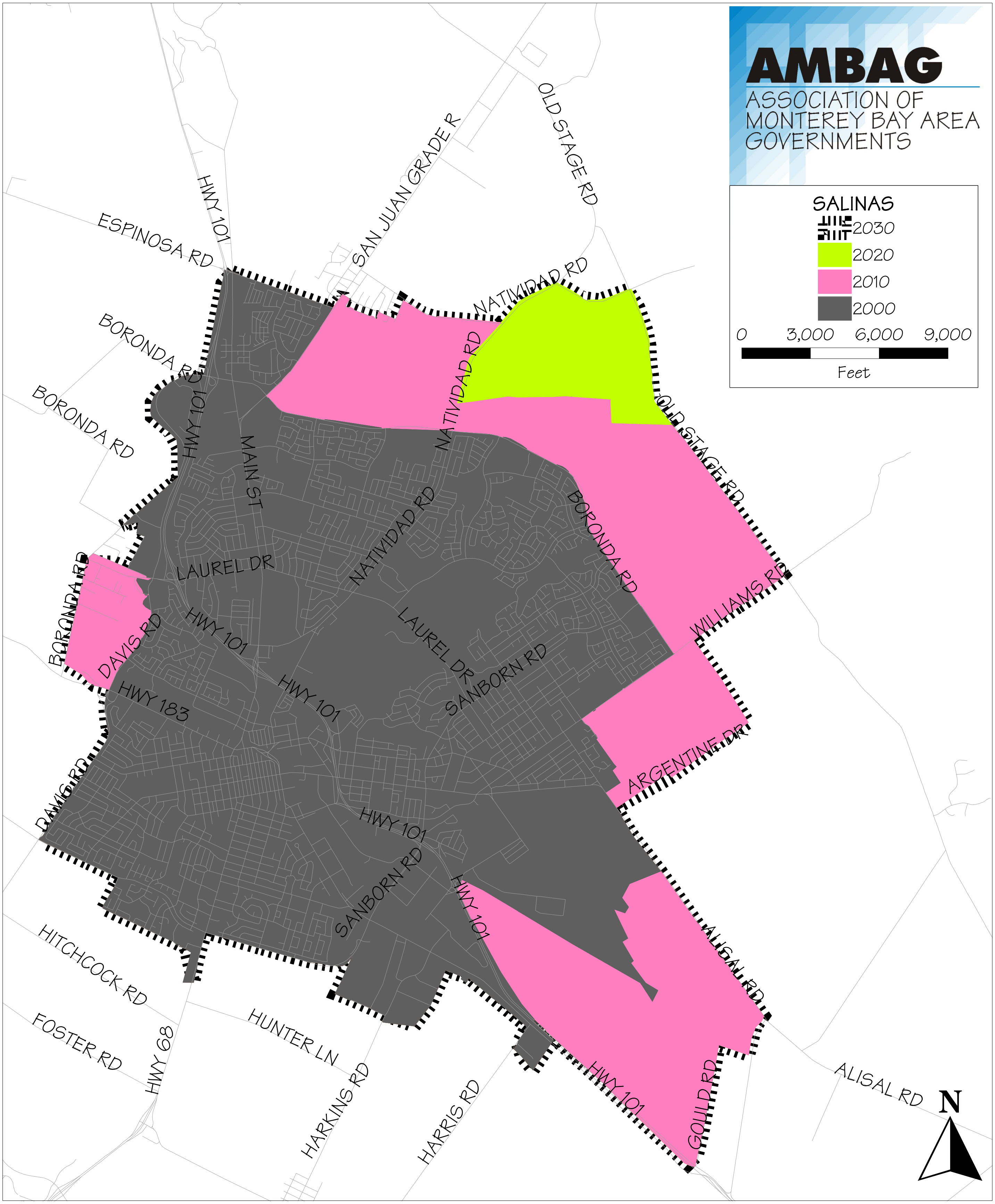


TABLE 15

Salinas

Data	2000	2005	2010	2015	2020	2025	2030
Population	143,776	146,687	165,141	174,788	184,434	198,749	213,063
Housing Units	39,469	40,411	46,696	49,564	52,431	55,243	58,055
Total Employment	68,233	74,363	81,572	86,550	91,527	96,414	101,300
Construction Employment	2,406	2,617	2,895	3,042	3,188	3,287	3,385
Farm Employment	72	96	652	705	757	757	757
Government Employment	12,085	13,230	14,288	15,709	17,133	19,513	21,895
Industrial Employment	14,698	16,302	18,382	19,178	19,973	20,545	21,116
Retail Employment	11,991	12,375	12,815	13,179	13,542	13,890	14,238
Service Employment	26,981	29,743	32,540	34,737	36,934	38,422	39,909
Jobs-Housing Ratio	1.73	1.84	1.75	1.75	1.75	1.75	1.74


AMBAG
ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS
SALINAS
2030
2020
2010
2000
0 3,000 6,000 9,000
Feet
N
ESPINOSA RD
HWY 101
SAN JUAN GRADE R
OLD STAGE RD
NATIVIDAD RD
BORONDA RD
MAIN ST
LAUREL DR
DAVIS RD
HWY 183
SANBORN RD
WILLIAMS RD
ARGENTINE DR
ALISAL RD
GOULD RD
HITCHCOCK RD
FOSTER RD
HWY 68
HUNTER LN
HARKINS RD
HARRIS RD

GRAPH 10

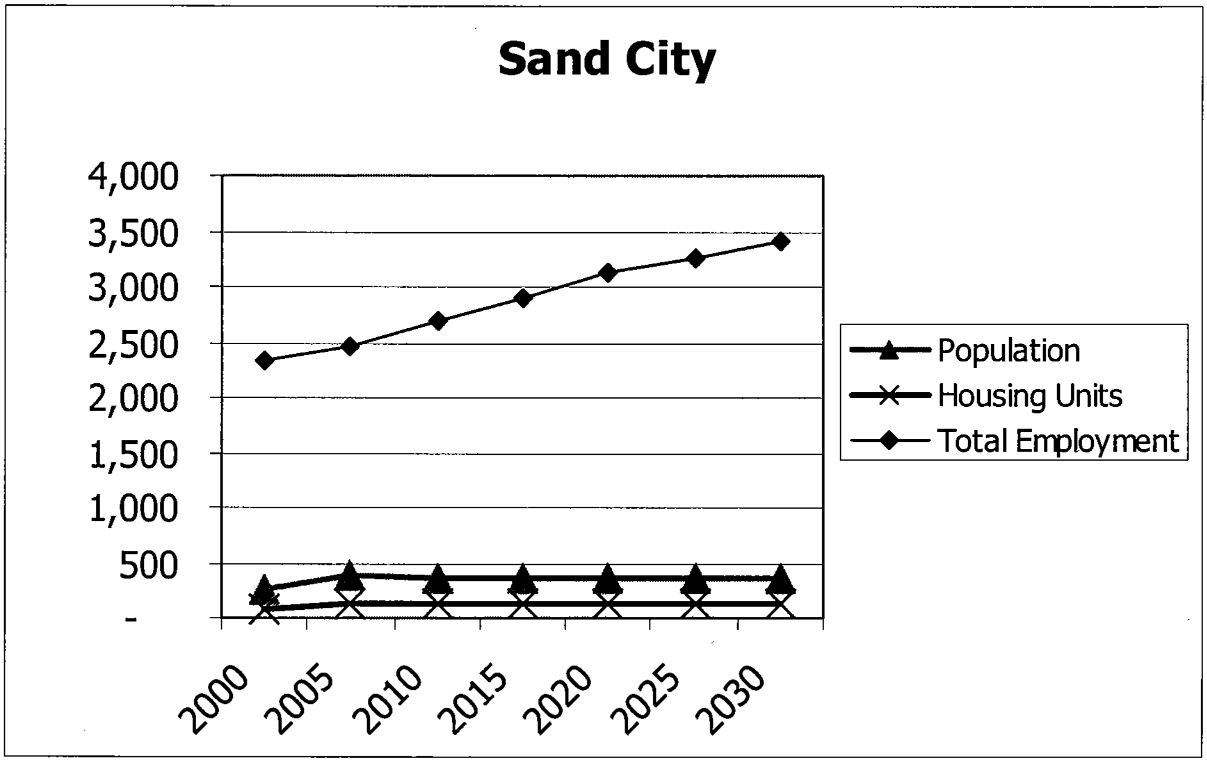
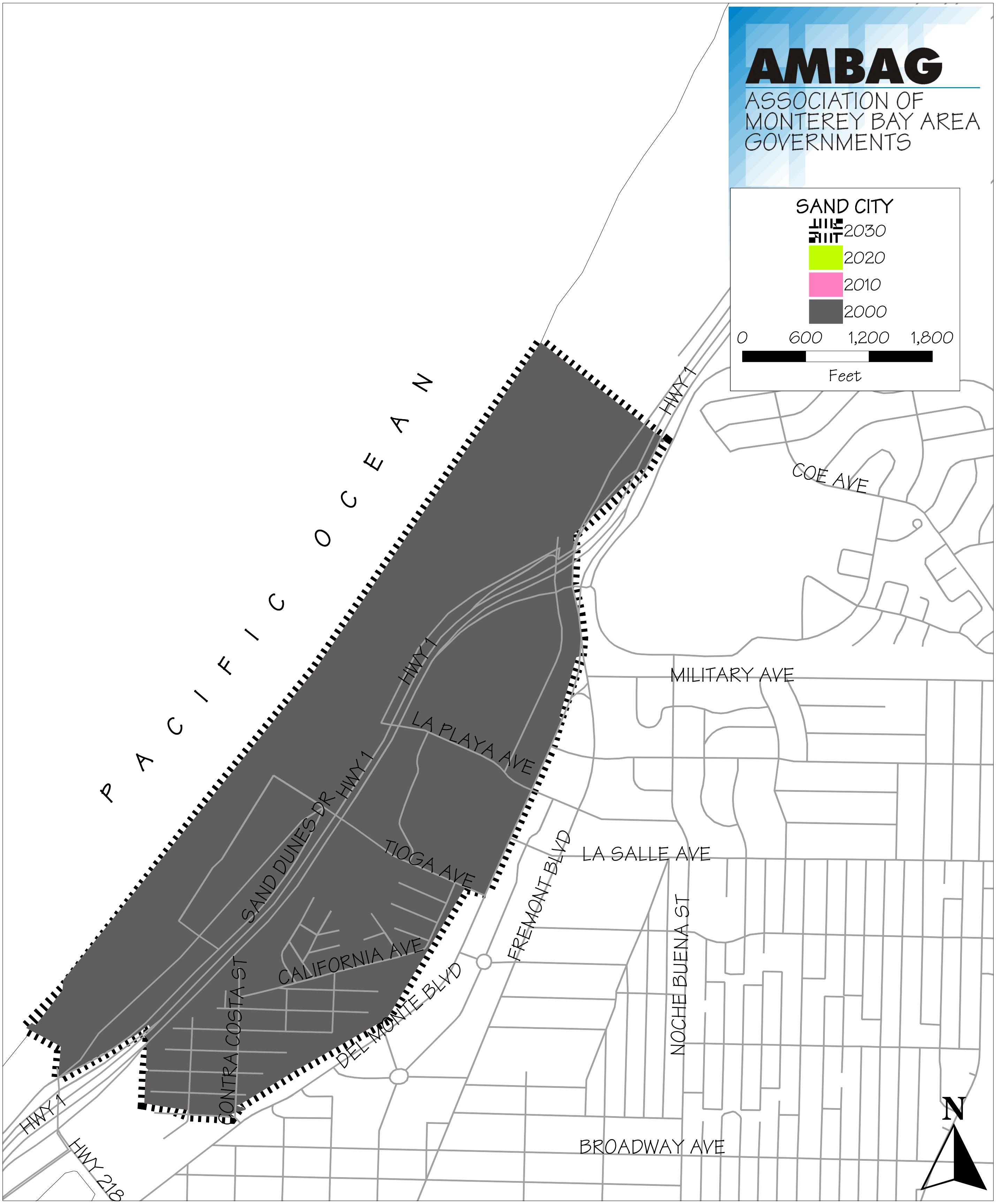


TABLE 16

Sand City

Data	2000	2005	2010	2015	2020	2025	2030
Population	261	384	370	368	365	367	369
Housing Units	88	136	136	136	136	136	136
Total Employment	2,331	2,466	2,693	2,909	3,125	3,269	3,413
Construction Employment	530	535	543	549	554	559	563
Farm Employment	-	-	-	-	-	-	-
Government Employment	18	22	24	26	30	50	73
Industrial Employment	650	666	686	686	686	691	695
Retail Employment	752	784	858	878	897	906	915
Service Employment	381	459	582	770	958	1,063	1,167
Jobs-Housing Ratio	26.49	18.13	19.80	21.39	22.98	24.04	25.10


AMBAG
ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS
SAND CITY
2030
2020
2010
2000
0
600
1,200
1,800
Feet
PACIFIC OCEAN
HWY 1
COE AVE
MILITARY AVE
LA PLAYA AVE
SAND DUNES DR
TIOGA AVE
LA SALLE AVE
FREMONT BLVD
CALIFORNIA AVE
CONTRA COSTA ST
DEL MONTE BLVD
NOCHE BUENA ST
BROADWAY AVE
HWY 218
N

GRAPH 11

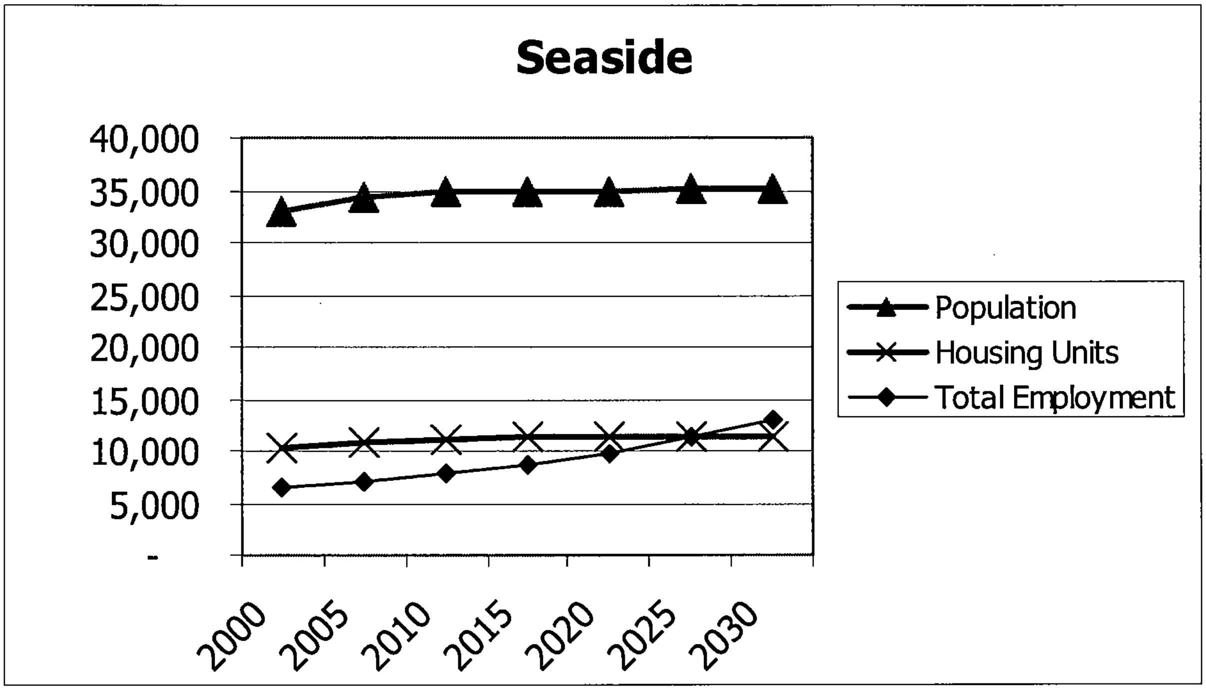
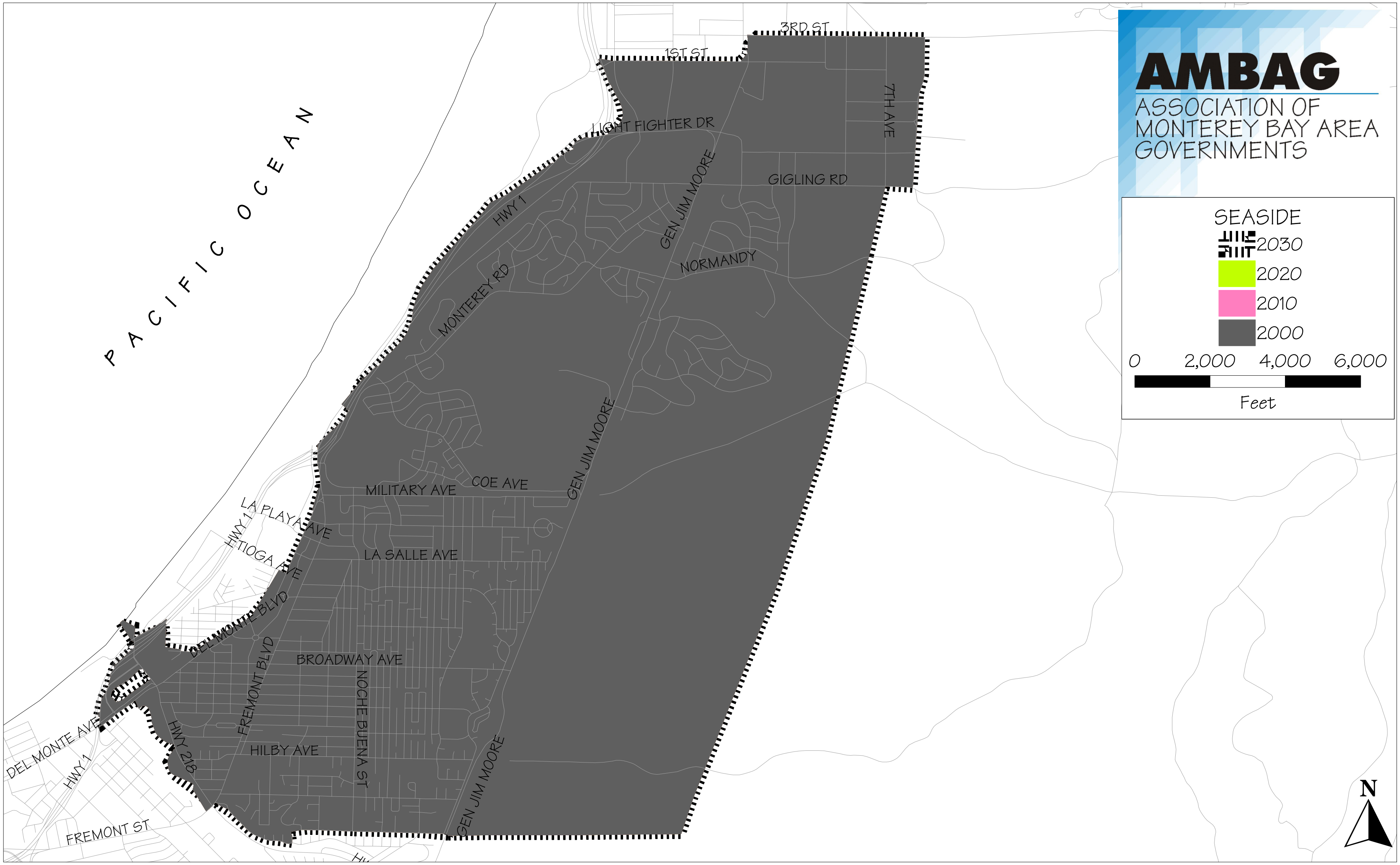


TABLE 17

Seaside

Data	2000	2005	2010	2015	2020	2025	2030
Population	33,097	34,221	34,886	34,871	34,855	35,002	35,148
Housing Units	10,366	10,688	11,193	11,237	11,280	11,280	11,280
Total Employment	6,603	7,125	7,866	8,775	9,683	11,379	13,075
Construction Employment	170	189	212	253	293	362	430
Farm Employment	-	-	-	-	-	-	-
Government Employment	1,247	1,325	1,475	1,745	2,017	2,750	3,486
Industrial Employment	496	586	799	927	1,055	1,081	1,106
Retail Employment	2,285	2,372	2,510	2,605	2,699	2,900	3,100
Service Employment	2,405	2,653	2,870	3,245	3,619	4,286	4,953
Jobs-Housing Ratio	0.64	0.67	0.70	0.78	0.86	1.01	1.16



2004 AMBAG POPULATION, HOUSING UNIT & EMPLOYMENT FORECASTS

APPENDIX E
WATER SUPPLY ASSESSMENT –
CAL WATER

Water Supply Assessment for
West, Central and East Specific Plan Areas
Salinas, California

Final

August 16, 2007

Prepared by:
California Water Service Company
Salinas, California

For:
City of Salinas, California

1. Introduction

The City of Salinas has initiated planning for future growth areas, which will be comprised of three Specific Plan areas: West, Central and East. An environmental impact report (EIR) will be prepared for each Specific Plan area. Since the proposed scale of development within each Specific Plan areas exceeds the criteria set forth in California state law pertaining to the requirement for preparation of a Water Supply Assessment (WSA) report (SB 610, CA Water Code Section 10910, et. al.), the City has requested that California Water Service Company (Cal Water) as the water service provider for the West Specific Plan and half of the Central Specific Plan and potentially the other half of the Central Specific Plan and all of the East Specific prepare a WSA for all three specific plans. Alco Water Service Company is currently the designated service provider to half of the Central and all of the East Specific Plans.

The location of the West, Central and East Area Specific Plans, which encompass approximately 2,481 acres in the northern part of the City of Salinas, are shown in the attached figures titled, “Figure LU-1 Future Growth Area” taken from the City of Salinas General Plan and “City of Salinas – Future Growth Areas” prepared by P&D Consultants. The proposed development areas are bounded on the west by San Juan Grade Road, the south by Boronda Road and Boronda Drive and the east by Williams Road and the north by Russell, Rogge and Old Stage Roads. The area is currently farmland with the preponderant activity being row crops.

Cal Water’s Salinas District encompasses most of the Salinas urban area. Salinas 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 Municipal Airport is located in the southeast corner of the city.

Cal Water’s Salinas District serves the residents of the City of Salinas and those of the unincorporated communities of Las Lomas, Oak Hills, Country Meadows, Salinas Hills and Indian Springs. A single distribution system provides service to the City of Salinas, which includes the Bolsa Knolls division. Small hydraulically isolated distribution systems provide service to the other communities.

SB 610 requires an assessment of whether the proposed water supply for the West, Central and East (WCE) Area Specific Plans and for the Salinas District will meet the combined water demands during normal, single dry and multiple dry water years for the next 20 years.

Following are a brief description of the proposed developments in each of the Specific Plan Areas, its projected water demands, the projected water demands for the City of Salinas, the combined water demands and a description and assessment of the proposed water supply as to its adequacy to meet those demands in accordance with the requirements of CWC 10912 to10915, and implementation requirements on the part of the City of Salinas, Cal Water and other parties.

2. Project Description

The West Area Specific Plan covering 815 acres consists of:

- Residential land uses: 449 acres of 4,243 dwelling units of which 1,671 (45%) are low density (4.5 – 8 dwelling unit/acre), 1,515 (39%) are medium density (8 – 15 dwelling units/acre) and 1,057 (16%) are high density (15 – 24 dwelling units/acre)
- Schools: 72 acres,
- Parks: 66 acres including a large community park,
- Mixed used commercial space (retail and office): 659,000 square feet and 97 residential dwelling units occupying approximately 41 acres.

The Central Area Specific Plan covering 633 acres consists of:

- Residential land uses: 398 acres of 3,313 dwelling units of which 1,765 (37%) are low density (4.5 – 8 dwelling unit/acre), 1,348 (38%) are medium density (8 – 15 dwelling units/acre) and 200 (24%) are high density (15 – 24 dwelling units/acre)
- Schools: 44 acres
- Parks: 26 acres
- Mixed used commercial space (retail and office): 468,000 square feet and 64 residential dwelling units occupying approximately 21 acres.

The East Area Specific Plan covering 922 acres consists of:

- Residential land uses: 451 acres of a maximum number of 3,958 dwelling units of which 1,992 (41%) are low density (4.5 – 8 dwelling unit/acre), 1,053 (42%) are medium density (8 – 15 dwelling units/acre) and 913 (17%) are high density (15 – 24 dwelling units/acre). Schools: 78 acres,
- Parks: 44 acres including a village green, playing field and oak woodland nature park,
- Mixed used commercial space (retail and office): 672,000 square feet and 86 residential dwelling units occupying approximately 29 acres.

3. Water Demand Forecast

The water demand forecast is based on the general land use designations contained in each of the Specific Plans and assumptions that water conservation measures will comply with existing codes and regulations. Proposed land use plans are summarized in Table 1.

Table 1
West, Central and East Specific Development Plans

Category	Acres	Square Feet	Units Residential
Residential			
West Area	449		4,243
Central Area	398		3,313
East Area	451		3,958
Total	1,298		11,514
Mixed Use (Commercial)			
West Area	41	781,000	97
Central Area	21	468,000	64
East Area	29	627,000	86
Total	91	1,876,000	247
	Total Residential Units:		11,761
Parks			
West Area	66		
Central Area	26		
East Area	44		
Total	136		
Schools			
West Area	72		
Central Area	44		
East Area	78		
Total	194		

A residential population forecast based City of Salinas Planning Department guidelines of 3.67 persons per residential dwelling unit is presented below.

Population Forecast for West, Central and East Specific Plans

Residential Units	Persons
11,761	43,163

Residential:

Cal Water data for Salinas District residential water use for the period from 1998 to 2002 averaged 355.8 gallons/service/day. Using US Census data for Salinas for 2000 of 3.66 persons/residential service, annual average day per capita consumption is 97.3 gallons/day for single-family residences. This includes both indoor use and outdoor use, which is mainly irrigation of lawns and landscaping. Note the combined annual average day (single-family and multi-family) residential per capita consumption is lower (Salinas 2007 Urban Water Management Plan (UWMP)).

Estimated average annual daily residential demand: 43,163 persons x 97.3 gallons/per person/day = 4,199,760 gallons/per day.

New dwelling units with water saving fixtures (toilets, showers, washing machines) and conservation type landscaping will result in a reduced residential per capita demand. The American Water Works Association (www.AWWA.org) indicates that conservation measures (installation of more efficient water fixtures and regular checking for water leaks) results in a 30% reduction in internal residential water use. California Coastal Commission staff in a report titled "Sunridge Views Subdivision, A-3-MCO-04-054" cites various studies that lead them to conclude that water conservation retrofitting and other measures will result in a 40% reduction of indoor water use and use of xeriscaping will reduce outdoor use, which is principally irrigation of lawns and landscaping, by 40%.

Field Code Changed

The assumption is made for the West, Central and East Specific Area Plans that new residential units will incorporate many of these conservation measures so that overall average per capita demand in the West, Central and East areas will be reduced by about 10% or that average annual residential demand in these areas will be 90% of the existing average Salinas District residential demand.

Therefore, estimated average annual daily residential demand at build out: 43,163 persons x (0.9) 97.3 gallons/per person/day = 3,779,800 gallons/per day or 4,237 acre-ft/yr.

<u>Commercial:</u>

Estimating water usage by commercial square footage requires characterizing the type and mix of businesses that are anticipated for the development. If the commercial mix has a higher concentration of higher water using businesses such as supermarkets, restaurants, coffee shops, health clubs, etc., the water use factor will be higher than one derived for dry goods retail activities such as clothing, shoes, jewelry, sporting goods, drug stores, bookstores, etc.

For another recent development project in Cal Water's Dominguez District in Torrance, CA, PCR Services Corporation (PCR) using data derived by the County Sanitation Districts of Los Angeles (CCDLA) developed a table of estimated demand for various types of commercial activities.

Since there was good agreement between the estimate of residential water usage derived from Cal Water data and those developed by PCR using CCDLA data, estimates of water demand for commercial activities developed by PCR using CCDLA factors for those activities are used for the West, Central and East Specific Plan areas and are summarized in Table 2.

Table 2 Commercial Activities Water Use Factors	
Category	**Average Use gallons/sq ft/day**
Retail:	
Shopping Center	0.358
Electronic Superstore	0.110
Home Improvement	0.110
Discount Club	0.110
Home Furnishing	0.110
Office Supp	0.110
Pet Supply	0.110
Supermarket	0.65
Restaurants:	
High turnover	1.100
Fast Food	1.100
Quality	1.100

No specific designation of commercial (mixed use) activities was provided for the West, Central and East Specific Plans; therefore, it is assumed that there will be a mix with the weighting as follows:

90 % retail (0.25) + 10% restaurants (1.10) = 0.335 gallons/sq ft/day

Therefore, West, Central and East Specific Plans average day commercial water use is estimated to be:

1,876,000 sq ft x 0.335 gallons/sq ft/day = 628,460 gallons/day or 705 acre-ft/yr

Parks:

Cal Water has determined park irrigation usage in a variety of urban settings and has found that it can range widely depending on the nature of the area, irrigation practices, type of vegetation and landscape cover, percentage of area irrigated, location and whether or not conservation practices are being followed. Usage ranges from 2.0 acre-ft/acre/year to over 4.5 acre-ft/acre/year.

It is anticipated that water conserving irrigation practices will be followed; therefore, an average application rate of 2.5 acre-ft/acre/year (ft/yr) is selected for the parks.

The estimated West, Central and East Specific Plan park irrigation demand at build out:
136 acres x 2.5 acre-ft/acre/yr = 340 acre-feet/year = 303,280 gallons per day.

Schools:

The firm Planning Design Consultants in developing water use estimates for the Rancho San Juan Specific Plan (similar development in Salinas area) used a factor of 3,500 gallons/day/acre to estimate annual average daily demand. This factor is used here for the schools proposed for the West, Central and East Specific Plans.

Estimated annual average daily school water demand: 194 acres x 3,500 gallons/day/acre = 679,000 gallons/day or 761 acre-ft/yr.

Unaccounted for Water:

Unaccounted for water is the difference between the metered quantity of water supplied to the distribution system and the quantity determined from metered sales or use by customers. It includes: pipe leakage losses, hydrant flushing, system repairs and improvements (flushing), fire flows and theft). On average in Salinas, it has been 11.55% - a figure that is above average with respect to other municipal systems in California.

New piping systems have a lower leakage rate than older existing pipes, so the overall unaccounted for water losses for the three specific plan areas is estimated to be 10%.

Therefore, the total estimated average annual daily water demand for the West, Central and East Area Specific Plans at build out is:

1.10 x (3,779,800 + 628,460 + 303,280 + 679,000) = 5,929,600 gallons/day or 6,648 acre-ft/yr

On an overall per capita water use basis, this is equivalent to 5,929,600 gallons/day/43,163 persons = 137.4 gallons/person/day. It is noted that without the assumption of 10% conservation savings in residential water use, total demand (including 10% for unaccounted for water) is estimated to be 6,391,550 gallons/day and overall per capita water use would accordingly be estimated at 148 gallons/person/day. As a check on these calculations, the overall average per capita water use for the Salinas District for the past five years was 145 gallons/person/day – quite close to the City's overall planning guide of 150 gallons/person/day. (Some years average water use is over 150 gallons/day/day and other years it is below 140 gallons/person/day.)

The estimated Maximum Day Flow is equal to 1.6 times the average annual daily demand. It is based on historical data from Cal Water's Salinas service area (Cal Water's June 2007 Urban Water Management Plan) and was calculated as the average ratio of maximum day demand in a given year to the annual average daily demand.

Total Estimated Maximum Day Water Demand for the West, Central and East Specific Plans:
1.6 x 5,929,600 gallons/day = 9,487,400 gallons/day or 6,588 gpm.

California Water Code 10631, Paragraph (e) (2), requires a water use projection (average annual demand forecast) in five-year increments for the 20-year forecasted period.
It is assumed that preparation and approval of the West, Central and East Specific Plans and certification of the EIRs will occur during 2007 and 2008 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 by July 2008 and that construction of plan area infrastructure and first phase of development will start in fall 2008. If it takes about 18 - 22 months or say 20 months as an average for infrastructure and homes to be built, sold and initial occupancy to start, then the West, Central and East Specific Plan water demands will start in mid 2010. It is also assumed that it will take 15 years for the West, Central and East Area Specific Plans to be completely built out and that full occupancy will occur by 2025.

Assuming development occurs linearly, the water demand forecast for the West, Central and East Area Specific Plans in five-year increments is as follows:

Year	**West, Central and East Area Specific Plans Average Annual Daily Water Demand**
2007	none
2012	790,600 gallons/day or 886 acre-ft/yr
2017	2,767,100 gallons/day or 3,102 acre-ft/yr
2022	4,743,700 gallons/day or 5,318 acre-ft/yr
2027	5,929,600 gallons/day or 6,648 acre-ft/yr

Year	**West, Central and East Area Specific Plans Maximum Day Water Demand**
2007	none
2012	1,265,000 gallons/day or 878 gpm
2017	4,427,400 gallons/day or 3,074 gpm
2022	7,159,500 gallons/day or 4,972 gpm
2027	9,487,400 gallons/day or 6,588 gpm

Salinas District Water Demand Forecast

Cal Water's projected total water demand forecasts in its draft Urban Water Management Plan (UWMP) June 2007 for the Salinas District are based on multiplying the forecast of projected services for each customer class (residential, commercial, industrial, institutional/government, other) by the anticipated demand per service for that class. Forecasts of growth in services are based on the five-year or ten-year average of growth in services by customer class for the period from. Three different demand scenarios per service per customer class (low, average and high) were developed based on data from 1980 to 1999. Low demand is calculated using the lowest recorded demand per service for each customer class during this period. Average or medium demand is calculated as the mean value for this period. High demand is based on the highest recorded demand per service for each customer class. Maximum day demand forecasts are calculated for each of these three demand scenarios by multiplying 1.6 times the low, average or high day. City of Salinas water demand was 94.6% of total Salinas District demand in 2005. That percentage is applied to the 20 year Salinas District demand forecast to derive a demand forecast for the City of Salinas.

Projected service connections based on past service counts growth rates are calculated in the UWMP for a 5-year average and a 10-year average. The 5-year average, which is calculated from 2002 to 2006, is 0.65% per year. The 10-year average, which is calculated from 1997 to 2006, is 1.68% per year. Analysis shows that the 10-year growth rate correlates more closely with the longer-term historic growth trend in Salinas.

Use of the 10-year growth rate results in an increase of 12,609 total services for the 25 years between 2006 and 2030. Approximately, 96.5% of the new services are projected to be residential. That is an increase of 12,082 residential service connections or dwelling units for the Salinas District as a whole. For the City of Salinas service area, which is 94.6% of the demand of Salinas District that would result in an estimated increase in residential service connections of 11,426. Prorating this projection to the year 2027 results in an estimated increase in residential service connections of 10,055.

Cal Water anticipates being the water service provider for three major development areas: West Area Specific Plan, ½ of the Central Area Specific Plan and Rancho San Juan Specific Plan (Butterfly Village II). The number of residential dwelling units for each Specific Plan at build out is summarized as follows:

Estimated Dwelling Units: West Area SP, ½ Central Area SP and RSJSP	
Specific Plan	Dwelling Units
West Area Specific Plan	4,243
½ Central Area Specific Plan	1,657
Rancho San Juan Specific Plan (Butterfly Village II)	1,147
Total	7,047

The balance of estimated new residential service connections in the City of Salinas Cal Water service area for other developments after subtracting the above total is: 3,008 dwelling units.

The City of Salinas has eight Focused Growth areas located in Cal Water's service area as follows:

1. West Laurel at Main Street
2. North Main at Soledad Street
3. Central City
4. South Main Street
5. Abbott Street
6. East Alisal Street
7. East Market Street

8. North Davis Road at West Laurel Drive

The estimated number of dwelling units for these Focused Growth areas based on information contained with Cal Water's Water Supply and Facilities Master Plan (WSFMP) prepared by Luhdorff and Scalmanini (L&S) in June 2004 is 1,706.

L&S also calculated water demand for the City's growth areas on the western area of the City (bordered by Boronda Road, Union Pacific Railroad and Davis Road) for industrial, commercial and open space and public area using the City's land use plans and Cal Water's historic water consumption data by user class and estimated a total demand of 770 acre-ft/yr. Using L&S consumption estimates (0.3922 acre-ft/yr/dwelling unit), this equals about 302 dwelling units.

L&S also calculated water demand for the City's growth areas on the southeastern area of the City (bordered by Highway 101, Harris Road and the Salinas Municipal airport) for industrial purposes using the City's land use plans and Cal Water's historic water consumption data for industrial use and estimated a total demand of 631 acre-ft/yr. Again using L&S consumption estimates (0.3922 acre-ft/yr/dwelling unit), this equals about 247 dwelling units.

So deducting these equivalent numbers from the above balance yields: 1,157 residential service connections or new dwelling units for other areas within the Cal Water service area excluding the other ½ of the Central Area Specific Plan and all of the East Area Specific Plan, which currently are in the Alco Water Company service area.

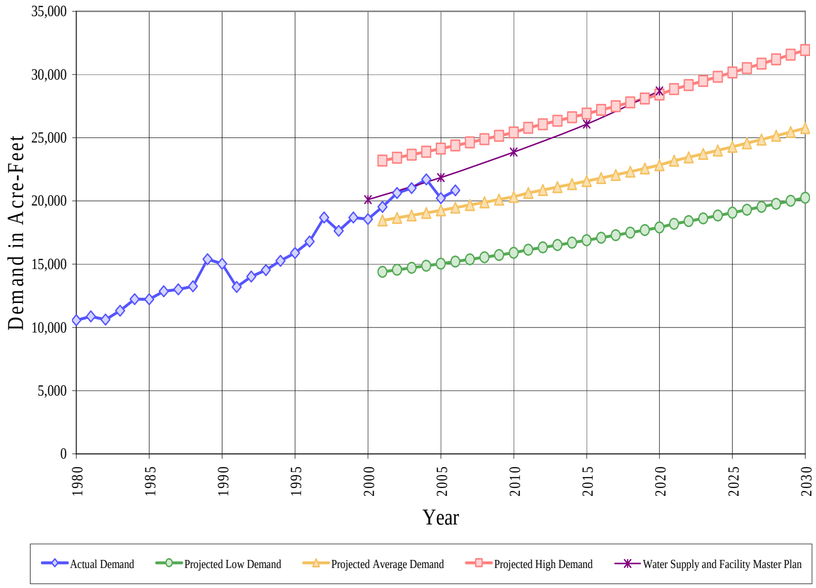
The number of estimated dwelling units for ½ of the Central Area Specific Plan and all of the East Area Specific Plan are:

Estimated Dwelling Units: ½ Central Area SP and East SP Area	
Specific Plan	Dwelling Units
East Area Specific Plan	3,958
½ Central Area Specific Plan	1,657
Total	5,615

So clearly, if Cal Water provides service to these new growth areas as well as those previously discussed, the demands for these areas must be added to the forecasted demand developed for the entirety of the City of Salinas Cal Water service area.

Cal Water developed three future water demand scenarios for the Salinas District based on the 10-year service connection growth rate and three different levels of demand per service type. Figure 1 is a graph of actual and projected water demand for all three scenarios including the unaccounted-for-system losses. The starting point for each demand projection is actual annual number of services in 2001. Figure 1 includes the projected water demand developed by Luhdorff and Scalmanini in the Salinas District Water Supply and Facilities Master Plan. The WSFMP demand projection is higher than the average or medium projection but is virtually the same as Cal Water's high demand projection as developed in its 2007 UWMP.

Figure 1: Salinas District Historical & Projected Demand (including system losses)



Since the Water Supply and Facilities Master Plan includes an assessment of future water demand based on a detailed review of the City of Salinas General Plan and Monterey County's Rancho San Juan Specific Plan, it or Cal Water's high demand forecast is used in this WSA. (Note that Cal Water's high demand forecast used the five-year average growth rate in service connections and the highest demand per water use sector.)

Projected high Salinas District demands in 5-year increments, starting in 2010, are shown in Table 3.

Table 3: Salinas District Actual and High Projected Water Demand											
		Water Use Sectors	Single family	Multifamily	Commercial	Industrial	Institutional/Gov.	Landscape/ Agriculture	Recycled	Other	Total
2000	metered	# of accounts	22,558	324	2,253	36	192	-	-	41	25,404
		Deliveries AFY	8,976	1,687	4,690	1,012	787	-	-	120	17,272
	unmetered	# of accounts	207	-	-	-	-	-	-	-	207
		Deliveries AFY	95	-	-	-	-	-	-	-	95
2005	metered	# of accounts	23,984	324	2,639	33	196	-	-	31	27,207
		Deliveries AFY	9,396	1,456	4,914	1,322	719	-	-	48	17,855
	unmetered	# of accounts	-	-	-	-	-	-	-	-	-
		Deliveries AFY	-	-	-	-	-	-	-	-	-
2010	metered	# of accounts	26,888	323	2,661	33	192	-	-	39	30,136
		Deliveries AFY	11,800	1,715	5,539	1,709	1,104	-	-	133	22,000
	unmetered	# of accounts	-	-	-	-	-	-	-	-	-
		Deliveries AFY	-	-	-	-	-	-	-	-	-
2015	metered	# of accounts	29,175	323	2,792	31	192	-	-	43	32,556
		Deliveries AFY	12,804	1,712	5,813	1,642	1,102	-	-	146	23,218
	unmetered	# of accounts	-	-	-	-	-	-	-	-	-
		Deliveries AFY	-	-	-	-	-	-	-	-	-
2020	metered	# of accounts	31,657	322	2,879	30	191	-	-	47	35,126
		Deliveries AFY	13,893	1,709	5,993	1,577	1,099	-	-	160	24,432
	unmetered	# of accounts	-	-	-	-	-	-	-	-	-
		Deliveries AFY	-	-	-	-	-	-	-	-	-
2025	metered	# of accounts	34,349	322	3,022	29	191	-	-	51	37,963
		Deliveries AFY	15,075	1,707	6,290	1,515	1,097	-	-	175	25,858
	unmetered	# of accounts	-	-	-	-	-	-	-	-	-
		Deliveries AFY	-	-	-	-	-	-	-	-	-
2030	metered	# of accounts	37,271	321	3,116	28	190	-	-	56	40,982
		Deliveries AFY	16,357	1,704	6,486	1,455	1,094	-	-	192	27,288
	unmetered	# of accounts	-	-	-	-	-	-	-	-	-
		Deliveries AFY	-	-	-	-	-	-	-	-	-

Table 4 shows the estimated demand for the Salinas District for average day, maximum day, and peak hour through 2030 in five-year increments.

Table 4: Salinas District High Demand Forecast: Average Day, Maximum Day, and Peak Hour Demands			
Projected Year	Average Day	Maximum Day	Peak Hour
	(MGD)	(MGD)	(MGD)
2005	18.4	31.8	47.7
2010	22.7	37.0	55.5
2015	24.0	39.2	58.8
2020	25.4	41.4	62.1
2025	26.9	43.9	65.9
2030	28.5	46.5	69.8

Table 5 shows the estimated City of Salinas High Demand Forecast for average day, maximum day and peak hour.

Table 5: City of Salinas High Demand Forecast: Average Day, Maximum Day, and Peak Hour Demands			
Projected Year	Average Day	Maximum Day	Peak Hour
	(MGD)	(MGD)	(MGD)
2005	17.7	28.8	43.2
2010	21.9	35.7	53.5
2015	23.1	37.8	56.7
2020	24.5	39.9	59.9
2025	25.9	42.3	63.5
2030	27.5	44.8	67.3

For a twenty-year projection, i.e. from 2007 to 2027, the projected annual average day demand is 29,750 acre-feet/year or 26.54 million gallons per day (mgd).

Table 6 below provides the City of Salinas projected water demands in five-year increments for the next 20 years. Again, this projection includes growth anticipated in the Rancho San Juan (Butterfly Village 2) Specific Plan, all of the West Area Specific Plan, ½ of the Central Specific Plan, all other designated growth areas in the City of Salinas land use plan and an equivalent of about 1,150 dwelling units.

Table 6: City of Salinas High Demand Forecast: Average Day & Max Day			
Projected Year	Average Day	Maximum Day	Average Day
	(MGD)	(MGD)	(Acre-ft/Yr)
2007	19.38	31.6	21,730
2012	22.38	36.5	25,090
2017	23.66	38.5	26,530
2022	25.06	40.8	28,090
2027	26.54	43.3	29,750

Table 7 provides the estimates of ½ of the Central Area and all of the East Area Specific Plans projected demands.

Table 7
1/2 Central and All of East Area Specific Plans

Category	Acres	Square Feet	Units Residential
Residential			
½ Central Area	199		1,656
East Area	451		3,958
Total	650		5,614
Mixed Use (Commercial)			
½ Central Area	10.5	234,000	32
East Area	29	627,000	86
Total	39.5	861,000	118
	Total Residential Units:		5,732
Parks			
½ Central Area	13		
East Area	44		
Total	57		
Schools			
½ Central Area	22		
East Area	78		
Total	100		

A residential population forecast based City of Salinas Planning Department guidelines of 3.67 persons per residential dwelling unit is presented below

Population Forecast for ½ Central and All of East Area Specific Plans

Residential Units	Persons
5,614	20,603

Residential:
Estimated average annual daily residential demand: 20,603 persons x 97.3 gallons/per person/day = 2,004,670 gallons/per day.

The assumption is made for all the Specific Area Plans that new residential units will incorporate conservation measures so that overall average per capita demand will be reduced by about 10% or that average annual residential demand in these areas will be 90% of the existing average Salinas District residential demand.

Therefore, estimated average annual daily residential demand at build out: 0.9 x 2,004,670 gallons/per day = 1,804,200 gallons/day.

Commercial:

861,000 sq ft x 0.335 gallons/sq ft/day = 288,440 gallons/day

Parks:

57 acres x 2.5 acre-ft/acre/yr = 142.5 acre-feet/year = 127,110 gallons per day.

Schools:

100 acres x 3,500 gallons/day/acre = 350,000 gallons/day

Unaccounted for Water
Unaccounted for water is estimated to be 10% of above total.

Therefore, Total Estimated Average Annual Daily water demand for ½ Central and all of East Area Specific Plans at build out is:

1.10 x (1,804,200 + 288,440 + 127,110 + 350,000) = 2,826,720 gallons/day or 3,170 acre-ft/yr

Assuming development occurs linearly, the water demand forecast for ½ Central and all of the East Area Specific Plans in five-year increments is as follows:

Year	½ Central and All East Area Specific Plans Average Annual Daily Water Demand
2007	none
2012	377,000 gallons/day or 422 acre-ft/yr
2017	1,319,140 gallons/day or 1,480 acre-ft/yr
2022	2,261,140 gallons/day or 2,535 acre-ft/yr
2027	2,826,720 gallons/day or 3,170 acre-ft/yr

Year	½ Central and All East Area Specific Plans Maximum Day Water Demand
2007	none
2012	603,200 gallons/day or 420 gpm
2017	2,110,620 gallons/day or 1,466 gpm
2022	3,617,800 gallons/day or 2,510 gpm
2027	4,522,750 gallons/day or 3,140 gpm

- The estimated increase in City of Salinas demand between 2007 and 2012 is 3,000,000 gallons per day. One half of the Central and all of the East Area Specific Plans projected demand for 2012 is forecasted to be 377,000 gallons/day or 12.6% of the forecasted growth in demand.

- The 2017 increase in demand relative to 2007 is 4,280,000 gallons/day. One half of the Central and all of the East Specific Plans projected demand for 2017 is forecasted to be 1,319,140 gallons/day or 30.8% of the forecasted growth in demand.

- The 2022 increase in demand relative to 2007 is 5,680,000 gallons/day. One half of the Central and all of the East Specific Plans projected demand for 2022 is forecasted to be 2,261,140 gallons/day or 39.8% of the forecasted growth in demand.

- The 2027 increase in demand relative to 2007 is 7,160,000 gallons/day. One half of the Central and all of the East Specific Plans projected demand for 2027 is forecasted to be 2,826,720 gallons/day or 39.4% of the forecasted growth in demand.

Based on the preceding data and analysis, the position is taken that the water demand forecast for ½ of the Central and all of the East Area Specific Plans is not covered in Cal Water's high water demand forecast for the City of Salinas. Therefore, the total demand forecast for the City of Salinas needs to be increased by ½ of the Central and all of the East Specific Plans forecasted demand.

Table 8 presents the revised Salinas demand forecast with all of the forecasted demand for the West, Central and East Specific Plan Areas included.

Table 8
City of Salinas Water Demand Forecast for All of West, Central and East Area Specific Plans and All Other City Planned Developments

		Annual Average	Maximum Day	
Year	**Acre-ft**	**Gallons per day**	**Gallons per day**	**GPM**
2007	20,460	18,250,000	29,200,000	20,280
2012	25,512	22,757,000	36,411,200	25,286
2017	28,000	24,979,000	39,966,400	27,750
2022	30,630	27,321,000	43,713,600	30,357
2027	32,920	29,366,700	46,987,000	32,630

4. Water Supply

Supply Capacity

The Cal Water City of Salinas service area has 30 active water supply wells with a combined capacity of approximately 23,022 gallons per minute (gpm) or 33,151,680 gallons/day or 37,165 acre-ft/yr.

Source capacity has been adequate to meet maximum day demand up to the present but with anticipated growth in demand, Cal Water has been adding well capacity to meet future maximum day demands. For 2027, annual average day demand is estimated to be 29,366,700 gallons/day or 29.37 mgd or 32,20 acre-ft/yr for the City and all West, Central and East Area Specific Plans demand. Maximum day demand for 2027 is estimated to be 47 mgd or 32,630 gpm.

Therefore, Cal Water needs to add about 9,610 gpm of capacity plus the equivalent of its existing largest well, which is 1,500 gpm, or a total additional capacity of 11,110 gpm or ~16,000,000 gallons/day.

Source of Supply

All of existing water supply for the City of Salinas is groundwater extracted from the Salinas Valley Ground Water Basin (SVGWB) from two hydraulically connected sub-basins or areas of the SVGWB known as the Eastside Area and the western fluvial or Pressure Zone.

Salinas Valley Groundwater Basin Geology, Hydrogeology and Management

Geologic Setting
(The following is taken from the Salinas District WSFMP May 2005 prepared by Luhdorff and Scalmanini.)

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 1930's 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 hydrogeologic studies of the Salinas Valley up to the present have been concerned with saline water intrusion, water quality, basin yields, and other aspects of ground-water 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 Dibblee, (1999); Dupre and Tinsley, (1980); and Tinsley (1975). Other references include Tinsley (1975) and Staal, Gardner & Dunne, Inc. (1993).

To go beyond a simple well data compilation and statistical analysis, L&S collected all available water well driller’s 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 herein.

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 Subbasins 3-4.01 and 3-4.02.

The City of Salinas overlies both the 180/400 foot aquifer (Subbasin 3-4.01) (referred to as the Pressure zone or Westside aquifer by Monterey County Water Resources Agency (MCWRA) and the Eastside Aquifer (Subbasin 3-4.02). The 180/400 foot aquifer subbasin 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 Subbasin. The extreme northwest boundary of the sub basin is shared with the Salinas Valley-Seaside Area Subbasin along the seaward projection of the King City Fault. This subbasin is bounded by the Monterey Bay on the northwest. The northern subbasin boundary is shared with the Pajaro Valley Groundwater Basin and coincides with the inland projection of a 400-foot deep, buried clay-filled paleodrainage of the Salinas River. This acts as a barrier to groundwater flow between the Pressure Zone and Eastside subbasins. The northeastern boundary is shared throughout most of its length by the adjacent Salinas Valley-Eastside Subbasin, and to the north with a shorter length of the Langley area Subbasin. The northeastern boundary generally coincides with the northeastern limit of confining conditions in the Pressure Zone or180/400-Foot aquifer subbasin 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 subbasin boundaries coincide with those identified for the Pressure Zone area by MCWRA.

The Eastside Aquifer subbasin extends from approximately five miles north of the city of Salinas to twenty-five miles south of the town of Gonzales along the eastern side of the lower Salinas Valley. The subbasin is bounded to the north by the Pleistocene Aromas Red Sands of the Salinas Valley-Langley Area Subbasin. To the south, the sub basin shares a boundary with the Quaternary Alluvium deposits of the Salinas Valley-Lower Forebay Aquifer Subbasin. The western sub basin boundary generally coincides with the northeastern limit of confining conditions in the adjacent 180/400-Foot Aquifer Subbasin and with Sate Highway 101. The eastern boundary is the contact of the Quaternary Terrace deposits with granitic rocks of the Gabilan Range. DWR's Eastside Aquifer subbasin 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 Subbasin toward the Salinas River on the west side of the Valley.

In the Salinas District L&S WSFMP May 2005, a lithographic description of both subbasins 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.

Pressure Zone or Western Fluvial Area: 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 for characterizing 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 subbasins are the only source 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 is in the advanced stages of planning and designing Phase 1 of the Salinas Valley Water Project (SVWP), a multi-component project that consists of:

1) Modification of the Nacimiento Dam Spillway,
2) Modified operation and maintenance of the 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.

Phase 2 of the SVWP is currently being planned by MCWRA to increase the amount of diverted surface water for the benefit of municipal users. The SVWP diversion facility will be at Moro Cojo on the Salinas River, and the Phase 2 urban component is estimated to be 10,000 acre-feet per year. Since that amount will be allocated among various users, it is unlikely that Cal Water in serving its City of Salinas area would get more than 50% or 5,000 acre-ft/yr.

One option for Phase 2, is to divert 1,800 acre-ft/year 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 be 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.

Additional phases or options within the SVWP will be evaluated by MCWRA to further increase groundwater supply for municipal users.

To support development of these supply alternatives, Cal Water will coordinate closely with the City of Salinas, MCWRA, other municipal and agricultural users of the SVGWB and the appropriate state agencies (DHS, 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.

It is noted here that the 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.

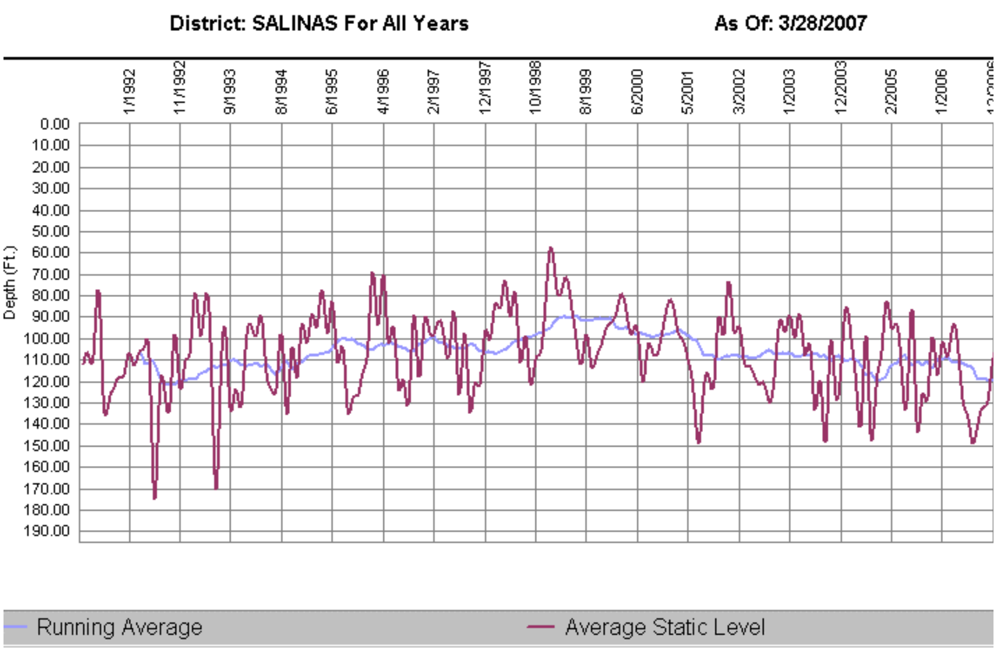
The Castroville Irrigation Project was constructed and put into operation to provide high quality treated wastewater from the Monterey Regional Water Pollution Control plant in Marina for agricultural for agricultural use. Use of this recycled water reduces agricultural groundwater pumping, which reduces 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 Phase 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 can not 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.

Salinas Groundwater Levels

Except for an annual variation of approximately thirty-five feet, average static groundwater levels in most of Cal Water’s Salinas District wells since 1961 have changed elevation only during drought years. Historical data collected continuously over the last 25 years indicates that the Salinas system has not experienced regular or frequent supply deficiencies during dry weather periods. Groundwater charts show that the majority of Cal Water's wells combined static levels have remained essentially unchanged during this period. From 1980 to1999 (20 year period), the Salinas District's annual demand increased from 10,562 acre-feet to 18,690 acre-feet or increase of 8,128 acre-feet (428 acre-feet/year), which on a percentage basis is approximately 77%. In 1976 and 1977, the average ground water elevation declined by 20 feet. Recovery occurred in 1982 and 1983 when increased rainfall and runoff refilled local reservoirs and increased groundwater recharge. With the extended drought that started in 1984, the average elevation began declining and by summer 1992 had dropped by 35 feet. Recovery of the groundwater level during the past few years has been occurring as a result of increased rainfall and runoff. Salinas District well levels for the past 15 years (1991 to 2006) show the average depth to groundwater is 120 feet below ground surface with minimal change. Figure 2 shows static groundwater levels from 1992 to 2006.

Figure 2: Salinas District Wells: Static Groundwater Levels



West, Central and East Areas Specific Plan Groundwater Impact Estimate

Based on data from City of Salinas Community Development Department (July 2007) 73% of the land proposed for urban development in the West, Central and East Specific Plan areas are currently being used for irrigated agriculture of produce – lettuce, strawberries, cauliflower, broccoli and other crops. Irrigation is mainly by sprinkler or drip systems, which are supplied by groundwater pumped from wells in the area. The balance of the plan area - 27% is fallow or non-irrigated.

Groundwater recharge from irrigated agricultural 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 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 obtaining and analyzing it is beyond the scope of this assessment, 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%. This is based on data taken from "Geologic, Hydrogeologic and Geotechnical Report" by Kleinfelder, Inc, March 12, 2003, for Rancho San Juan Specific Plan (which about 2 – 3 miles north of the West, Central and East Areas). Kleinfelder estimated total irrigation water demand for the existing agricultural area at 2,770 acre-ft/year and total return flow or groundwater recharge at 846 acre-ft/year or 30.5%.)

According to the Kleinfelder report based on information from the Monterey County Agricultural Extension and University of Davis, irrigation rates for crops are as follows:

Strawberries: 1.87 ft/acre/crop
Lettuce: 2.1 ft/acre/crop
Alfalfa or cauliflower: 4.04 ft/acre/crop

Based on observations from a driving tour of the West, Central and East areas (July 2007), it appears that approximately 1/3 of the irrigated crops are strawberries, 1/3 lettuce and 1/3 cauliflower. Therefore, using the irrigation rates estimated by Kleinfelder, the overall average irrigation rate for the existing 1,730 (0.73 x 2,370) irrigated acres in the specific plan areas is estimated at:

1/3 (1.87) +1/3 (2.1) + 1/3(4.04) = 2.66 ft/acre/crop

Based on information from Cal Water personnel who live in Salinas, usually two and sometimes three crops are grown and harvested over the period of a year in this area.

It is assumed here that on average only two (2) crops per year are grown in the irrigated areas.

Therefore, estimated groundwater pumping for existing irrigated agricultural in the three specific plan areas is:

2 x 2.66 ft/acre/year x 1,730 acres = 9,200 acre-ft/year.

This compares to the total build out estimate for the urban use of the three Specific Plan areas of 6,648 acre-f/yr, which is 2,552 acre-ft/year more.

The estimated amount of recharge from existing irrigated agriculture is:

2 x 0.3 x 2.66 ft/yr x 1,730 = 2,760 acre-ft/year

Estimated net consumptive water from existing irrigated agriculture use is 6,440 acre-ft/year.

The estimated annual average day water demand for the West, Central and East areas Specific Plans at build-out is 6,648 acre-ft/yr for 2,370 acres. The summary of projected uses is as follows:

Residential: 4,237 acre-ft/yr
Commercial: 705 acre-ft/yr
Parks: 340 acre-ft/yr
Schools: 761 acre-ft/yr
Unaccounted for: 605 acre-ft/yr
Total: 6,648 acre-ft/yr
Based on Cal Water historical data for the Salinas District, the average 5-year (2002-2006) outdoor single family residential was use 36.8%.

Estimated commercial outdoor use is 20%
Estimated park outdoor use is 95%
Estimated schools outdoor use is 40%
Estimated unaccounted for outdoor use is 98%

Therefore, total estimated outdoor annual average day water demand for the West, Central and East areas Specific Plans at build-out is:

0.368 x 4,237 + 0.2 x 705 + 0.95 x 340 + 0.40 x 761 + 0.98 x 605 = 2,920 acre-ft/yr

It is estimated that 98% of outdoor water use is for land irrigation and 25% of urban land irrigation water infiltrates below the plant root zone and recharges groundwater. Note this includes unaccounted for water for which a high percentage is pipe leakage, which would be 100% groundwater recharge.

Therefore, 0.98 x 0.25 x 2,920 = 715 acre-ft/yr or 10.7% of estimated average annual day demand is estimated to be recharge to the groundwater system.

For the three specific plan areas at build out, net consumptive water use is estimated at: 5,933 acre-ft/yr.

This compares to a net consumptive use for existing agricultural land use of 6,440 acre-ft/year and an estimated amount of recharge of 2,760 acre-ft/year.

Hence, it appears that net consumptive use of water for proposed urban uses is about 507 acre-ft/year <u>less than</u> existing agricultural uses. Based on these generalized estimates, this would result in a <u>net increase</u> groundwater storage by this amount with conversion from agricultural to urban use in the West, Central and East Specific Plan areas.

However, indoor use demand results in the water being discharged to the sanitary sewer and conveyed to the Monterey County Regional Water Pollution Control Agency (MCRWPCA) for treatment and use for irrigation of agricultural lands.

Indoor water use for the three Specific Plan areas is estimated to be 3,728 acre-ft/yr (6,648 – 2,920).

According to the Keith Israel, general manager of the MCRWPCA, (July 2007) current annual average daily flow to the wastewater treatment is 21 millions gallons per day (mgd) or 23,540 acre-ft/yr of which the City of Salinas contributes 60%. Average annual tertiary treated wastewater used for agricultural irrigation is 13,000 acre-ft/yr, or 55% of treated wastewater. Since Salinas supplies 60%, approximately 33% of Salinas' wastewater is delivered to agricultural users. Using this percentage, the estimated quantity of treated effluent from the three specific plan areas that will be delivered to agricultural users for irrigation is 0.33 x 3,728 acre-ft/yr = 1,230 acre-ft/yr. This is additional groundwater recharge that can reasonably be credited to the West, Central and East Area Specific Plans since that amount of water would not be pumped by agricultural irrigators.

<u>On this basis, the net effect of conversion of agricultural land to urban use for the West, Central and East Area Specific Plans would *increase regional groundwater storage* by an estimated 1,737 acre-ft/yr (1230 + 507).</u>

<u>Groundwater Quality</u>

Groundwater quality in the aquifers underlying the City of Salinas has been and for the most part continues to be generally suitable for drinking water supply based on California Department of Health and US Environmental Protection Agency drinking water standards. As required by regulation, Cal Water runs complete Title 22 water quality analyses on samples from all new prospective production wells to insure that water fully complies with federal and state drinking water standards.

The contaminant with the greatest impact on Salinas drinking water quality has been nitrates (NO_3). Table 9 provides some NO_3 concentration data obtained from Cal Water Salinas wells that illustrate the problem. Note the drinking water maximum contaminant limit (MCL) for NO_3 is 45 mg/l.

Table 9: Nitrate Concentrations in Selected Cal Water City of Salinas Wells

Well Station Number	1980	Year 1995	2005
6-01	12	32	42
10-01	22	40	Not available
21-01	27	55	Not available
105-1	15	65	Not available
108 –1	7	55	Not available

To deal with rising nitrate levels Cal Water has installed and put into operation five well head treatment systems that reduce nitrates to levels that comply with drinking water standards.

Nitrates are present in most Cal Water Salinas wells at varying concentrations. Its presence is generally attributed to vertical movement from the ground surface through geologic materials and unsealed or improperly abandoned wells in response to pumping in deeper strata.

The second major contaminant that has affected a number of wells in Salinas is volatile organic compounds (VOCs) including methyl-tert-butyl ether (MTBE).

In the eastside area aquifer, lack of effective confining zones can result in cross-flow from shallower aquifers and result in deterioration of water quality if there are surface sources of contaminants present.

Currently, a high percentage of City wells have water quality conditions that require ongoing monitoring because of sufficiently high levels of nitrates or VOCs. If contaminant concentrations of regulated constituents exceed DHS drinking water quality standards, Cal Water will either provide treatment facilities or replace wells where location, age, condition and yield make treatment economically infeasible.

Within the last 5 years, a higher than anticipated number of wells in the City of Salinas service area had to be shut down. Four wells were inactivated due to excessive levels of nitrates, two wells due to excessive MTBE levels and three wells due to casing collapse or problems (old wells at the end of their useful life). This resulted in a loss of water supply capacity. To make up for lost supply capacity and meet future supply needs for growth, Cal Water during the past four (4) years has been designing and constructing new wells, system storage and related booster pumps and when necessary providing or improving on-site treatment for wells with non-complying water quality. To date, Cal Water has installed ion exchange treatment for removal of nitrates at five wells and for removal of uranium at one well. Granular activated carbon (GAC) treatment for removal of MTBE or VOCs has been provided at three well sites that have a useful remaining life, good yield and are in a critical pressure zone.

With respect to siting future water supply wells, test hole exploration will be conducted in some cases to a depth of 1,000 feet and dedicated monitoring wells be constructed and sampled to characterize ground-water quality and levels at multiple selected depths.

According to L&S, the -400 and -300 foot aquifers appear to be the best stratigraphic target for wells in the western area of the City where a clay unit separates these units from the overlying aquifers. Deep annular seals to about -300 foot elevation will help isolate targeted aquifer units from potentially poorer water quality in overlying aquifers. However, where the -300 foot aquifer in overlain by the -200 foot aquifer channel, there is the potential for lack of similar geologic control so that the presence of intervening clay beds must be evaluated for new wells. In such locations where the clay layers are not present, annular sealing may not be effective in controlling water quality i.e., preventing contaminant mitigation.

In the eastern alluvial fan area, the implications of hydrogeologic factors are more difficult to predict because of the complexity of soils bedding and thinness of sandy beds. So even though there are general regions with sand bed clusters in the -300 foot and -400 levels, all potential sites require exploratory well evaluations to assess geologic, hydrogeological and water quality conditions.

Because there are hundreds of wells throughout the greater Salinas area that may be conduits for contamination of aquifers at well sites targeted for municipal supply, exploratory testing is now the standard approach used by Cal Water in developing new sources.

Cal Water recognizes that if certain well sources are needed in locations where nitrate levels or VOCs cannot be mitigated through well design, treatment will have to be provided. In those situations where treatment is required, Cal Water will also conduct technical and cost evaluations to determine whether individual well or centralized treatment is most feasible.

New Salinas Well Supply Projects: 0.5 – 2 Years

Within the City of Salinas, Cal Water anticipates completion of construction and commencement of operation on four (4) new wells (Stations 64, 67, 22 and 69) will occur between late 2007 and mid 2008. The estimated combined production rate of these wells is 5,000 gpm (average annual production ~ 8,070 acre-ft/yr). Cal Water has been working on these well projects for the last two years. Several of them are designed, production wells have been drilled and related facilities are being installed.

New and Replacement Salinas Well Supply Projects: 2 – 10 Years

The engineering firm CDM has developed a longer term supply plan for Cal Water for the Salinas District (Report November 16, 2006) that consists of a portfolio of new projects and water conservation for demand management.

Within the next 2 to 10 years, the top-ranked projects for implementation are:

1. Replacement wells without treatment: goal 5 new wells with a combined production rate of 5,000 gpm and average annual production of 6,800 acre-ft/yr
2. Replacement wells with treatment: goal 3 new wells with a combined production rate of 3,000 gpm and average annual production of 4,100 acre-ft/y.
3. Additional new well sites within the city with no treatment: goal 6 new wells with a combined production rate of 6,000 gpm and average annual production of 8,100 acre-ft/yr
4. Additional new well site within the city with treatment: goal 1 new well with a production rate of 1,000 gpm and average annual production of 1,360 acre-ft/y.
5. New wells and treatment at existing inactive site: goal 2 new wells with a production rate of 1,600 gpm and average annual production of 2,180 acre-ft/yr

In summary, within the next 2 - 10 years or by 2017, 10 new wells (items 3 – 5 above) with a total estimated capacity of 8,600 gpm or ~13,883 acre-ft/yr are to be constructed and put into operation. Note that wells in items 1 and 2 are not included in the new supply since they are replacing existing wells that have reached the end of their useful life.

New Salinas Well Supply Projects: 10 – 20 Years

Cal Water has longer-term plans (10 to 20 years) to develop additional new wells close to but outside the City of Salinas boundaries. One alternative being evaluated includes up to eight (8) wells feeding into new 16" transmission mains along River Road and Monterey Road and a connection with the existing distribution system at El Blanco Road. The nominal production of each well is estimated to be 1,000 gpm for a total of 8,000 gpm. A second alternative includes a shorter and mostly 16" transmission main on Harkins Road with a tie in to the existing Cal Water system at Nutting Street. A potential for six (6) new wells (1,000 gpm each or 6,000 gpm total) has been identified for this alternative. It is assumed here that the first alternative will be implemented progressively between 2017 and 2027 with total additional capacity of 7,000 gpm being added.

Table 10 presents the forecasted total water supply based on:

1) Four (4) new wells that will go on line during 2007 and 2008
2) Ten (10) new wells going on line at a rate of 2 per year between 2012 and 2017
3) Seven (7) new wells going on line at a rate of 1 per year between 2017 and 2027

Table 10
City of Salinas Forecasted Water Supply
Versus
Forecasted Demand Including All of West, Central and East Specific Plans

Year	Well Supply GPM	Demand Annual Average GPM	Demand Maximum Day GPM	Difference Supply – Max Dem
2007	25,500	12,674	20,280	+5,220
2012	29,000	15,800	25,286	+3,714
2017	36,600	17,350	27,750	+8,850
2022	41,600	18,970	30,357	+11,243
2027	43,600	20,390	32,630	+10,970

It should be noted that the above cited plans to install new wells on the schedule presented and the resultant additional supply capacity is regarded as prudent since there are a number of existing wells that are approaching the end of their useful life and because increased groundwater quality problems in recent years have caused some Salinas wells to be taken out of operation. While the long-term supply plan includes replacement wells for wells that need to be shut down, it is not assumed that there will be a one for one replacement. Also, 6 wells are receiving nitrate treatment and there may be a need to shut down one or more treatment plants at the end of their useful life if new wells not requiring treatment can be brought on line. Hence, the reason for surplus well capacity.

Cal Water is committed to a continuing program to develop new or replacement wells within the Salinas District to meet growth in demand and to replace wells that are at the end of their useful life or have water quality problems for which on-site treatment is not economically justified.

For wells at new sites rather than on existing sites, Cal Water assesses hydrogeologic conditions, water quality, and requirements for compliance with regulatory criteria. Selected sites that have a favorable assessment will have a test hole drilled to verify the presence and nature of aquifer materials and water quality. If geologic and water quality results indicate a site is suitable for a drinking water production well, the site is purchased and developed. Depending on land acquisition, permitting and approval issues and including design, construction and start up, it takes two to three years to bring a new well on line.

Reclaimed Water (Recycling)

The Monterey Regional Water Pollution Control Agency (MRWPCA) provides residential wastewater treatment for the Salinas urban area and after advanced treatment recycles 100% of treated effluent for agricultural irrigation during the summer months. Of the nearly 21 mgd of flow recycled by MRWPCA, 60% comes from the City of

Salinas and 70% of that or 42% is water from Cal Water wells in Salinas.

The West, Central and East Area Specific Plans provide for wastewaters generated from those areas to be collected, conveyed and treated at the MRWPCA treatment plant. As previously presented in this WSA, approximately 33% of wastewaters generated within the Specific Plan areas will be reclaimed and used for agricultural irrigation. This will have the effect of increasing available urban groundwater supply if agricultural irrigators proportionately reduce their groundwater pumping. Therefore, direct use of reclaimed wastewater for irrigation of parks, golf courses and other public and semi-public lands is not considered here.

Water Conservation or Demand Management

California Water Service Company is a California Urban Water Conservation Council (CUWCC) member. The CUWCC was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The Council's goal is to integrate urban water conservation Best Management Practices (BMP) into the planning and management of California's water resources.

Implementation of water conservation BMPs will help limit water demand from customers within the District's service area, which in turn helps reduce water supply requirements for the Salinas District.

The Department of Water Resources (DWR), water utilities, environmental organizations, and other interested groups developed a list of urban BMPs for conserving water. A Memorandum of Understanding Regarding Urban Water Conservation in California (MOU), as amended March 9, 2005, formalizes an agreement to implement these BMPs. The MOU is administered by the CUWCC and is its primary tool for promoting efficient water use.
As a signatory of the MOU, Cal Water has agreed to implement the BMPs that are cost beneficial in accordance with a schedule assigned to each BMP. The BMPs as defined in the MOU are generally recognized as standard water conservation measures. Table 7 presents the BMPs agreed upon by Cal Water in the MOU.

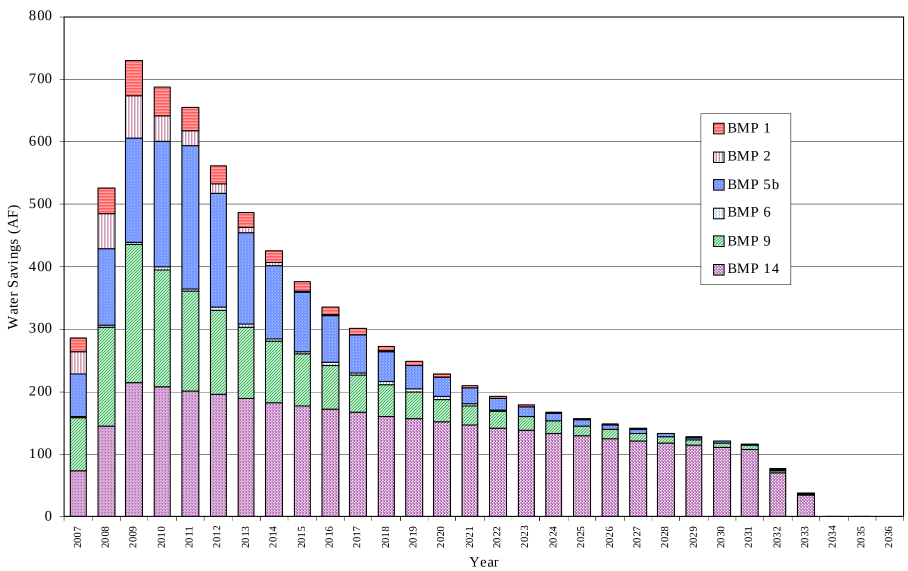
Table 7: Water Conservation Best Management Practices

Being Implemented by Cal Water
Water survey programs for single-family residential and multi-family residential connections
Residential plumbing retrofit
System water audits, leak detection and repair
Metering with commodity rates for all new connections and retrofit of existing connections
Large landscape conservation programs and incentives
High-efficiency washing machine rebate programs
Public information programs
School education programs

Conservation programs for commercial, industrial, and institutional accounts
Wholesale agency assistance programs
Conservation pricing
Conservation coordinator
Water waste prohibition
Residential ULFT replacement programs

Cal Water Salinas District Potential BMP Water Savings

The following figure illustrates anticipated Cal Water BMP water savings from 2007 - 2030 for Salinas. In summary, for 2007 – 2012 about 300+ acre-ft/yr of water savings, 2013 – 2020 about 300 – 200 acre-ft/yr of water savings and 2020 – 2030 about 150 – 100 acre-ft/yr.



Cal Water also has its own programs to increase water use efficiency:

<u>Distribution System Water Audit and Leak Detection Program</u>
Cal Water conducts an in-house water audit and leak detection program for its distribution systems. The program is administered by a company employee equipped with state-of-the-art leak detection equipment. It is expected that each district will be audited once every three years.

<u>Water Efficient Landscape Guidelines</u>
These guidelines apply to all landscapes designed for Cal Water properties including renovations. For ease of adoption by districts with a multitude of

climates and microclimates, the guidelines are generic. They do, however, adhere to water efficient landscape (Xeriscape) principles.

Implementation of Supply Plans and Conservation Programs

The Cal Water Salinas District, supported by its engineering, water quality and customer service staff in San Jose, is 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 thereby providing excess supply capacity to accommodate more rapid growth than anticipated and 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 (1.6 times the average day) with the largest source (greatest capacity well) being down or not operating.

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

For prospective new well sites and other water facilities such as storage tanks and booster pump stations, Cal Water follows a standard procedure in which it establishes interest on the part of a property owner to sell all or a designated piece of his/her property to Cal Water for a water supply purpose. In the case of a well site, Cal Water first determines its suitability for a production well. This includes a conducting a sanitary survey, Phase 1 environmental assessment, a right of entry agreement, design and construction of a test well, testing of the yield and water quality of the test well and evaluation of findings. If a site is determined to be suitable, Cal Water generally purchases the property from the owner. In the case of public properties, it may enter into a long-term lease or obtain a permanent easement.

Cal Water is required to obtain the following permits including:

1. Water system amendment permit from California Department of Health Services (DHS)
2. A conditional use permit 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 the well is constructed and before use, Cal Water is required to demonstrate to DHS that water from the well complies with all drinking water standards. Cal Water also is required to file the well logs obtained by the driller with the Department of Water Resources**.**

Design and Construction of 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 West, Central and East Area Specific Plans, Cal Water will work closely with the City of Salinas and it's planning consultant, developers and their engineers, the CA Dept of Health Services, the Monterey County Water Resources Agency and others involved with the planning, design, construction and operation of the proposed water system.

Cal Water will prepare design drawings and specifications for required new 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 City of Salinas 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 West, Central and East Area Specific Plans. Capital costs for new well stations will be partially recovered by Cal Water through its per lot assessment fee to developers in accordance with California Public Utility Commission (CPUC) rules.

With respect to the Salinas District, Cal Water has an ongoing capital improvement program to upgrade and improve the distribution system, replace facilities that have reached the end of their useful life, provide treatment of groundwater due to excessive nitrates, MTBE or other contaminants and provide new facilities when required and justified. Cal Water's Salinas District capital improvement program is separate from and will not include costs associated with design and construction of distribution system improvements required for new developments in the West, Central and East Specific Plan Areas. However, upon transfer of ownership of new water system facilities to Cal Water by developers, the water system will be incorporated into Cal Water's capital improvement program.

SB 610 Section 10910 Paragraph (d)(2) requires identification of existing water supply entitlements, water rights, or water service contracts held by the public water system shall be demonstrated by providing information related to all of the following:

Written contracts or proof of entitlement to an identified water supply.

Proof of entitlement to use of existing and proposed new wells cited is based on ownership of the property and wells and Cal Water's legal right to use the underlying percolated waters. Aside from the correlative water rights, Cal Water does not have any other existing water supply entitlements, water rights or water service contracts.

Copies of a capital outlay program for financing the delivery of a water supply system that has been adopted by the public water system.

Capital costs for design and construction of water distribution systems are the responsibility of the developers. Developers will also be responsible for per lot assessment fees in accordance with California Public Utility Commission (CPUC) rules to cover the cost of the water supply.

Cal Water's Salinas District capital improvement program is separate from and does not include any of the fore-mentioned costs associated with the design and construction of new water system facilities for West, Central and East Specific Plan projects. However, upon legal transfer of new water system facilities to Cal Water by the developers, the water system will be incorporated into Cal Water's capital improvement program.

Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

For distribution system improvements, developers will be required to obtain the necessary building permits from the City of Salinas.

If a storage facilities are required to adequately serve proposed developments, Cal Water will be responsible for their design and construction and for obtaining a conditional use permit and building permit from the City of Salinas. The developer will be responsible for direct reimbursement of those costs to Cal Water.

Cal Water is highly experienced in preparing applications and obtaining the necessary permits that are needed in order to proceed with design, construction, startup and operation of water supply transmission and distribution facilities. Cal Water is familiar with approvals it must obtain from the City of Salinas, Monterey County and the California Dept of Health Services.

5. Water Supply Assessment

As shown in Table 6, Cal Water's plans for increasing water supply to meet forecasted demands for anticipated growth including all of the West, Central and East Area Specific Plans is to design and construct 19 new wells over the next 15 years. The actual number of new wells will depend on their reliable yields. For example, three new wells with an average yield of 1,300 gpm would eliminate the need for one new well where it has been assumed that the average yield of four wells 1,000 gpm. Conversely, lower yielding wells may require additional wells in order to provide the required capacity and a reasonable surplus capacity for reliability.

SB 610 requires an assessment as to whether the proposed water supply for the West Area will meet projected water demand for the next 20 years out during:

1) Normal,
2) Single dry
3) Multiple dry water years.

A chart comparing annual rainfall since 1980 to the average annual rainfall is shown in below. Average annual rainfall for the Salinas District is 14.6 inches. The most recent driest year 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 are based on the most recent and consecutive lowest annual rainfall totals which occurred in 2002, 2003, 2004. Reduced rainfall in Salinas during this period coincides similar reductions experienced in California.

Salinas Comparison of Annual Rainfall to Historical Average

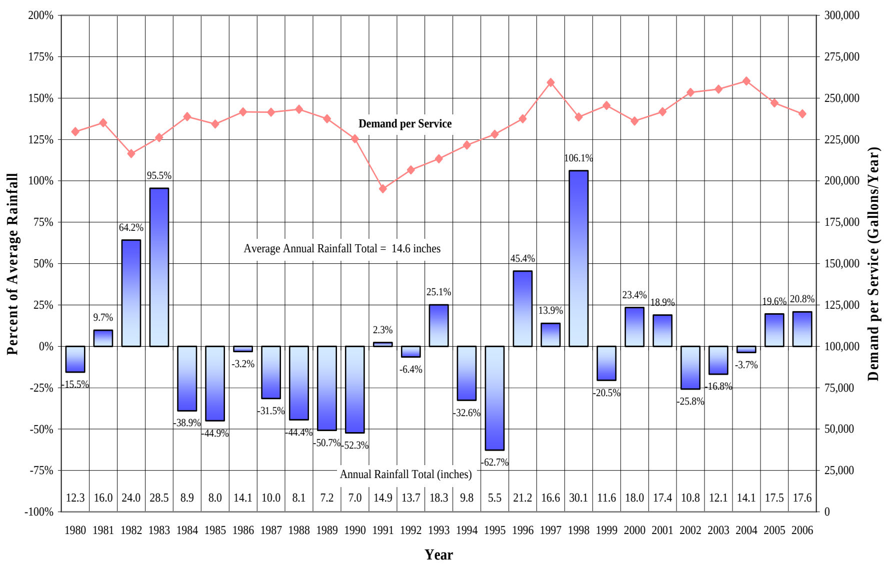


Table 11 provides rainfall and water demand records for the Salinas District:

Table 11

Salinas District Rainfall and Demand Records

Average Annual Rainfall: 14.6 inches

Year	Rainfall (inches)	Rainfall % of Ave	Residential Services	Total Services	Demand/Service* Residential	Demand/Service* Total	Classification of Year By Amount of Precipitation
1991	14.9	2.1	19,440	22,037	124	219	Normal
1992	13.7	-6.2	19,494	22,115	136	232	Slightly below Normal
1993	18.3	25.3	19,562	22,201	138	239	Above Normal
1994	9.8	-32.9	19,807	22,450	139	248	Dry
1995	5.5	-62.3	20,053	22,698	141	255	Very Dry
1996	21.2	45.2	20,365	23,040	146	266	Well Above Normal
1997	16.6	13.7	20,764	23,475	156	290	Slightly below Normal
1998	30.1	106.2	21,346	24,089	133	267	Excessively Above Normal
1999	11.6	-20.5	22,033	24,806	142	275	Dry
2000	18	23.3	22,765	25,611	144	265	Above Normal
2001	17.4	19.2	23,214	26,317	141	271	Above Normal
2002	10.8	-26.0	23,385	26,522	145	284	Dry
2003	12.1	-17.1	23,643	26,810	143	286	Dry
2004	14.1	-3.4	23,953	27,170	147	292	Normal
2005	17.5	19.9	23,984	27,207	139	277	Above Normal
2006	17.6	20.5	23,963	27,186	136	272	Above Normal

* Acre-ft

As Table 11 shows aside from the anomalous results in 1991 and 1992 with respect to demand, that there is no significant change in residential service demand for the period from 1999 to 2004 even though annual rainfall varied considerably:

- In 1999, with rainfall 20.5% below normal, average single-family residential consumption was 142 acre-ft/service;
- In 2000, with rainfall 23.3 % above normal, average single-family residential consumption was 144 acre-ft/service;
- In 2001, with rainfall 19.2 % above normal, average single-family residential consumption was 141 acre-ft/service;
- In 2002, with rainfall 26 % below normal, average single-family residential consumption was 145 acre-ft/service;
- In 2003, with rainfall 17.1 % below normal, average single-family residential consumption was 143 acre-ft/service;
- In 2004, with rainfall only 3.4 % below normal, average single-family residential consumption was 147 acre-ft/service.

The overall average single-family residential consumption during for this 6 year period was 143.7 acre-ft/service.

Other than for years with excessively high rainfall, where water demand dropped because of reduced outside irrigation, single dry years (1999) and multiple dry years (2002, 2003,

2004) do not result in any significant changes in water demand levels with respect to what might be considered the "normal" hydrologic year.

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 have recovered in wet years resulting in a relatively stable groundwater over decades.

Normal Hydrologic Year.

In the next 0.5 to 10 years, wells developed in or near the West, Central and East Specific Plan areas are expected to provide an adequate reliable supply of water that meets drinking water standards. With existing wells, replacement wells, new wells, and additional pumping and storage facilities, Cal Water has a distribution system that permits water to be moved between pressure zones with excess supply capable of being moved to zones that may be at times short of supply. In the 10 to 20 year time frame, Cal Water plans to further add additional wells as previously discussed thereby providing a reliable supply to meet the projected annual average daily demand of 32,920 acre-ft/year.

Single Dry Year.

Based on preceding data and analysis, Cal Water estimates that the availability of Salinas area groundwater supplies will not be affected by a single dry year. As the data also 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 water use advice and information from Cal Water may reduce consumption.

Multiple Dry Years.

Based on preceding data and analysis, Cal Water estimates that the availability of Salinas area groundwater supplies will not be affected by a multiple dry year drought. The effect on pumping plan area groundwater supplies at "normal" demand levels during multiple dry years is very likely some localized decline in groundwater levels. The quantity of supply, however, is not likely to be diminished much if at all. As groundwater level data presented in this WSA has shown, during ensuing wet periods, groundwater levels are very likely to recover to "normal" levels providing overall Salinas area pumping rates remain the same or do not significantly increase.

In the event, there is a more significant decline in basin groundwater storage and hence groundwater levels in the Salinas area, Cal Water is prepared to implement its four-stage rationing plan, which is described below. The plan has both voluntary and mandatory stages. Approval from the CPUC must be obtained prior to implementation of mandatory restrictions. Table 12 is a summary of that program.

Table 12: 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 outline lists the actions to be taken during periods when a reduction in consumption is required:

Stage 1

- 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.

Stage 2

- 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.

Stage 3

- 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

With respect to demand and supply for multiple dry years, if groundwater level declines were impacting the yield of wells, users could be required to reduce consumption. Cal Water believes that it could achieve a 10% to 20% reduction based on a voluntary reduction program (Stage 2) and 20% to 35% reduction (Stage 3) if a mandatory program is required.

For example, a 15% reduction in demand for Salinas in 2027 would amount to a decrease of 4,940 acre-ft/year or a net forecasted demand of 27,980 acre-ft/year. Even with the assumption of a loss of 30% of well output capacity, i.e., only 70% of well capacity available in 2027 which is estimated to be 70,385 acre-ft/yr under a multiple year drought, projected well supply capacity would equal 49,270 acre-ft/yr or 1.76 times greater than reduced demand or 1.5 times greater than projected 2027 “normal” demand.

6. Conclusion

Based on:

- Cal Water’s plan to construct 19 new wells with approximately 18,600 gpm capacity in the next 15 years
- Cal Water’s ability to supply water to the West, Central and East Specific Plan Areas with water from wells inside and outside those areas,
- Cal Water’s near and short term plan for supply and distributions system improvements (new and replacement wells, treatment and related transmission, storage and distribution system improvements),
- Historical Salinas area data demonstrating no diminishment in water supply during single dry and multiple dry years,
- In-place, proven, ongoing conservation programs and best management practices for reducing demand during single and multiple dry years

Cal Water represents that it will have adequate water supplies to meet the projected demands of the West, Central and East Specific Area Plans Areas in addition to those of its existing customers and other anticipated future water users as identified in the City of Salinas land use plans for the 20 year period from 2007 to 2027 under normal, single dry year and multiple dry year conditions.

APPENDIX F
WATER SUPPLY ASSESSMENT –
ALISAL WATER COMPANY

ALISAL WATER CORPORATION

A California Corporation
dba ALCO WATER SERVICE

Robert T. Adcock
President
(831) 424 - 0441 Phone

249 Williams Road
Salinas, CA 93905
(831) 424 - 0611 Fax

August 3, 2007

Robert Richelieu
City of Salinas
Development and Engineering Services
200 Lincoln Avenue
Salinas, CA 93901

RE: Future Growth Area Water Supply

Dear Mr. Richelieu,

Enclosed please find Alco Water Service's Water Service Assessment (WSA), which demonstrates Alco's ability to provide water service to its existing customers as well as the entire Central and East Areas. We have also attached our most current Urban Water management Plan (UWMP), which takes into account the water demand and necessary water supply for the City of Salinas' Central and East Future Growth Areas. The UWMP also demonstrates Alco's ability to provide water service to its existing customers as well as the entire Central and East Areas.

If you have any questions or require additional information, please do not hesitate to contact me at (831) 424-0441.

Sincerely,

Thomas R. Adcock
Vice President

TRA/ams

enclosures

cc: Robert C. Russell, PE, Deputy City Manager/City Engineer
Carl Niizawa, PE, DEE, Deputy City Engineer
John Bridges, EDAW
Future Growth Area Development Teams, City of Salinas

ALCO WATER SERVICE

WATER SERVICE ASSESSMENT
August 2007

ALCO WATER SERVICE
WATER SERVICE ASSESSMENT

From the information provided to Alco Water Service (Alco) by the City of Salinas and the City's consultants, P&D Consultants, specifically in their report entitled City of Salinas North Future Growth Area Water System Study dated August 30, 2006 (see attached report), the entire East Area and the entire Central Area would represent approximately 7,421 additional dwelling units and approximately 1,381 developable acres to be completed over the next twenty years. The purpose of this Water Service Assessment (WSA) is to present water service information using the methodology to project water use/demand calculations that is consistent with the 150 gallons per person per day specified in the P&D Consultants Water System Study dated August 30, 2006.

BACKGROUND

Alco updated its Urban Water Management Plan (UWMP) in March 2007. This Water Service Assessment (WSA) was prepared with the information from Alco's March 2007 UWMP. The water demand used in Alco's current UWMP includes the entire water demand for the Central and East Future Growth Area projects.

Alisal Water Corporation, dba Alco Water Service (Alco), is a privately owned public utility that began serving water in 1932 in an unincorporated area commonly referred to as the Alisal. This area was annexed to the City of Salinas in the early 1960's. With the incorporation of the Alisal area, all water served within the city boundaries is provided by public utility water companies.

Alco is governed by the California Public Utilities Commission (CPUC), which regulates water rates and quality of service. Water quality is regulated by the California Department of Public Health (CDPH) Division of Drinking Water and Environmental Management (DDWEM) and the Monterey County Health Department (MCHD) Environmental Health Division (EHD).

Alco has a certificate of public convenience and necessity from the CPUC to provide public utility water service in Monterey County and specifically, in and around the Eastern portion of the City of Salinas. Additionally, Alco has a water supply permit from CDPH to act as a public water supplier in Monterey County, specifically in the Eastern portion of the City of Salinas.

ALCO'S SOURCE OF SUPPLY

Water Rights

Alco obtains all its water from groundwater. This groundwater is extracted from the Salinas Valley Groundwater Basin and, more specifically, the East Side Aquifer Subbasin. The groundwater in the Salinas Valley Groundwater Basin, which includes the East Side Aquifer Subbasin, is not currently adjudicated, meaning that there are no specific restrictions on the amount of groundwater that can be pulled from any sources as long as it is for beneficial use and is not wasteful. Because the Salinas Valley Groundwater Basin is not an adjudicated basin, Alco has no limit on its legal right to withdraw water from its groundwater well sources and provide that water for the beneficial use of its customers. Further, because Alco is a public utility with a certificate of public convenience and necessity and a CDPH water supply permit, Alco has the ability and the right to draw water, without limitation, from its water sources for beneficial use to the fullest extent of which it is capable, as long as water is not wasted nor used unreasonably. In California, in an unadjudicated basin, the use of groundwater is governed by the doctrine of correlative rights. This doctrine accords each owner of land overlying a common water supply a right to the reasonable, beneficial use of that water supply. By virtue of this doctrine, coupled with the possession of a certificate of public convenience and necessity from the CPUC and a water supply permit from CDPH, Alco has the right to withdraw water from its water sources and supply all of those customers that it is approved to serve water to by the CPUC. If, in the future, the Salinas Valley Groundwater Basin were to be adjudicated, Alco, as a public utility providing water service for domestic purposes, would still be considered the highest priority use and would be provided a priority in the adjudication over non-domestic uses, in accordance with CA Water Code 106.

Alco's Groundwater Wells

Alco has been using water from East Side Aquifer Subbasin since 1932 to supply water to its Salinas customers. Alco currently has eight water wells, five of which are in active service and three of which have been designated as standby sources by CDPH and will be returned to active status after the addition of treatment or blending facilities for arsenic. Alco currently has one new water source already drilled and test-pumped and will be adding this source to the system in the near future. Alco is also in the process of drilling four new water sources to add to the water system in year 2007. The locations of Alco's existing water sources as well as those wells that are being added in the future are dispersed throughout Alco's service area. The eight sources, as well as those new sources that are drilled and/or are scheduled to be drilled, draw water from both the 400-foot aquifer and the deep aquifer. Only one well, out of the all of Alco's existing well sources and the wells currently being developed, draws water from the 400-foot aquifer only.

Groundwater Supply

In Bulletin 118, the Department of Water Resources identifies the Eastside Aquifer Subbasin as follows:

> Basin Boundaries and Hydrology
>
> The Eastside Aquifer subbasin extends from approximately five miles north of the City of Salinas to twenty-five miles south to the town of Gonzales. The Subbasin is bounded to the north by the Pleistocene Aromas Red Sands of the Salinas Valley-Langley Area Subbasin. To the south, the subbasin shares a boundary with Quaternary Alluvium and Terrace deposits of the Salinas Valley-Lower Forebay Aquifer Subbasin. The western subbasin boundary generally coincides with the northeastern limit of confining conditions in the adjacent 180/400-Foot

Aquifer subbasin (DWR 1946a) and with the location of Highway 101. The eastern boundary is the contact of Quaternary Terrace deposits with granitic rocks of the Gabilan Range. The subbasin boundaries are generally correlative with those of the East Side subarea of the Monterey County Water Resources Agency (MCWRA). Intermittent streams such as Natividad, Alisal, Quail, Parsons, Muddy and Johnson Creeks drain the western slopes of the Gabilan Range and flow across the Subbasin toward the Salinas River on the west side of the Valley. Average annual precipitation is 13 inches.

Hydrogeologic Information

The Salinas Valley is surrounded by the Gabilan Range on the east, by the Sierra de Salinas and Santa Lucia Range on the west, and is drained by the Salinas River, which empties into Monterey Bay on the north. The King City (Rinconda-Reliz) Fault (Durbin 1978) generally follows the western margin of the Valley from King City in the south to Monterey Bay in the north. Valley-side down, normal movement along the fault allowed the deposition of an asymmetric, westward thickening alluvial wedge. The Salinas Valley has been filled with 10,000 to 15,000 feet of Tertiary and Quaternary marine and terrestrial sediments that include up to 2,000 feet of saturated alluvium (Showalter 1984). Above the generally non-water bearing and consolidated granitic basement, Miocene age Monterey and Pliocene age Purisima Formations are water bearing strata within the Plio-Pleistocene age Paso Robles Formation and within Pleistocene to Holocene alluvium.

Water Bearing Formations

The primary water-bearing units of this subbasin are the same units that produce water in the adjacent 180/400-Foot Aquifer subbasin – namely, the 180-Foot Aquifer and the 400-Foot Aquifer. However, the near-surface confining unit (Salinas Aquitard) does not extend into the Eastside or other subbasins. Groundwater in the Eastside Aquifer subbasin is semi-confined to unconfined and occurs in lenses of sand and gravel that are interbedded with massive units of finer grained material (Durbin 1970). The thickness of the 180-foot aquifer varies from 50 to 150 feet in the Salinas Valley, with an average 100 feet (MW 1994; DWR 1970). Because of the westward thickening of alluvial units in the Salinas Valley (Showalter 1984), the average thickness in the Eastside subbasin is probably less than that stated above. The 180-Foot Aquifer may be in part correlative to older portions of Quaternary terrace deposits or the upper Aromas Red Sands. The 180-Foot Aquifer is separated from the 400-Foot Aquifer by a zone of discontinuous sands and blue clays called the 180/400-foot Aquiclude (MW 1998) which ranges in thickness from 10 to 70 feet.

More recent studies suggest the 400-Foot Aquifer exist not only in the 180/400-Foot Aquifer subbasin, but also in the Eastside Aquifer and Lower Forebay Aquifer subbasins (MW 1994). The 400-foot aquifer has an average thickness of 200 feet and consists of sands, gravels, and clay lenses (LHI 1985). The upper portion of the aquifer may be correlative with the Aromas Red Sands and the lower portion with the upper part of the Paso Robles Formation (MW 1994).

Later reports term the 180-Foot Aquifer and the 400-Foot Aquifer the "shallow zone" and "deep zone", respectively, in the Eastside and in the Upper and Lower Forebay subbasins (MW 1998).

An additional, deeper aquifer (also referred to as the 900-Foot Aquifer or the Deep Aquifer) is present in the lower Salinas Valley. A blue marine clay aquitard also separates this aquifer from the overlying 400-Foot Aquifer. This deeper aquifer consists of alternating layers of sand-gravel mixtures and clays (up to 900 feet thick), rather than a distinct aquifer and aquitard (MW 1994). The Deep Aquifer has experienced little development except near the coast where it is used to replace groundwater from the 180- and 400-Foot Aquifers rendered unusable by seawater intrusion; water quality and yield data are scarce.

MW (1994) estimated specific yields for the three main aquifers in the Salinas Valley for their Integrated Ground and Surface Water Model (IGSM). The estimated values for the 180-Foot, 400-Foot, and Deep Aquifers were 8-16 percent, 6 percent, and 6 percent, respectively. An average weighted specific yield of 8.8 percent was derived for three depth zones within the interval 20 to 200 feet below grade by the SWRB (1955). Yates (1988) estimated a storage coefficient of 0.0285 in the northern subbasin and 0.030 in the southern subbasin.

DWR Bulletin 118 further states;

<u>Groundwater Budget (Type A)</u>
A detailed groundwater budget was available for this subbasin for 1994 (MW 1998). Natural recharge (including applied water recharge) is estimated to be 41,000 af. There is no artificial recharge. Subsurface inflow is approximately 17,000 af. Annual urban and agricultural extractions total 86,000 af. There are no other extractions or subsurface outflow. Therefore, this Subbasin is in overdraft of approximately 28,000 af per year. Bulletin 118 also states that, as of 1994, the Eastside Aquifer Subbasin had approximately 2,560,000 af of groundwater stored in this Subbasin. As of 1994, there were approximately 91.4 years of water available in this Subbasin (2,560,000 af / 28,000 af of overdraft per year = 91.4 years. Therefore, according to Bulletin 118's documentation, if no steps whatsoever were taken to address the overdraft issues of the Eastside Aquifer Subbasin, there would still be approximately 78 years of capacity as of 2007 in the Eastside Aquifer Subbasin.

Monterey County has established an agency called the Monterey County Water Resource Agency (MCWRA) in order to address water shortage issues in the basin. MCWRA manages two distinct water projects, the Castroville Seawater Intrusion Project (CSIP) and the Salinas Valley Water Project (SVWP). The goals of these projects are to stop seawater intrusion, provide adequate water supplies to meet current and future

(2030) needs and hydrologically balancing the groundwater of the Salinas Valley Groundwater Basin.

Castroville Seawater Intrusion Project (CSIP)
The CSIP is a jointly managed and operated project of the Monterey Regional Water Pollution Control Agency (MRWPCA) and the Monterey County Water Resources Agency (MCWRA). MRWPCA provides residential wastewater treatment for the Salinas urban area and, after treatment, recycles 100% of the treated effluent for agricultural irrigation in the northern Salinas Valley in the summer months. This recycled water program has the ability to provide approximately 30,000 AFY, which reduces groundwater used from the Salinas Groundwater Basin for agricultural purposes.

Salinas Valley Water Project (SVWP)
The SVWP is a collaborative effort between MCWRA and Salinas Valley interests to address the water resources management issues within the Salinas Valley. The SVWP provides for the long-term management and protection of groundwater resources in the basin. The SVWP was developed to address three critical water supply, water distribution and water quality issues in the Salinas Valley:

1) Stopping seawater intrusion
2) Providing adequate water supplies and flexibility to meet current and future (2030) needs
3) Hydrologically balancing the groundwater basin in Salinas Valley

To address the three issues, the SVWP proposes:

- Modifying the spillway at Nacimiento Dam and reporting Nacimiento and San Antonio Reservoirs;
- Utilizing the Salinas River for conveying water to the northern portion of the Salinas Valley;
- Storing flows from the Monterey County Water Recycling Project and utilizing the stored recycled water to help meet summer irrigation needs;
- Diverting the Salinas River; and
- Treating and distributing water to agricultural users in the northern Salinas Valley.

MCWRA describes these projects as follows:

Modification to the Nacimiento Dam spillway.
The spillway at Nacimiento Dam would be modified to increase the flexibility of reservoir operations and allow the reservoir to maintain higher water levels in the winter and spring months. The additional storage gained at Nacimiento would be released along with flows stored at San Antonio Dam for Basin recharge and diversion later in the year.
Reoperation of Reservoirs.
The proposed spillway modifications would change the ways Nacimiento and San Antonio reservoirs are operated in order to provide the source water for the SVWP,

while assuring the provision of adequate flood control capacity. The modified operation would increase the amount of water available for recharge and diversion during the irrigation season.

Salinas River Recharge, Conveyance, Diversion and Distribution.

The Salinas River would be utilized to convey water to the proposed diversion facility. The facility would include an inflatable dam designed to operate from April to November. A proposed Salinas River surface diversion facility would divert river water to the existing Castroville Seawater Intrusion Project (CSIP) system for delivery to the CSIP service area for agricultural irrigation. Diverted river water would supplement the use of CSIP project water and would replace existing groundwater pumping in the CSIP service area. The diversion facility would form a shallow impoundment of water upstream of the facility when the dam is operational. This impoundment could extend up to 2 miles upstream.

Diversion Facility

The proposed surface diversion facility would divert up to 25,000 acre feet of water from the Salinas River at Salachi Ranch Road into the exiting CSIP distribution pipeline for delivery to agricultural users for irrigation. The diverted water would serve as an alternate groundwater supply to offset groundwater pumping. San Antonio and Nacimiento reservoirs would be reoperated to release water primarily during the late-spring and summer irrigation season. Increased spring and summer flows would be available for diversion to agricultural users via the surface diversion facility. Increased flows would also provide increased recharge through the riverbed to the groundwater aquifer.

System Operations

The SVWP diversion facility will be operated to compliment existing recycled water flows. Recycled water plant flows will be blended with Salinas River water whenever river diversions are available. The existing supplemental wells that provide groundwater to the CSIP system will be maintained. These wells will be utilized to provide peak irrigation flow requirements as well as to provide an adequate irrigation water supply during dry year conditions when Salinas River diversions are not adequate to meet the irrigation demand of the CSIP service area.

The CSIP project is built and in operation at this time and the SVWP project was approved by an April 8, 2003 ballot of Monterey County property owners. From information obtained from MCWRA, MCWRA is in the process of obtaining all necessary permits and has entered into contracts with engineering firms to perform the design work.

URBAN WATER MANAGEMENT PLAN (UWMP)

Alco's current Urban Water Management Plan (UWMP) takes into account and includes the water service needs for the City of Salinas' General Plan Future Growth Areas designated as Central Area and East Area. This is a smaller scope of area than was used to calculate data in the previous UWMP, which took into account the whole Future Growth Area from the General Plan, including the West Area.

The UWMP indicates the following water supply demand for its service area, which encompasses the proposed project areas.

TABLE 1
WATER SUPPLY DEMAND PER UWMP

YEAR [1]	WATER USE MILLION GALLONS
2000	1,500
2001	1,492
2002	1,461
2003	1,436.3
2004	1,616.4
2005	1,557
2006	1,461.8
2010	1,896
2015	2,301
2020	2,707
2025	3,112
2027	3,274

NOTE:
1) Years 200 through 2006 are actual water usage and Years 2010 through 2027 are projected water usage.

WATER DEMAND OF PROJECT

By letter dated September 22, 2006, the City of Salinas has determined that the appropriate water demand for the Central Area and the East Area will be 150 gallons per person per day multiplied by 3.67 persons per dwelling. This water demand was shown in the Administrative Draft of the City of Salinas North Future Growth Area Water System Study prepared by P&D Consultants on August 30, 2006.

The Tables below, showing water demand for the Central and East Areas, were taken directly from P&D's Water System Study prepared for the City of Salinas and will be used in Alco's current Water Service Assessment to demonstrate water demand. The Tables demonstrate that the Central Specific Plan Area adds approximately 2.0 million gallons per day of water demand to the system and that the East Specific Plan Area adds approximately 2.5 million gallons per day of water demand to the system.

Table 6 from P&D Consultants' August 30, 2006 Water System Study
Water Demand for the Central Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,765	971,632.5	675
Medium Density	DU	550	1,348	742,074	515
High Density	DU	550	201	110,650.5	77
Retail	Acre	3,000	0	0	0
Office	Acre	3,000	0	0	0
Mixed Use	Acre	3,000	21	63,000	44
Parks	Acre	1,500	26	39,000	27
Schools	Acre	1,500	44	66,000	46
			Total	**1,992,397**	**1,384**

DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor	2
Maximum Day Demand	2,767 GPM
Peak Hour Demand Peaking Factor	4
Peak Hour Demand	5,534 GPM

Table 8 from P&D Consultants' August 30, 2006 Water System Study
Water Demand for the East Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,992	1,096,596	762
Medium Density	DU	550	1,053	579,676.5	403
High Density	DU	550	914	503,157	349
Retail	Acre	3,000	0	0	0
Office	Acre	3,000	0	0	0
Mixed Use	Acre	3,000	29	87,000	60
Parks	Acre	1,500	44	66,000	46
Schools	Acre	1,500	78	117,000	81
			Total	**2,449,429**	**1,851**

DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor	2
Maximum Day Demand	3,402 GPM
Peak Hour Demand Peaking Factor	4
Peak Hour Demand	6,804 GPM

The Table below is a summary of the data obtained from the Total Project Water Demand from the Water System Study prepared by P&D Consultants on August 30, 2006.

TABLE 2
TOTAL PROJECT WATER DEMAND
(Data from P&D Consultants' August 30, 2006 Water System Study)

AREA	DWELLING UNITS	DAILY WATER DEMAND (MG/day)	ANNUAL WATER DEMAND MG/year	PEAK HOURLY WATER DEMAND (GPM)
EAST	4,044[1]	2.449429	894	6,804
CENTRAL	3,377[1]	1.992397	727	5,534
TOTAL	7,421[1]	4.44	1,621	12,338

Note:
1) These numbers are directly from the City of Salinas' letter dated September 22, 2006.
2) The Daily Usage Factor is a calculation of the number of gallons used per day per dwelling unit, based on the City of Salinas' letter dated September 22, 2006, which, for the purposes of this Water Service Assessment, uses a historical projected water use of 150 gallons per person per day and the City's current average household size of 3.67 persons per dwelling, to arrive at this factor; i.e., [150 gallons per person per day] * [3.67 persons per dwelling] = 550.5 gallons per day per dwelling unit.

TABLE 3
ESTIMATED UPDATED TOTAL SYSTEM WATER DEMAND[1]
(Data from P&D Consultants' August 30, 2006 Water System Study)

YEAR	FLOW (MG/YR)
2005[1]	1,557[2]
2006[1]	1,461.8[2]
2007[1]	1,653
2008[1]	1,734
2009[1]	1,815
2010[1]	1,896
2015[1]	2,301
2020[1]	2,707
2025[1]	3,112
2027[1]	3,274

Note:
1) This Table represents Alco's estimated total water system demand in MG/Yr. It includes all of Alco's existing customers for 2005 and 2006. For 2007, it reflects a growth in annual water demand from an existing project (Monte Bella) being built out. Years 2008 through 2027 reflect additional water demand of a linear build-out of the 7,421 dwelling units and expected irrigation, commercial and industrial uses for the East and Central Areas of development.
2) Actual system-wide water use.

Alco's water system is served directly from groundwater sources. It currently has approximately 205,000 gallons of storage, but Alco will be building a 5MG storage tank to be completed prior to 2010. Thus the system must currently supply the hourly peak flow demand. All major wells are equipped with an emergency generator and transfer switch. Peak hourly flows currently are not measured. They have been established based on experience at other systems and are determined to be as follows: Peak hourly flow equals the 3-year average annual flow * peaking factor of peak month/average flow (currently 1.35) * 2.0 *1.5. This formula has been historically accepted by the Department of Public Health and has proven satisfactory for estimating Alco's water demands. We have used this formula to determine only Alco's current system's peak hourly demands; however, we did not use this formula to determine the Central and East Areas peak hourly demands. For the East and Central Areas, Alco used the peak hourly demand calculations provided to us by the City of Salinas in the P&D Consultants Water System Study dated August 30, 2006.

Using the data from P&D Consultants Water System Study dated August 30, 2006, the anticipated peak flows for the East and Central projects from the City of Salinas' specific plan are as follows:

TABLE 4
PROJECT PEAK HOURLY DEMAND

PROJECT	PEAK HOUR[1] gpm	PEAK HOUR W/ RESERVOIR[1] gpm
EAST	6,804	5,443
CENTRAL	5,534	4,427
TOTAL	**12,338**	**9,870**

Note:
1) The peak hourly flows in gpm include the anticipated demand from the expected residential, irrigation, commercial and industrial uses for the East and Central Areas of development.

These hourly peak flows are generally expressed in gpm to compare it readily with the pumping capacity of the system. It is anticipated that by 2010, Alco will have a 5 million gallon water reservoir built. Peak hourly flows will then be delivered from this reservoir. This will reduce the well capacity requirement by 20% during the peak hourly demand.

Using these flow projections, the calculated peak hourly flows for Alco's total water system and with the Central and East Future Growth Area projects are as follows:

TABLE 5
UPDATED SUPPLY CAPACITY REQUIREMENTS

YEAR	PEAK HOURLY DEMAND W/ PROJECT AND WITH 5MG STORAGE RESERVOIR[2] (gpm)	PEAK HOURLY DEMAND W/ PROJECT AND WITHOUT 5MG STORAGE RESERVOIR[1] (gpm)
2000	10,954	10,954
2001	11,867	11,867
2002	11,526	11,526
2003	11,004	11,004
2004	11,537	11,537
2005	12,101	12,101
2006	11,264	11,264
2010	11,688	14,610
2015	14,184	17,730
2020	16,687	20,859
2025	19,184	23,980
2027	20,182	25,228

Notes:

1) The Peak hourly flow was calculated by taking Alco's existing peak hourly flow calculation for its existing system, which is as per formula: *Peak hourly flow equals the average annual flow * peaking factor of peak month/average flow (currently 1.35) * 2.0 *1.5*, after which is added to it the peak hourly flow that was determined by P&D Consultants' August 30, 2006 Water System Study.

2) From Year 2010 and forward, the peak hourly flow has been reduced due to the impact of the 5MG reservoir. There is a 20% reduction in the peak hourly demand due to the reservoir.

With or without the 5 MG reservoir, Alco's water system demand, which includes the current demand and the demand projected to the build-out of the project, is within the maximum well capacity of Alco's existing wells, as shown by comparing Tables 5 and 7.

The information provided above is based on normal years. Due to the nature of Alco's water supply being all groundwater, our supply is not as sensitive to dry years as a surface water supplied system. Additionally, due to the fact that our water system does not serve water for agricultural purposes and is mainly for urban use, our water demand does not fluctuate significantly with dry and multiple dry years, see Table 6 below.

TABLE 6
WATER DEMAND PER SERVICE CONNECTION[1]
FOR NORMAL, SINGLE DRY & MULTIPLE DRY YEARS
1970 THROUGH 2006

YEARS	WATER SYSTEM DEMAND PER SERVICE CONNECTION[1] PER YEAR (GALLONS)	% DIFFERENCE FROM 37-YEAR AVERAGE
1970 through 2006	194,000	N/A
Single Dry Year (1976 & 1977) [2]	175,000	-9.79
Multiple Dry Years (1987 through 1992) [3]	208,000	7.22

Notes:

1) Number of Service Connections includes all categories; single-family residential, multi-family residential, commercial, industrial, institutional, landscape irrigation.
2) Single Dry Years
3) Multiple Dry Years

As can be seen from Table 6 above, the average water demand in a single dry year, which is represented by the average water demand during the 1976-1977 drought, is 9.79% lower than Alco's historical water demand per service connection per year. We have used the 1987-1992 drought as an example of multiple dry years and, as can be seen by the Table, the average water demand for these years was only 7.22% greater than Alco's historical water demand per service connection per year. Therefore, Alco's system has not historically experienced a significant change in water demand from its system water demand in normal, single dry and multiple dry years.

During single dry years and multiple dry years, Alco's historical data has not shown a significant increase in the per capita water demand.

Alco's groundwater wells have proven to be a reliable source of water for its service area. During the major droughts of 1976-1977 and 1987-1992, Alco's water capacity did not diminish and the water wells continued to constitute a reliable supply during single and multiple dry years. The wells that provided water during this time period continue to provide a reliable source of water. Additionally, newer wells pumping from the same aquifers have proven to provide adequately during single dry and multiple dry years. Furthermore, the East and Central areas are currently irrigated agricultural areas, which, when converted to urban uses, are expected to draw less water from the aquifer than in the past or at least be water-neutral, impacting the aquifer neither positively nor negatively. It is a goal of the Monterey Water Resources Agency to reduce the water consumption by at least 20% during changes of land use (Mulholland, 1993). Therefore, Alco does not expect water usage in the Central and East Areas to increase the water demand on the aquifer.

Further, in the Department of Water Resources Bulletin 160-98, Appendix 5A Regional Water Budgets with Existing Facilities and Programs, Table ES5A-3 shows that, for the Central Coast Region, the urban water use by 1995 calculations for an average year, was 286,000 af and for a drought year was 294,000 af. Table ES5A-3 projected that in 2020, an average year for urban water use would be 379,000 af and a drought year would be 391,000 af. Further, this Table demonstrates that groundwater supplies actually increased in the 1995 calculations from 1,045,000 af to 1,142,000 af. Similarly, the groundwater supply increases for the projected numbers for 2020, from 1,041,000 af to 1,159,000 af. These numbers are intended to represent the entire Central Coast Region, which includes diverse areas. However, comprehensively, the difference in urban water usage does not increase significantly for the entire area and the supply during drought years for groundwater does not diminish. This trend mimics Alco's own historical experience that has indicated insignificant variations in actual water usage when comparing normal years to dry and multiple dry years.

WATER SUPPLY, PRODUCTION AND IMPLEMENTATION

Water Supply

As discussed previously, Alco's water supply comes entirely from groundwater. The proposed project areas are currently in agricultural use and are supplied from wells drawing groundwater. As also stated previously, the conversion of irrigated agricultural land to residential development generally results in a net decrease in water consumption, thus Alco expects that the provision of water service to the project areas will either draw less water from the aquifer or comparable amounts of past usage for the same areas. It is a goal of the Monterey Water Resources Agency to reduce the water consumption by at least 20% during changes of land use (Mulholland, 1993). During the past droughts Alco had no problem of meeting its demands and no changes are expected in the future.

Production

Alco's current UWMP provides the production capacities of existing wells, which are as follows:

TABLE 7
EXISTING WELL CAPACITIES

EXISTING WELLS	MAXIMUM WELL CAPACITY		EXISTING PUMP CAPACITY[1]	
	gpm	MG/YR	gpm	MG/YR
Alisal High School	4,000	2,102	2,106	1,107
Alma	800	420	750	394
Boronda[2]	2,500	1,314	1,997	1,050
County	3,500	1,840	2,377	1,249
Kilbreth	4,000	2,102	2,253	1,184
Las Casitas[2]	4,000	2,102	2,371	1,246
Nogal[2]	3,500	1,840	2,031	1,067
Santana	2,500	1,314	1,333	701
TOTALS	**24,800**	**13,034**	**15,218**	**7,998**
Verona[3]	4,000	2,102	2,300	1,209
Totals, including Verona	28,800	15,136	17,518	9,207

NOTES:

1) Based on pump test capacity performed at the end of 2002
2) These wells have been changed to standby status by CDPH and will be returned to active status after the addition of treatment or blending facilities for arsenic.
3) Verona Well is drilled but not yet approved for use by CDPH.

TABLE 8
UPDATED SYSTEM WELL PRODUCTION CAPACITY

SOURCE	CAPACITY (gpm)						
	2005	**2006**	**2010**	**2015**	**2020**	**2025**	**2027**
PEAK HOURLY SYSTEM DEMAND WITH 5MG STORAGE RESERVOIR (from Table 5)	**12,101**	**11,264**	**11,688**	**14,184**	**16,687**	**19,184**	**20,182**
EXISTING WELLS	15,218	15,218	16,279[1,2]	16,279[1,2]	16,279[1,2]	16,279[1,2]	16,279[1,2]
NEW WELLS							
Verona (MB#1) [3]			2,300	2,300	2,300	2,300	2,300
Surrey (MB #2)			2,000	2,000	2,000	2,000	2,000
Monte Bella (MB #3)			2,000	2,000	2,000	2,000	2,000
Padova (MB #4)			1,000	1,000	1,000	1,000	1,000
New Laurel Heights			2,000	2,000	2,000	2,000	2,000
New Bardin			1,500	1,500	1,500	1,500	1,500
Hibino			2,000	2,000	2,000	2,000	2,000
RESERVE WELL LOTS[4]							
WR #2							
WR #3							
First Avenue							
Towt Street							
Williams Road							
Wiren Street							
Acosta Plaza							
Ranchero Drive							
Rider Avenue							
Alma Avenue #2							
TOTAL CAPACITY	**15,218**	**15,218**	**29,079**	**29,079**	**29,079**	**29,079**	**29,079**

Notes:
1) This capacity amount includes the Boronda Well, the Las Casitas Well and the Nogal Well, which will be returned to service by 2010 through treatment or blending.
2) This amount includes certain increases in pump changes at Alisal High School Well and Santana Well.
3) Verona Well is drilled but not yet approved for use by CDPH.
4) Reserve well lots to be drilled and put into production as necessary.

Again, as previously stated, Alco's well capacity is far greater than the annual water system demand for Alco's entire system including the whole of the Central and Eastern areas of development. That water demand, as previously stated, is 3,274 MG/Yr and Alco's maximum well capacity from its existing wells is greater than 13,000 MG/Yr. Now that it has been confirmed that Alco's production capacity exceeds the annual water demand for our system including the whole of the Central and Eastern areas of development, we must confirm that Alco can meet the peak hourly production demand of the entire water system including the whole of the Central and Eastern areas of development. As can be seen from Table 8, Alco's total water production capacity in gpm is always greater than the peak hourly water system demand projected out to 2027. When the peak hourly water system demand is calculated with the 5MG of storage in place, that demand in year 2027 is 20,182 gpm and the water production capacity remains 29,079 gpm. Therefore, Alco has the water production capacity to be able to provide service to its entire water system including the whole of the Central and Eastern areas of development, even during the peak hourly demand.

Again, all of the water system demand calculations used for the Central and East Areas that are used in this document come directly from the P&D Consultants' August 30, 2006 Water System Study report prepared for the City of Salinas.

As shown in Alco's current UWMP, at least seven new wells and the 5MG storage reservoir are expected to be added to Alco's water system by the year 2010. The Verona Well (MB #1), a part of the Monte Bella subdivision, has already been constructed and is in the CDPH approval process. Alco is in the process of drilling the new Bardin Well and the Surrey Way Well (MB #2). Well drilling permits have already been obtained for the Monte Bella Boulevard Well (MB #3) and the new Laurel Heights Well from the Monterey County Health Department (MCHD). Approval has been obtained from State of California Department of Public Health (CDPH) to drill at all of these locations. The Monte Bella Boulevard Well (MB #3) and the new Laurel Heights Well will be drilled upon completion of the present drilling of new Bardin Well and the Surrey Way Well (MB #2). The Hibino Well is scheduled to be permitted by MCHD and CDPH and drilled and brought online in 2008 and the Padova Well is scheduled to be permitted by MCHD and CDPH and drilled and brought online in 2010. A site plan showing the current and the proposed wells and reservoir is attached (Tab 2). Further, even after the addition of these new wells as listed in Table 8, Alco has ten well lots in reserve that wells could be drilled upon. Well locations are chosen by Alco on the basis of water quality and potential production capacities. Alco does not plan on obtaining any well sites in the Central or East Future Growth Areas, as our experience and knowledge of the water quantity and quality in those areas shows there to be insufficient quantity and water with a quality below State and Federal water quality standards for certain constituents.

Potential for Contamination

Alco has the benefit of already possessing ten well lots in its service area in the event that any of its existing sources ever need to be replaced for any reason, including compliance with water quality standards.

While Alco does not forecast its water sources to become contaminated, that potential is always a consideration for any water system. Further, State and/or Federal water quality standards may be changed such that a source that is currently in compliance with all standards may be out of compliance after the implementation of any new standards. Alco deals with these issues by diversifying source locations in the service area, so that any contamination, if it were to occur, is only likely to affect a minimal number of sources and not all of the water sources at the same time. If contamination does occur, having diversified sources allows Alco to isolate the affected sources and evaluate whether:

- To discontinue use of the sources without replacing them
- To discontinue use of the sources and replace them with new sources
- To blend the sources with sources meeting the standards
- To treat the sources for the contaminant(s) found

Alco's practice is to obtain a 20,000 square foot well lot, which is large enough to allow the utility to install blending and/or treatment facilities as is deemed necessary, depending upon the contaminant.

If treatment were to become necessary, Alco's current customers will benefit from the additional ratepayers in the Central and East Future Growth Areas, as costs will be able to be spread over a larger customer base.

Implementation - Financing of Water System Facilities
As indicated in the UWMP, Alco is a public utility regulated by the California Public Utilities Commission. Facilities installed to provide service to new development are covered by a Rule 15 Main Extension Contract. This contract requires developers to pay for all the water system facility improvements necessary to provide water service to their projects. Developers are required to pay for water system engineering and construction, inspection, pipes, valves, booster pumping facilities, wells, treatment, reservoirs and all necessary appurtenances that supply water to their development. In addition, they are required to provide suitable land, easements and rights-of-way to install water system facilities including but not limited to wells, booster stations, pipelines and/or reservoirs at locations acceptable to the utility. In this manner of developer's financing of facilities, it is assured that all of their proposed projects will have the facilities to be supplied with water.

The water utility, however, does finance the water system facilities and improvements for its existing water users. In the case of the 5MG storage reservoir, it will be built and paid for by the utility.

Approvals
Once a specific plan and the EIR for the project are approved by the City, the following approvals are needed to implement the water system facilities that will affect the project. Alco's current service area, approved by the California Public Utilities Commission

(CPUC), already includes a portion of the Central Area and all of the East Area. If Alco were to provide service to the rest of the Central area, it would require approval of the CPUC to add the rest of the Central Area to Alco's service area. The following approvals are not necessarily in order of importance or timing;

- Easements and Rights-of-Way meeting utility requirements
- Land for production, storage and pumping facilities
- Utility's Engineer to perform system modeling for pipe sizing
- Monterey County Health Department, Environmental Health Division for well permit
- Monterey County Building Department for building permit – reservoir
- Monterey Bay Unified Air Pollution Control District for operation of emergency generator
- Monterey County Public Works for encroachment permit of pipelines
- City of Salinas Public Works for encroachment permit of pipelines
- City of Salinas Building Department for pump station permits
- State of California Department of Public Health for well operating permit
- State of California Department of Public Health for approval of wells and treatment, if required

Per Senate Bills 610 and 221, Alco is responding to the following question in this report; "Will the water supplier's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to the water supplier's existing and planned future uses, including agricultural and manufacturing uses?" The answer is **YES**, the Alco system **CAN** provide the required and necessary water service to the proposed projects in the Central and East Areas of the City's Specific Plans during normal years, dry years and multiple dry years in conjunction with adequately providing water service as per the requirements of Senate Bills 610 and 221 during normal, single dry and multiple dry water years. Even if potential water contamination occurs, Alco can further adequately provide water service as a result of the utility's diversification of water source locations, its additional well locations that can be developed, and its well lots that are sized to allow for future water treatment facilities, if necessary, which can be installed if the need were to occur. Alco has sources of proven capacity to meet current and future water demands and will add any future sources and facilities as specific projects demand and as outlined in the previous content of this report. These water system facilities will be paid for by the project developers and any other entities necessitating the water system facilities to be installed. None of the water for these proposed projects will come from water supplies never before used; all of the water will come either from our existing sources or new groundwater well sources drawing water from an aquifer already in use and of known quality and quantity.

This Water Service Assessment was prepared this 3rd day of August, 2007 by:

Thomas R. Corral, Vice President, Alisal Water Corporation

Signature — Title

APPENDIX G
ANNUAL WATER USE STUDY,
NORTH FUTURE GROWTH AREA
(WOOD RODGERS)

ANNUAL WATER USE STUDY
North Future Growth Area
SALINAS, CALIFORNIA
March, 2007

PURPOSE

The purpose of this study is to compare the existing pre-development water use in the Salinas North Future Growth Area (FGA) to the future water use at this site at "buildout". This annual water use study is aimed to make a comparison of the current overall water consumption on the site at existing agricultural land use versus proposed residential development conditions.

BACKGROUND

The FGA, located in unincorporated Monterey County, is part of the City of Salinas' Sphere of Influence Amendment Future Growth Area planned for annexation by the City. It includes 2,488 acres of planned residential development in the north eastern part of Salinas which is divided into three specific plan areas: East, Central and West. The FGA is presently used primarily as agricultural land and will ultimately feature low, medium and high density residential development with village greens, village centers, Elementary, Junior High and High schools, neighborhood parks, open space, wetland preserve corridors and mixed use development.

The East Area is a 924 acre site bounded by Williams Road at southeast, Old Stage Road at northeast, future alignment of Constitution Avenue at northwest and Boronda Road at southwest.

The Central Area is a 750 acre site bounded by future Constitution Avenue to the southeast, future alignment of Russell Road to the north, West Boronda Road at south west and Natividad Road at west.

The West Area consists of 814 acre with San Juan Grade Road to the west, Rogge Road and future alignment of Russell Road to the north, Natividad Road to the East and West Boronda Road to the south.

EXISTING LANDUSE CONDITIONS

The total irrigated land for the entire FGA is 1,959 acres with 529 acres of non-irrigated land.

Most of the East Area agricultural use is row crops (rotation of strawberries, broccoli, lettuce etc.) with some pasture land. The site is currently used strictly for agricultural practices which include row crops, green-house, nursery and pasture. Approximately 540 acres are irrigated farm land, 40 acres are green-house farm land and 334 acres are non-irrigated pasture. The remaining 20 acres are existing ponds, basins, channel bankfull corridor, field roads, equipment storage areas and riparian area, Figure 1.

The Central Area has approximately 653 acres of irrigated row crop farmland with the remaining 97 acres either ponds, basins, creek bed, riparian area or other non-irrigated land, Figure 2.

The West Area consists of 629 acres of irrigated farmland by William Tarp and an estimated 97 irrigated farm land on the Madolora property that is being farmed by others. The total irrigated farmland is therefore 726 acres. The remaining 77 acres includes field roads, residences, storage, equipment areas and other non-irrigated land. In addition, about 11 acres of elementary school that is currently connected to the City water system, Figure 3.

Table 1 summarizes the existing agricultural and non-agricultural areas. Existing field roads and storage areas are counted as non-irrigated lands. It is assumed, in this study, that non-agricultural areas have a current water use rate of zero.

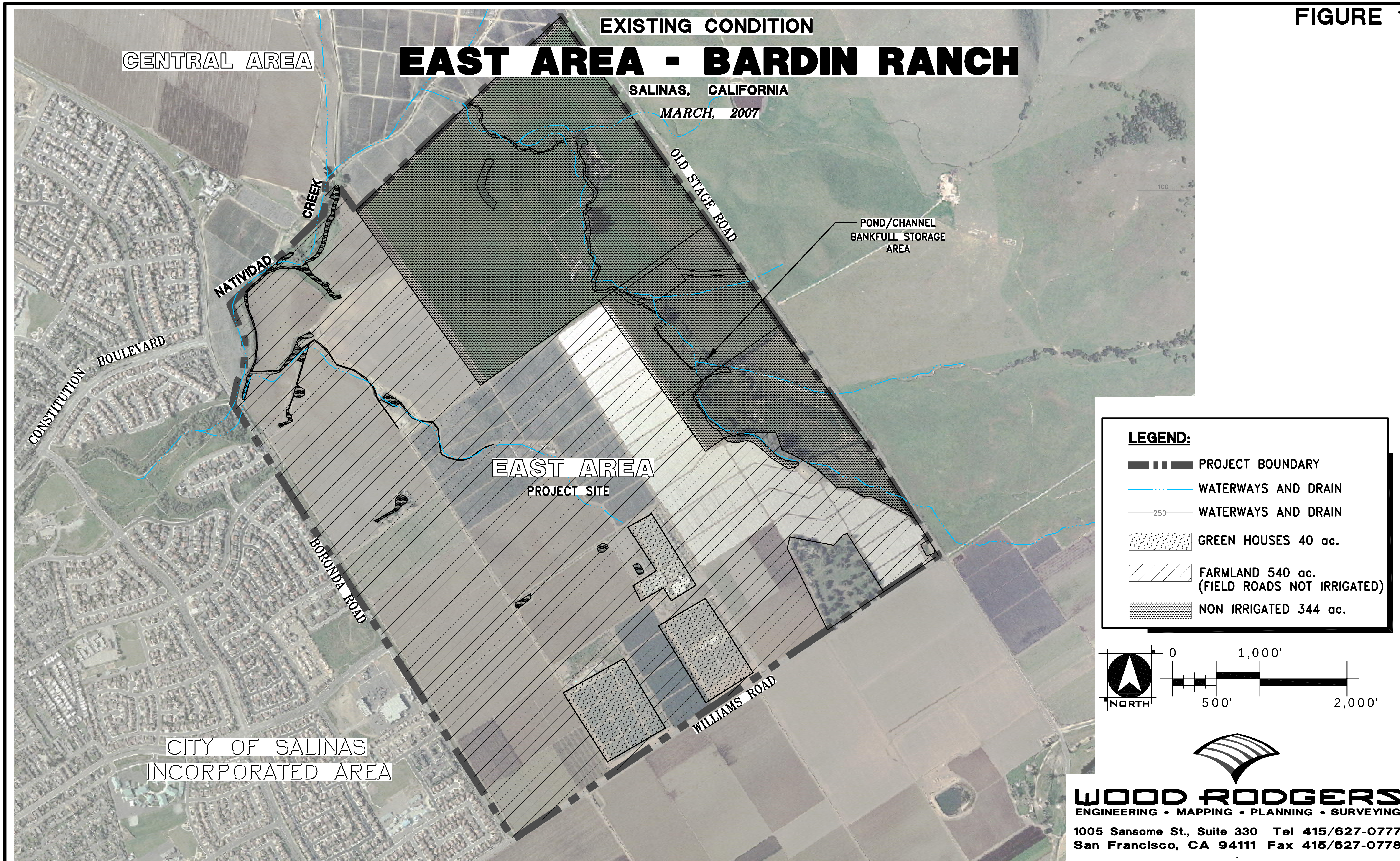


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FIGURE 2

EXISTING CONDITIONS

CENTRAL AREA

SALINAS, CALIFORNIA

MARCH, 2007

LEGEND:

- PROJECT BOUNDARY
- CROP LAND 653 ac.
- NON-IRRIGATED 97 ac. (FIELD ROADS NOT IRRIGATED)

NOTE:

NOT A BOUNDARY MAP
BOUNDARY LINES ARE AN APPROXIMATION

NORTH

0 500' 1,000' 2,000'

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FIGURE 3

EXISTING CONDITIONS

WEST AREA

SALINAS, CALIFORNIA

MARCH, 2007

LEGEND:

- PROPERTY OWNERSHIP BOUNDARY
- CROP LAND 726 ac. (FIELD ROADS NOT IRRIGATED)
- NON-IRRIGATED 88 ac.

NORTH

0 500' 1,000' 2,000'

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Table 1: FGA Existing Irrigated and Non-irrigated Areas

	East	Central	West	Total
Type:	ac	ac	ac	ac
IRRIGATED FARM LAND				
Row Crop	540	653	726	
Green Houses	40	0	0	
Total	580	653	726	1,959
NON-IRRIGATED	ac	ac	ac	
Non-Irrigated Pasture	324	7	76	
Ponds, basins etc.	20	90	0	
School	0	0	11	
Total	344	97	88	529
Total Gross Acreage:	924	750	814	2,488

ac = acres

EXISTING WATER PUMPING/IRRIGATION RATES

The existing annual water use is presented in this report as a range (2.6 to 3.04 acre feet per acre) and was arrived at using two sources: data from West Area Specific Plan properties and local and recent published information available for this region of Monterey County.

Water pumping records were kept for ranches in the West Area from 1994 to 2005. The overall average is 3.04 acre feet per acre (AF/ac) based on records kept for a total of 629 net irrigated acres of 695 gross acres.

Annual average unit agricultural water pumped for the East Side (Salinas Valley subarea that includes the FGA) is 2.6 acre-feet/acre calculated using reported acreage and water pumped from 2003-2004 Water and Land Use Form, accounting for all crop types reported, including nurseries and all reporting methods: water flowmeter, electrical meter and hour meter, as reported by farmers or agricultural land owners to the Monterey County Water Resources Agency.

The Salinas Urban Water Allocation Plan adopted by the City of Salinas in 1994 reports water use for major users in active agricultural operation in 1987 based on estimates identified in environmental documents as follows:

Williams Ranch	425 ac.	2.9 AF/ac
Northeast Area	575 ac.	3.5 AF/ac
	500 ac.	2.5 AF/ac
Carr Lake	450 ac.	2.9 AF/ac
Hartnell East Camps	110 ac.	3.4 AF/ac

The weighted average of these estimates is 3.0 AF/ac, therefore these estimates support the use of the range 2.6 – 3.04 AF/ac for this water balance as reasonable and consistent with the use in the Salinas area.

PROPOSED LANDUSE CONDITIONS

The FGA property will be developed into a mixed-use master planned community that provides an appropriate balance of residential land use, commercial and mixed use areas, community services and systematically constructed infrastructure and services that adequately support the overall development. In terms of dwelling units, the East Area development could consist of up to 4,044 dwelling units of mostly low- and medium- density single family residential units, neighborhood parks, schools, a natural creek corridor, open space trail networks, and a nature park. The Central Area could consist up to 3,377 dwelling units of mostly low- and medium- density single family residential units while the West Area upper limit is 4,340 dwelling units, with a balance between low, medium and high density. Up to 11,761 dwelling units for the FGA (4,044+3,377+4,340) are found in the General Plan.

The development of the FGA is expected to be completed over a 15-20 year time frame with construction starting in the Fall of 2008.

Based on the 2000 census, and as presented in the General Plan the density used for the FGA regardless of type of unit (low, medium or high density) is 3.67 persons per household.

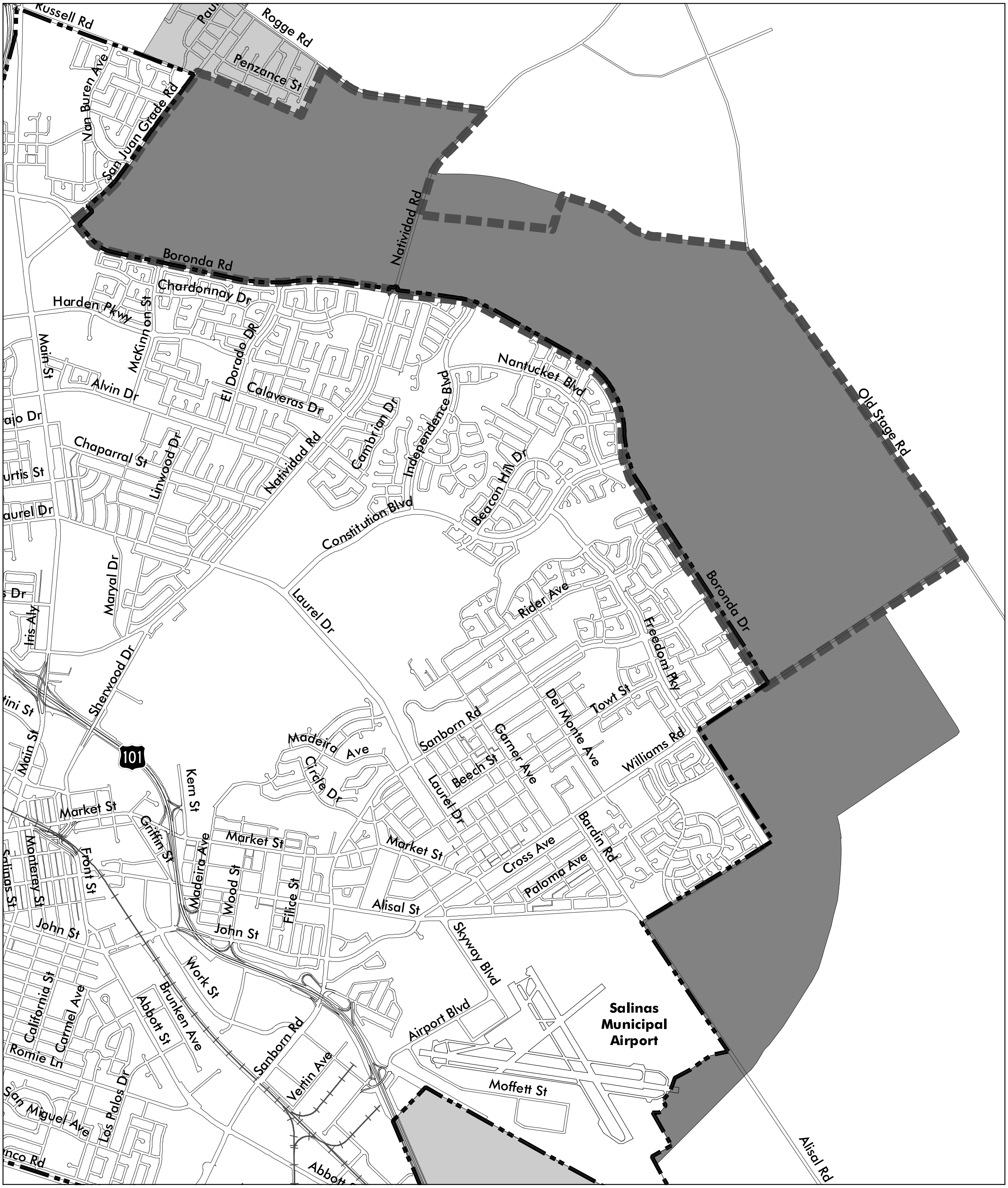
Table 2 defines the future land uses for the three specific plan areas.

Table 2: FGA Land Use Summary

Area:	East	Central	West
Type:	du	du	du
LDR	1,992	1,765	1,671
MDR	1,053	1,348	1,515
HDR	914	201	1,057
TOTAL	3,959	3,314	4,243
	ac	ac	ac
Retail	0	0	11
Office	0	0	0
Mixed Use	29	21	30
Parks	44	26	66
Schools	78	44	72
Maximum du (1)	4,044	3,377	4,340
Total Gross Acreage:	924	750	814

(1) Maximum dwelling units in accordance with the general plan
ac = acres
du = dwelling units
LDR = Low Density Residential
MDR = Medium Density Residential
HDR = High Density Residential

Figure 4 shows the proposed future growth area



Legend

City Boundary

Existing Sphere of Influence

Proposed Sphere of Influence Amendment Area

Proposed Annexation Area within Proposed Sphere of Influence Amendment Area

NORTH 0 0.5 1 1.5 2 Miles

Figure 4

WATER SUPPLY RATES

The upper limit of estimated water supply is 549 gallons per day per dwelling unit and is based on an average estimated water supply of 150 gallons per capita per day. This per capita supply number is a conservative "catch all" value accounting for water losses, hydrant tests, line flushing, leaks, water breaks, unaccounted water demand, and demands by parks, schools, median irrigation, commercial and retail. Both water purveyors in Salinas (Cal Water and Alco Water Service) provided that they will be able to deliver this level of water supply in their respective Water Supply Assessment Reports. A letter providing the interpretation of the City of Salinas for this value is provided in the Appendix.

PROJECTED WATER CONSUMPTION RATES

Two sources of metered water use rates were used to arrive at a range of water consumption rates for the FGA of 389 to 421 gallons per dwelling unit per day. These two estimated water consumption translate to an average estimated water consumption of 106 and 115 gallons per capita per day. This range represents an accurate forecast of water use because the FGA has significantly large number of medium density residential properties (around 34%) and town homes with smaller lot sizes than average and, therefore, less outdoor areas to be irrigated by residents. The FGA will employ low impact development measures in handling storm drainage such as grassy swells, permeable surfaces, etc. as well as dedicated retention and detention ponds to keep the storm water on-site and recharge the aquifer. This study has not taken credit for these measures in the before and after water use calculation, but when examining the project impact as a whole, these measures will enhance the localized water budget, by reducing, and in some cases, eliminating the flow of storm water and irrigation water offsite.

Both consumption estimate broke down the projected demands by dwelling units, retail, office, mixed use, parks and schools and adopted water consumption data from current Salinas development similar in nature to the proposed development in the FGA. The benefit of using recent development in the consumption analysis is that it is a better reflection of average annual domestic and irrigation water use accounting for new construction and water saving measures required in "new" post 1992 household plumbing construction, consistent with the Uniform Plumbing Code and water efficient landscaping based on CA Title 24 regulations. For this estimate an average of 324 gallons per dwelling unit (89 gallons per capita per day) was used based on the Salinas' Williams Ranch residential water use 2002 to 2006 reported by Alco Water Service. The California Water Service Company (Cal Water) Water Supply Assessment for the West Area reported 355.8 gallons/service/day which calculate to a consumption of 97.3 gallons per capita per day.

The water consumption rates derived from the Williams Ranch Development and the Cal Water source are similar to the proposed conditions for the FGA and account for implementation of Water Conservation Plan accounting for low volume toilet and shower flows, use of low water use landscape, restricted use of turf and irrigation systems with low application rates that do not exceed infiltration rates. The generation rates shown in Table 3 were added to the residential use number resulting in a consumption rate specific to each of the three future growth areas based on their land use breakdown. With the addition of demands for retail, office, mixed use, parks and schools this water consumption results in an overall 389 – 421 gallons per dwelling unit for the FGA.

Table 3: FGA Flow Generation Rates

Development Type	Units	Generation Rates gpd (1)	gpd (2)
Person	Person	89	97.3
du	du	324	421
Retail	ac	3000	3000
Office	ac	3000	3000
Mixed Use	ac	3000	3000
Parks	ac	1500	1500
Schools	ac	1500	1500

(1) Based on Williams Ranch Metered consumtion
(2) Based on metered water consumption for West Area Water Assessment by Cal Water

ac = acres
gpd = gallons per day
gpd/ac = gallons per day per acre
du = dwelling unit

Table 4 in the following page describes the formula and steps to arrive at the consumption rates for the Salinas FGA.

Table 4: FGA Consumption Rate Formula

Salinas Future Growth Area
formula for consumption generation rates:

$$\frac{88.5\ (\text{gpd/capita}) \times 3.67\ (\text{capita/du}) \times 11{,}761\ \text{du} + (\overset{\text{Retail Acerage}}{11} \times 3000\ (\text{gpd/ac})) + (\overset{\text{Office Acerage}}{0} \times 3000\ (\text{gpd/ac})) + (\overset{\text{Mixed Use Acerage}}{80} \times 3000\ (\text{gpd/ac})) + (\overset{\text{Parks Acerage}}{136} \times 1500\ (\text{gpd/ac})) + (\overset{\text{Schools Acerage}}{194} \times 1500\ (\text{gpd/ac}))}{11{,}761\ \text{du}}$$

= **389** gpd/du

ac = acres
du = dwelling units
gpd = gallons per day

$$\frac{389\ \text{gpd/du}}{3.67\ \text{capita/du}} = \mathbf{106}\ (\text{gpd/capita})$$

$$\frac{97.3\ (\text{gpd/capita}) \times 3.67\ (\text{capita/du}) \times 11{,}761\ \text{du} + (\overset{\text{Retail Acerage}}{11} \times 3000\ (\text{gpd/ac})) + (\overset{\text{Office Acerage}}{0} \times 3000\ (\text{gpd/ac})) + (\overset{\text{Mixed Use Acerage}}{80} \times 3000\ (\text{gpd/ac})) + (\overset{\text{Parks Acerage}}{136} \times 1500\ (\text{gpd/ac})) + (\overset{\text{Schools Acerage}}{194} \times 1500\ (\text{gpd/ac}))}{11{,}761\ \text{du}}$$

= **421** gpd/du

ac = acres
du = dwelling units
gpd = gallons per day

$$\frac{421\ \text{gpd/du}}{3.67\ \text{capita/du}} = \mathbf{115}\ (\text{gpd/capita})$$

RESULTS OF WATER BALANCE

As shown in Table 5, the water balance for the FGA indicates a water deficit of 465 acre feet per year using the most conservative assumptions of water irrigation rate of 2.6 acre feet per acre and a consumption rate of 115 gallons per capita per day. In contrast, a surplus of 819 acre feet per year is calculated using the least conservative data of 3.04 acre feet per acre and a consumption rate of 106 gallons per capita per day. The average of the four Surplus/Deficit results presented in Table 5 is a surplus of 202 acre feet per year.

Table 5: Salinas FGA Water Use Study Results

		Units	Value			
Existing:						
	Irrigated Land	ac	1959	1959	1959	1959
	Non-irrigated Land	ac	529	529	529	529
	Irrigation Rate	AF/ac	2.6	3.04	2.6	3.04
Proposed:						
	Dwelling Unit Count	du	11761	11761	11761	11761
	Generation Rate	gpd/du	421	421	389	389
Surplus/Deficit		AF/yr	(465)	495	(43)	819

ac = acres
du = dwelling units
gpd/du = gallons per day per dwelling unit
AF/yr = acre-feet per year

REFERENCES

- City of Salinas North Future Growth Area Water System Study, P&D Consultants, January 15, 2007.
- West Area Specific Plan Existing and Projected Water Usage, based on William Tarp farming data and EDAW, February 1, 2007.
- 2004 Ground Water Extraction Summary Report, Monterey County Water Resources Agency.
- City of Salinas Urban Water Allocation Plan, February 2, 1994 (adopted 8th of March 1994 by Salinas City Council)), Appendix F, Page 15.
- Alco Water Service Williams Ranch Residential Water Usage, 2002 to 2006.
- California Water Service Company Water Supply Assessment Report for the West Area Specific Plan Salinas, California, July 26, 2005
- Water Conservation Plan, Williams Ranch Residential, Appendix E.

APPENDIX H
WATER SYSTEM STUDY,
NORTH FUTURE GROWTH AREA
(P&D CONSULTANTS)

CITY OF SALINAS
NORTH FUTURE GROWTH AREA

WATER SYSTEM STUDY

Prepared for:

City of Salinas
Community Development Department
200 Lincoln Avenue
Salinas, CA 93901
Contact: Robert Richelieu, Planning Manager

Prepared by:

P&D Consultants
999 Town & Country Road, 4th Floor
Orange, CA 92868

August 20, 2007

CITY OF SALINAS
NORTH FUTURE GROWTH AREA

WATER SYSTEM STUDY

TABLE OF CONTENTS

Purpose

The purpose of this report is to identify the proposed water facilities (exclusive of supply facilities) necessary to develop the Salinas North Future Growth Area (North FGA) as identified in Exhibit 1 at a level of detail necessary to support the City of Salinas application for Sphere of Influence Amendment and Annexation to the Monterey County Local Agency Formation Commission. The North FGA is divided into three specific plan areas: west, central and east and comprises approximately 2,488 acres. This report will also be used in preparing the infrastructure sections of these three specific plans.

Background Information

The City of Salinas, the county seat and largest city in Monterey County, is located in the northwest part of the Salinas Valley about 60 miles south of San Jose and 10 miles inland from Monterey Bay.

Study Methodology

The North FGA involves 2,488 acres which are divided into three specific plan areas. The development capacity of the North FGA specific plan areas are shown in the following three tables. The estimate of population for the specific plan area is 3.67 people per dwelling unit.

City of Salinas - North Future Growth Area

EXHIBIT 1

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Table 1.1
North Future Growth Area – West Specific Plan area
General Plan Development Capacity

				West SP Area	
			Net	Dwelling Units	Square Feet
		Notes	Acres	Households	(Thousands)
Residential Land Use					
RLD	Residential Low Density	[1]	257	1,671	0
RMD	Residential Medium Density		129	1,515	0
RHD	Residential High Density		63	1,057	0
Commercial/Office/Mixed Land Use					
RET	Retail		11	6	120
OFF	Office		0	0	0
MIX	Mixed Use	[2]	30	91	659
Light Industrial Land Use					
GCO	General Commercial Light Industrial		0	0	0
GI	General Industrial		0	0	0
Open Space Land Use					
OPN	Open Space	[1] [2]	64	0	0
PKS	Parks	[3]	66	0	0
PS	Public/Semi Public	[1] [4]	72	0	785
		Total	**693**	**4,340**	**1,564**

Assumptions:

Persons per Household = 3.67
1 Household = 1 Dwelling Unit
Net Acres = Gross Acres x 0.85

Table 1.2
North Future Growth Area – Central Specific Plan Area
General Plan Development Capacity

				Central SP Area	
			Net	Dwelling Units	Square Feet
		Notes	Acres	Households	(Thousands)
Residential Land Use					
RLD	Residential Low Density	[1]	272	1,765	0
RMD	Residential Medium Density		115	1,348	0
RHD	Residential High Density		12	201	0
Commercial/Office/Mixed Land Use					
RET	Retail		0	0	0
OFF	Office		0	0	0
MIX	Mixed Use	[2]	21	64	468
Light Industrial Land Use					
GCO	General Commercial Light Industrial		0	0	0
GI	General Industrial		0	0	0
Open Space Land Use					
OPN	Open Space	[1] [2]	142	0	0
PKS	Parks	[3]	26	0	0
PS	Public/Semi Public	[1] [4]	44	0	483
		Total	**633**	**3,377**	**951**

Assumptions:
Persons per Household = 3.67
1 Household = 1 Dwelling Unit
Net Acres = Gross Acres x 0.85

Table 1.3
North Future Growth Area – East Specific Plan Area
General Plan Development Capacity

				East SP Aea	
			Net	Dwelling Units	Square Feet
		Notes	Acres	Households	(Thousands)
Residential Land Use					
RLD	Residential Low Density	[1]	306	1,992	0
RMD	Residential Medium Density		90	1,053	0
RHD	Residential High Density		55	914	0
Commercial/Office/Mixed Land Use					
RET	Retail		0	0	0
OFF	Office		0	0	0
MIX	Mixed Use	[2]	29	86	627
Light Industrial Land Use					
GCO	General Commercial Light Industrial		0	0	0
GI	General Industrial		0	0	0
Open Space Land Use					
OPN	Open Space	[1] [2]	147	0	0
PKS	Parks	[3]	44	0	0
PS	Public/Semi Public	[1] [4]	78	0	848
		Total	**748**	**4,044**	**1,475**

Assumptions:

Persons per Household = 3.67
1 Household = 1 Dwelling Unit
Net Acres = Gross Acres x 0.85

Design Guidelines

The City of Salinas is served by two water companies; California Water Service Company and ALCO Water Company. The current service boundary separating these water providers is the electric power line easement near Hemingway Drive. A comparison of per capita water demand through out the Country is shown in table 2. A per capita demand rate of 150 gallons per day was selected. This translates into 550 gallons per dwelling unit (DU) which is used in tables 4, 6 and 8. This includes municipal and ancillary demand and was confirmed by both ALCO and California Water Service Company.

Table 2
Comparison of Per Capita Water Demand

City	Gallons per Capita per Day	City	Gallons per Capita per Day
Seatle	103	Missoula, MT	158
San Francisco	106	Oakland	160
Tucson	135	Santa Paula	163
Oxnard, CA	125	Casper, WY	178
El Paso	136	Ventura, CA	180
Fillmore, CA	136	Albuquerque	182
Portland	137	Phoenix	184
Los Angeles	140	Denver	228
San Diego	150	Salt Lake City	284
Santa Cruz	155	Chino Hills, CA	150
Boulder, Co	157	Las Vegas	307

Water lines were designed with a minimum size of 8 inches. 8 inch lines were used for in-tract development. Lines greater than 8 inch are used for the backbone system. This report shows the backbone system. The water lines were designed for maximum day plus fire flow. Unit costs were developed and are as follows. They are based on prevailing wage. The cost for new pipes does not include Preliminary design, PS&E, Construction Staking and Administration. Those costs are added in accordance with the method used in the Mark Thomas Roadway and Drainage Cost Estimate Report.

Table 3
Pipe Unit Cost

Pipe Size (Inches)	Unit Cost (Per Linear Foot)
12	$ 125
16	$165
24	$250
Preliminary Design/Environmental	2% of total “Hard” cost
PS&E	10% of total “Hard” cost
Construction Admin/Staking	4% of total “Hard” cost
Administration	1% of total “Hard” cost

Pipeline cost includes pipe, valves, hydrants, air release valves excavation, installation, backfill and appurtenances.

Results of the Model

West Specific Plan Area

The West Specific Plan (SP) area adds approximately 2.3 million gallons per day of water demand to the system. Water demand is listed in Table 4. The total length of water lines for this plan area is listed in Table 5.

Table 4
West Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,671	919,886	639
Medium Density	DU	550	1,515	834,008	579
High Density	DU	550	1,057	581,879	404
			Total	**2,335,772**	**1,622**

DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor	2
Maximum Day Demand	3,244 GPM
Peak Hour Demand Peaking Factor	4
Peak Hour Demand	6,488 GPM

Table 5
Water for West Specific Plan Area

Pipe Size (Inches)	Length (Feet)	Unit Cost	Total
12	58,423	$125	$7,302,875
		Subtotal	**$7,302,875**
		Preliminary Design	**$146,058**
		PS&E	**$730,287**
		Construction Staking	**$292,115**
		Administration	**$73,029**
		Total	**$8,544,364**

Central Specific Plan

The Central Specific Plan (SP) area adds approximately 1.8 million gallons per day of water demand to the system. Water demand is listed in Table 6. The total length of water lines for the plan area is listed in Table 7.

Table 6
Central Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,765	971,632.5	675
Medium Density	DU	550	1,348	742,074	515
High Density	DU	550	201	110,650.5	77
			Total	**1,824,357**	**1,267**

DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor 2
Maximum Day Demand 2,534 GPM
Peak Hour Demand Peaking Factor 4
Peak Hour Demand 5,068 GPM

Table 7
Water for Central Specific Plan Area

Pipe Size (Inches)	Length (Feet)	Unit Cost	Total
12	57,961	$ 125	$6,276,375
16	2,471	$165	$ 407,715
		Subtotal	**$6,684,090**
		Preliminary Design	**$133,682**
		PS&E	**$668,409**
		Construction Staking	**$267,364**
		Administration	**$66,841**
		Total	**$7,820,385**

East Specific Plan

The East Specific Plan (SP) area adds approximately 2.2 million gallons per day of water demand to the system. Water demand is listed in Table 8. The total length of water lines for this plan area is listed in Table 9.

Table 8
East Specific Plan Area

Development	Units	Generation Rates (GPD)	Quantity	Average Water Demand (GPD)	Average (GPM)
Low Density	DU	550	1,992	1,096,596	762
Medium Density	DU	550	1,053	579,676.5	403
High Density	DU	550	914	503,157	349
			Total	**2,179,430**	**1,513**

DU = Dwelling Unit
GPM = Gallons Per Minute
GPD = Gallons Per Day

Maximum Day Demand Peaking Factor 2
Maximum Day Demand 3,027 GPM
Peak Hour Demand Peaking Factor 4
Peak Hour Demand 6,054 GPM

Table 9
Water for East Specific Plan Area

Pipe Size (inches)	Length (feet)	Unit Cost	Total
12	25,937	$125	$3,242,125
16	28,771	$165	$4,747,215
24	6,010	$250	$ 1,502,500
		Total	**$9,491,840**

Preliminary Design	**$189,837**
PS&E	**$949,184**
Construction Staking	**$379,674**
Administration	**$94,918**
Total	**$11,105,453**

City of Salinas - Proposed Water Layout

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APPENDIX I
STORM WATER DRAINAGE SUMMARY

CITY OF SALINAS
NORTH FUTURE GROWTH AREA

DRAINAGE SUMMARY

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July 6, 2007

CITY OF SALINAS
NORTH FUTURE GROWTH AREA

DRAINAGE SUMMARY

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Tables

Purpose

The purpose of this report is to identify the proposed drainage facilities necessary to develop the SOI planning area as identified in Exhibit 1. The SOI planning area is divided into three specific plan areas; west, central and east specific plan areas and comprises 2,488 acres.

Background Information

The City of Salinas, the county seat and largest city in Monterey County, is located in the northwest part of the Salinas Valley about 60 miles south of San Jose and 10 miles inland from Monterey Bay.

The climate of the Salinas Valley is typical of central coastal valleys in California, characterized by ocean-moderated temperatures that only occasionally exceed 85 degrees or drop below 35 degrees Fahrenheit. About 80 percent of the average annual rainfall occurs during the five-month period of November through March, and 55 percent typically falls during December through January.

The SOI area is located in the Salinas Hydrologic Unit (HU) No. 309.00, Lower Salinas Valley Hydrologic Area (HA) No. 309.10, and conveys runoff to the four major receiving waters: Carr Lake, Gabilan Creek, Natividad Creek, and Santa Rita Creek. Figure 2-1 shows the major receiving waters within the City and their tributary drainage areas.

Natividad Creek and Gabilan Creek originate north of the City, then flow south through the City and drain to the Carr Lake area. At Carr Lake, both Gabilan and Natividad Creeks are tributary to the Reclamation Ditch. During major storms with high backwater in the Reclamation Ditch, these creeks overflow at their downstream end and inundate large areas of Carr Lake.

The Santa Rita Creek watershed is a small watershed of about 0.5 square miles in the northwestern part of the City. This small watershed drains out of the City to the west and south. Runoff from Santa Rita Creek and Markely Swamp eventually reaches the Reclamation Ditch to the west of the City boundary.

Based on discussions with City staff, the major existing drainage problems occur at the boundary of unincorporated areas of Monterey County and the City where runoff from adjacent agricultural fields flows into the City. The two general locations affected by this problem are: the east side of the City near Williams Road, and the north side of the City along Boronda Road. At these locations, agricultural runoff can overtop the tail water ditches and either enter the City's storm drain system at curb inlets at the boundary of unincorporated areas of Monterey County and the City or flow overland on City streets to a storm drain inlet with capacity. The agricultural runoff has a very high suspended solids load and sediment is deposited in the City storm drain system and City streets. In some cases, runoff from agricultural properties located outside the City limits can reach flow volumes and rates that not only cause flooding of City property but also impact private properties. The Rec-Ditch Nexus Analysis addressed this issue and stated a cost of $1,250,000 for a basin servicing Gabilan Creek. Any other construction costs required to capture off-site sediment would also appropriately be accounted for in a County sponsored program.

Development Hydrology Impacts

The proposed mixed used development will modify the surface runoff generated from the project local watershed that is tributary to the receiving waters or adjacent creek systems compared to the natural runoff conditions. Specialized hydrologic mitigation facilities proposed with the development will satisfy the different requirements from various agencies that require implementation of mitigation features for impacts to the surface hydrology. In general, urbanization will result in direct modifications to surface hydrology through several areas that include (1) decreasing the development watershed response time associated with a more

City of Salinas - North Future Growth Area

EXHIBIT 1

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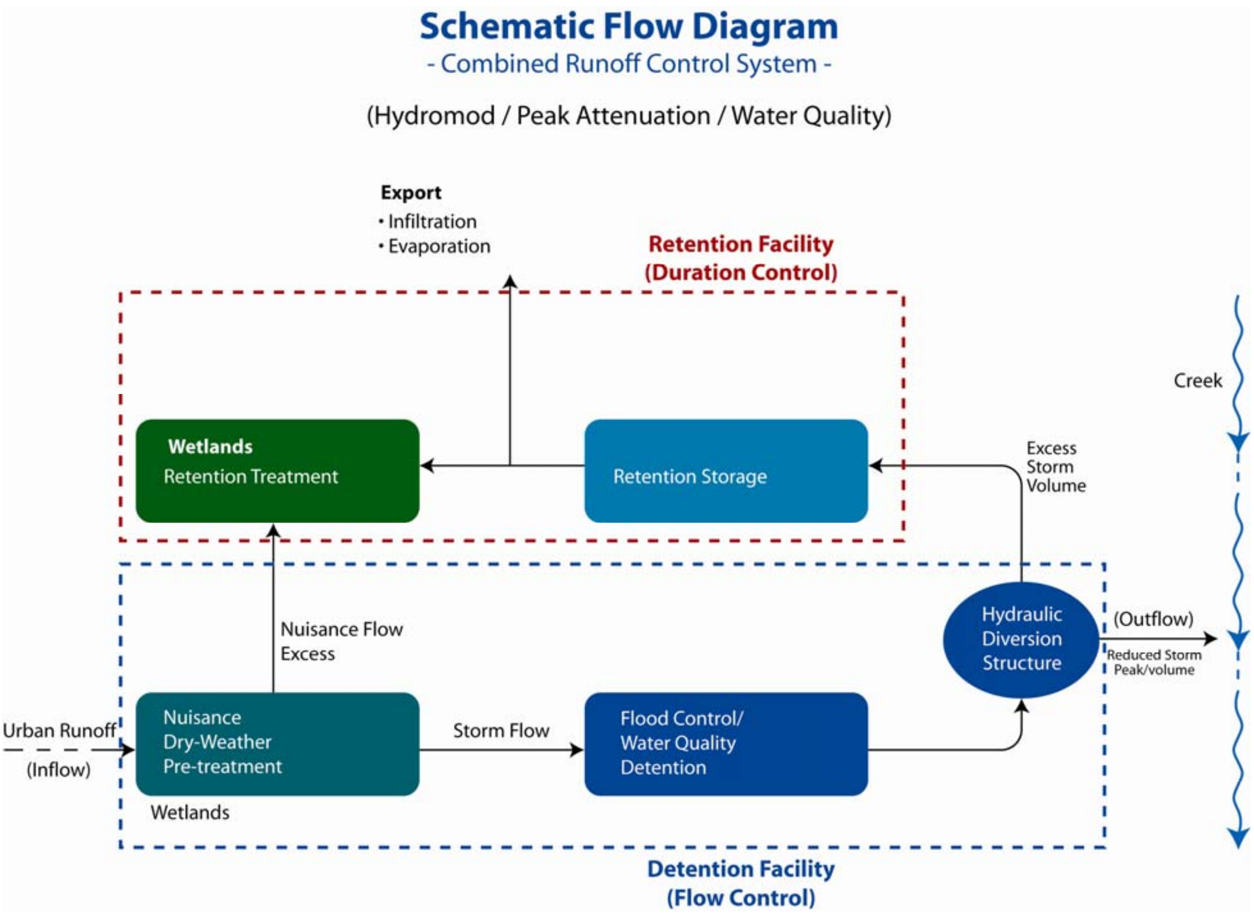
hydraulically efficient drainage conveyance system of streets and pipes, (2) increasing runoff volume, (3) reduction of infiltration through increased impervious areas, and (4) increases in peak runoff rates. In addition, urban runoff can result in increased concentrations of different constituent pollutants that can result in impacts to water quality. The quantity of runoff can potentially influence the stability of the river process in alluvial stream systems directly related to sediment transport and effect the downstream existing hydrologic operation of Carr Lake.



Hydrology Analysis

The different hydrologic requirements evaluated for this assessment of the surface hydrology included: (1) the City of Salinas, (2) RWQCB stormwater quality requirements, (3) Monterey County Water Resources Agency focusing on the operational requirements of the downstream Reclamation Ditch, and (4) Carr Lake impacts. The analyses provide the estimate of pre-development and post-development project watershed hydrology for both hypothetical single event rainfall and continuous rainfall for the maximum water year. Runoff simulations were developed using both the Storm Water Management Model (XP-SWMM) and the Army Corps of Engineers Hydrologic Modeling System (HEC-HMS) software for each of the following events: 100-year 72-hour, 100-year 24-hour, 10-year 24-hour and 1998 (wettest year available) – one year continuous hourly precipitation data for the City of Salinas, The intent of these analyses is to determine the governing criteria and demonstrate the project stormwater facilities are adequately sized to address each of the different requirements. The analyses calculated the lumped hydrologic effect from each of the watersheds for both the existing and proposed conditions. The analyses also provided the appropriate size of facility based on each of the different criteria evaluated into order to understand the most stringent requirements in determining the basin dimensions. The size of the facility illustrated in the analyses can be distributed into multiple facilities in order to match the physical constraints and provide the best compatibility with the landuse plan.

The intent of the analyses was to determine the required stormwater flow control facility that would adequately mitigate all the hydrologic impacts for the different criteria. The hydrologic analyses assumed a two basin facility which provided independent retention and detention capabilities to achieve the desired objectives. However, these results can be used to size a single facility with a dual function using an upper and lower pool to meet these same objectives as discussed in this technical memo. A comparison of the results of the continuous rainfall simulation for the maximum rainfall year to the single hypothetical storm event illustrates that mitigating **the difference between the 72-hour 100-year storm event volumes will provide the maximum retention volume** if infiltration is assumed in the continuous model.

The proposed control facility would be a dual basin facility that will have the (1) detention storage requirements outlined in the City of Salinas detention requirements, (2) water quality treatment volume in constructed wetlands distributed in both the detention and retention basin based on percentage of the capture volume for each facility, and (3) adjacent retention pond based on the 100-year 72-hour differential between pre- and post project conditions. The water quality treatment volume can be reduced based on the use of Low Impact Development (LID) features within the project and this can also reduce the retention volume requirements because of change in the project impervious / infiltration values. In addition, the operation of the retention basins in both the water balance analysis and continuous simulation assumes infiltration capabilities in the basin floor to release/evacuate the stored volume over time. The infiltration rates represent an average of the sampled values within the site so the aggregate value is conservative because the basins will be located within high infiltration/percolation zones. A safety factor was also applied as typically recommended for infiltration basin design of both a factor of 2 and 4 to represent the potential for clogging. The continuous rainfall model, even with the infiltration safety factor, indicates that for the maximum rainfall year that the basins would be dry at the end of the season for both safety factors.

Hydrology Mitigation Measures

Surface hydrology impacts associated with the development will be fully mitigated prior to discharging to the natural drainage courses through central drainage facilities and land planning features within the development.

Detention / Retention Basins -A combined flow control system will be utilized in order to achieve the hydrologic mitigation and water quality requirements that follows similar agency/industry hydromodification recommendations. The proposed flow control system will include one or more of the following components which are illustrated in the schematic above and include: (1) duration control / water quality treatment basin, (2) pretreatment wetlands, (3) retention/infiltration basin, and (4) diversion outlet to either the retention basin or the downstream receiving waters.

The initial basin is the smaller basin and will provide hydraulic control to distribute flows, water quality treatment, and peak attenuation through flow control. Detention basins are the most common means of meeting flow control requirements. The reduced release rate requires temporary storage of the excess amounts in a basin. The flow control basin will incorporate extended detention to provide water quality treatment for storm flows. Extended detention are designed with outlets that detain the runoff volume from the water quality design storm (e.g. 85th perctile 24-hour events) for some minimum time (e.g. 48-hours) to allow particles to settle. The flow control basin will also incorporate wetland vegetation in a presettling area in order to provide additional treatment and mitigate nuisance / dry-weather flow. The second element of the combined control system is a separate and hydraulically independent basin to store the delta volume between pre-and post-development.

Basins will be designed with sediment forebays to trap small amounts of sediment entering the project area,

Low Impact Development – Low Impact Development (LID) features will be implemented through site design techniques within the land plan as design elements. LID takes the approach of integrating natural vegetation and small-scale treatment systems to treat and infiltrate stormwater runoff close to where it originates. Reducing the amount of impervious surfaces reduces the amount of stormwater runoff generated in the first place.

Surface Water Quality Treatment - Water quality treatment for storm runoff and urban dry-weather flows will be provided through vegetated swales and the detention/retention basins (as described above) which will incorporate water quality treatment within the flow control facility portion and will satisfy local water quality requirements. These treatment Best Management Practices (BMPs) will provide water quality treatment in addition to that provided by the LID features.

Flow-based treatment control BMPs include linear swales. Volume-based BMPs include the initial basins in the detention/retention basin system and several water quality basins that will receive runoff from developed areas.

Summary

This report summarizes the finding from the three stormwater facility summary reports developed by Wood Rodgers and Pace Engineers. Those reports can be found in Attachments A through C. The FGA drainage areas, required basins and costs are listed in table 1. The cost for basins does not include 30% contingency and 20% soft cost. Soft cost include Preliminary design, PS&E, Construction Staking and Administration. Those costs are added in accordance with the method used in the Mark Thomas Roadway and Drainage Cost Estimate Report.

Table 1
Summary of Required Basins

FGA	Tributary Area (ACRES)	Required Basin (ACRES)	Cost
West	5,996	26	$5,300,000
Central	665	27	$3,200,000
East	2,124	26	$5,600,000
		Subtotal	**$14,100,000**
		30%Contingency	**$4,230,000**
		20% Soft Cost	**$2,820,000**
		Total	**$21,150,000**

Attachment A

West SP Area Summary

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SALINAS WEST FGA
STORMWATER FACILITY SUMMARY

Development Hydrology Impacts

The Salinas West site is a proposed mixed-use residential development within the western portion of the City of Salinas Future Growth Area (FGA). New development generally increases impervious area, reduces natural ground available for infiltration, and provides a more efficient drainage system. This phenomenon usually leads to increases in peak flows and total runoff volumes and water quality problems. However, specialized hydrologic mitigation facilities proposed for the development will satisfy the different requirements from various agencies and interests that require implementation of mitigation for impacts to surface hydrology and in addition prevent downstream increases in both peak flows and total runoff volume from existing conditions for each of the design storms. A total of approximately 26 acres will be set aside for these facilities.

Hydrology Mitigation Measures

Surface hydrology impacts associated with the development will be fully mitigated prior to discharging to the natural drainage courses through central drainage facilities and land planning features within the development.

Detention / Retention Basins

A combined flow control systems will be utilized in order to achieve the hydrologic mitigation and water quality requirements that follows similar agency/industry hydromodification recommendations. The proposed flow control system will include one or more of the following components which are illustrated in **Figure 2** and include: (1) Duration control / water quality treatment basin, (2) retention/infiltration basin, and (3) diversion outlet to either the retention basin or the downstream receiving waters.

The initial basin is the smaller basin and will provide hydraulic control to distribute flows, water quality treatment, and peak attenuation through flow control. Detention basins are the most common means of meeting flow control requirements. The reduced release rate requires temporary storage of the excess amounts in a basin. The flow control basin will incorporate extended detention to provide water quality treatment for storm flows. Extended detention are designed with outlets that detain the runoff volume from the water quality design storm (e.g. 85th perctile 24-hour events) for some minimum time (e.g. 48-hours) to allow particles to settle. The flow control basin will also incorporate wetland vegetation in a presettling area in order to provide additional treatment and mitigate nuisance / dry-weather flow. The second element of the combined control system is a separate and hydraulically independent basin to store the delta volume between pre-and post-development.

Low Impact Development (LID)

The application of Low Impact Development will be used to help restore the existing site hydrology to the maximum extent practicable by using site design techniques that help store, infiltrate, evaporate, and detain 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. The presence of poor permeability soils may require underdrain systems connected to the storm drain pipe system to protect against prolonged ponding.

The pollutant removal efficiencies of these facilities range widely from 40% to 100% based on the types and influent concentrations (Fig. 5-2, California Stormwater Quality Association). The stormwater volume reduction capacity of these features is closely dependent on the in situ soil type.

BMPs - Water Quality Treatment

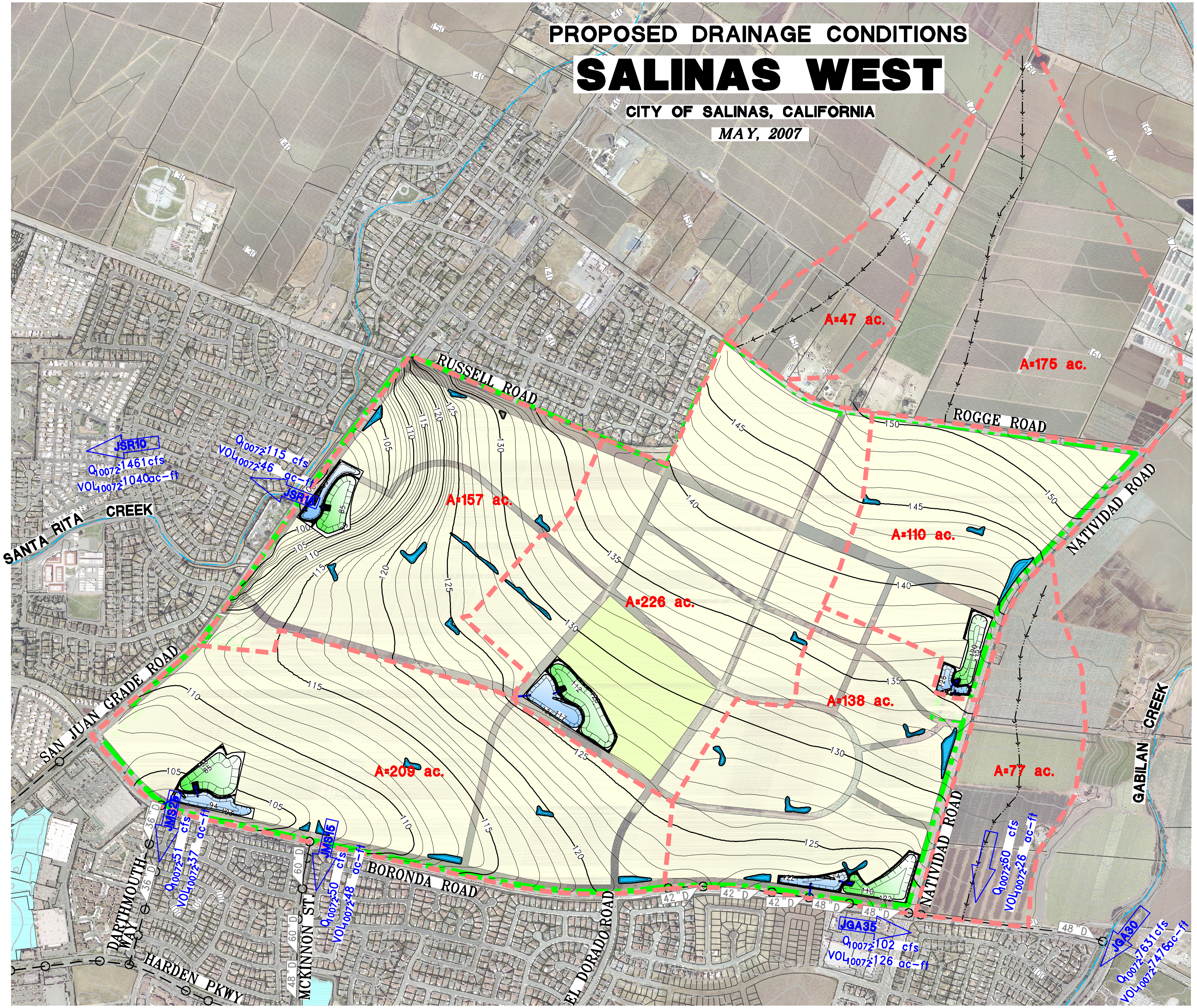
Treatment BMPs will include vegetated swales and extended detention areas (as described above) which will satisfy local water quality requirements. These treatment BMPs will provide water quality treatment in addition to that provided by the LID features.

Flow-based treatment control BMPs include linear swales. Volume based BMPs will include the initial basins in the five main detention/retention basins, and several water quality basins that will receive runoff from the developed areas. The basins will be located within the pocket parks scattered around the site. See **Figure 1** for BMP locations.

Hydrologic Analysis

The different hydrologic requirements evaluated for this assessment of the surface hydrology included: (1) the City of Salinas, (2) RWQCB stormwater quality requirements, (3) Monterey County Water Resources Agency focusing on the operational requirements of the downstream Reclamation Ditch, and (4) Carr Lake impacts. The analyses provide the estimate of pre-development and post-development project watershed hydrology for both hypothetical single event rainfall and continuous rainfall for the maximum water year. Runoff simulations were developed using both the Storm Water Management Model (XP-SWMM) and the Corps of Engineers Hydrologic Modeling System (HEC-HMS) software for each of the following events: 100 year 72-hour, 100-year 24-hour, 10-year 24-hour, and 1998 (wettest year available) - one year continuous hourly precipitation data for the City of Salinas. The intent of these analyses is to determine the governing criteria and demonstrate the project stormwater facilities are adequately sized to address each of the different requirements.

FIGURE 1



LEGEND:

- PROJECT BOUNDARY
- ONSITE PROPOSED GRADE
- WATERSHED BOUNDARY
- WATERWAY AND DRAIN
- DRAIN FLOWPATH
- EXISTING GROUND CONTOUR
- EXISTING DRAINAGE PIPE W/ MANHOLE
- EXISTING PIPE SIZE AND DIRECTION
- CUMULATIVE 100YR-72HR EVENT PEAK FLOW (cfs) AND VOLUME (ac-ft)
- WATER QUALITY/RETENTION BASIN
- WATER QUALITY/DETENTION BASIN
- WATER QUALITY
- EXISTING DETENTION BASIN
- DEVELOPMENT AREA
- OPEN SPACE
- A=175 ac. WATERSHED AREA

NORTH
0 500' 1,000' 2,000'

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San Francisco, CA 94111 Fax 415/627-0778

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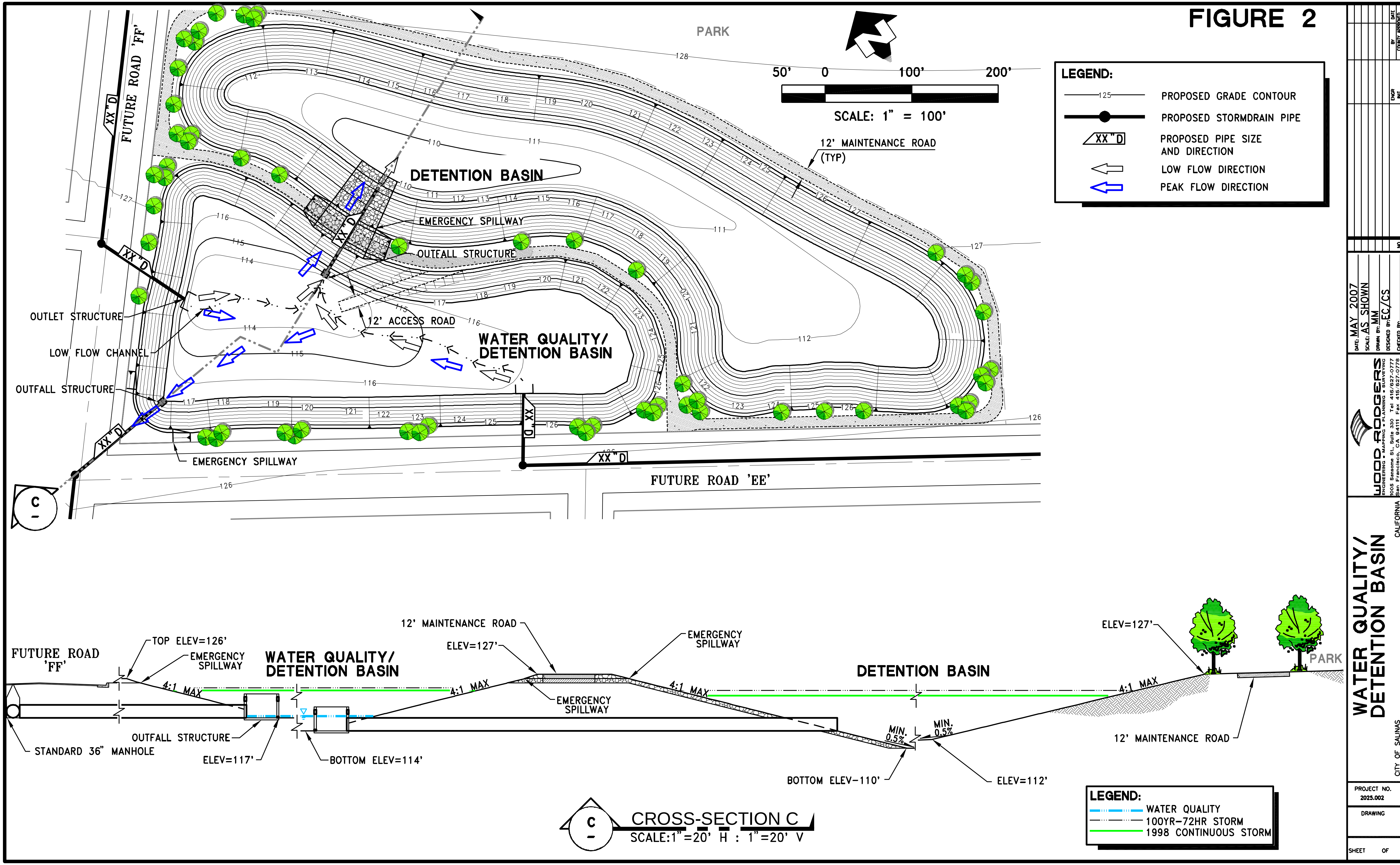
FIGURE 2


PARK
50' 0 100' 200'
SCALE: 1" = 100'
LEGEND:
PROPOSED GRADE CONTOUR
PROPOSED STORMDRAIN PIPE
XX"D PROPOSED PIPE SIZE AND DIRECTION
LOW FLOW DIRECTION
PEAK FLOW DIRECTION
12' MAINTENANCE ROAD (TYP)
DETENTION BASIN
EMERGENCY SPILLWAY
OUTFALL STRUCTURE
12' ACCESS ROAD
WATER QUALITY/ DETENTION BASIN
OUTLET STRUCTURE
LOW FLOW CHANNEL
OUTFALL STRUCTURE
EMERGENCY SPILLWAY
FUTURE ROAD 'FF'
FUTURE ROAD 'EE'
XX"D
C
FUTURE ROAD 'FF'
TOP ELEV=126'
EMERGENCY SPILLWAY
WATER QUALITY/ DETENTION BASIN
12' MAINTENANCE ROAD
ELEV=127'
EMERGENCY SPILLWAY
DETENTION BASIN
ELEV=127'
PARK
4:1 MAX
MIN. 0.5%
OUTFALL STRUCTURE
STANDARD 36" MANHOLE
ELEV=117'
BOTTOM ELEV=114'
BOTTOM ELEV-110'
ELEV=112'
12' MAINTENANCE ROAD
CROSS-SECTION C
SCALE:1"=20' H : 1"=20' V
LEGEND:
WATER QUALITY
100YR-72HR STORM
1998 CONTINUOUS STORM
DATE: MAY 2007
SCALE: AS SHOWN
DRAWN BY: MM
DESIGNED BY: EC/CS
WOOD RODGERS
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WATER QUALITY/ DETENTION BASIN
CITY OF SALINAS CALIFORNIA
PROJECT NO. 2025.002
DRAWING
SHEET OF
C:\Common\WFGA-SALINAS\SW_FIG02-ONSITE_DETENTION-BASIN.dwg 6/28/07 11:25am mmontes

Attachment A

Table 1. 10-Year 24-Hour Storm Event

Outfall Location	***Watershed Area (ac)***	***Peak Flow (cfs)***	***Total Volume (ac-ft)***
Existing Conditions			
Santa Rita Creek @ San Juan Grade Road	*260*	*50*	*20*
36" Inlet & 60" Inlet @ Dartmouth Way & McKinnon Street	*297*	*57*	*24*
48" Inlet @ Natividad Road	*505*	*105*	*43*
Mitigated Developed Conditions			
Santa Rita Creek @ San Juan Grade Road	*157*	*40*	*13*
36" Inlet & 60" Inlet @ Dartmouth Way & McKinnon Street	*482*	*22*	*2*
48" Inlet @ Natividad Road	*423*	*52*	*22*

Table 2. 100-Year 24-Hour Storm Event

Outfall Location	***Watershed Area (ac)***	***Peak Flow (cfs)***	***Total Volume (ac-ft)***
Existing Conditions			
Santa Rita Creek @ San Juan Grade Road	*260*	*105*	*40*
36" Inlet & 60" Inlet @ Dartmouth Way & McKinnon Street	*297*	*115*	*46*
48" Inlet @ Natividad Road	*505*	*210*	*81*
Mitigated Developed Conditions			
Santa Rita Creek @ San Juan Grade Road	*157*	*83*	*24*
36" Inlet & 60" Inlet @ Dartmouth Way & McKinnon Street	*482*	*64*	*19*
48" Inlet @ Natividad Road	*423*	*100*	*53*

Table 3. 100-Year 72-Hour Storm

Outfall Location	***Watershed Area (ac)***	***Peak Flow (cfs)***	***Total Volume (ac-ft)***
Existing Conditions			
Santa Rita Creek @ San Juan Grade Road	*260*	*187*	*88*
36" Inlet & 60" Inlet @ Dartmouth Way & McKinnon Street	*297*	*195*	*99*
48" Inlet @ Natividad Road	*505*	*346*	*172*
Mitigated Developed Conditions			
Santa Rita Creek @ San Juan Grade Road	*157*	*115*	*46*
36" Inlet & 60" Inlet @ Dartmouth Way & McKinnon Street	*482*	*102*	*85*
48" Inlet @ Natividad Road	*423*	*105*	*126*

Table 4. 1998 Hourly Continuous Storm Event

Outfall Location	***Watershed Area (ac)***	***Peak Flow (cfs)***	***Total Volume (ac-ft)***
Existing Conditions			
Santa Rita Creek @ San Juan Grade Road	*260*	*114*	*71*
36" Inlet & 60" Inlet @ Dartmouth Way & McKinnon Street	*297*	*155*	*81*
48" Inlet @ Natividad Road	*505*	*178*	*132*
Mitigated Developed Conditions			
Santa Rita Creek @ San Juan Grade Road	*157*	*46*	*69*
36" Inlet & 60" Inlet @ Dartmouth Way & McKinnon Street	*482*	*35*	*80*
48" Inlet @ Natividad Road	*423*	*105*	*129*

Attachment B

Central SP Area Summary

SALINAS FGA – CENTRAL AREA
SURFACE HYDROLOGY AND WATER QUALITY

Development Hydrology Impacts

The proposed mixed used development will modify the surface runoff generated from the project local watershed that is tributary to the receiving waters or adjacent creek systems compared to the natural runoff conditions. Specialized hydrologic mitigation facilities proposed with the development will satisfy the different requirements from various agencies that require implementation of mitigation features for impacts to the surface hydrology. In general, urbanization will result in direct modifications to surface hydrology through several areas that include (1) decreasing the development watershed response time associated with a more hydraulically efficient drainage conveyance system of streets and pipes, (2) increasing runoff volume, (3) reduction of infiltration through increased impervious areas, and (4) increases in peak runoff rates. In addition, urban runoff can result in increased concentrations of different constituent pollutants that can result in impacts to water quality. The quantity of runoff can potentially influence the stability of the river process in alluvial stream systems directly related to sediment transport and effect the downstream existing hydrologic operation of Carr Lake.

Hydrology Mitigation Measures

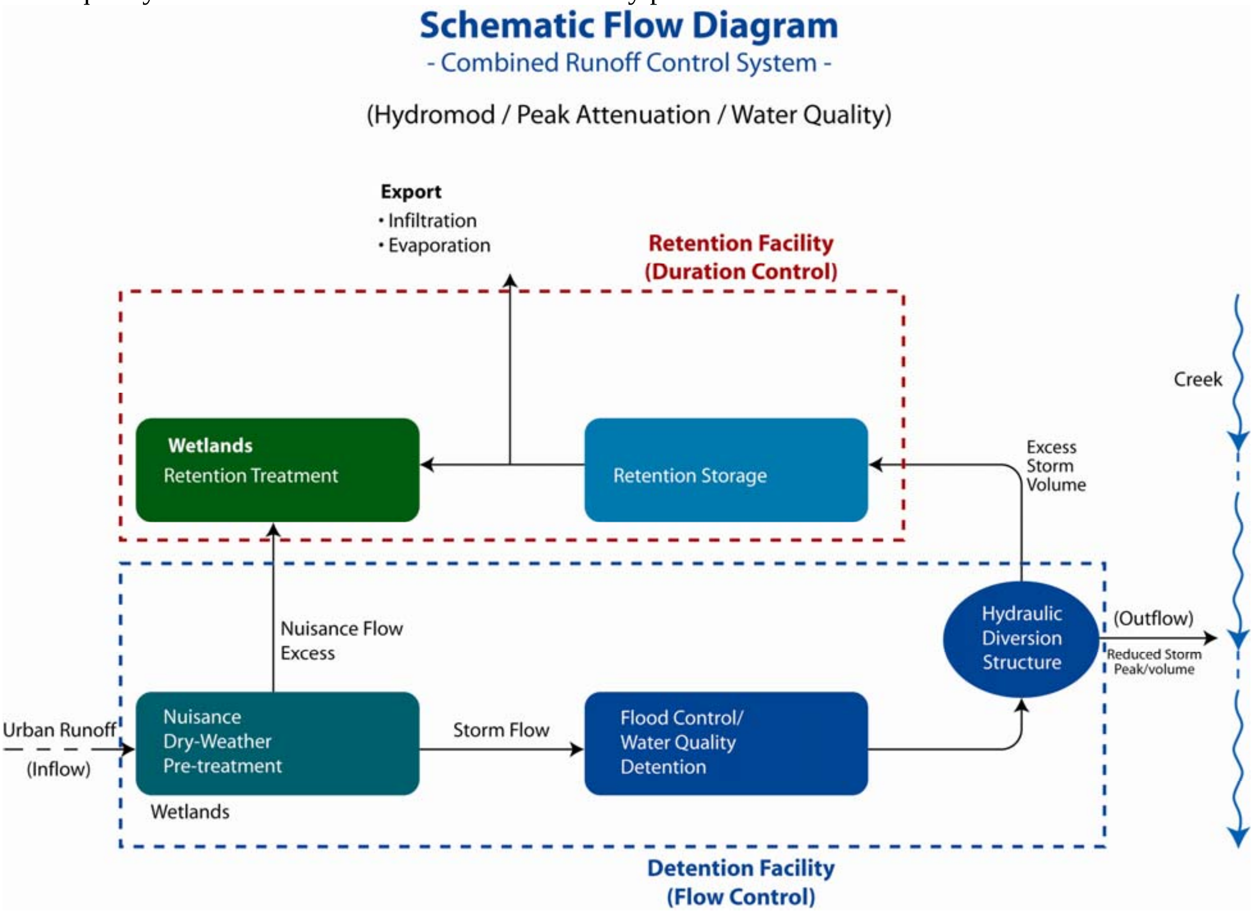
Surface hydrology impacts associated with the development will be fully mitigated prior to discharging to the natural drainage courses through central drainage facilities and land planning features within the development.

Detention / Retention Basins -A combined flow control systems will be utilized in order to achieve the hydrologic mitigation and water quality requirements that follows similar agency/industry hydromodification recommendations. The proposed flow control system will include one or more of the following components which are illustrated in the schematic above and include: (1) Duration control / water quality treatment basin, (2) pretreatment wetlands, (3) retention/infiltration basin, and (4) diversion outlet to either the retention basin or the downstream receiving waters.

The initial basin is the smaller basin and will provide hydraulic control to distribute flows, water quality treatment, and peak attenuation through flow control. Detention basins are the most common means of meeting flow control requirements. The reduced release rate requires temporary storage of the excess amounts in a basin. The flow control basin will incorporate extended detention to provide water quality treatment for storm flows. Extended detention are designed with outlets that detain the runoff volume from the water quality design storm (e.g. 85th perctile 24-hour events) for some minimum time (e.g. 48-hours) to allow particles to settle. The flow control basin will also incorporate wetland vegetation in a presettling area in order to provide additional treatment and mitigate nuisance / dry-weather flow. The second element of the combined control system is a separate and hydraulically independent basin to store the delta volume between pre-and post-development.

Low Impact Development – Low Impact Development (LID) features will be implemented through site design techniques within the land plan as design elements. LID takes the approach integrating natural vegetation and small-scale treatment systems to treat and infiltrate stormwater runoff close to where it originates. Reducing the amount of impervious surfaces reduces the amount of stormwater runoff generated in the first place.

Surface Water Quality Treatment - Water quality treatment for storm runoff and urban dry-weather flows will be provided through the detention/retention basins which will incorporate water quality treatment within the flow control facility portion.



<u>Hydrology Analysis</u>

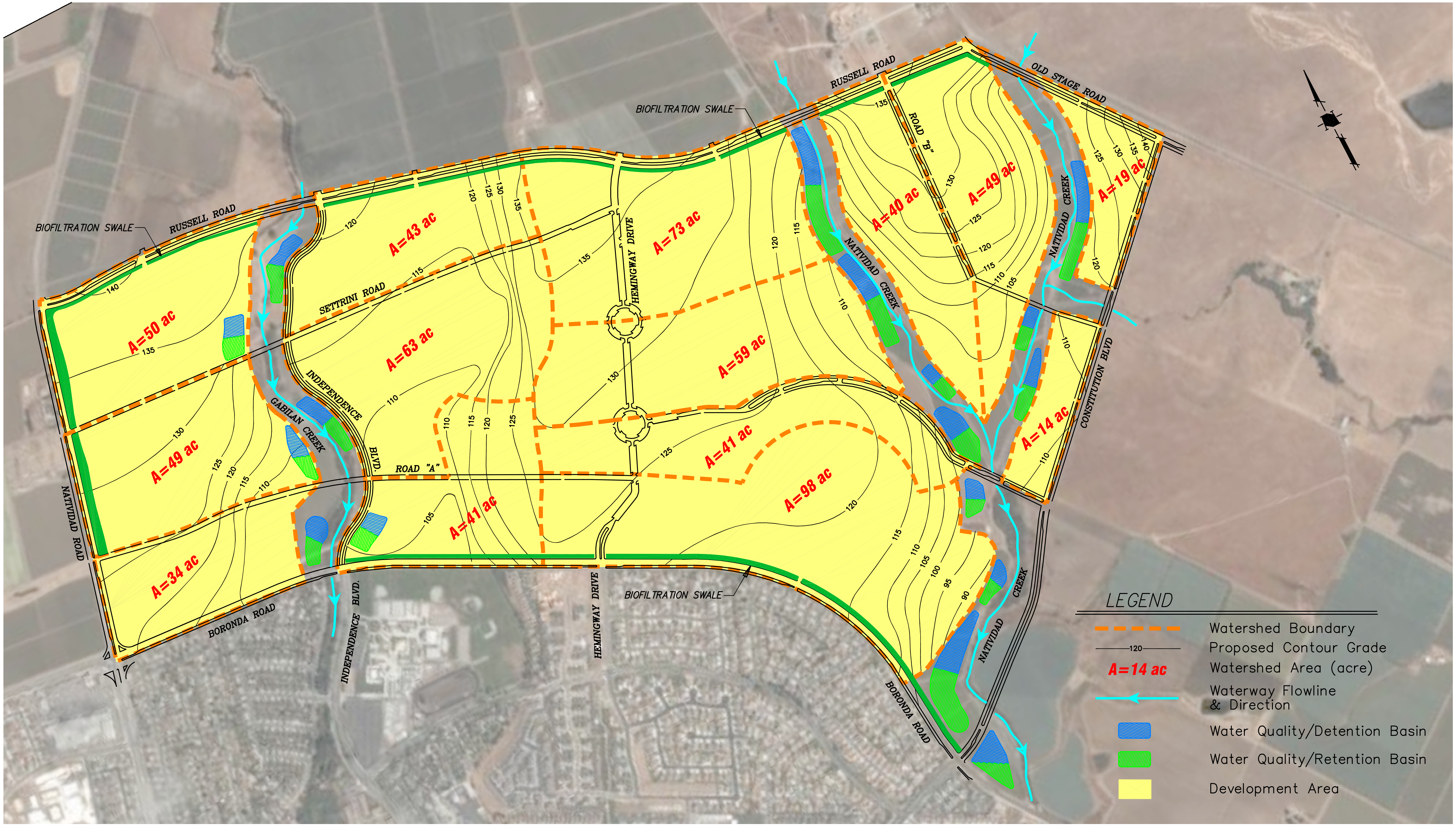
The different hydrologic requirements evaluated for this assessment of the surface hydrology included: (1) the City of Salinas, (2) RWQCB stormwater quality requirements, (3) Monterey County Water Resources Agency focusing on the operational requirements of the downstream Reclamation Ditch, and (4) Carr Lake impacts. The analyses provide the estimate of pre-development and post-development project watershed hydrology for both hypothetical single event rainfall and continuous rainfall for the maximum water year. The intent of these analyses is to determine the governing criteria and demonstrate the project stormwater facilities are adequately sized to address each of the different requirements. The central and east areas of the FGA were subdivided into <u>six subwatersheds</u> which correspond to the major discharge points of the development to the adjacent creek system. The analyses calculated the lumped hydrologic effect from each of these watersheds for both the existing and proposed conditions. The analyses also provided the appropriate size of facility based on each of the different criteria evaluated into order to understand the most stringent requirements in determining the basin dimensions. The size of the facility illustrated in the analyses can be distributed into multiple facilities in order to match the physical constraints and provide the best compatibility with the landuse plan.

The intent of the analyses was to determine the required stormwater flow control facility that would adequately mitigate all the hydrologic impacts for the different criteria. The hydrologic analyses assumed a two basin facility which provided independent retention and detention capabilities to achieve the desired objectives. However, these results can be used to size a single facility with a dual function using an upper and lower pool to meet these same objectives as discussed in this technical memo. A comparison of the results of the continuous rainfall simulation for the maximum rainfall year to the single hypothetical storm event illustrates that mitigating **the difference between the 72-hour 100-year storm event volumes will provide the maximum retention volume** if infiltration is assumed in the continuous model. A comparison of the difference storage volume requirements for facility sizing is illustrated in the following table.

Table 1- Summary of Stormwater Control Facility Basin Storage Requirements

Basin / Subwatershed	Drainage Area (acres)	City of Salinas **Detention** (acre-ft)	Difference 100-year 72-hour **Retention** (acre-feet)	Water Quality Volume (acre-feet)	Maximum Day **Retention** SF = 2 (acre-feet)	Maximum Day **Retention** SF = 4 (acre-feet)
1	128.7	**14.4**	**11**	3.53	7.7	14.5
2	139.5	**14.7**	**12**	3.83	7.2	13.4
3	285	**35.2**	**31**	7.83	21.9	41.2
4	84.1	**6.4**	**3**	2.31	3.1	5.7
5	15	**0.6**	**4**		0.8	1.5
6	13	**0.8**	**2**		0.3	0.5

The proposed control facility would be a dual basin facility that will have the (1) detention storage requirements outlined in the City of Salinas detention requirements, (2) water quality treatment volume in constructed wetlands distributed in both the detention and retention basin based on percentage of the capture volume for each facility, and (3) adjacent retention pond based on the 100-year 72-hour differential between pre- and post project conditions. The water quality treatment volume can be reduced based on the use of Low Impact Development (LID) features within the project and this can also reduce the retention volume requirements because of change in the project impervious / infiltration values. In addition, the operation of the retention basins in both the water balance analysis and continuous simulation assumes infiltration capabilities in the basin floor to release/evacuate the stored volume over time. The infiltration rates represent an average of the sampled values within the site so the aggregate value is conservative because the basins will be located within high infiltration/percolation zones. A safety factor was also applied as typically recommended for infiltration basin design of both a factor of 2 and 4 to represent the potential for clogging. The continuous rainfall model, even with the infiltration safety factor, indicates that for the maximum rainfall year that the basins would be dry at the end of the season for both safety factors.



GRAPHIC SCALE

800 0 400 800

1 inch = 800 feet

CreekBridge Homes
1611 Bunker Hill Way, Suite 250
Salinas, Ca. 93906

Date:	07/06/07
Scale:	1" = 800'
Designed:	SRL
Drawn:	CAS
Checked:	DRS
Proj. Engr:	SRL
File:	505300ex08.dwg

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Gilroy (408) 846-0707
www.hmh-engineers.com

Proposed Onsite Drainage Conditions

Salinas **CENTRAL AREA : CREEKBRIDGE II** California

Sheet 1 Of 1 Sheets

JOB NUMBER 5053-00

Attachment C

East SP Area Summary

WOOD RODGERS

SALINAS EAST FGA
STORMWATER FACILITY SUMMARY

Development Hydrology Impacts

The Salinas East site is a proposed mixed-use residential development within the eastern portion of the City of Salinas Future Growth Area (FGA). New development generally increases impervious area, reduces natural ground available for infiltration, and provides a more efficient drainage system. This phenomenon usually leads to increases in peak flows and total runoff volumes and water quality problems. However, specialized hydrologic mitigation facilities proposed for the development will satisfy the different requirements from various agencies and interests that require implementation of mitigation for impacts to surface hydrology and in addition prevent downstream increases in both peak flows and total runoff volume from existing conditions for each of the design storms. A total of at least 26 acres will be set aside for these facilities.

Hydrology Mitigation Measures

Surface hydrology impacts associated with the development will be fully mitigated prior to discharging to the natural drainage courses through central drainage facilities and land planning features within the development.

Detention / Retention Basins

A combined flow control systems will be utilized in order to achieve the hydrologic mitigation and water quality requirements that follows similar agency/industry hydromodification recommendations. The proposed flow control system will include one or more of the following components which are illustrated in Figure 2 and include: (1) Duration control / water quality treatment basin, (2) retention/infiltration basin, and (3) diversion outlet to either the retention basin or the downstream receiving waters.

The initial basin is the smaller basin and will provide hydraulic control to distribute flows, water quality treatment, and peak attenuation through flow control. Detention basins are the most common means of meeting flow control requirements. The reduced release rate requires temporary storage of the excess amounts in a basin. The flow control basin will incorporate extended detention to provide water quality treatment for storm flows. Extended detention are designed with outlets that detain the runoff volume from the water quality design storm (e.g. 85th perctile 24-hour events) for some minimum time (e.g. 48-hours) to allow particles to settle. The flow control basin will also incorporate wetland vegetation in a presettling area in order to provide additional treatment and mitigate nuisance / dry-weather flow. The second element of the combined control system is a separate and hydraulically independent basin to store the delta volume between pre-and post-development.

Low Impact Development (LID)

The application of Low Impact Development will be used to help restore the existing site hydrology to the maximum extent practicable by using site design techniques that help store, infiltrate, evaporate, and detain 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. The presence of poor permeability soils may require underdrain systems connected to the storm drain pipe system to protect against prolonged ponding.

The pollutant removal efficiencies of these facilities range widely from 40% to 100% based on the types and influent concentrations (Fig. 5-2, California Stormwater Quality Association). The stormwater volume reduction capacity of these features is closely dependent on the in situ soil type.

BMPs - Water Quality Treatment

Treatment BMPs will include vegetated swales and extended detention areas (as described above) which will satisfy local water quality requirements. These treatment BMPs will provide water quality treatment in addition to that provided by the LID features.

Flow-based treatment control BMPs include a linear swale that will be located within a 30-foot buffer along Boronda Road. Volume based BMPs will include the initial basins in the two main detention/retention basins, and several water quality basins that will receive low flow runoff from the developed areas adjacent to the Natividad Creek tributary. See **Figure 1** for BMP locations.

Hydrologic Analysis

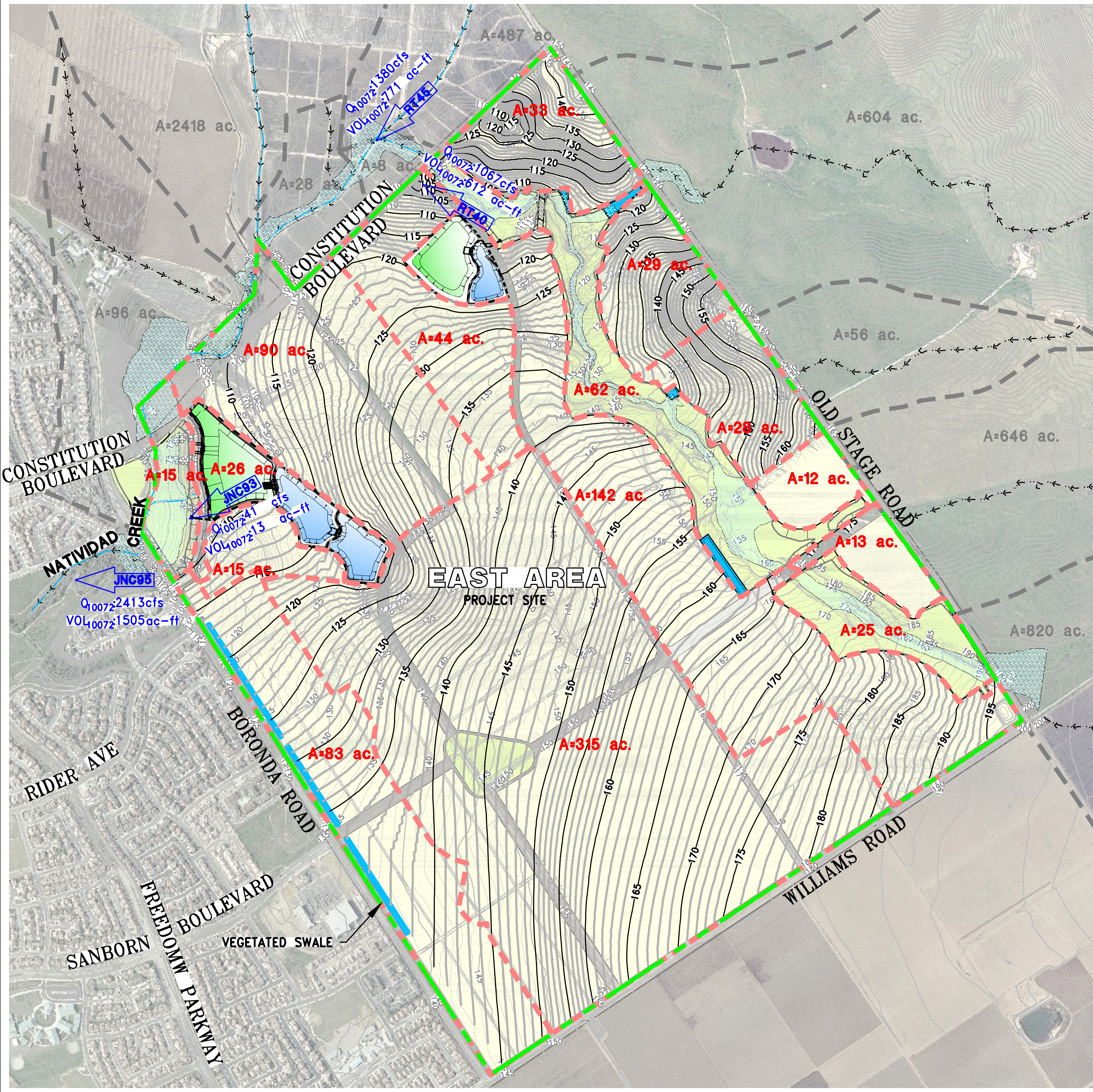
The different hydrologic requirements evaluated for this assessment of the surface hydrology included: (1) the City of Salinas, (2) RWQCB stormwater quality requirements, (3) Monterey County Water Resources Agency focusing on the operational requirements of the downstream Reclamation Ditch, and (4) Carr Lake impacts. The analyses provide the estimate of pre-development and post-development project watershed hydrology for both hypothetical single event rainfall and continuous rainfall for the maximum water year. Runoff simulations were developed using both the Storm Water Management Model (XP-SWMM) and the Corps of Engineers Hydrologic Modeling System (HEC-HMS) software for each of the following events: 100 year 72-hour, 100-year 24-hour, 10-year 24-hour, and 1998 (wettest year available) - one year continuous hourly precipitation data for the City of Salinas. The intent of these analyses is to determine the governing criteria and demonstrate the project stormwater facilities are adequately sized to address each of the different requirements.

ONSITE PROPOSED DRAINAGE CONDITIONS

EAST AREA : BARDIN RANCH

CITY OF SALINAS, CALIFORNIA

MAY 2007



LEGEND:

- PROJECT BOUNDARY
- 150 ONSITE PROPOSED GRADE
- WATERSHED BOUNDARY
- OFFSITE WATERSHED BOUNDARY
- OFFSITE DRAIN FLOWPATH
- 110 EXISTING GROUND CONTOUR
- WATERWAY AND DRAIN
- A=519 ac. WATERSHED AREA (acre)
- WATER QUALITY/RETENTION BASIN
- WATER QUALITY/DETENTION BASIN
- WATER QUALITY
- DEVELOPMENT AREA
- OPEN SPACE
- PROPOSED 100-YEAR FLOODPLAIN

NORTH

0 500' 1,000' 2,000'

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San Francisco, CA 94111 Fax 415/627-0778

FIGURE 1

J:\Jobs\1280-BARDIN RANCH\BARDIN RANCH-OA\Civil\Exhibits\H&H-SUMMARY-FIG01 EAST.dwg 7/05/07 3:08pm mmontes

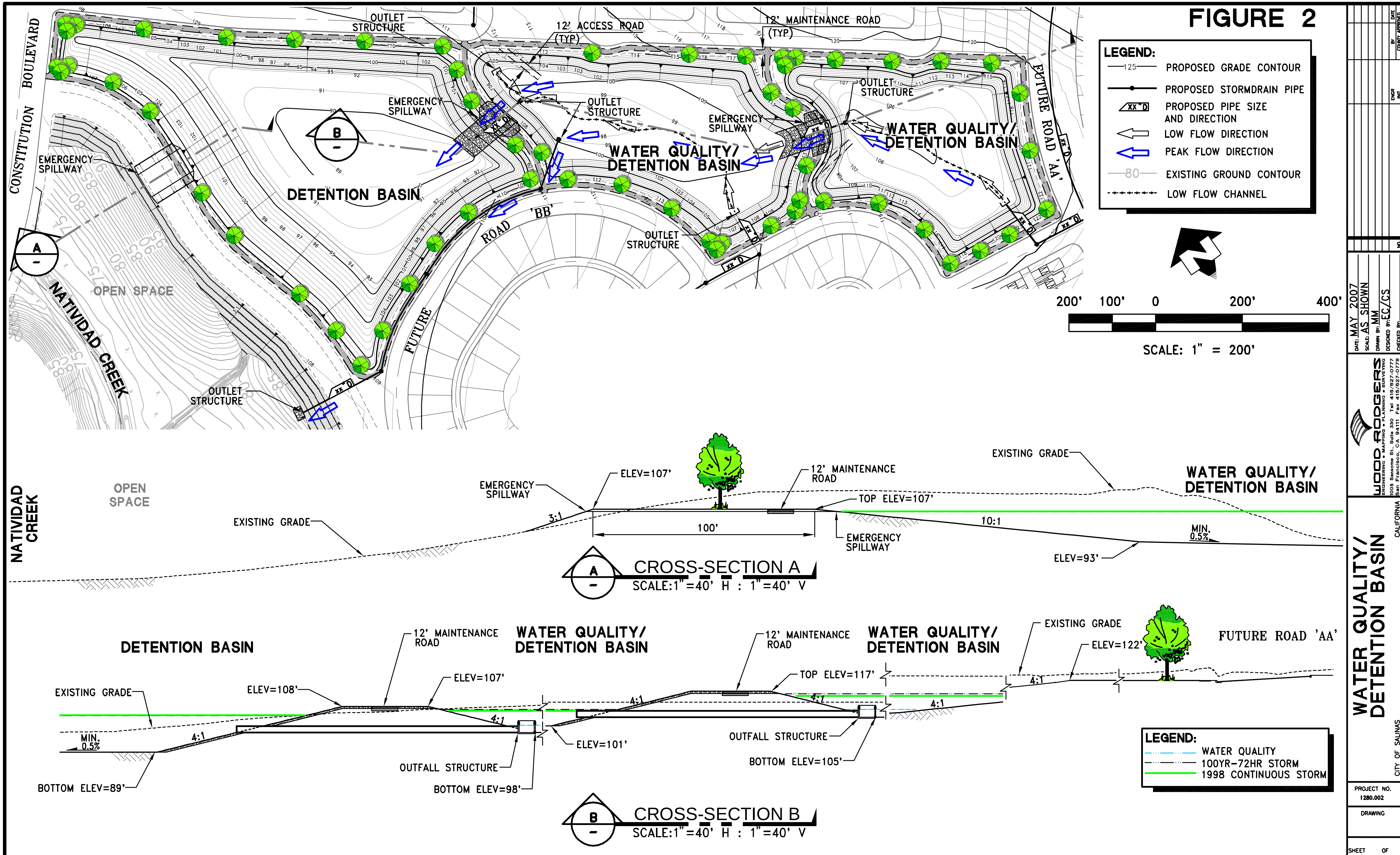
FIGURE 2
LEGEND:
PROPOSED GRADE CONTOUR
PROPOSED STORMDRAIN PIPE
PROPOSED PIPE SIZE AND DIRECTION
LOW FLOW DIRECTION
PEAK FLOW DIRECTION
EXISTING GROUND CONTOUR
LOW FLOW CHANNEL
CONSTITUTION BOULEVARD
NATIVIDAD CREEK
OPEN SPACE
DETENTION BASIN
WATER QUALITY/ DETENTION BASIN
EMERGENCY SPILLWAY
OUTLET STRUCTURE
12' ACCESS ROAD (TYP)
12' MAINTENANCE ROAD (TYP)
FUTURE ROAD 'BB'
FUTURE ROAD 'AA'
SCALE: 1" = 200'
CROSS-SECTION A
SCALE:1"=40' H : 1"=40' V
EXISTING GRADE
ELEV=107'
12' MAINTENANCE ROAD
TOP ELEV=107'
100'
3:1
10:1
MIN. 0.5%
ELEV=93'
CROSS-SECTION B
SCALE:1"=40' H : 1"=40' V
ELEV=108'
ELEV=107'
ELEV=101'
4:1
OUTFALL STRUCTURE
BOTTOM ELEV=89'
BOTTOM ELEV=98'
TOP ELEV=117'
BOTTOM ELEV=105'
ELEV=122'
LEGEND:
WATER QUALITY
100YR-72HR STORM
1998 CONTINUOUS STORM
DATE: MAY 2007
SCALE: AS SHOWN
DRAWN BY: MM
DESIGNED BY: EC/CS
WOOD RODGERS
ENGINEERING • MAPPING • PLANNING • SURVEYING
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PROJECT NO. 1280.002
DRAWING
SHEET OF
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Attachment A

Table 1. 10-Year 24-Hour Storm Event

Outfall Location	Watershed Area (ac)	Peak Flow (cfs)	Total Volume (ac-ft)
Existing Conditions			
Natividad Creek @ Boronda Road	*5996*	*563*	*353*
Mitigated Developed Conditions			
Natividad Creek @ Boronda Road	*5996*	*486*	*308*

Table 2. 100-Year 24-Hour Storm Event

Outfall Location	Watershed Area (ac)	Peak Flow (cfs)	Total Volume (ac-ft)
Existing Conditions			
Natividad Creek @ Boronda Road	*5996*	*1662*	*875*
Mitigated Developed Conditions			
Natividad Creek @ Boronda Road	*5996*	*1462*	*775*

Table 3. 100-Year 72-Hour Storm

Outfall Location	Watershed Area (ac)	Peak Flow (cfs)	Total Volume (ac-ft)
Existing Conditions			
Natividad Creek @ Boronda Road	5996	2733	1695
Mitigated Developed Conditions			
Natividad Creek @ Boronda Road	5996	2413	1505

Table 4. 1998 Hourly Continuous Storm Event

Outfall Location	Watershed Area (ac)	Peak Flow (cfs)	Total Volume (ac-ft)
Existing Conditions			
Natividad Creek @ Boronda Road	5996	1404	2072
Mitigated Developed Conditions			
Natividad Creek @ Boronda Road	5996	1282	2061

Attachment D

List of the relevant drainage infrastructure reports concerning the FGA.

1. City of Salinas Storm Water Master Plan May 2004
2. Salinas West FGA Stormwater Facility Summary by Wood Rodgers July 2007 Attachment A in this report.
3. Salinas Central FGA Stormwater Facility Summary by Pace Engineers July 2007 Attachment B in this report.
4. Salinas East FGA Stormwater Facility Summary by Wood Rodgers July 2007 Attachment C in this report.

APPENDIX J
GREENHOUSE GAS EMISSIONS CALCULATIONS

Appendix J
Vehicular Greenhouse Gas Emissions

Year	Daily VMT[1]	Annual VMT	Annual VMT by Vehicle Fuel Type[5]		Vehicle Fuel Economy[2] (Miles Per Gallon)		Fuel Consumption (Gallons)		Emission Factors (Lbs./Gallon of Gasoline)[3]			Emission Factors (Lbs./Gallon of Diesel)[3]			Total Gasoline Emissions by GHG [4] (converted to tons CO2e)			Total Diesel Emissions by GHG[4] (converted to tons CO2e)			Total Vehicular GHG Emissions (tons)
			Gasoline	Diesel	Gasoline	Diesel	Gasoline	Diesel	CO_2	CH_4	N_2O	CO_2	CH_4	N_2O	CO_2	CH_4	N_2O	CO_2	CH_4	N_2O	
2000	1,663,300	607,104,500	603,461,873	3,642,627	21.910	27.303	27,542,760	133,415	19.564	0.00055	0.00020	22.384	0.0005340	0.0001928	269,423.28	174.21	826.28	1,493.18	0.82	3.86	271,922
2010	2,033,400	742,191,000	739,964,427	2,226,573	22.041	28.616	33,572,180	77,809	19.564	0.00055	0.00020	22.384	0.0005340	0.0001928	328,403.07	212.34	1,007.17	870.83	0.48	2.25	330,496
2020	2,403,500	877,277,500	875,522,945	1,754,555	22.729	28.354	38,520,082	61,880	19.564	0.00055	0.00020	22.384	0.0005340	0.0001928	376,803.44	243.64	1,155.60	692.56	0.38	1.79	378,897

1. City of Salinas General Plan Circulation Element (page C-23)
2. California Department of Transportation, California Motor Vehicle Stock, Travel and Fuel Forecast, 2006.
3. Bay Area Air Quality Management District, Source Inventory of Bay Area Greenhouse Gas Emissions, November 2006.
4. Robert Henson, The Rough Guide to Climate Change, September 2006.
5. Assumes proportion of total vehicle miles traveled by gasoline- and diesel-powered autos within Salinas is same as statewide proportions (MVSTAFF 2006)

Land Use Designation	Year	du/ksf[1]	Annual Usage Factors[2] (mWh/year/du or ksf)	Annual Usage (mWh/year)	Emission Factors[3]			Total GHG Emissions (lbs)			Total[4] (tons CO_2e)
					CO_2 (lbs/mWh)	CH_4 (lbs/mWh)	N_2O (lbs/mWh)	CO_2	CH_4	N_2O	
Single-Family Residential (du)	2000	17,558	68.400	1,200,967	804.54	0.0067	0.0037	966,226,151.09	8,046.48	4,443.58	483,872.15
	2020	25,980	68.400	1,777,032	804.54	0.0067	0.0037	1,429,693,325.28	11,906.11	6,575.02	715,969.84
Multiple-Family Residential (du)	2000	20,131	47.280	951,794	804.54	0.0067	0.0037	765,756,087.31	6,377.02	3,521.64	383,479.62
	2020	30,465	47.280	1,440,385	804.54	0.0067	0.0037	1,158,847,508.81	9,650.58	5,329.43	580,334.15
Commercial (sf)	2000	9,518	0.240	2,284	804.54	0.0067	0.0037	1,837,826.81	15.30	8.45	920.36
	2020	6,570	0.240	1,577	804.54	0.0067	0.0037	1,268,598.67	10.56	5.83	635.30
Industrial (sf)	2000	16,791	0.108	1,813	804.54	0.0067	0.0037	1,458,975.36	12.15	6.71	730.63
	2020	29,246	0.108	3,159	804.54	0.0067	0.0037	2,541,194.30	21.16	11.69	1,272.59
Office (sf)	2000	3,983	0.204	813	804.54	0.0067	0.0037	653,714.50	5.44	3.01	327.37
	2020	5,125	0.204	1,046	804.54	0.0067	0.0037	841,146.57	7.00	3.87	421.23
Public & Institutional (sf)	2000	11,584	0.096	1,112	804.54	0.0067	0.0037	894,699.97	7.45	4.11	448.05
	2020	14,864	0.096	1,427	804.54	0.0067	0.0037	1,148,033.53	9.56	5.28	574.92
Mixed Use (sf)	2000	0	0.240	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	13,082	0.240	3,140	804.54	0.0067	0.0037	2,525,998.15	21.04	11.62	1,264.98
Arterial Frontage (sf)	2000	671	0.240	161	804.54	0.0067	0.0037	129,563.12	1.08	0.60	64.88
	2020	679	0.240	163	804.54	0.0067	0.0037	131,107.84	1.09	0.60	65.66
Total 2000				**2,158,944**							**869,843**
Total 2020				**3,227,928**							**1,300,539**

1. City of Salinas Draft Program EIR 2002, Section 5.13 Public Services and Utilities, Tables 5.13-17 and 5.13-18.

2. See Sheet 4

3. California Climate Action Registry General Reporting Protocol, Version 2.1 June 2006, Appendix C, Tables C.1 and C.2.

4. Global Warming Potentials: $C0_2 = 1$; $CH_4 = 23$; $N_2O = 300$

Land Use Designation	Year	du/ksf[1]	Annual Usage Factors[2] (MMBtus/year/du or ksf)	Annual Usage (MMBtus/year)	Emission Factors[3] CO_2 (kg/MMBtu)	CH_4 (kg/MMBtu)	N_2O (kg/MMBtu)	Total Emissions (lbs) CO_2	CH_4	N_2O	Total GHG Emissions[4] (tons CO_2e)
Single-Family Residential (du)	2000	17,558	82.3794	1,446,418	53.05	0.0059	0.0001	169,195,049.28	18,817.17	318.94	84,861.76
	2020	25,980	82.3794	2,140,217	53.05	0.0059	0.0001	250,352,396.64	27,843.15	471.92	125,567.18
Multiple-Family Residential (du)	2000	20,131	49.5821	998,138	53.05	0.0059	0.0001	52,951,224.10	135,447.33	29,944.14	32,524.88
	2020	30,465	49.5821	1,510,520	53.05	0.0059	0.0001	80,133,080.44	204,977.55	45,315.60	49,221.12
Commercial (sf)	2000	9,518	49.5821	471,923	53.05	0.0059	0.0001	25,035,504.99	64,039.93	14,157.68	15,377.86
	2020	6,570	49.5821	325,755	53.05	0.0059	0.0001	17,281,284.70	44,204.91	9,772.64	10,614.89
Industrial (sf)	2000	16,791	0.0408	685	53.05	0.0059	0.0001	36,332.42	92.94	20.55	22.32
	2020	29,246	0.0408	1,193	53.05	0.0059	0.0001	63,282.59	161.87	35.79	38.87
Office (sf)	2000	3,983	0.0247	98	53.05	0.0059	0.0001	5,223.29	13.36	2.95	3.21
	2020	5,125	0.0247	127	53.05	0.0059	0.0001	6,720.90	17.19	3.80	4.13
Public & Institutional (sf)	2000	11,584	0.0247	286	53.05	0.0059	0.0001	15,191.21	38.86	8.59	9.33
	2020	14,864	0.0247	367	53.05	0.0059	0.0001	19,492.59	49.86	11.02	11.97
Mixed Use (sf)	2000	0	0.0358	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	13,082	0.0358	469	53.05	0.0059	0.0001	24,875.74	63.63	14.07	15.28
Arterial Frontage (sf)	2000	671	0.0358	24	53.05	0.0059	0.0001	1,275.92	3.26	0.72	0.78
	2020	679	0.0358	24	53.05	0.0059	0.0001	1,291.13	3.30	0.73	0.79
Total 2000				**2,917,572**							**132,800**
Total 2020				**3,978,672**							**185,474**

1. City of Salinas Draft Program EIR 2002, Section 5.13 Public Services and Utilities, Tables 5.13-17 and 5.13-18.

2. See Sheet 4

3. California Climate Action Registry General Reporting Protocol, Version 2.1 June 2006, Appendix C, Tables C.5 and C.6.

4. Global Warming Potentials: $C0_2$ = 1; CH_4 = 23; N_2O = 300

1 kg = 2.205 lbs

	Existing (2000) GHG Emissions (tons CO2e)	Buildout (2020) GHG Emissions (tons CO2e)	Percent Increase
Vehicles	271,922	378,897	39.34%
Electricity	869,843	1,300,539	49.51%
Natural Gas	132,800	185,474	39.66%
TOTAL	**1,274,565**	**1,864,910**	**46.32%**

Land Use Designation	FEIR Usage Factors[1]		Conversion Factors[2]	
	Electricity (kWh/month/du or ksf)	**Natural Gas** (cf/month/du or ksf)	**Electricity[3]** (mWh/year/du or ksf)	**Natural Gas[4]** (MMBtus/year/du or ksf)
Single-Family Residential (du)	**5,700.0**	**6,665.0**	68.4	82.3794
Multiple-Family Residential (du)	**3,940.0**	**4,011.5**	47.28	49.58214
Commercial (sf)	**20.0**	**4,011.5**	0.24	49.58214
Industrial (sf)	**9.0**	**3.3**	0.108	0.040788
Office (sf)	**17.0**	**2.0**	0.204	0.02472
Public & Institutional (sf)	**8.0**	**2.0**	0.096	0.02472
Mixed Use (sf)	**20.0**	**2.9**	0.24	0.035844
Arterial Frontage (sf)	**20.0**	**2.9**	0.24	0.035844

1. City of Salinas Draft Program EIR 2002, Section 5.13 Public Services and Utilities, Tables 5.13-17 and 5.13-18.

2. California Climate Action Registry General Reporting Protocol, Version 2.1 June 2006, Part III Chapter 8 Table III.8.1

3. 1 kWh = .001 mWh; 12 months = 1 year

4. 1000 cf x 1.03 = MMBtu; 12 months = 1 year

Appendix J
Vehicular Greenhouse Gas Emissions

Year	Daily VMT[1]	Annual VMT	Annual VMT by Vehicle Fuel Type[5]		Vehicle Fuel Economy[2] (Miles Per Gallon)		Fuel Consumption (Gallons)		Emission Factors (Lbs./Gallon of Gasoline)[3]			Emission Factors (Lbs./Gallon of Diesel)[3]			Total Gasoline Emissions by GHG [4] (converted to tons CO2e)			Total Diesel Emissions by GHG[4] (converted to tons CO2e)			Total Vehicular GHG Emissions (tons)
			Gasoline	Diesel	Gasoline	Diesel	Gasoline	Diesel	CO_2	CH_4	N_2O	CO_2	CH_4	N_2O	CO_2	CH_4	N_2O	CO_2	CH_4	N_2O	
2000	0	0	0	0	21.910	27.303	0	0	19.564	0.00055	0.00020	22.384	0.0005340	0.0001928	0.00	0.00	0.00	0.00	0.00	0.00	0
2020	592,703	216,336,632	215,903,958	432,673	22.729	28.354	9,499,052	15,260	19.564	0.00055	0.00020	22.384	0.0005340	0.0001928	92,919.73	60.08	284.97	170.79	0.09	0.44	93,436

1. The SOI Amendment and Annexation Area represents 24.66 percent of projected dwelling unit capacity within the City in 2020 (14,318 dwelling units/58,055 dwelling units). This analysis assumes that the percentage of daily VMT for the SOI Amendment and Annexation Area will be proportional to its percentage of projected dwelling unit capacity (24.66 percent). The city-wide daily VMT figure was taken from the City of Salinas General Plan Circulation Element (page C-23).

2. California Department of Transportation, California Motor Vehicle Stock, Travel and Fuel Forecast, 2006.

3. Bay Area Air Quality Management District, Source Inventory of Bay Area Greenhouse Gas Emissions, November 2006.

4. Robert Henson, The Rough Guide to Climate Change, September 2006.

5. Assumes proportion of total vehicle miles traveled by gasoline- and diesel-powered autos within Salinas is same as statewide proportions (MVSTAFF 2006)

Land Use Designation	Year	du/ksf[1]	Annual Usage Factors[2] (mWh/year/du or ksf)	Annual Usage (mWh/year)	Emission Factors[3] CO_2 (lbs/mWh)	CH_4 (lbs/mWh)	N_2O (lbs/mWh)	Total GHG Emissions (lbs) CO_2	CH_4	N_2O	Total[4] (tons CO_2e)
Single-Family Residential (du)	2000	0	68.400	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	8,867	68.400	606,503	804.54	0.0067	0.0037	487,955,762.71	4,063.57	2,244.06	244,361.22
Multiple-Family Residential (du)	2000	0	47.280	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	5,451	47.280	257,723	804.54	0.0067	0.0037	207,348,687.69	1,726.75	953.58	103,837.24
Commercial (sf)	2000	0	0.240	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	120	0.240	29	804.54	0.0067	0.0037	23,170.75	0.19	0.11	11.60
Industrial (sf)	2000	0	0.108	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	4,065	0.108	439	804.54	0.0067	0.0037	353,209.15	2.94	1.62	176.88
Office (sf)	2000	0	0.204	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	0	0.204	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
Public & Institutional (sf)	2000	0	0.096	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	2,272	0.096	218	804.54	0.0067	0.0037	175,479.83	1.46	0.81	87.88
Mixed Use (sf)	2000	0	0.240	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	2,566	0.240	616	804.54	0.0067	0.0037	495,467.91	4.13	2.28	248.12
Arterial Frontage (sf)	2000	0	0.240	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
	2020	0	0.240	0	804.54	0.0067	0.0037	0.00	0.00	0.00	0.00
Total 2000				**0**							**0**
Total 2020				**865,528**							**348,723**

1. City of Salinas Draft Program EIR 2002, Section 5.13 Public Services and Utilities, Tables 5.13-17 and 5.13-18; Dwelling unit totals reflect the assumption that development capacity for Residential Low Density will consist of single-family detached units; Residential Medium Density will consist of 50 percent single-family detached or attached units and 50 percent multiple-family units; and Residential High Density will consist of multiple-family units.

2. See Sheet 4

3. California Climate Action Registry General Reporting Protocol, Version 2.1 June 2006, Appendix C, Tables C.1 and C.2.

4. Global Warming Potentials: $C0_2$ = 1; CH_4 = 23; N_2O = 300

Land Use Designation	Year	du/ksf[1]	Annual Usage Factors[2] (MMBtus/year/du or ksf)	Annual Usage (MMBtus/year)	Emission Factors[3]			Total Emissions (lbs)			Total GHG Emissions[4] (tons CO_2e)
					CO_2 (kg/MMBtu)	CH_4 (kg/MMBtu)	N_2O (kg/MMBtu)	CO_2	CH_4	N_2O	
Single-Family Residential (du)	2000	0	82.3794	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	8,867	82.3794	730,458	53.05	0.0059	0.0001	85,445,523.52	9,502.90	161.07	42,856.20
Multiple-Family Residential (du)	2000	0	49.5821	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	5,451	49.5821	270,272	53.05	0.0059	0.0001	14,337,942.60	36,675.94	8,108.17	8,806.97
Commercial (sf)	2000	0	49.5821	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	120	49.5821	5,950	53.05	0.0059	0.0001	315,639.90	807.40	178.50	193.88
Industrial (sf)	2000	0	0.0408	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	4,065	0.0408	166	53.05	0.0059	0.0001	8,795.86	22.50	4.97	5.40
Office (sf)	2000	0	0.0247	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	0	0.0247	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
Public & Institutional (sf)	2000	0	0.0247	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	2,272	0.0247	56	53.05	0.0059	0.0001	2,979.49	7.62	1.68	1.83
Mixed Use (sf)	2000	0	0.0358	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	2,566	0.0358	92	53.05	0.0059	0.0001	4,879.31	12.48	2.76	3.00
Arterial Frontage (sf)	2000	0	0.0358	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
	2020	0	0.0358	0	53.05	0.0059	0.0001	0.00	0.00	0.00	0.00
Total 2000				**0**							**0**
Total 2020				**1,006,994**							**51,867**

1. City of Salinas Draft Program EIR 2002, Section 5.13 Public Services and Utilities, Tables 5.13-17 and 5.13-18; Dwelling unit totals reflect the assumption that development capacity for Residential Low Density will consist of single-family detached units; Residential Medium Density will consist of 50 percent single-family detached or attached units and 50 percent multiple-family units; and Residential High Density will consist of multiple-family units.

2. See Sheet 4

3. California Climate Action Registry General Reporting Protocol, Version 2.1 June 2006, Appendix C, Tables C.5 and C.6.

4. Global Warming Potentials: $C0_2$ = 1; CH_4 = 23; N_2O = 300

1 kg = 2.205 lbs

	Existing (2000) GHG Emissions (tons CO2e)	Buildout (2020) GHG Emissions (tons CO2e)	Percent of City's Total GHG Emissions
Vehicles	0	93,436	24.66%
Electricity	0	348,723	26.81%
Natural Gas	0	51,867	27.96%
TOTAL	**0**	**494,026**	**26.49%**

Land Use Designation	FEIR Usage Factors[1]		Conversion Factors[2]	
	Electricity (kWh/month/du or ksf)	**Natural Gas** (cf/month/du or ksf)	**Electricity[3]** (mWh/year/du or ksf)	**Natural Gas[4]** (MMBtus/year/du or ksf)
Single-Family Residential (du)	**5,700.0**	**6,665.0**	68.4	82.3794
Multiple-Family Residential (du)	**3,940.0**	**4,011.5**	47.28	49.58214
Commercial (sf)	**20.0**	**4,011.5**	0.24	49.58214
Industrial (sf)	**9.0**	**3.3**	0.108	0.040788
Office (sf)	**17.0**	**2.0**	0.204	0.02472
Public & Institutional (sf)	**8.0**	**2.0**	0.096	0.02472
Mixed Use (sf)	**20.0**	**2.9**	0.24	0.035844
Arterial Frontage (sf)	**20.0**	**2.9**	0.24	0.035844

1. City of Salinas Draft Program EIR 2002, Section 5.13 Public Services and Utilities, Tables 5.13-17 and 5.13-18.

2. California Climate Action Registry General Reporting Protocol, Version 2.1 June 2006, Part III Chapter 8 Table III.8.1

3. 1 kWh = .001 mWh; 12 months = 1 year

4. 1000 cf x 1.03 = MMBtu; 12 months = 1 year