State Route 99/Hammett Road Interchange Reconstruction Project

Stanislaus County, California
10-STA-99-PM 23.8/24.7
Project ID 10-0000-0099

Draft Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment

Prepared for the
State of California Department of Transportation

The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327.

June 2012

Caltrans

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project located in Stanislaus County and San Joaquin County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, and potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do:

- Please read this Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment. Additional copies of this document as well as the technical studies are available for review at the Caltrans district office at 1976 E. Martin Luther King Blvd, Stockton, CA 95205 and Nick W. Blom Salida Regional Library at 4835 Sisk Road, Salida, CA 95368.
- Attend the public information meeting.
- We welcome your comments. If you have any concerns regarding the proposed project, please attend the public information meeting on July 31, 2012, or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:
- Scott Smith, Associate Environmental Planner
  Central Sierra Environmental Analysis Branch
  California Department of Transportation
  855 M Street, Suite 200
  Fresno, CA 93721
- Submit comments via email to: scott_smith@dot.ca.gov.
- Submit comments by the deadline: August 15, 2012.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the Federal Highway Administration, may 1) give environmental approval to the proposed project, 2) do additional environmental studies, or 3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

Printing this document: To save paper, this document has been set up for two-sided printing (to print the front and back of a page). Blank pages occur where needed throughout the document to maintain proper layout of the chapters and appendices.

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Scott Smith, District 6, 855 M Street, Suite 200, Fresno, CA 93721, (559) 445-6464; or contact Caltrans District 10 Public Affairs Office at (209) 948-7977 or use the California Relay Service TTY number, (800) 735-2929 or dial 711.

10-STA-99-PM 23.8/24.7
Project ID# 10-000-0099

Reconstruct the Hammett Road Interchange along State Route 99 from post miles 23.8 to 24.7 between Ciccarelli Road and Pirrone Road in Stanislaus County, California.

DRAFT INITIAL STUDY
with Proposed Mitigated Negative Declaration/ Environmental Assessment

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 U.S. Code 4332(2)(C) and 23 U.S. Code 327

THE STATE OF CALIFORNIA
Department of Transportation

7/3/12
Date of Approval

Margaret L. Lawrence
Office of Environmental Management North
Central Region Environmental Division
California Department of Transportation
NEPA Lead Agency

7/3/12
Date of Approval

Margaret L. Lawrence
Office of Environmental Management North
Central Region Environmental Division
California Department of Transportation
CEQA Lead Agency

The following persons may be contacted for additional information concerning this document:

Margaret L. Lawrence
Office of Environmental Management North
Central Region Environmental Division
California Department of Transportation

855 M Street, Suite 200
Fresno, CA 93721
(209) 948-3754 - Stockton
(559) 445-6469 - Fresno
margaret_lawrence@dot.ca.gov

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to reconstruct the existing State Route 99/Hammett Road interchange including the overcrossing, on and off-ramps, and certain roadway segments within the interchange limits.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision regarding the project is final. This Mitigated Negative Declaration is subject to modification based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on Land Use, Growth, Farmlands/Timberlands, Relocations, Community Impacts, Environmental Justice, Coastal Zone, Cultural Resources, Hydrology and Floodplain, Wild and Scenic Rivers, Natural Communities, Wetlands and Other Waters and Plant Species.

In addition, the proposed project would have no significant effect on Parks and Recreational Services, Utilities/Emergency Services, Traffic and Transportation/Pedestrian and Bicycle Facilities, Visual/Aesthetics, Water Quality, Paleontology, and Storm Water Runoff, Geology/Soils/Seismic/Topography, Hazardous Waste/Materials, Air Quality, and Noise and Vibration with the implementation of avoidance, minimization, and/or mitigation measures.

In addition, the proposed project would have no significantly adverse effect on biological resources (animal species, threatened and endangered species and invasive species) with the implementation of avoidance, minimization, and/or mitigation measures as recommended by the U.S. Fish & Wildlife Service (e.g., preconstruction surveys, nesting setback, purchase of mitigation credits).

_____ _____

Margaret L. Lawrence, Office Chief
Office of Environmental Management, North
Central Region Environmental Division
California Department of Transportation

Date

Summary

The California Department of Transportation (Caltrans) in cooperation with the Stanislaus County Department of Public Works proposes to reconstruct the existing State Route 99/Hammett Road Interchange in the community of Salida in Stanislaus County. This would include reconstruction of the overcrossing, on and off-ramps, and certain segments of Hammett Road within the interchange limits. On and off-ramps would be widened to accommodate greater traffic volumes entering and exiting the mainline. The overcrossing would be replaced to accommodate the widening of Hammett Road on the west, and the Hammett Road Extension on the east. The reconstructed interchange overcrossing structure would consist of six-lanes that conform to the Hammett Road widening, and the Hammett Road East Extension.

Two alternatives have been considered: one build alternative (Alternative 3) and a no-build alternative.

Build Alternatives

At the project outset, three build alternatives were examined for the proposed interchange improvements. Alternatives 1 and 2 have been eliminated and are discussed in Chapter 1 under Alternatives Considered but Eliminated from Further Discussion. The build alternative that was carried through in this document is Alternative 3. Alternative 3, would modify the existing Hammett Road interchange with a hybrid modified diamond and partial cloverleaf. The Alternative would widen Hammett Road from two lanes to six lanes by adding two lanes in each direction (eastbound and westbound). Other common design features include the following: new freeway on-and-off ramps, High Occupancy Vehicle lanes, ramp metering, intersections improvements along with the installation of traffic signals, pedestrian and bicycle facility improvements, and drainage and landscaping.

No-Build Alternative

The No-Build Alternative would retain the existing interchange in its current configuration. By 2015, the traffic analysis shows that, without ramp improvement, all intersections within the study area are expected to operate at Level of Service F and will not be able to accommodate forecasted traffic volumes with increased growth in the area.

The table below compares potential impacts for the Build Alternative and the No-Build Alternative and includes design and environmental information.

Table S.1: Summary of Major Potential Impacts from Alternatives

Potential Impact		Alternative 3	No-Build Alternative
Land Use	**Consistency with the Salida Community Plan**	Consistent	Inconsistent
	Consistency with the Stanislaus General Plan	Consistent	Inconsistent
Parks and Recreation		Temporary Impact to Section 4(f) Lands	None
Growth		None (not growth inducing project)	None
Farmlands/Timberlands		None	None
Community Character and Cohesion		None	None
Relocation	**Business displacements**	None	None
	Housing displacements	None	None
	Utility service relocation	Potential utility relocations	None
Environmental Justice		None	None
Utilities/Emergency Services		Potential utility relocations	None
Traffic and Transportation/ Pedestrian and Bicycle Facilities		Temporary impact to pedestrian and bicycle facility (Section 4(f) Lands)	Traffic Levels of Service would continue to degrade
Visual/Aesthetics		None	None
Cultural Resources		None	None
Hydrology and Floodplain		None	None
Water Quality and Storm Water Runoff		Potential water quality impacts from construction	None
Geology/Soils/Seismic/ Topography		None	None
Paleontology		High potential for encountering paleontological resources	None
Hazardous Waste/Materials		Short-term construction related impacts	None
Air Quality		Short-term construction related impacts	Long-term air quality would degrade with continued congestion
Noise and Vibration		Potential increase in ambient noise levels/short-term construction related noise	None

Potential Impact	Alternative 3	No-Build Alternative
Natural Communities	None	None
Wetlands and other Waters	None	None
Plant Species	None	None
Animal Species	Loss of a approx 14 acres of potential habitat for Cooper's hawk, White-tailed kite, Merlin, Burrow owl and Tricolored blackbird habitat	None
Threatened and Endangered Species	Potential impact to Valley elderberry longhorn beetle habitat (Loss of 1 elderberry shrub) Loss of 25 acres of foraging habitat for Swainson's Hawk.	None
Invasive Species	construction-related activities would potentially promote the distribution of invasive plant species to off-site areas	None
Construction	Water quality and stormwater runoff, hazardous waste/materials, air quality, noise and invasive species	None
Cumulative Impacts	None	None

Table S.2: Permits and Approvals

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 consultation for Threatened and Endangered Species. .	To be completed prior to finalizing the environmental document
California Department of Fish and Game	Alteration Section 2080.1. Agreement for Threatened and Endangered Species.	Initiate once the Final Environmental document is complete
Stanislaus County	Encroachment Permit allows building within the county right-of-way.	Contractor obtains permit prior to construction.

Effective July 1, 2007, Caltrans has been assigned environmental review and consultation responsibilities under the National Environmental Policy Act pursuant to 23 U.S. Code 327.

Table of Contents

List of Figures

List of Tables

List of Abbreviated Terms

ADT	average daily traffic
AM	Ante Meridem
ARB	Air Resources Board
Ave.	Avenue
BSA	Biological Study Area
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
dBA	A-weighted decibels
ft	feet
H_2S	hydrogen sulfide
HCM	Highway Capacity Manual
HFC	hydrofluorocarbons
IAC	Interagency Consultation
kg	kilograms
km	kilometers
lbs	pounds
LED	light-emitting diode
$LE_q(h)$	equivalent sound level per hour
L_{max}	maximum instantaneous noise level
LOS	Level of Service
LSA	LSA Associates, Inc.
mg	milligrams
mg/l	milligrams per liter
micro g/m^3	micrograms per cubic meter
MMT	million metric tons
MS4	Municipal Separate Storm Sewer Systems
MSAT	mobile source air toxics
N/A	not applicable

NAC	noise abatement criteria
NB	northbound
ND	no data
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
O_3	ozone
Pb	lead
PFC	perfluorocarbons
PM	Post Meridiem
$PM_{2.5}$	fine particulates
PM_{10}	coarse particulates
ppm	parts per million
Protocol	Transportation Project-Level Carbon Monoxide Protocol
PSR	Project Study Report
Rd.	road
ROG	reactive organic gasses
SB	southbound
SF_6	sulfur hexafluoride
SO_2	sulfur dioxide
SO_x	sulfur oxide
SR	State Route
SSSC	side street stop control
St.	street
StanCOG	Stanislaus Council of Governments
SWMP	Storm Water Management Plan
U.S.	United States
USFWS	United States Fish and Wildlife Service
VELB	Valley elderberry longhorn beetle
VRP	visibility reducing particles

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) as the lead agency under the California Environmental Quality Act and the National Environmental Policy Act, in cooperation with the Stanislaus County Department of Public Works proposes to reconstruct the State Route 99/Hammett Road interchange between Ciccarelli Road and Pirrone Road in northern Stanislaus County. See Figures 1.1 and 1.2 for project vicinity and location.

The proposed improvements propose to widen Hammett Road from two lanes to six lanes by adding two lanes in each direction (eastbound & westbound) from Ciccarelli Road to Pirrone Road, modify the existing diamond interchange, and widen the on and off ramp on State Route 99.

This project is included in the 2010 Federal Statewide Transportation Improvement Program and is included in the Stanislaus Council of Government's 2011 Regional Transportation Plan as a "Tier 1" project (page 1 of Appendix M of the Stanislaus Council of Government's 2011 Regional Transportation Plan) adopted in August 2010. Funding is proposed from a variety of sources including Regional Surface Transportation Program, and local Public Facility Fees generated by ongoing development and direct developer contribution. The estimated cost for Alternative 3 is $40.5 million.

The proposed project involves an existing compact "diamond" interchange on State Route 99/Hammett Road. The State Route 99/Hammett Road Interchange within the project limit is currently a two-lane road (one lane in each direction) from Ciccarelli Road to Pirrone Road. State Route 99 is a six-lane freeway (three mixed flow lanes in each direction) throughout the project limits. State Route 99 is a component of the California Freeway and Expressway System stretching almost the entire length of the Central Valley.

Figure 1.1
Project Vicinity Map
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

N

0 25 50
MILES

SOURCE: California Natural Diversity Database (February 2012)

Figure 1.2
Project Location Map
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the proposed project is to:

- Relieve projected traffic congestion and improve Level of Service on local roadways.
- Correct current deficiencies existing on the Hammett Road Interchange.

1.2.2 Need

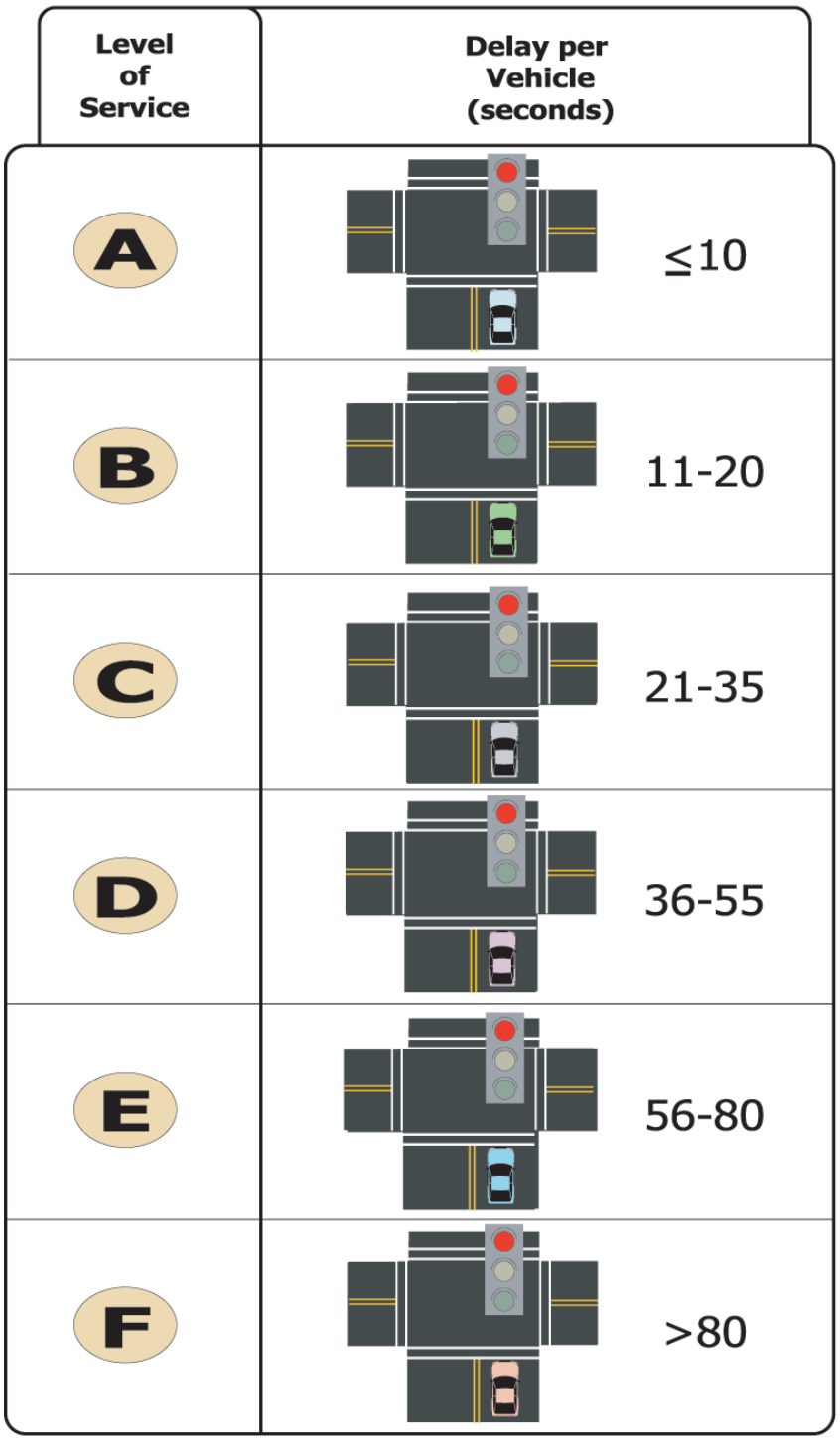
Existing and Projected Traffic Congestion and Level-of-Service

The traffic analysis prepared for the project indentified that the intersections at the Hammett Road interchange all operate above level of service D (see Figure 1.3 that describes level of service and Figure 1.4 that shows existing roadway conditions). Although existing delays at the Hammett Road interchange intersections do not currently exceed County and Caltrans thresholds for level of service, future local and regional growth will bring additional traffic demand and potentially cause exceedances.

By 2015, the traffic analysis shows that, without ramp improvement, two intersections within the study area are expected to operate at Level of Service F during PM peak hour (see Figure 1.5) with the existing interchange. Additionally, vehicle queues at the ramp terminal intersections will spill back onto Route 99 in both directions. Traffic operations will continue to decline beyond 2015 if no changes to the circulation system occur. The project is needed to create additional ramp capacity to accommodate 2035 growth forecasts and traffic projections (see Figure 1.6).

Delays in peak travel directions under existing conditions stem from regional growth in the County. For the State Route 99/Hammett Road interchange, these conditions are expected to worsen and lead to periods of high traffic volumes and deterioration in peak hour traffic operations, including vehicle queuing (queuing is a line of waiting vehicles) that extends across multiple project area intersections in the project build-out year (2035).

Overall, the Salida Community is expected to experience a large amount of residential and commercial growth in the coming years. As a result of this local growth, combined with expected regional growth, total future demand volumes on State Route 99/Hammett Road interchange ramps are projected to increase by about 1,000 vehicles in both the AM and PM peak hours by 2035, when compared with existing volumes. This would result in traffic delays of 15 to 20 minutes per vehicle.



Factors Affecting LOS of Signalized Intersections

Traffic Signal Conditions:
- Signal Coordination
- Cycle Length
- Protected left turn
- Timing
- Pre-timed or traffic activated signal
- Etc.

Geometric Conditions:
- Left- and right-turn lanes
- Number of lanes
- Etc.

Traffic Conditions:
- Percent of truck traffic
- Number of pedestrians
- Etc.

SOURCE: California Department of Transportation

Figure 1.3
Levels of Service For Signalized Intersections
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

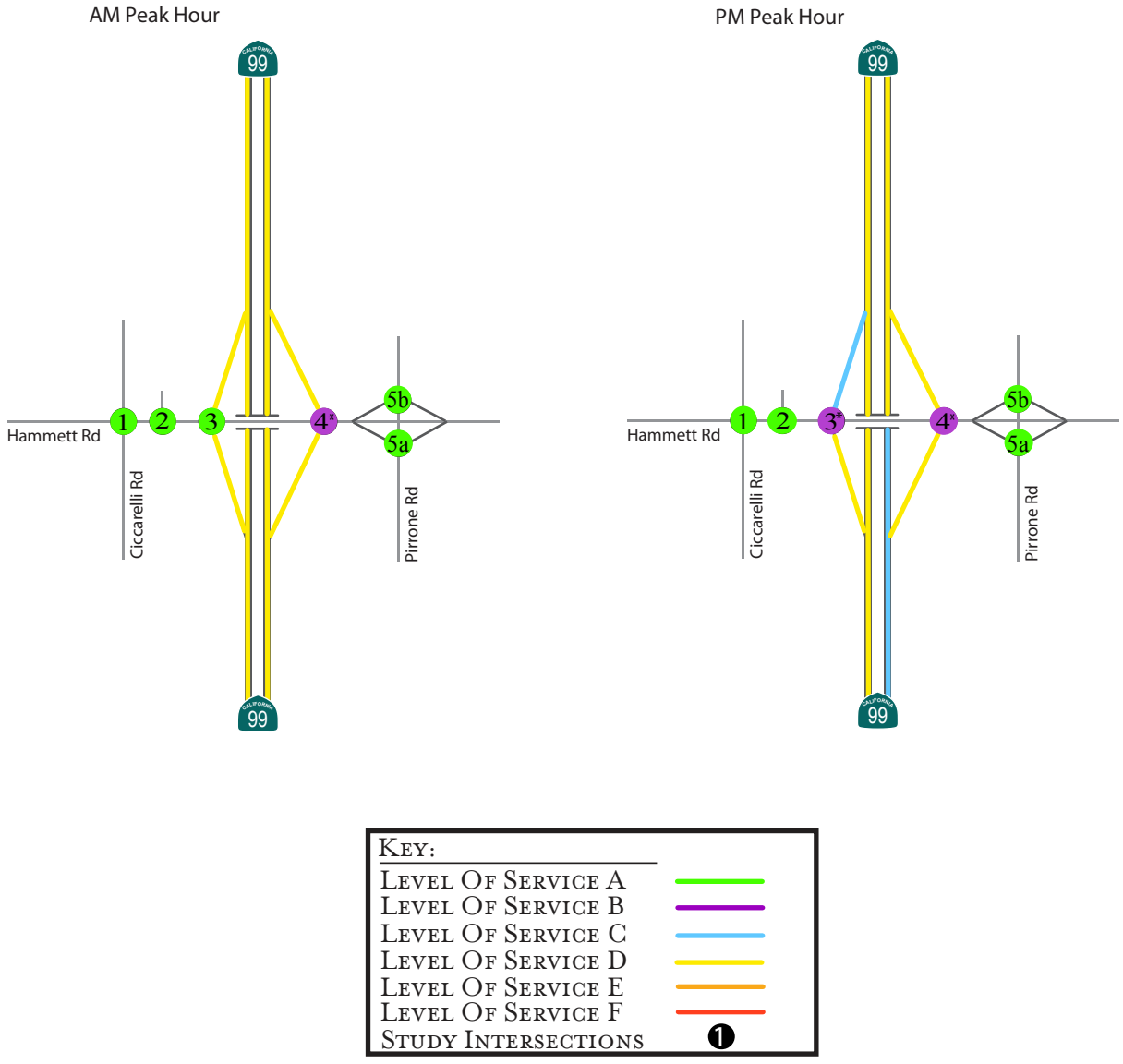


Figure 1.4
Hammett Levels of Service - Existing Conditions
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

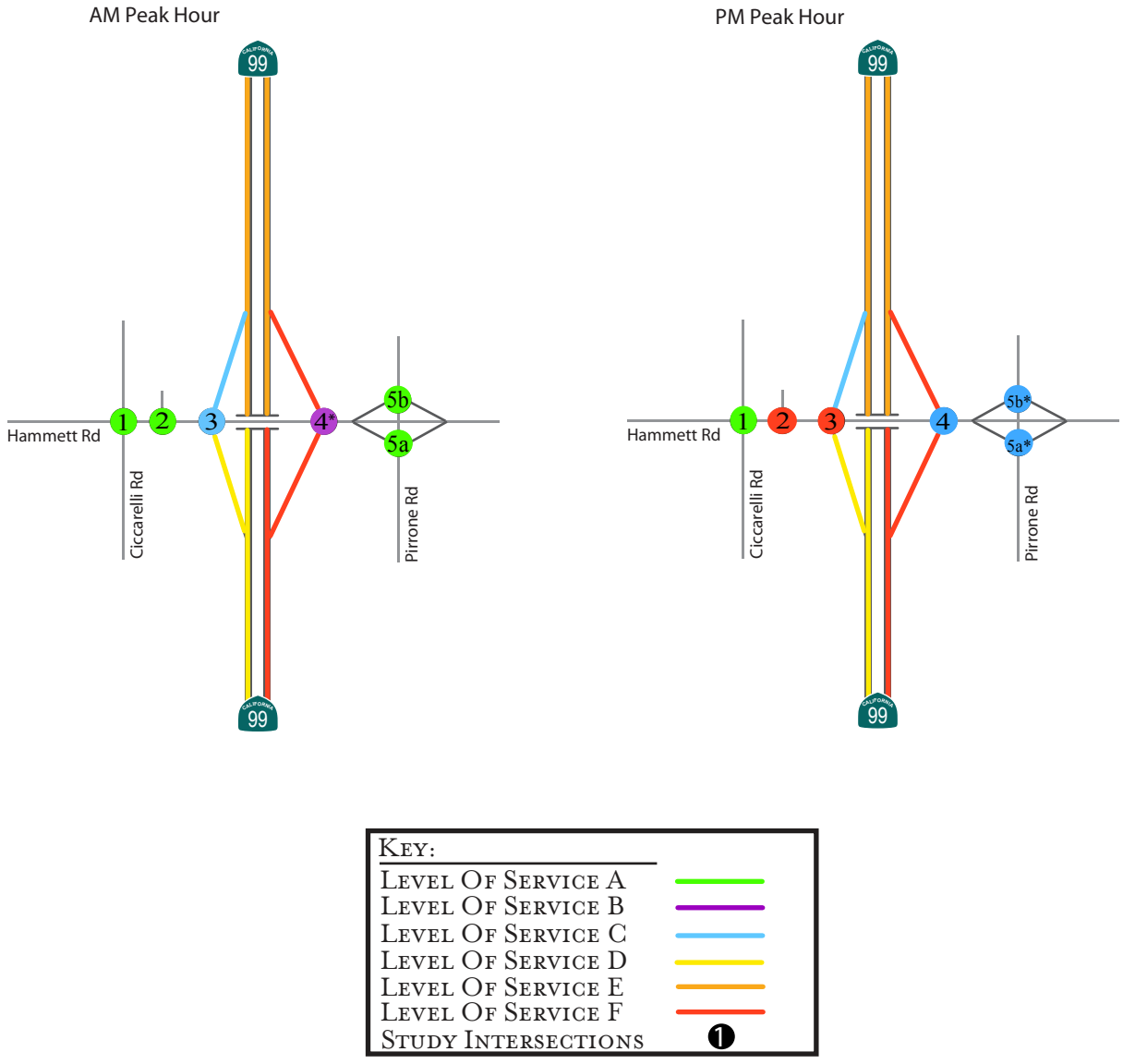


Figure 1.5
Hammett Levels of Service - No Build Alternative Year 2015
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

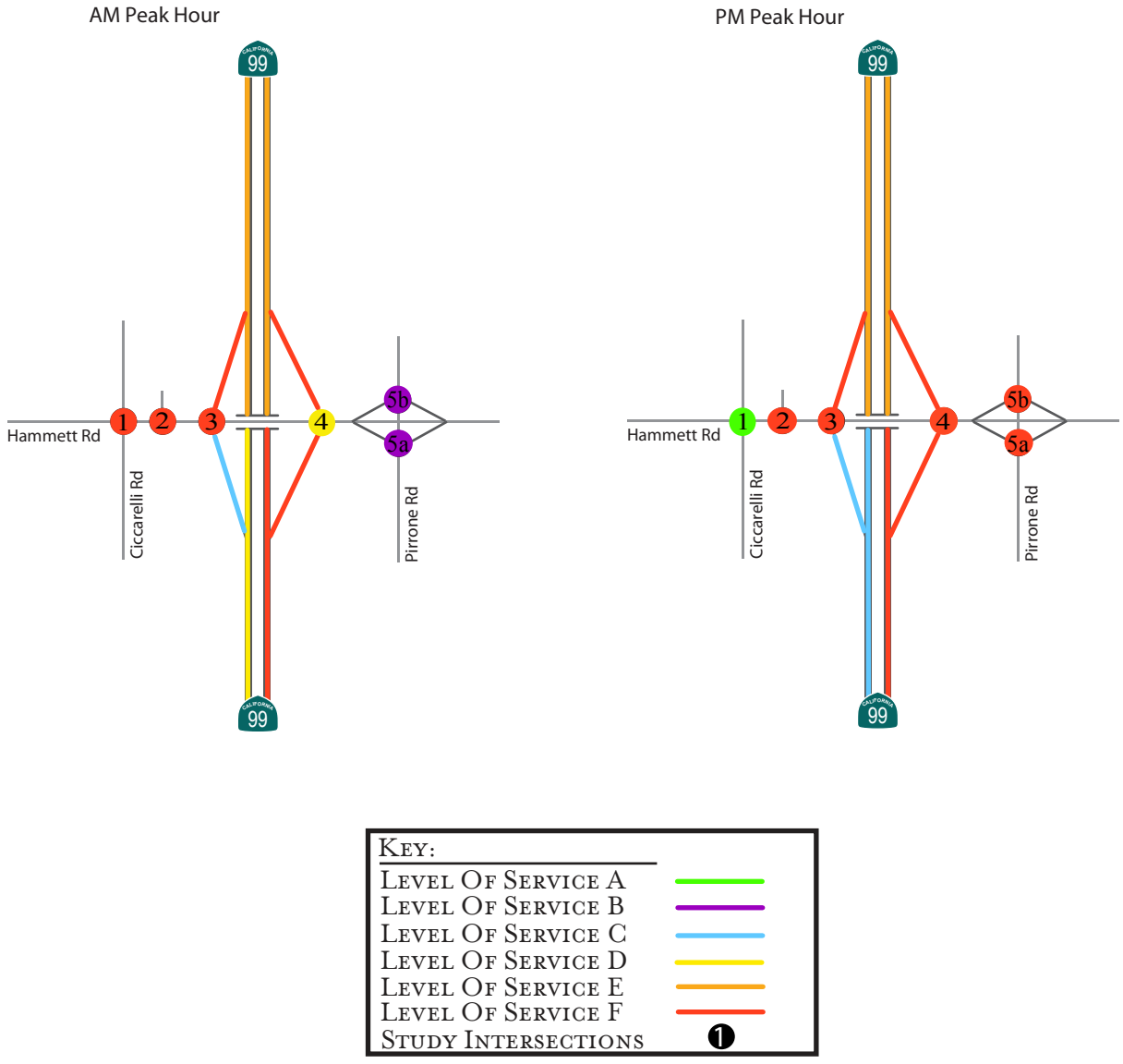


Figure 1.6
Hammett Levels of Service - No Build Alternative Year 2035
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

Growth proposed in the Salida Community Plan

The demand for transportation improvements within the area is generated by planned development in the Salida/Stanislaus County from the Salida Community Plan. The County of Stanislaus adopted an updated General Plan in 1994, creating a land use blueprint for long-term growth. The General Plan was updated in 2000 to include the Salida Community Plan, which allows substantial amounts of new residential, commercial, and office development in Stanislaus County. The current Salida Community Plan was updated in 2007. According to the California Department of Finance, the County population is expected to increase by approximately 35% from 559,000 in 2010 to about 857,000 residents in 2030.

The Community of Salida is expected to experience substantial traffic growth. By 2035, growth proposed in the Salida Community Plan will include over 27,000 new jobs and over 5,000 new residential units. In addition, the connection of the proposed Salida Expressway with Hammett Road will bring additional regional traffic to the interchange. Adding to the regional transportation network, State Route 99 serves as a major route for vehicles in the Central Valley and an important truck route.

Traffic congestion on Hammett Road and State Route 99 occurs because it is a compact interchange. The non-signalized two-lane bridge and Hammett Road, combined with single lane on and off-ramps, provides inadequate capacity to accommodate any increased traffic volume traveling to and from State Route 99 during peak periods. The area is experiencing increased growth that will yield higher traffic volumes on the existing facility in the near futures.

As the Salida Community grows as a result of implementing development projects anticipated in the recent General Plan Update, the demand for transportation improvements will increase. Traffic generated by future projects and growth will need to utilize the State Route 99/Hammett Road interchange to access travel destinations in the region. The proposed improvements are consistent with the 2011 Stanislaus Council of Governments Regional Transportation Plan (adopted August 2010).

Current Deficiencies

The existing deficiencies include nonstandard features within the project limits as following:

- On mainline State Route 99 – Nonstandard vertical clearance at the Hammett Road overcrossing for the northbound direction on State Route 99.

- At local intersections – Nonstandard banking of the roadway along the horizontal curve on Hammett Road overcrossing of State Route 99.

1.3 Alternatives

This section describes the proposed action and the build alternative (Alternative 3) developed by Caltrans to address the project's purpose and need while avoiding or minimizing environmental impacts. Major features used for comparison included project cost, level of service and other traffic data, and specific environmental impacts.

Alternative 3 would be a modified hybrid diamond and partial cloverleaf that alters the geometries of the on- and off-ramps in both directions to conform to existing State Route 99 (see Figure 1.7). In addition to the build alternative, a No-Build Alternative has also gone forward for evaluation in this document.

This section describes Alternative 3 and explains why other alternatives were dropped from further consideration, and provides a comparison of how the alternative meets the purpose and need. Consideration of each alternative also includes input from other public agencies and the public.

1.3.1 Proposed Build Alternative

Alternative 3 is a hybrid diamond and partial cloverleaf (Type L-2 and L-9) interchange. The existing compact diamond interchange bridge will be replaced with a wider overcrossing bridge of State Route 99 (see Figure 1.7). The overcrossing bridge over the Union Pacific Rail Road will also be replaced with a wider bridge along with reconstruction of on and off-ramps and widening of Hammett Road. Sidewalk with chain link fence will be provided on the north side of the two bridges. The proposed project will connect to Hammett Road on the west and to the planned Hammett Road extension on the east. The new Hammett Road overcrossing over State Route 99 will be built with long span and sufficient to accommodate future widening on State Route 99.

Alternative 3 will include the following features:

- Hammett Road in the eastbound direction will have a right-turn pocket to the northbound State Route 99 loop on-ramp and three through lanes.
- Hammett Road in the westbound direction will have two right-turn lanes onto the northbound on-ramp and two through lanes.

- The northbound on-ramp will be widened to two lanes with ramp metering and a high-occupancy vehicle bypass.
- The northbound loop on-ramp will be a single lane on- ramp with metering and a high-occupancy vehicle bypass.
- The northbound stem off-ramp will be a single lane off-ramp that widens to two lanes, terminating in a left-turn lane and a right-turn lane onto Hammett Road eastbound.
- The southbound on-ramp will be widened to two lanes that will taper to a single lane with ramp metering and a high-occupancy vehicle bypass.
- The southbound off-ramp will be a single lane off-ramp that widens to two left-turn lanes, a shared of through/left turned lane and a right-turn lane at the Hammett Road intersection.

Traffic signals will be installed at the State Route 99/Hammett Road off- and on-ramp intersections. Roadway lighting will be provided on Hammett Road at the on- and off-ramps and intersections. Retaining walls will be required for the southbound off-ramp, southbound on-ramp and parts of Hammett Road.

Alternative 3 will add six new storm water basins. Basin Number 1 will be located to the south of Hammett Road, on the west side of the Union Pacific Rail Road line. To provide the space required for this basin, additional right-of-way will be acquired. Basin Number 2 will be located between the southbound on-ramp and the Union Pacific Rail Road line. Basin Number 3 will be located between State Route 99 and southbound off-ramp. Basin Number 4 will be located inside the northbound loop on-ramp. Basin Number 5 will be a modification of an existing basin located in the area enclosed by Route 99, Hammett Road and the northbound on-ramp. Basin Number 6 will be located on the south side of Hammett Road and to the east of the northbound on-ramp. Additional right-of-way will be required to provide the necessary space for this basin.

The project staging will allow the existing Hammett Road Interchange to remain open during construction. State Route 99 shoulders will be temporarily closed during the construction of the bridge replacement.

The estimated cost for Alternative 3 is 40.5 million.

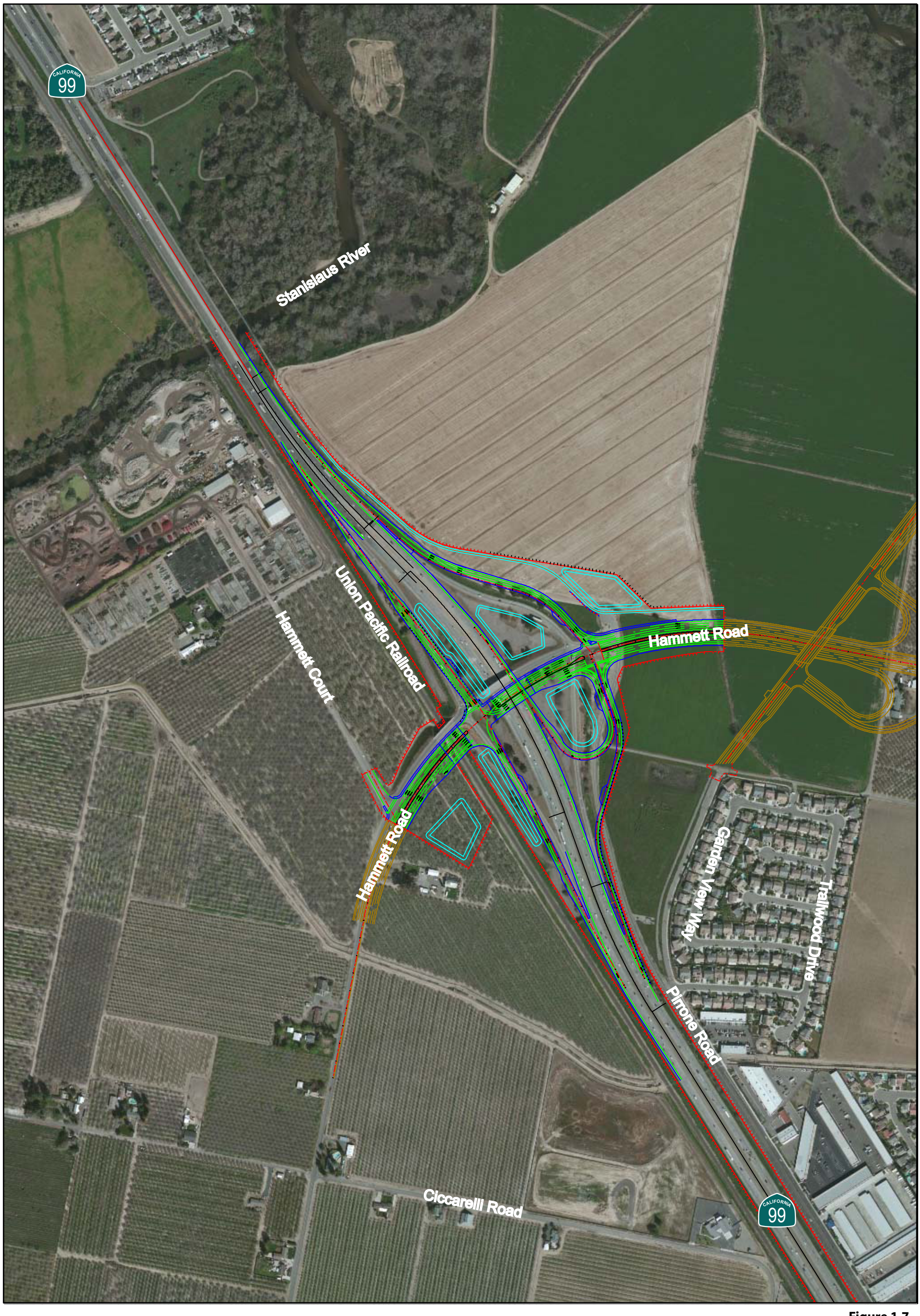


Figure 1.7
Alternative 3 Layout
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

1.3.2 No-Build Alternative

The No-Build Alternative for the State Route 99/Hammett Road Interchange would involve no change to the existing bridge or ramps for the year 2035 project horizon. The No-Build Alternative for the interchange does not meet the Purpose and Need as identified in Section 1.2. Year 2035 forecast traffic volumes would cause unacceptable levels of service at the interchange as well as significant traffic congestion at ramps, State Route 99, nearby roadway segments and intersections. The No-Build Alternative is inconsistent with local and regional planning, resulting in land use/circulation inconsistencies for the forecast planning horizon. None of the circulation improvements would occur (i.e., interchange improvements) and vehicular mobility would be constrained. As a result of congestion, local motorists would be delayed and confined to the project vicinity, with increasing difficulty occurring for motorists attempting to access the region through State Route 99. Finally, unacceptable traffic levels of service and congestion with this alternative would minimize the opportunities to provide a balanced transportation network for the region.

The No-Build Alternative would retain the existing interchange in its current configuration. The existing interchange can accommodate current traffic volumes but with increased growth in the area, it would be unable to adequately service future traffic volumes.

If the No-Build Alternative was selected, a number of environmental conditions would decline when compared with the build alternative. Traffic levels of service would degrade to unacceptable levels resulting in severe congestion and gridlock. Commensurate with congested conditions air quality would be degraded, potentially exceeding the federal and State standards for various emissions.

1.4 Comparison of Alternatives

Table 1.1 summarizes major potential impacts of Alternative 3 and the No-Build Alternative.

Table 1.1: Summary of Major Potential Impacts from all Alternatives

Potential Impact		Alternative 3	No-Build Alternative
Land Use	**Consistency with the Salida Community Plan**	Alternative is consistent with Salida Community Plan	Will not support Salida Community Plan Growth

Potential Impact		Alternative 3	No-Build Alternative
	Consistency with the Stanislaus General Plan	Alternative is consistent with General Plan	Will not support Stanislaus General Plan Growth
Parks and Recreation		Temporary Impact to Section 4(f) Lands	None
Growth		None (not growth inducing project)	None
Farmlands/Timberlands		None	None
Community Character and Cohesion		None	None
Relocation	**Business displacements**	None	None
	Housing displacements	None	None
	Utility service relocation	Potential utility relocations	None
Environmental Justice		None	None
Utilities/Emergency Services		Potential utility relocations	None
Traffic and Transportation/ Pedestrian and Bicycle Facilities		Temporary impact to pedestrian and bicycle facility (Section 4(f) Lands)	Traffic Levels of Service would continue to degrade
Visual/Aesthetics		None	None
Cultural Resources		None	None
Hydrology and Floodplain		None	None
Water Quality and Storm Water Runoff		Potential water quality impacts from construction	None
Geology/Soils/Seismic/ Topography		None	None
Paleontology		High potential for encountering paleontological resources	None
Hazardous Waste/Materials		Short-term construction related impacts	None
Air Quality		Short-term construction related impacts	Long-term air quality would degrade with continued congestion
Noise and Vibration		Potential increase in ambient noise levels/short-term construction related noise	None
Natural Communities		None	None

Potential Impact	Alternative 3	No-Build Alternative
Wetlands and other Waters	None	None
Plant Species	None	None
Animal Species	Loss of a approx 14 acres of potential habitat for Cooper's hawk, White-tailed kite, Merlin, Burrow owl and Tricolored blackbird habitat	None
Threatened and Endangered Species	Potential impact to Valley elderberry longhorn beetle habitat (Loss of 1 elderberry shrub) Loss of 25 acres of foraging habitat for Swainson's Hawk.	None
Invasive Species	construction-related activities would potentially promote the distribution of invasive plant species to off-site areas	None
Construction	Water quality and stormwater runoff, hazardous waste/materials, air quality, noise and invasive species	None
Cumulative Impacts	None	None

After comparing and weighing the benefits and impacts of all of the feasible alternatives, which are summarized in Table 1.1, the project development team has identified Alternative 3 as the preferred alternative, subject to public review. Final identification of a preferred alternative will occur after the public review and comment period.

After the public circulation period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, if no unmitigable significant adverse impacts are identified, Caltrans will prepare a Negative Declaration or Mitigated Negative Declaration. Similarly, if the Department determines the action does not significantly impact the environment, Caltrans, as assigned by the Federal Highway Administration, will issue a Finding of No Significant Impact in accordance with the National Environmental Policy Act.

1.4.3 Alternatives Considered But Eliminated From Further Discussion

The project development team studied two other viable alternatives (Alternative 1 and Alternative 2) for the State Route 99/Hammett Road interchange during the project-

initiation phase. Due to poor operational performance, considerable right-of-way impacts, and cost, Alternative 1 was dropped from further analysis. Due to considerable environmental impacts, the need provide an auxiliary lane on northbound Route 99 over the Stanislaus River, and cost, Alternative 2 was dropped from further analysis.

The following discusses the Project Study Report (PSR) alternatives.

Alternative PSR-1 – Widen Existing (Type L-1) Diamond Interchange.

This alternative was replaced with Alternative 3, which provides a new loop ramp for the northbound direction. Alternative 3 avoids the need to provide an auxiliary lane on the northbound Route 99 over the Stanislaus River.

Alternative PSR-2 – Construct New (Type L-8) Partial Cloverleaf Interchange.

This Alternative was rejected due to more significant cost and site impacts than Alternative 3.

Alternative PSR-3 – Type L-7 Interchange

This Alternative was rejected due to more significant cost and site impacts than Alternative 3.

1.5 Permits and Approvals Needed

The following permits, reviews, and approvals would be required for project construction:

Table 1.2: Permits and Approvals

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 consultation for Threatened and Endangered Species.	To be completed prior to finalizing the environmental document
California Department of Fish and Game	1602 Agreement for Streambed Alteration Section 2080.1. Agreement for Threatened and Endangered Species.	Initiate once the Final Environmental document is complete
Stanislaus County	Encroachment Permit allows building within the county right-of-way.	Contractor obtains permit prior to construction.

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from the build alternative, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow. Related regulatory information—the laws, regulations, and governmental and regulatory agencies involved for each impact area—is provided at the beginning of each section as needed.

As part of the scoping and environmental analysis conducted for the project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

- Farmland/Timberlands – As the surrounding lands currently used for agricultural purposes have been committed to commercial land uses in the Salida Community Plan according to the Farmland Protection Policy Act Rule 7, the proposed project will not impact land designated for agricultural purposes within the project limits (Farmland Conversion Assessment, April, 2010).
- Community Impacts – There is no community resulting in social or economic degradation, disruption of human-made resources, community cohesion, or the availability of public facilities and services (2011 Draft Project Report Route 99/Hammett Road Interchange).
- Relocations and Real Property Acquisition – There are no relocations as part of the project. (2011 Draft Project Report Route 99/Hammett Road Interchange).
- Environmental Justice – No minority or low-income populations that would be adversely affected by the proposed project have been identified. Therefore, this

project is not subject to the provisions of E.O. 12898. (2011 Draft Project Report Route 99/Hammett Road Interchange).

- Cultural Resources – No cultural resources were identified during analysis of the Architectural and Archaeological Areas of Potential Effect (Historic Property Survey Report, June, 2010; Archaeological Survey Report, June, 2010; Historical Resources Evaluation Report, April, 2010).
- Hydrology and Floodplain – No direct impact to the river are expected even though State Route 99 crosses the Stanislaus River (Floodplain Evaluation Report, April 2011).
- Natural Communities, Wetlands and Other Waters and Plant Species – There will be no impact to natural communities, wetlands and other waters and plant species (Natural Environment Study, May 2011).

2.1 Human Environment

This chapter explains the impacts that the project would have on the human environment in the project area. It describes the existing environment that could be affected by the project and the potential impacts from the proposed project.

2.1.1 Land Use

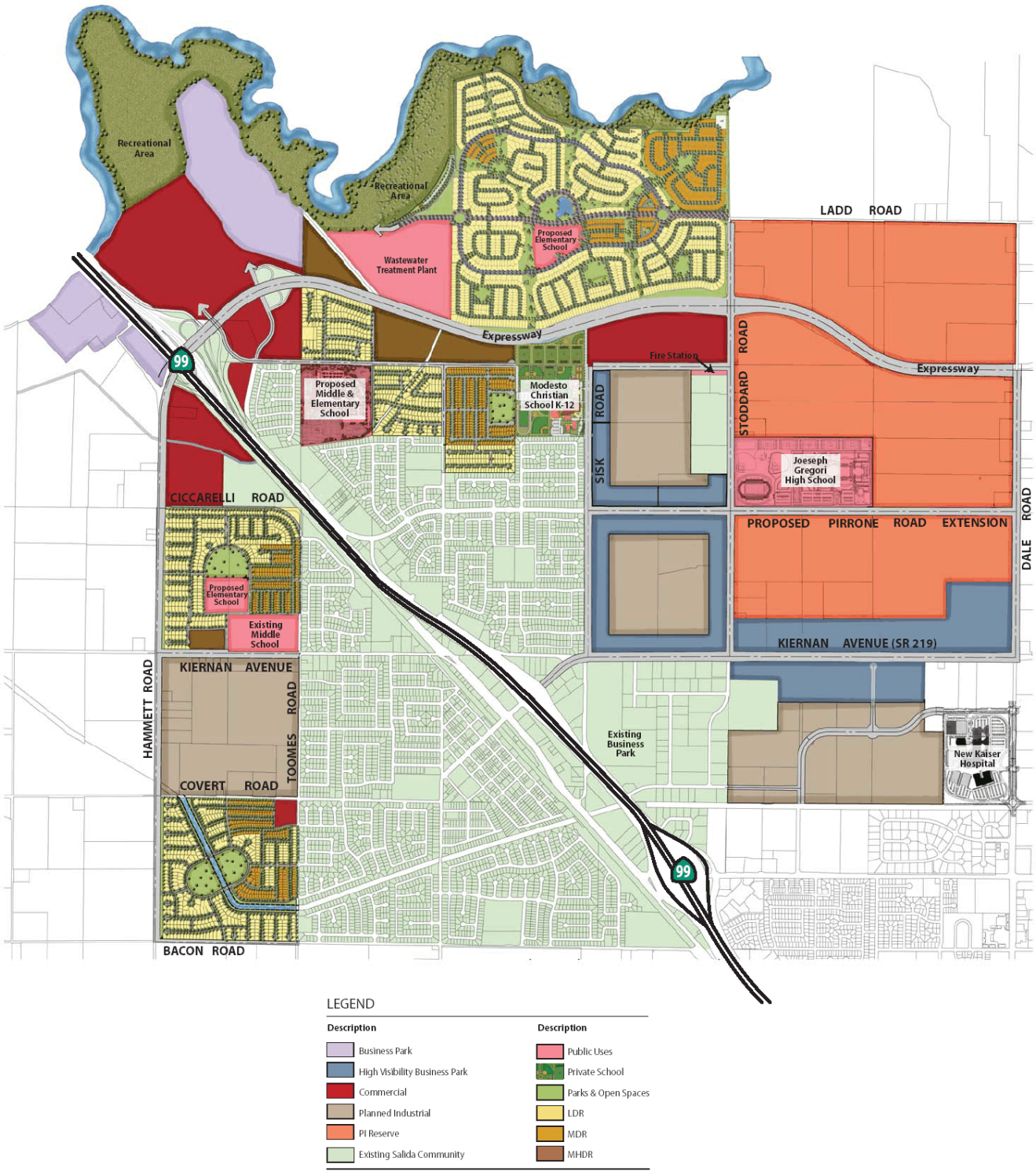
This section describes existing and proposed land uses on the project site and vicinity.

2.1.1.1 Existing and Future Land Use

Affected Environment

Stanislaus County adopted an updated General Plan in 2006 that provides a land use blueprint for long-term growth to at least 2035. The Stanislaus County General Plan provides a plan for the northern Salida area that allows substantial amounts of new residential, commercial, and office development. The Salida Community Plan, adopted August 7, 2007, is a blueprint for land use in the Salida area. Specifically, the Salida Community Plan, which is consistent with the planning uses in the Stanislaus County General Plan, foresees substantial residential and commercial growth in the northern and northeastern portions of the Salida community (see Figure 2.1).

As the community grows from implementing development included in the updated Stanislaus County General Plan, the demand for transportation improvement would increase. Traffic generated by future projects and growth in Salida and adjacent



SALIDA COMMUNITY PLAN

SALIDA, CA

SOURCE: County of Stanislaus General Plan

Figure 2.1
Salida Community Plan Plan
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

communities would need to utilize Hammett Road and State Route 99 to access travel destinations in the region.

The Stanislaus Council of Governments is the regional transportation-planning agency for the County and conducts regional transportation planning for the area. The County, the Stanislaus Council of Governments, and Caltrans are working cooperatively on long-range programs to address the transportation needs of the community and region.

The study area's existing land use consists primarily of agricultural uses. Per the Salida Community Plan, projected land uses consist of a mix of residential, commercial, industrial, and planned development. Future land use in the Salida Community is following a regional trend toward more residential and commercial development within the areas surrounding the project. Table 2.1 shows other proposed transportation projects in the project area.

Table 2.1: Proposed Transportation Projects

Name	Jurisdiction	Proposed Uses	Status
Claribel Road Widening	County of Stanislaus	Widen from 2-4/6 lanes with bike path	0% Built
State Route 99/State Route 219 (Kiernan Avenue) Widening	Caltrans	Widen from 2-4 lanes	100% Built
Pelandale Avenue/State Route 99 Interchange Widening/Reconstruction	City of Modesto	Widen from 4-6 lanes, replace ramps	0% Built
State Route 99/Kiernan Avenue Interchange Widening/Reconstruction	County of Stanislaus	Widen from 4-6 lanes, replace ramps	0% Built
State Route 219 (Kiernan Avenue) from State Route 99 to Stoddard Road	Caltrans	Widen from 4-6 lanes	0% Built
Sisk Road from State Route 219 (Kiernan Avenue) to Pirrone Road	County of Stanislaus	Widen from 2-4 lanes	0% Built
Sisk Road from Pelandale Avenue to State Route 219 (Kiernan Avenue)	County of Stanislaus	Widen from 2-4 lanes	0% Built
Stoddard from State Route 219/Kiernan Avenue to Ladd Road	County of Stanislaus	Widen from 2-4 lanes	0% Built

One other project that is at the conceptual stage of development is the North County Corridor Project (identified in the Salida Community Plan as "Expressway"), would provide interregional connectivity from State Route 99 easterly to approximately 7.7 miles east of the State Route 120/108 junction. It is anticipated that the ultimate facility type would be a four to eight-lane controlled access highway. Using concepts from the North County Corridor feasibility study, one of the alternatives would connect to Hammett Road as a local road interchange modification. A concept that utilizes the Highway Design Manual standards for local street interchange spacing would function as a regular highway and would not require a design exception on State Route 99. However, connecting the North County Corridor as an expressway to State Route 99 will require a design exception for non-standard interchange spacing between State Route 99/Hammett Road and State Route 99/State Route 219 (Kiernan Avenue).

Environmental Consequences

Land would have to be acquired for the build alternative to accommodate interchange improvements. No substantial impacts to land use would result from interchange re-construction because the project is consistent with local planning for the area. The project also improves roadway conditions that support the current and future growth within the project.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.1.2 Consistency with State, Regional, Local Plans and Programs

Affected Environment

The State Route 99/Hammett Road Interchange is located in Salida, which is part Stanislaus County. State Route 99 is a state highway that runs north to south through the Central Valley. The project is within the jurisdiction of the proposed Salida Community Plan and the Stanislaus County General Plan. The project is also within the jurisdiction of the Stanislaus Council of Governments 2011 Regional Transportation Plan. Lastly, because the interchange connects with a state highway and has federal funding, the project is subject to Caltrans and Federal Highway Administration guidelines.

Regional

Stanislaus Council of Governments Regional Transportation Plan - The Regional Transportation Plan is the coordinated long-range transportation plan for the region's nine cities and the unincorporated county. The Stanislaus Council of Government's

long-range transportation plans for the region are stated within the Regional Transportation Plan. The Regional Transportation Plan includes an assessment of overall growth and economic trends in the region and provides a strategic direction for transportation capital investments.

Local

Stanislaus County General Plan - The Stanislaus County General Plan outlines the seven mandatory planning elements (land use, circulation, housing, open space, conservation, safety, and noise) outlined in Section 65300 of the California Government Code. This information provides the long-term land-use planning structure for the county.

Salida Community Plan - The Salida Community Plan, part of the Stanislaus County General Plan, is a long-term planning document that focuses on land-use planning for the Salida community.

Environmental Consequences

Land would have to be acquired for the build alternative to accommodate interchange improvements. Alternative 3 would convert 15 acres of existing agricultural to urban (highway) uses. Existing land uses for these right-of-way allocations include agricultural, commercial, industrial, and residential uses. Farmland areas to be acquired during right-of-way acquisition are currently zoned for agricultural purposes, but the Stanislaus County General Plan and Salida Community Plan have designated these areas as a business park. Right-of-way relocation/compensation practices would be followed and planned characteristics of the roadway corridor would not be altered. No substantial impacts to land use would result from construction of the proposed project because the project is consistent with local planning for the area and would not cause land use inconsistencies. The project also would improve roadway conditions that support the current and future land use activities within the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures required.

2.1.2 Parks and Recreational Facilities

Regulatory Setting

Section 6009(a) of Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users amended Section 4(f) legislation at 23 United State Code 138 and

49 United States Code 303 to simplify the processing and approval of projects that have only de minimis impacts on lands protected by Section 4(f).

Federal Highway Administration's final rule on Section 4(f) de minimis findings is codified in 23 Code of Federal Regulations 774.3 and 23 Code of Federal Regulations 774.17.

In the first substantive revision to Section 4(f) since its enactment, Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users amended the law to simplify the processing and approval of projects that have only de minimis impacts on lands protected by Section 4(f). This revision provides that once the U.S. Department of Transportation determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a de minimis impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. Responsibility for compliance with Section 4(f) have been assigned to the Caltrans pursuant to the memorandum of understanding under Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users Sections 6004 and 6005, including determinations and approval of Section 4(f) evaluations as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Affected Environment

Section 4(f) de minimis for this project will be circulated simultaneously with the draft environmental document. Concurrence with the Section 4(f) de minimis from the City of Ripon is expected after circulation of the draft environmental document.

The only Section 4(f) resource that will be impacted by the proposed project is a recreational bicycle path. The path is located on right-of-way that is owned by Caltrans, however, the path is owned and maintained by the City of Ripon. The path begins at the junction of Pirrone Road and Hammett Road on the east side of State Route 99. The path crosses through the project site, running roughly southeast to northwest, over the Stanislaus River via a historic pedestrian bridge to the Army Corps Park Ripon River Crossing.

Environmental Consequences

The proposed project will widen Hammett Road to six lanes, and construct a new northbound onramp structure and associated drainage basins on the east side of State Route 99. These improvements will shift the path approximately 200 feet at its

outermost relocation. Realignment of the recreational use pedestrian and bicycle path will fall between the proposed onramp structure and the most easterly drainage basin. The connection to the Army Corps Park Ripon River Crossing will remain in place. Activities associated with the path will not be affected, as the existing path will remain open during construction activities whenever feasible. The new path will be constructed before the existing path is demolished. The path will continue to be owned and maintained by the City of Ripon.

Avoidance, Minimization, and/or Mitigation Measures

The following measures will be undertaken to reduce potential impacts to the Section 4(f) resource to the maximum extent practical:

- The project applicant will ensure that the recreational use pedestrian and bicycle path remain open to bicyclists and pedestrians during all stages of project construction. If necessary, an interim bicycle path will be constructed if it is infeasible to keep the existing path open before the new path is constructed.
- If construction equipment is moved across the recreational use pedestrian and bicycle path during construction, the contractor is required to have flaggers on the bicycle path to ensure the safety of pedestrians and bicyclists.

2.1.3 Growth

Regulatory Setting

The Council on Environmental Quality regulations, which implement the National Environmental Policy Act of 1969, requires evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The Council on Environmental Quality regulations, 40 Code Federal Regulations 1508.8, refers to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act also requires the analysis of a project's potential to induce growth. California Environmental Quality Act guidelines, Section 15126.2(d), require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

Affected Environment

From 2000 to 2010, Stanislaus County experienced a population growth of 15.1 percent (U.S. Census Bureau, 2010).

The Central Valley has long been known for relatively affordable housing compared with much of the rest of California (California Association of Realtors 2007). For example, the median home price for Santa Clara County is 2.4 times higher than housing in Stanislaus County.

Since 2006, a significant downturn in residential construction throughout Stanislaus County has resulted in a significant number of employment layoffs, reduced purchase of materials and supplies, and effects to related services and suppliers of household goods.

Despite the current economic climate, certain sectors remain strong, including agriculture, the core industry in the county. Also, with a growing skilled labor force (college degrees have increased by 16.3 percent since 2000 [U.S. Census Bureau, 2010]), and with lower housing prices resulting in improved affordability, Stanislaus County is poised for significant growth in the future.

Environmental Consequences

A “first cut screening” was developed to help determine the likely growth-potential of the project and whether further analysis was necessary (see Table 2.2).

Table 2.2: Growth Inducing Impacts Screening Analysis

Screening Factor	Discussion
Accessibility	The proposed project would provide an improved connection to existing roadways only and would not increase or provide new access to other parts of the project area such as non-roadway uses/lands, extend utility infrastructure, or increase utility capacity. New roadways would be introduced to the project area but would serve solely as access points to existing roadways. In the proposed project, effects related to accessibility would be minimal.
Project type, location, and growth pressure	The project area is an urban area surrounded by rural land uses. Transportation projects in urban areas surrounded by rural land uses have a higher potential to cause growth-related impacts as population density and economic activity generate higher demands for conversion of undeveloped lands to developed uses. The proposed project is being built to meet existing demand and projected future growth based on the Stanislaus County General Plan, Salida Community Plan, and Stanislaus Council of Governments 2011 Regional Transportation Plan. Neither the Stanislaus County General Plan nor the Stanislaus Council of Governments 2011 Regional Transportation Plan have forecasted any potential growth as a result of the proposed project. The proposed project accommodates growth forecasts developed for these plans to ensure that circulation along State Route 99 and the roadways and segments adjacent to the proposed project would keep pace with population increases. The proposed project will not be built prior to the development of land uses designated in the Salida Community Plan because the project will be partially funded by land development fees.
Foreseeable growth	The proposed project would not directly affect growth within the Salida community or Stanislaus County. The proposed project would generally improve regional transportation along the State Route 99 corridor and the roadways and segments adjacent to the interchange in a manner consistent with the Stanislaus County General Plan, Salida Community Plan, and Stanislaus Council of Governments 2011 Regional Transportation Plan.
Growth and its impact on resources	Growth would not occur without implementation of the Stanislaus County General Plan, the Salida Community Plan, and Stanislaus Council of Governments 2011 Regional Transportation Plan. The proposed project is needed to accommodate the growth forecast in these plans and therefore, the project would not induce or encourage growth. As such, no growth-inducing impacts are anticipated.

Based on the results of the screening factors above, the proposed project would not induce growth, and therefore no further analysis is required.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project and area-wide cumulative projects would not stimulate unplanned residential or commercial growth. As the proposed project is not growth inducing, the project would not put pressure on or cause impacts to the environmental resources of concern. No avoidance, minimization, and/or mitigation measures are proposed because growth impacts would be minimal.

2.1.4 Relocations and Real Property Acquisition

Regulatory Setting

Caltrans' Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations, Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix E for a summary of the Relocation Assistance Program.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 United States Code 2000d, et seq.). See Appendix B for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

A Right of Way Data Sheet was prepared for Alternative 3 and approved by Central Region Right of Way on July 26, 2011. The State Route 99/Hammett Road Interchange area consists primarily of agricultural uses with a few single-family residences and farm operations in the area.

Environmental Consequences

The proposed project requires the acquisition of additional permanent and temporary right of way. Alternative 3 will require the acquisition of 19.88 acres of farmland and require no relocation.

Based on a review of available agricultural properties in the Ripon, Salida, and surrounding Stanislaus County area, a sufficient supply appears to exist of suitable replacement sites for sale or lease.

All persons who are moving because of the proposed project would be contacted by a Relocation Agent to ensure that eligible displaced residents receive their full relocation benefits, including advisory assistance, and that all activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources would be available to all displaced residents free of discrimination. Tenant occupants of properties to be acquired are contacted soon after the first written offer to purchase and also are given a detailed explanation of Caltrans' Relocation Program Property

Acquisition Policies Act of 1970, as amended. Caltrans would provide relocation advisory assistance to any person, business, farm, or non-profit organization displaced as a result of acquisition of real property for public use.

Avoidance, Minimization, and/or Mitigation Measures

- Caltrans would provide relocation assistance to displaced residents in accordance with the Business and Farm Relocation Assistance Program and the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970 (see Appendix E). In accordance with federal and state laws and Caltrans policy, a relocation plan would be developed and used for the residents and businesses displaced under the proposed project.

2.1.5 Utilities/Emergency Services

Affected Environment

The City of Modesto supplies water to the Salida community area. Numerous private wells also serve the community.

About 26 percent of the water supplied to the system originates from wells, with the remainder being treated surface water supplied by the City of Modesto. The City of Modesto Water Operations Division supplies drinking water to residents in Modesto, Empire, Salida, Waterford, Hickman, Grayson, Del Rio, parts of Ceres and Turlock, and county areas adjacent to the city system. For many years, Modesto's water customers received all of their water from wells. To continue delivering clean, dependable drinking water to customers, the city partnered with the Modesto Irrigation District in the early 1990s and in 1995 acquired the Del Este Water Company. Together, the city and irrigation district consolidated resources to build a 30-acre plant at Modesto Reservoir to treat surface water from the Tuolumne River.

Wastewater collection and treatment are provided by the Salida Sanitary District. The Regional Wastewater Control Facility is in Salida on Pirrone Road. The district treats wastewater using an intermittent-cycle extended-aeration system. Organisms that naturally live in the wastewater are allowed to increase in number through extended aeration in specially designed holding tanks. These organisms decompose the complex organic substances in the wastewater.

American Telephone and Telegraph Company provides telephone service in the community of Salida. Communications that include a mix of fiber optics, copper

cable, and their supporting facilities are routed underground in public utility easements following the street alignments.

Electric and natural gas are services are interwoven into the proposed project area and are provided by the Pacific Gas and Electric Company. Electric and gas facilities are routed above and below ground as needed in public utility easements. The Pacific Gas and Electric Company natural gas pipeline is a 12 inch steel transmission facility that was placed in 1969. North of Hammett Road the pipeline is on private property in an exclusive utility easement of approximately 15 feet northwest of the existing bike trail/Caltrans right-of-way. South of Hammett Road the natural gas pipline is in the public right-of-way on the northwest side of Pirrone Road.

The Union Pacific Railroad traverses north-south through the area, crossing Broadway Avenue just west of Salida Boulevard. The average number of trains per day is 19. The County of Stanislaus has a future encroachment permit project that will restripe and provide signals at the intersections when traffic warrants. No railroad grade separation is planned by either the County or the Union Pacific Railroad at this location.

The Salida Fire Protection District provides fire protection, paramedic emergency medical service, rescue, and response to hazardous materials incidents to the Community of Salida. The Salida Fire Protection District is a combination department consisting of both career and volunteer personnel. The Salida Fire Protection District is currently quartered in two modern stations. Station 1 is located at E. Broadway and Salida Blvd in Salida and Station 2 is located at Tully Road and Ladd Road in the Del Rio area.

Police protection services are provided by the Stanislaus County Sheriff’s Department and California Highway Patrol. The Sheriff’s department patrols the county in six geographical sectors. A sub-station is located in each of these sectors and a Patrol lieutenant is assigned to each of these command sectors. The Central Command sector has two sub-stations, one in the community of Empire and the other sub-station is located in the City of Hughson, which contracts with the Sheriff’s Department for law enforcement services. The California Highway Patrol Central Division provides law enforcement services for California State Highways for the project area. The nearest California Highway Patrol area office is the Modesto office.

Environmental Consequences

Utility relocations would be required as a result of the proposed project. The American Telephone and Telegraph Company has underground facilities that would be affected by the project. The Pacific Gas and Electric Company has a distribution gas pipeline that would be affected by the project. Modesto Irrigation District has aerial distribution facilities that would be affected by the project. The Pacific Gas and Electric Company gas pipeline, Modesto Irrigation District distribution facilities, and American Telephone and Telegraph Company conduit structures are located on exclusive easement on the east side of State Route 99 and will require an easement.

Utility relocations are considered minor and will occur at the same time highway improvements are implemented and would create minimal customer disruption within the area surrounding the proposed project. Pacific Gas and Electric will have to relocate approximately 3,400 feet of the natural gas pipeline. The cost of this relocation is included in the project cost.

Union Pacific Railroad facilities will require a wider bridge over the railroad at the Hammett Road Interchange, as well as new maintenance agreements. No branch lines or spurs are affected. Currently, the clearance over the tracks accommodates the Union Pacific Railroad's minimum vertical clearance. During the project construction there will be a temporary reduction in vertical clearance to 21 feet for false work (scaffolding) during construction of the structure. Rail operations will not be affected during construction phase.

Emergency services may have minimal delays as a result of the proposed project. Temporary lane closures are expected during the construction phase, which would result in minimal delays to emergency services. Once construction is complete, the congestion will lessen, and traffic level of service would improve which would result in overall benefit in emergency services response times.

Avoidance, Minimization, and/or Mitigation Measures

A number of utilities for water, wastewater, storm drainage, electric and natural gas services, and other services are in the project area. During the construction phase of the proposed project may require the relocation of utilities. These relocations should not present any unusual situations and are considered routine for roadway construction projects. The following minimization measures would reduce impacts to utilities and emergency services:

- The project would be designed to minimize conflicts with utilities in the project area.
- The project would relocate those utilities made difficult to reach for maintenance or access purposes as a result of the project.
- The contractor would be required to notify utility users of any short-term, limited interruptions of service.
- If unexpected underground utilities were encountered, the contractor would work with the utility provider to develop plans to address the utility conflict, protect the utility if needed, and limit service interruptions.
- The contractor would circulate construction schedules and traffic control information to county emergency-service providers at least one to two weeks before any road closures.
- The Traffic Management Plan would address redirecting emergency services during temporary lane closures. Please see mitigation measures in Section 2.1.5, Traffic and Transportation/Pedestrian and Bicycle Facilities.

2.1.6 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

Caltrans, as assigned by Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the negative effects on all highway users who share the road.

Caltrans is committed to carrying out the 1990 Americans with Disabilities Act by building transportation facilities that provide equal access for all persons. The same degree of convenience, accessibility, and safety available to the general public will be provided to persons with disabilities.

Affected Environment

A Traffic Operations Report, March, 2010 and Draft Project Report, March, 2012 were prepared for this. Figure 2.2 shows all intersections, mainline and ramps analyzed in this section.

Accident History

Caltrans provided accident data for State Route 99 through the study corridor and the interchange as shown in Table 2.3 below. This data shows that a total of 74 accidents were reported on the mainline during the three-year period from April 1, 2007 to March 31, 2010. At the ramps, a total of 9 accidents were reported.

The total accident rates within the project area on the northbound off-ramp and southbound on- and off- ramp are higher than the state average for similar interchanges. It is anticipated that safety will be enhanced with this project, due to the improvement of interchange geometry. The proposed project will increase the storage capacity of the off- and on-ramps, install signal control, and prevent vehicle queues (a line of waiting vehicles) from backing up on to State Route 99 and Hammett Road.

Table 2.3: Accident History

Facility	Number of Accidents			Accident Rate (accidents per million-vehicle-miles)					
				Actual			State Average		
	Total	Fatal	Fatal + Injury	Fatality	Fatal + Injury	Total	Fatality	Fatal + Injury	Total
SR-99 (PM R023.900 to PM R024.749)	74	0	19	0	0.19	0.72	0.009	0.27	0.83
NB Off-Ramp to Hammett	2	0	0	0	0	3.51	0.002	0.26	0.75
SB On-Ramp From Hammett	1	0	0	0	0	1.79	0.004	0.42	1.20
NB On-Ramp From Hammett	1	0	0	0	0	0.38	0.002	0.26	0.75
SB Off-Ramp To Hammett	5	0	1	0	0.37	1.85	0.007	0.37	1.20

Note: Shading denotes locations that exceed the statewide average.
Source: Caltrans District 10 TASAS data between 04/01/2007 and 03/31/2010 for Route 99 mainline and ramps.

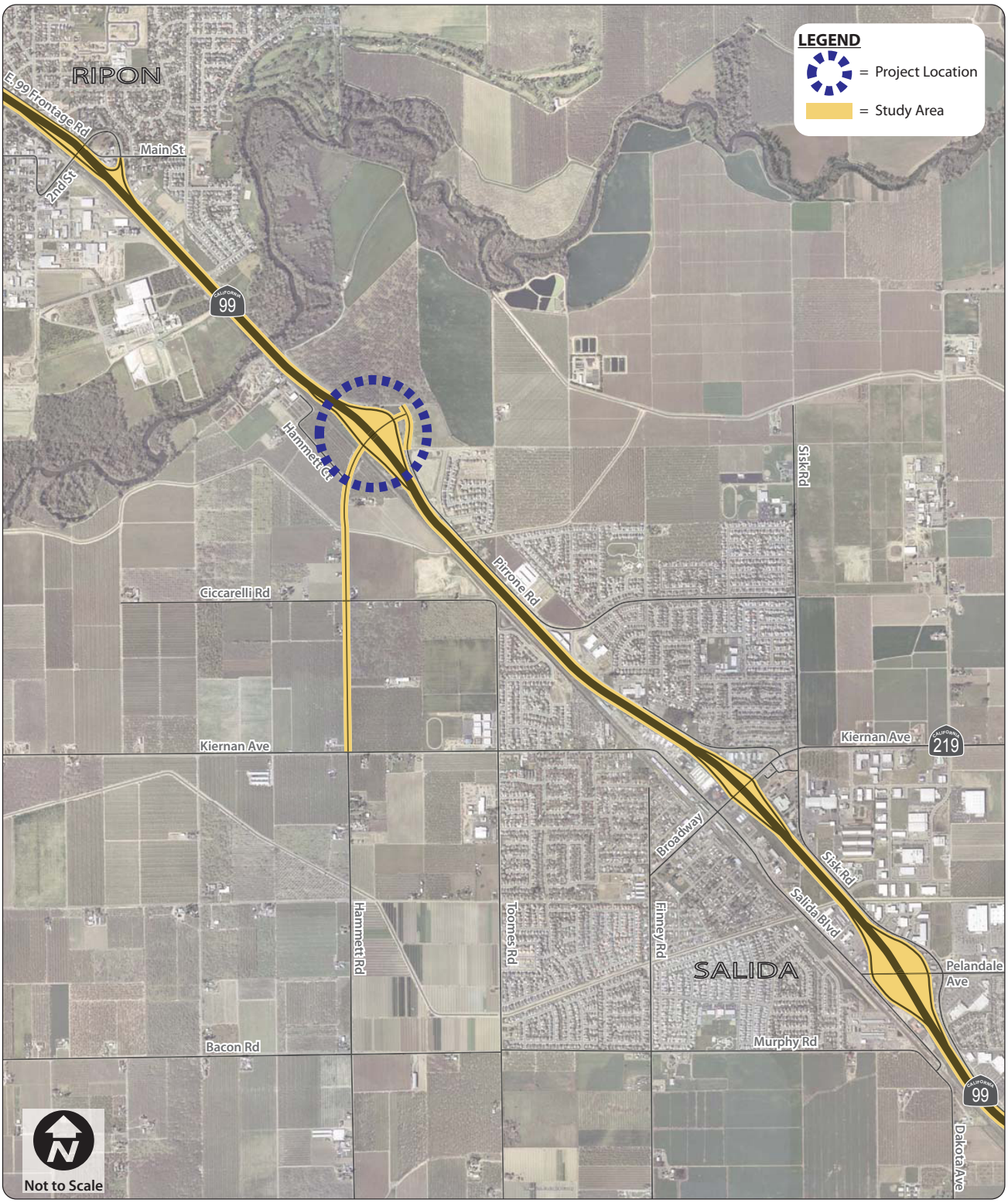


Figure 2.2
Study Intersectios and Roadway Segments
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

Intersection Operations

Existing delays at the intersection on the Hammett Road interchange do not currently exceed County and Caltrans thresholds for level of service. Projected future regional and local growth will bring additional traffic demand and potentially cause exceedances.

Under the No Build Alternative in 2035, several intersections are anticipated to operate at unacceptable levels of services (Level of Service E or worse) during the AM and/or PM peak hour (Table 2.4).

Mainline and Ramp Operations

State Route 99 mainline and Hammett Road interchange ramp operations currently do not exceed County and Caltrans thresholds for level of service. By 2015, the traffic analysis shows that, without ramp improvement, several intersections within the study area are expected to operate at unacceptable levels of service with the existing interchange. Additionally, vehicle queues at the ramp terminal intersections will spill back onto Route 99 in both directions.

Under the No Build Alternative in 2035, several sections of the mainline and ramp operations are anticipated to operate at unacceptable levels of services (Level of Service E or worse) during the AM and/or PM peak hour (Tables 2.5, 2.6, 2.7 and 2.8).

Environmental Consequences

The following discussion compares the potential effects of constructing the build alternative with the No Build Alternative.

Impacts to Intersection Operations

As shown in Table 2.4, Alternative 3 would reduce system-wide vehicle hours of delay compared to the No Build Alternative. All intersections would operate at acceptable levels of service under the build alternatives.

Table 2.4: 2035 Intersection Analyses

Intersection	Traffic Control	Peak Hour	No Build		Alternative 3	
			Control Delay	LOS	Control Delay	LOS
1. Ciccarelli Road / Hammett Road	SSSC[1]	AM	**>100 (>100)**	**F (F)**	2 (7)	A (A)
		PM	2 (5)	A (A)	2 (8)	A (A)
2. Hammett Court / Hammett Road	SSSC[1]	AM	**>100 (>100)**	**F (F)**	2 (3)	A (A)
		PM	**>100 (>100)**	**F (F)**	2 (8)	A (A)
3. State Route 99 Southbound Ramps / Hammett Road	Signal[2]	AM	**>100**	**F**	19	B
		PM	**>100**	**F**	35	C
4. State Route 99 Northbound Ramps / Hammett Road	Signal[2]	AM	43	D	6	A
		PM	**>100**	**F**	5	A
5a. Pirrone Road / Salida Expressway Westbound Ramps[3]	Signal[2]	AM	13	B	21	C
		PM	**>100**	**F**	19	B
5b. Pirrone Road / Salida Expressway Eastbound Ramps[3]	Signal[2]	AM	14	B	24	C
		PM	**>100**	**F**	25	C

Notes: Results based on SimTraffic simulation of 10 runs. LOS = level of service

[1]Signalized intersection level of service based on weighted average control delay per vehicle, according to the *2000 Highway Capacity Manual*.

[2]Sidestreet stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the *2000 Highway Capacity Manual* in the notation: average (worst approach).

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

Impacts to Mainline and Ramp Operations

In opening year (2015) Alternative 3 is not intended to increase capacity on the mainline; however, some of the improvements would benefit mainline operations. The proposed improvements to the southbound off-ramp under the Build alternatives would eliminate the vehicle queue spillback impacts on the mainline that are anticipated under No Build conditions in the PM peak hour.

In all scenarios, State Route 99/Hammett Road interchange would be reconfigured from two lanes to six lanes by adding two lanes in each direction (eastbound and westbound) from Ciccarelli Road and Pirrone Road in northern Stanislaus County. The project would add a northbound loop-on ramp in addition to the northbound diamond on-ramp. Each mainline segment, ramp junction, and weaving section on

State Route 99 was analyzed based on the design year (2035) volumes and lane configurations. Tables 2.5, 2.6, 2.7 and 2.8 shows that the proposed project would have no effect on the mainline operations due to the queuing caused by insufficient mainline capacity. Some ramp operations would be improved in the southbound direction in both the AM and PM peak hours. Alternative 3 eliminates this merge by providing a loop on-ramp and separating eastbound and westbound Hammett Road traffic using the northbound State Route 99 on-ramp.

Under the 2035 No Build Alternative, a major bottleneck would occur at the Stanislaus/San Joaquin County line between the Second Street and Hammett Road interchanges during the AM and PM peak hour. State Route 99 at the Stanislaus River Bridge would become congested for vehicles trying to cross the Stanislaus River because there are very few alternate routes. Queues from this bottleneck would extend into upstream segments of State Route 99 for up to 13 miles, beyond the limits of the study area.

Table 2.5: 2035 AM Peak Hour Northbound Mainline and Ramp Junction

Location	Number of Lanes	Section Type	No Build		Alternative 3	
			Density[1]	LOS	Density[1]	LOS
South of Pelandale Avenue	4	Mainline	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Pelandale Avenue	2	Diverge	**In Queue**	**F**	**In Queue**	**F**
On-Ramp from Pelandale Avenue	1	Merge	**In Queue**	**F**	**In Queue**	**F**
Between Pelandale Ave. and Kiernan Ave.	4 + Aux	Weave	**In Queue**	**F**	**In Queue**	**F**
On-Ramp to Kiernan Avenue	2	Diverge	**In Queue**	**F**	**In Queue**	**F**
On-Ramp from Kiernan Avenue	1	Merge	**In Queue**	**F**	**In Queue**	**F**
Between Kiernan Ave. and Hammett Road	4	Mainline	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Hammett Road	1	Diverge	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Hammett Road Eastbound	1	Diverge	N/A	N/A	N/A	N/A
Off-Ramp to Hammett Road Westbound	1	Diverge	N/A	N/A	N/A	N/A
On-Ramp From Hammett Road	2	Merge	**In Queue**	**F**	N/A	N/A
On-Ramp From Eastbound Hammett Road	2	Merge	N/A	N/A	**In Queue**	**F**
On-Ramp from Westbound Hammett Road	2	Merge	N/A	N/A	**In Queue**	**F**
Between Hammett Rd. and Main St./2nd St.	3	Mainline	**Bottle-neck**	**E**	**Bottle-neck**	**E**
Off-Ramp to Main Street/2nd Street	1	Diverge	**41**	**E**	**41**	**E**
On-Ramp from Main Street/2nd Street	1	Merge	31	D	31	D
North of Main Street/2nd Street	3	Mainline	31	D	31	D

Note: **Shaded cells** represent mainline segments, which are in queue due to downstream bottlenecks not captured by the HCM analysis, resulting in LOS F operations. **Bold** denotes LOS E or F operations.

[1]Density is in passenger cars per mile per lane.

N/A = Not Applicable

LOS = level of service

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

Table 2.6: 2035 PM Peak Hour Northbound Mainline and Ramp Junction

Location	Number of Lanes	Section Type	No Build		Alternative 3	
			Density[1]	LOS	Density[1]	LOS
South of Pelandale Avenue	4	Mainline	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Pelandale Avenue	2	Diverge	**In Queue**	**F**	**In Queue**	**F**
On-Ramp from Pelandale Avenue	1	Merge	**In Queue**	**F**	**In Queue**	**F**
Between Pelandale Ave. and Kiernan Ave.	4 + Aux	Weave	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Kiernan Avenue	2	Diverge	**In Queue**	**F**	**In Queue**	**F**
On-Ramp from Kiernan Avenue	1	Merge	**In Queue**	**F**	**In Queue**	**F**
Between Kiernan Ave. and Hammett Road	4	Mainline	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Hammett Road	1	Diverge	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Hammett Road Eastbound	1	Diverge	N/A	N/A	N/A	N/A
Off-Ramp to Hammett Road Westbound	1	Diverge	N/A	N/A	N/A	N/A
On-Ramp From Hammett Road	2	Merge	**In Queue**	**F**	N/A	N/A
On-Ramp From Eastbound Hammett Road	2	Merge	N/A	N/A	**In Queue**	**F**
On-Ramp from Westbound Hammett Road	2	Merge	N/A	N/A	**In Queue**	**F**
Between Hammett Rd. and Main St./2nd St.	3	Mainline	**Bottle-neck**	**E**	**Bottle-neck**	**E**
Off-Ramp to Main Street/2nd Street	1	Diverge	**41**	**E**	**41**	**E**
On-Ramp from Main Street/2nd Street	1	Merge	30	D	30	D
North of Main Street/2nd Street	3	Mainline	28	D	28	D

Note: **Shaded cells** represent mainline segments, which are in queue due to downstream bottlenecks not captured by the HCM analysis, resulting in LOS F operations. **Bold** denotes LOS E or F operations.

[1]Density is in passenger cars per mile per lane.

N/A = Not Applicable

LOS = level of service

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

Table 2.7: 2035 AM Peak Hour Southbound Mainline and Ramp Junction

Location	Number of Lanes	Section Type	No Build		Alternative 3	
			Density[1]	LOS	Density[1]	LOS
North of Main Street/2nd Street	3	Mainline	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Main Street/2nd Street	1	Diverge	**In Queue**	**F**	**In Queue**	**F**
On-Ramp from Main Street/2nd Street	1	Merge	**In Queue**	**F**	**In Queue**	**F**
Between Hammett Rd. and Main St./2nd St.	3	Mainline	**Bottle-neck**	**E**	**Bottle-neck**	**E**
Off-Ramp to Hammett Road	1	Diverge	**In Queue[2]**	**F**	33	D
Off-Ramp to Hammett Road Westbound	1	Diverge	N/A	N/A	N/A	N/A
Off-Ramp to Hammett Road Eastbound	1	Diverge	N/A	N/A	N/A	N/A
On-Ramp to Hammett Road	1	Diverge	21	C	21	C
Between Kiernan Ave. and Hammett Road	4	Mainline	20	C	20	C
Off-Ramp to Kiernan Avenue	1	Diverge	25	C	25	C
On-Ramp from Kiernan Avenue	1	Merge	25	C	25	C
Between Kiernan Avenue and Pelandale Avenue	4	Mainline	20	C	20	C
Off-Ramp to Pelandale Avenue	1	Diverge	26	C	26	C
On-Ramp from Pelandale Avenue	1	Diverge	28	D	28	D
South of Pelandale Avenue	4	Mainline	23	C	23	C
EB Salida Expy: Between SR-99 MB On-Ramp and Pirrone Road	4 + Aux	Weave	B		B	
WB Salida Expy: Between Pirrone Road and SR-99 NB: On-Ramp	3 + 2 Aux	Weave	**In Queue[2] (F)**		A	

Note: **Shaded cells** represent mainline segments, which are in queue due to downstream bottlenecks not captured by the HCM analysis, resulting in LOS F operations. **Bold** denotes LOS E or F operations.

[1]Density is in passenger cars per mile per lane.

[2]This section is anticipated to be in queue as a result of vehicle queue spillback from the southbound off-ramp intersection.

N/A = Not Applicable

LOS = level of service

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

Table 2.8: 2035 PM Peak Hour Southbound Mainline and Ramp Junction

Location	Number of Lanes	Section Type	No Build		Alternative 3	
			Density[1]	LOS	Density[1]	LOS
North of Main Street/2nd Street	3	Mainline	**In Queue**	**F**	**In Queue**	**F**
Off-Ramp to Main Street/2nd Street	1	Diverge	**In Queue**	**F**	**In Queue**	**F**
On-Ramp from Main Street/2nd Street	1	Merge	**In Queue**	**F**	**In Queue**	**F**
Between Hammett Rd. and Main St./2nd St.	3	Mainline	**Bottle-neck**	**E**	**Bottle-neck**	**E**
Off-Ramp to Hammett Road	1	Diverge	**In Queue[2]**	**F**	32	D
Off-Ramp to Hammett Road Westbound	1	Diverge	N/A	N/A	N/A	N/A
Off-Ramp to Hammett Road Eastbound	1	Diverge	N/A	N/A	N/A	N/A
On-Ramp to Hammett Road	1	Diverge	24	C	24	C
Between Kiernan Ave. and Hammett Road	4	Mainline	21	C	21	C
Off-Ramp to Kiernan Avenue	1	Diverge	26	C	26	C
On-Ramp from Kiernan Avenue	1	Merge	30	D	30	D
Between Kiernan Avenue and Pelandale Avenue	4	Mainline	24	C	24	C
Off-Ramp to Pelandale Avenue	1	Diverge	32	D	32	D
On-Ramp from Pelandale Avenue	1	Diverge	30	D	30	D
South of Pelandale Avenue	4	Mainline	25	C	25	C
EB Salida Expy: Between SR-99 MB On-Ramp and Pirrone Road	4 + Aux	Weave	A		A	
WB Salida Expy: Between Pirrone Road and SR-99 NB: On-Ramp	3 + 2 Aux	Weave	**In Queue[2] (F)**		A	

Note: **Shaded cells** represent mainline segments, which are in queue due to downstream bottlenecks not captured by the HCM analysis, resulting in LOS F operations. **Bold** denotes LOS E or F operations.

[1]Density is in passenger cars per mile per lane.

[2]This section is anticipated to be in queue as a result of vehicle queue spillback from the southbound off-ramp intersection.

N/A = Not Applicable

LOS = level of service

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

Impacts to Public Transportation

Public transportation within the Salida Community area is not expected to be greatly affected by the project. Transit service is not currently provided in the vicinity of the State Route 99/Hammett Road Interchange. However, once construction is complete, the proposed project is expected to improve traffic flow. If transit is ultimately provided, the benefits of transit (i.e., reduced trips) should further improve traffic flows, as well as air quality.

The proposed project would not affect transit-dependent persons. While there are residents in the Salida Community area who do not or cannot drive a vehicle, these needs are met by friends, relatives or by other means, including a fixed bus route, dial-a-ride, specialized dial-a-ride, intercity fixed bus routes, interregional fixed bus route, and intercity and commuter rail. Within the Salida Community and Modesto area, there are also numerous taxi companies that offer service 24 hours a day. Ultimately, since public transportation systems are not expected to be greatly affected by the project, any transit-dependent population would, likewise, not be affected.

Impacts to Pedestrian and Bikeway Facilities

The build alternative would provide pedestrian/bikeway facilities that are consistent with the County's planned future pedestrian/bikeway network. Based on the County of Stanislaus Street Design Guidelines, arterials will provide a minimum 8-foot-wide detached sidewalk/bike path on both sides of the roadway to serve both pedestrians and bicyclists. The project will result in realignment of the Class 1 pedestrian/bikeway facility on the eastside of State Route 99.

The Class 1 pedestrian/bikeway facility on the eastside of State Route 99 will remain open to bicyclists and pedestrians (as discussed in Section 2.1.2) during all stages of the project construction as a result of the realignment under this alternative.

Avoidance, Minimization, and/or Mitigation Measures

The project would implement the following measures to reduce construction-related traffic impacts:

- The contractor would be required to prepare and implement a traffic management plan that would identify the locations of temporary detours and signage to facilitate local traffic patterns and through-traffic requirements.
- The project special provisions of the highway contract would require that emergency service providers (i.e., law enforcement, fire protection, and

ambulance services) be given adequate advance notice of any street closures during the construction phases of the proposed project.

- Construction activities would be coordinated to avoid blocking or limiting access to homes and businesses to the extent possible. Residents would be notified in advance about potential access or parking effects before construction activities begin.
- Any interchange, ramp, or road closures required during construction would, to the extent possible, be limited to nighttime hours to reduce effects on businesses in the study area.
- Construction activities would be coordinated to avoid blocking or limiting access to businesses along during business hours. Businesses would be notified in advance concerning construction activities before construction begins.
- The traffic management plan would be prepared to address short-term disruptions in existing circulation patterns during construction; for example, the traffic management plan would identify the locations of temporary detours or temporary roads to facilitate local traffic circulation and through-traffic requirements.
- Construction activities would be coordinated with Union Pacific Railroad in order to limit disruption to the rail line affected by the proposed project.

2.1.7 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act of 1969 as amended establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings (42 United States Code 4331[b][2]). To further emphasize this point, the Federal Highway administration in its implementation of the National Environmental Policy Act (23 United States Code 109[h]) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act establishes that it is the policy of the State to take all action necessary to provide the people of the State "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities." (California Public Resources Code Section 21001[b])

Affected Environment

A Visual Impact Assessment was prepared in June 2010 to assess visual impacts.

The project area is mostly developed around the interchange with agricultural and urban uses. However, some undeveloped open space is also present, including plant communities that consist of disturbed/ruderal vegetation (weeds) and row and field crops. The median on State Route 99 consists of oleander shrubs.

The Visual Impact Assessment included a field review of distinct landscapes surrounding each element of the proposed project within the project area. The analysis was conducted consistent with the Federal Highway Administration *Visual Impact Assessment for Highway Projects*. As part of the Visual Impact Assessment the following observation points were utilized to document and evaluate visual quality:

Observer Point 1: From this location only a portion of Hammett Road is visible to freeway travelers due to the incline of the off-ramp, elevation of the overcrossing, and nearby orchards.

Observer Point 2: This location occurs on State Route 99 at the Hammett Road overcrossing. In this location the views of the road are experienced by regional freeway travelers. Due to the elevation of the overcrossing, views of Hammett Road are restricted to the off-ramps.

Observer Point 3: The existing intersection at Hammett Road and Hammett Court is the western limit of the project boundary. This section of Hammett has a steep grade where the railroad overcrossing meets the western portion of Hammett Road.

Observer Point 4: This location occurs at the future intersection of Hammett Road and the future Salida Expressway. Travelers along Hammett Road are limited to using the west side of the overpass and the on- and off-ramps.

Environmental Consequences

Visual Quality was evaluated on a scale from one to seven (very low to very high). The evaluation assesses the differences between the existing conditions (e.g., pre-project condition) and those changes due to proposed roadway improvements.

Views of the Road

As noted in Table 2.9, the build alternative has an average Visual Quality rating that is equivalent to the Existing Condition.

Table 2.9: Evaluation for Proposed Project - View of the Road

Observer Point	Existing Condition	Alternative 3
1	2.8	3.04
2	2.8	2.8
3	2.75	2.5
4	2.8	2.8
Total:	11.15	11.14
Average:	2.79	2.79

Source: Hammett Road/State Route 99 Interchange Reconstruction Project Visual Impact Assessment, June 2010.

In general Table 2.9 shows local residents and travelers will experience a very small decline in the surrounding visual environment as a result of the proposed project. Changes to the view shed as a result of constructing the project will marginally degrade the views from most locations as the character of the existing interchange structure will not substantially change. The loss in visual quality will be minor and is primarily attributed to constructing larger interchange facilities, as well as the addition of travel lanes to an existing roadway and modification of freeway ramps.

Views from the Road

Table 2.10 evaluates the views from the road by assessing the visual quality of the adjacent setting with the proposed roadway improvements in place.

Table 2.10: Evaluation for Proposed Project - View from the Road

Observer Point	Existing Conditions	Alternative 3
1	3.07	3.12
2	2.9	2.82
3	2.6	3.15
4	3.07	2.73
Total:	11.64	11.82
Average:	2.91	2.95

Source: Hammett Road/State Route 99 Interchange Reconstruction Project Visual Impact Assessment, June 2010.

In general travelers of State Route 99 and Hammett Road will experience a small change in the visual environment as a result of the proposed project. Impacts to "views from the road" would not change dramatically as a result of the proposed project. Changes to the view shed, as a result of the project alternatives, will marginally degrade (a visual quality decrease of less than 1.0 for all observation

points). Aesthetic values for the observation points would actually improve at locations 1, 2, and 3, and would be degraded only slightly for views west of the interchange. On average existing visual quality values will be increased by 0.04. Views from the road for the proposed project will actually be slightly improved from the existing views.

Reconstruction of the interchange will include landscaping to enhance local aesthetics. See Figure 2.3 for Visual Simulations.

Avoidance, Minimization, and/or Mitigation Measures

The following minimization measures, to be completed in cooperation with the Caltrans Landscape Architect, incorporate design features and methods to avoid permanent adverse impacts:

- Architectural detailing and/or surface treatments consistent with the surrounding community should be incorporated into new bridge design.
- Artistic soundwall design should be implemented to break up and mask the built environment and enhance the driving experience. Soundwall design should be compatible with the surrounding area and meet community goals.
- Soundwalls should be designed to discourage the proliferation of graffiti. Some examples of soundwall design may include rough-textured finishes or uneven surfaces, graffiti-resistant coatings, and vine plantings of a type that would attach to walls.
- Replacement planting would include the replacement of removed landscaping. Areas affected or disturbed by construction would be replanted in the form of new landscape planting and irrigation systems.

SOURCE: Visual Impact Assessment Hammett/State Route 99 Interchange Reconstruction Project, June 2010.

Note: Land Use descriptions are from Salida Community Plan

Figure 2.3
Visual Simulation Alternative 3
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System permit. Known today as the Clean Water Act, Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the National Pollutant Discharge Elimination System permit scheme. Important Clean Water Act sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S. to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below.)
- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers.

The objective of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

U.S. Army Corps of Engineers issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide

permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of U.S. Army Corps of Engineers Standard permits. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative, which would have less adverse effects. The Guidelines state that U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative, to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the California Porter-Cologne Act and regulates discharges to waters of the State. Waters of the State include more than just Waters of the U.S., like groundwater and surface waters not considered Waters of the U.S. Additionally, it prohibits discharges of

"waste" as defined and this definition is broader than the California Porter-Cologne Act definition of "pollutant". Discharges under the California Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the California Porter-Cologne Act.

The State Water Resources Control Board and Regional Water Quality Control Board are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable Regional Water Quality Control Board Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with California's Porter-Cologne Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the Clean Water Act requires the establishment of Total Maximum Daily Loads. Total Maximum Daily Loads specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, water pollution control, and water quality functions throughout the state. Regional Water Quality Control Board are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

- **National Pollution Discharge Elimination System Program**
  Municipal Separate Storm Sewer Systems

  Section 402(p) of the California Porter-Cologne Act requires the issuance of National Pollution Discharge Elimination System permits for five categories of storm water dischargers, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. Environmental Protection Agency defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body

having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. The State Water Resources Control Board has identified the Department as an owner/operator of an MS4 by the State Water Resources Control Board. This permit covers all Department rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollution Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit, under revision at the time of this update, contains three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices and other measures.

To comply with the permit, the Department developed the Statewide Storm Water Management Plan to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Storm Water Management Plan assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Storm Water Management Plan describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices. The proposed Project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Part of and appended to the Storm Water Management Plan is the Storm Water Data Report and its associated checklists. The Storm Water Data Report

documents the relevant storm water design decisions made regarding project compliance with the MS4 National Pollution Discharge Elimination System permit. The preliminary information in the Storm Water Data Report prepared during the Project Initiation Document phase will be reviewed, updated, confirmed, and if required, revised in the Storm Water Data Report prepared for the later phases of the project. The information contained in the Storm Water Data Report may be used to make more informed decisions regarding the selection of best management practices and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan. In accordance with the Department's Standard Specifications, a Water Pollution Control Plan is necessary for projects with less than one acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before U.S. Army Corps of Engineers issues a 404 permit.

In some cases the Regional Water Quality Control Board may have specific concerns with discharges associated with a project. As a result, the Regional Water Quality Control Board may issue a set of requirements known as Waste Discharge Requirements under the State Water Code that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. Waste Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

Affected Environment

A Water Quality Assessment Report was completed for the project in June 2010 and Floodplain Evaluation Report was completed in April of 2011.

The project area is in the San Joaquin River Basin. The Stanislaus River, which flows approximately one mile northwest of the project site, is one of the largest tributaries of the San Joaquin River. The Stanislaus River eventually meets the San Joaquin River and flows into the Sacramento-San Joaquin River Delta. This site is located within the Modesto Groundwater Subbasin. The Modesto Groundwater Subbasin lies between the Stanislaus River to the north and Tuolumne River to the south and between the San Joaquin River on the west and crystalline basement rock of the Sierra Nevada foothills on the east. The surface area of the subbasin is 247,000 acres.

The project site is also within the Modesto Irrigation District, a major water purveyor in the Modesto Groundwater Subbasin. The Modesto Irrigation District is a public utility that supplies surface water, groundwater, and electrical service to agricultural and municipal customers throughout its 101,700-acre service area. The Modesto Irrigation District has both irrigation wells and drainage pumping wells.

There are four known aquifers in the Modesto Groundwater Subbasin. The Cities of Modesto, Oakdale, and Riverbank and the communities of Salida, Empire, and Waterford use groundwater to supply their residents. Groundwater in the Modesto Subbasin is for the most part of good quality. Locally, some problem constituents include total dissolved solids, nitrates, radionuclides, dibromochloropropane, and volatile organic compounds. In addition to these constituents localized areas of man-made contamination (gasoline, solvents, etc.) are present.

This portion of the Stanislaus River is currently on the Clean Water Act Section 303(d) list of Water Quality Limited Segments, and therefore does not currently meet state water quality standards. Diazinon, pesticides, and mercury are known pollutants exceeding current standards for the river.

In the project area, stormwater runoff from the State Route 99 mainline, the interchange ramps, and Hammett Road is collected through a system of ditches and basins and directed into the 42” cast-in-place main drainage culvert which parallels State Route 99 on the east side of the highway. This pipe discharges to the Stanislaus River at the north end of the project area, adjacent to the State Route 99 Bridge.

There are existing unlined ditches running along the east side of State Route 99 and in the highway median. There are seven cross culverts, which carry storm flows from the median and west side of the highway to the cast-in-place drainage culvert discussed above. Flows in the ditches on the east side of the highway also enter the main culvert through drainage inlets located at the junctions with the cross culverts.

Six existing drainage basins are within the project area – one in each of the four quadrants of the existing diamond interchange, and one each between the Union Pacific Railroad line and the southbound on- and off-ramps.

Environmental Consequences

Short-term Impacts Water Quality

During construction the State Route 99/Hammett Road Interchange project has the potential to cause temporary water quality impacts due to grading activities and removal of existing vegetation, which can cause increased erosion. Stormwater runoff from the proposed project may transport pollutants to nearby water resources, such as the Stanislaus River and storm drains, if Best Management Practices are not properly implemented.

Fueling or maintenance of construction vehicles will also occur within the State Route 99/Hammett Road Interchange project site during construction, resulting in a risk for accidental spills or releases of fuels, oils, and other potentially toxic materials. An accidental release of these materials may pose a threat to water quality if contaminants enter storm drains, open channels, or surface water receiving bodies. The magnitude of the impact form an accidental release depends on the amount and type of material spilled.

Long-term Impacts to Water Quality

To determine the project's effect on storm drainage, the project engineer prepared a Storm Water Data Report, which included an analysis of the drainage systems, and the improvements required to accommodate the additional runoff.

The proposed project has the potential to create adverse long-term impacts to water quality due to changes in stormwater drainage. Because the project will result in a permanent increase of impervious surfaces, it will also result in a permanent increase in runoff and pollutant loading. The primary pollutants are sediments, petroleum distillates, and metals. These substances are washed off the highway surface by rainfall and become runoff. Runoff in significant quantities occurs only during heavy storms that in turn cause the pollutants to be greatly diluted. These storms cause some high flows in the drainage systems further diluting the pollutants as they are carried from the source. However, drainage design and construction of drainage basins will likely decrease the long-term amount of untreated runoff that reaches the Stanislaus River.

Drainage

Alternative 3 will not change the existing flow pattern on State Route 99. The proposed project will, however, increase impervious surfaces by 7.2 in the project area. This increase will generate an associated increase in stormwater runoff.

Avoidance, Minimization, and/or Mitigation Measures

This project will have minimal impacts to water quality with the following avoidance, minimization, and proposed mitigation measures incorporated:

- Preparation and implementation of construction site Best Management Practices in compliance with the provisions of the Department's Statewide National Pollutant Discharge Elimination System Permit and any subsequent permit as they relate to construction activities for the project. This will include submission of a Notice of Construction to the Regional Water Quality Control Board at least 30

days before the start of construction, preparation and implementation of a Stormwater Pollution Prevention Plan, and submission of a Notice of Construction Completion to the Regional Water Quality Control Board upon completion of construction and stabilization of the project site. Design Pollution Prevention and Treatment Control best management practices for the project in accordance with the procedures outlined in the Stormwater Quality Handbooks, Project Planning and Design Guide will be followed. This will include coordination with the Regional Water Quality Control Board with respect to feasibility, maintenance, and monitoring of Treatment Control best management practices as set forth in the Department's Statewide Stormwater Management Plan.

- If dewatering activities are necessary for the project, the provision of the General Waste Discharge requirements for discharges to surface waters that pose an insignificant (de minimus) Threat to Water Quality, Order No. R8-2003-0061 National Pollutant Discharge Elimination System Permit No. CAG998001, as they relate to construction activities for the project, will be followed. This will include submission of a Notice of Intent to the Regional Water Quality Control Board at least three months before the start of dewatering and compliance with all applicable provision in the de minimus permit, including water sampling, analysis, and reporting of dewatering-related discharges.
- The project's design would ensure that all stormwater runoff from the new interchange ramps and Hammett Road will discharge into new drainage basins within the project limits. The basins would be designed to accommodate all the stormwater runoff from new paved areas (ramps and Hammett Road) per District 10 Hydraulics design guidelines. The proposed basins will be interconnected and there will be no overflow outlets. There will be no connections to Municipal Separate Storm Sewer Systems, and with the exception of the portion of the northbound on-ramp, runoff from new impervious surfaces will not discharge to surface waters.

2.2.2 Geology/Soils/Seismic/Topography

Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under the California Environmental Quality Act.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Caltrans' Office of Earthquake Engineering is responsible for assessing the seismic hazard for Caltrans projects. The current policy is to use the anticipated Maximum Credible Earthquake, from young faults in and near California. The Maximum Credible Earthquake is defined as the largest earthquake that can be expected to occur on a fault over a particular period of time.

Affected Environment

A Preliminary Geotechnical Report was completed in July 2008.

Climate

The climate in this area is characterized by Mediterranean climatic conditions. This consists of mild winters, warm summers and small daily and seasonal temperature ranges. Extreme temperatures range from average minimum temperature of 37.7 degrees Fahrenheit in December to average maximum temperature of 94.1 degrees Fahrenheit in July. Based on the statistical data from the Western Regional Climate Center, average total annual precipitation is 12.41 inches in Modesto. Most of the rainfall is recorded between November and April with the average total monthly precipitation of 1.56 inches.

Topography and Drainage

The terrain around the project is generally flat and sloping gently (1 percent) north toward the Stanislaus River. State Route 99 in the vicinity of Hammett Road Interchange is generally level on a broad curve through the interchange. Slopes for fill areas that support elevated ramps and the bridges are variable in angle, but generally do not exceed a 4:1 slope (4 feet horizontal distance for every 1 foot vertical elevation). The slope areas directly underneath the bridges are paved with concrete (also at a 4:1 angle) in order to protect those areas from erosion. The area surrounding the interchange is covered in grasses and some tree.

Regional Geology and Seismicity

The general area of the project site is part of the Coastal Range of California Geomorphic Provinces. The Coast Ranges are mountain ranges (2000 to 4000 feet, occasionally 6000 feet elevation above sea level) and valleys. The ranges and valleys trend northwest, subparallel to the San Andreas Fault. The province terminates on the east where strata dip beneath alluvium of the Great Valley; on the west by the Pacific Ocean with mountains rising sharply from uplifted and terraced wave-cut coast; on

the north by South Fork Mountain, which has the characteristic trend of the Coast Ranges, and on the south by the Transverse Ranges.

The Coast Ranges are composed of thick late Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay. Offshore, the continental shelf is transected by submarine canyons. The Monterey submarine canyon, 10,000 feet deep, is apparently a submerged river canyon. The northern Coast Ranges are dominated by irregular, knobby, landslide topography of the Franciscan Formation. The eastern border is characterized by strike-ridges and valleys in Upper Mesozoic strata. In several areas, Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma, and Clear lake volcanic fields. The Coast Ranges are subparallel to the rift valley of the active San Andreas Fault. The San Andreas Fault is more than 600 miles long, extending from Pt. Arena to the Gulf of California. The Salinian block to the west of the San Andreas Fault has granitic core, extending from the southern extremity of the Coast Ranges to north of the Farallon Islands.

Based on the geotechnical report, the majority of the soils encountered during the geotechnical investigation are mainly alternating layers of medium dense to very dense silty sand, sandy silt, and clayey silt (Modesto Formation).

Groundwater was encountered at a depth of 20 feet in borings drilled from the State Route 99/Hammett Road Interchange. The groundwater level is anticipated to vary with the passage of time due to seasonal groundwater fluctuation, surface and subsurface flows into the river, ground surface runoff, and other factors that may not have been present at the time of the investigation.

Generally, the liquefaction potential at the proposed project site is considered to be relatively low. Clays, which are the dominant soil in the area, are generally not susceptible to liquefaction. Based on the available as-built data, the vast majority of the granular material encountered in the borings is dense to very dense.

The project is located in an area where seismic activity is relatively inactive. Several faults exist in or around Stanislaus County. These faults may cause low to moderate ground shaking at the site.

Maximum moment magnitudes for some of the major faults in the area are determined based on the Mualchin (California Seismic Hazard Map, 1996). These maximum moment magnitudes represent the largest earthquakes a fault is capable of

generating and is related to seismic moment. The fault type and the maximum moment magnitudes within the project vicinity are summarized in Table 2.11.

Table 2.11: Earthquake Data

Fault	Fault Type	Estimated Distance from Site (km)	Maximum Moment Magnitude
Midway San Joaquin	Unknown/unpublished	27	6.75
Coast Ranges-Sierran Block	Reverse	33	7.00
Greenville	Right Lateral Strike	40	7.25
Prairie-Creek Spenceville-Dentman	Normal	50	6.50

Source: State Route 99/Hammett Road Interchange Improvements Preliminary Geotechnical Report, July 2008.

Potential seismic hazards may arise from three sources: surface fault rupture, ground shaking, and liquefaction. Since no active faults pass through the site, the potential for fault rupture is relatively low. Based on available geologic and seismic data, it is possible that the site may experience low to moderate ground shaking during an earthquake event.

Environmental Consequences

Ground shaking could affect the State Route 99/Hammett Road Interchange Structure, however the structure is built to meet Caltrans Seismic Design Criteria to withstand seismic activities. Since the project does not involve habitable structures, the seismic activities potential will not affect a population source. Likewise, as the liquefaction potential is considered low for the project site, the potential for a seismic hazard from liquefaction is also low.

Avoidance, Minimization, and/or Mitigation Measures

The project would incorporate recommendations and design features from the Preliminary Geotechnical Report to minimize geologic impacts, including the following:

- Exploratory soil borings to investigate the subsurface soil conditions (specifically corrosivity) should be planned.
- Foundations, embankments, soundwalls, and retaining walls should be designed to Caltrans Highway Design Manual and standard specifications. Caltrans

standard grading and erosion control measures should be implemented to mitigate slope stability concerns.

- Before project implementation, additional data should be collected to confirm that liquefaction potential at the project site is low.

2.2.3 Paleontology

Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., Antiquities Act of 1906 [16 United States Code 431-433], Federal-Aid Highway Act of 1960 [23 United States Code 305]), and the Omnibus Public Land Management Act of 2009 [16 United States Code 470aaa]). Under California law, paleontological resources are protected by the California Environmental Quality Act.

Affected Environment

A Paleontological Identification and Evaluation Report was prepared in March 2010. The ground surface of the project vicinity is primarily flat due to natural topography and current and historic agricultural land uses. The project lies in the north-central portion of the San Joaquin Valley that is a large structural trough situated between the Coast Ranges and the Sierra Nevada mountain range. The valley is filled with marine and alluvial sediments deposited by the Stanislaus River. These deposits have in the past produced significant fossils.

The project area is underlain by two paleontologically sensitive Pleistocene formations, consisting of the Riverbank and Modesto formations. The Riverbank Formation, which underlies the Modesto Formation at depth in much of the San Joaquin Valley, and is between 450,000 to 130,000 years old. The Riverbank Formation is composed of reddish-brown alluvial fan deposits of some gravel, sand, and silt which are reddish-brown in color. Sediments of this formation have produced significant vertebrate fossils. The Pleistocene-age Modesto Formation is on the surface throughout most of the area of potential disturbance. The Modesto Formation, between 42,000 and 14,000 years in age, is composed of loosely consolidated alluvial fan deposits of gravel, sand and silt. The deposits become increasingly dense with depth and are typically light grayish brown to light brown in color. Undifferentiated Quaternary sediments in Stanislaus County contain significant vertebrate fossils These Pleistocene formations are covered by Holocene-age flood plain deposits and thin cover of Holocene soil. The fill and the recent Holocene floodplain deposits are

not sensitive for significant paleontological resources. Vertebrate and invertebrate fossils have been found in both the Riverbank and Modesto formations in the project vicinity in the past.

A field survey, which included visual inspection of areas with exposures that might reasonably be predicted to contain fossils in the project area, was conducted to document the presence of any previously unrecorded fossil sites. Although no fossil localities are reported within the project right-of-way, the presence of fossils in sediments of the Riverbank and Modesto formations elsewhere in the area suggests that there is a high potential for additional similar fossil remains to be uncovered by excavations during project construction.

Fossil remains salvaged during project construction could provide a more comprehensive documentation of the diversity of animal and plant life that once existed in Stanislaus County and could result in a more accurate reconstruction of the geologic and paleobiologic history of the San Joaquin Valley.

Environmental Consequences

The entire Area of Potential Effect has been mapped as the Late Pleistocene Modesto Formation. Any excavation into original soils will affect these Late Pleistocene deposits, potentially disturbing paleontologically sensitive strata. This work includes all of the excavation for overcrossing abutments, traffic signage, retaining walls, railroad bridge abutments, the center bridge pier, lighting, utility relocation, retention basins, and water pipes. Excavation for roadway reconstruction is not anticipated to go deeper than two to three feet and may only affect artificial fill beneath the current road. If there is no artificial fill beneath the road, this work has the potential to encounter the Modesto Formation.

There is also the potential for excavation to affect the stratigraphically deeper Middle Pleistocene Riverbank Formation during excavation for traffic signals (to 30 feet) and driven piles (to 60 feet).

Based on Caltrans' guidelines, the Modesto formation in the Area of Potential Effect has high potential for producing significant vertebrate fossils. This formation has been known for containing "significant nonrenewable paleontological resources." As such, any fossils contained within the Area of Potential Effect are expected to be significant for scientific reasons. Fossils or fossil-bearing strata are considered to be nationally significant if they consist of or contain "an outstanding example of fossil

evidence of the development of life on earth." Fossils that are significant for scientific reasons need to be taken into account under California Environmental Quality Act.

Avoidance, Minimization, and/or Mitigation Measures

The Paleontological Identification Report/Paleontological Evaluation Report recommends that the section of the Paleontological Identification Report describing the excavation monitoring for the project include the following to avoid and minimize impacts to paleontological resources as part of a Paleontological Mitigation Plan:

- A preconstruction field survey should be conducted followed by salvage of any observed surface paleontological resources prior to the beginning of grading.
- Attendance at the pregrade meeting by a qualified paleontologist or his/her representative. At this meeting, the paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered and the methods that will be employed if anything is discovered.
- During construction excavation, a qualified vertebrate paleontological monitor would initially be present on a full-time basis whenever exaction will occur within the sediments that have a high sensitivity rating. Monitoring maybe reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions and when they occur will be determined by the qualified Principal Paleontologist). The monitor would be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor would be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, Caltrans would consider using heavy equipment on site to assist in the removal and collection of large materials.
- Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these native sediments occasionally be sport-screened through one-twentieth-inch mess screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 3 cubic yards, or 6,000 pounds) would be collected and processed through stacked sets of twenty-mesh over thirty-mesh screens to recover additional fossils.
- Any recovered specimens would be prepared to the point of identification and permanent preservation. This includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume of storage from around larger specimens to reduce the volume of storage for the repository and the storage cost

and the application of approved chemical hardeners/stabilizers to fragile specimens.

- Specimens would be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university that has a curator who can retrieve the specimens on request. Caltrans requires that a draft duration agreement be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.

2.2.4 Hazardous Waste/Materials

Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health, and land use.

The main federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated mainly under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if disturbed during project construction.

Affected Environment

A Phase 1 Initial Site Assessment was completed for the project in August, 2008. The purpose of this investigation was to determine whether the improvement activities associated with the proposed project could be affected by any recorded or visible hazardous waste problems within and adjacent to the interchange right-of-way, and to recommend any additional Initial Site Assessment work, as appropriate. An updated records search was performed August 2010 to supplement the 2008 Initial Site Assessment.

Physical Site Inspection

Observations made during the site inspection walk/drive-through of the project vicinity are described in the following paragraphs. The site inspection was performed on Friday, December 1, 2004.

The visual site survey did not reveal any evidence of spills or hazardous waste contamination within the project limits. Several uses are potentially associated with hazardous wastes or materials within the project area. Several issues that may warrant additional testing or investigation were observed, including thermoplastic striping, and reflective paint that may contain lead. A portion of the proposed project may also require additional testing for potential hazards and include lands used for agricultural production, and right-of-way utilized by Southern Pacific Railroad.

Database and Regulatory Reviews

A search of environmental regulatory databases was conducted for proposed project and surrounding properties. The database search was conducted by Environmental Data Resources, Inc. to determine whether documentation exists related to environmental incidents at the site or surrounding properties.

The sites identified in the Environmental Data Resources search were evaluated with respect to their potential to impact the project adversely. Three main criteria were used to evaluate whether the Environmental Data Resources listed sites warranted further consideration: (1) proximity to the proposed project (less than 650 feet from edge of existing right-of-way); (2) hydraulically upgradient with respect to groundwater flow; and (3) hydraulically upgradient with respect to surface water flow/stormwater runoff.

No National Priority List or Proposed National Priority List, Emergency Response Notification System, or Records of Decision, Toxic Substance Control Act, or Superfund sites with Consent Agreement were identified within a 1-mile radius of the project.

None of the database records indicate the potential for hazardous materials to migrate to the project site. The only two sites that have outstanding violations (5050 Salida Road and 6137 Hammett Road) are over ½ mile from the project and are continuously monitored by the Department of Toxic Substances Control and the State Water Regional Control Board respectively.

Table 2.12: Hazardous Waste Sites

Address	Description
Records that were in both the 2008 and 2010 database searches	
6131 Hammett Road ¼- ½ mile Southwest of project site	The site is listed in the Solid Waste Facility (SWF) database. There are no violations reported for this site.
New records not present in 2008 database	
5625 Ciccarelli Road 0-1/8 mile Southeast of site, down gradient	This site is listed in the LUST database. This database identifies sites have had leaking underground storage tank incidents. The site is listed in the HIST CORTESE database. This database contains sites that were designated by the State Water Resources Control Board and Integrated Waste Board as being sites with hazardous materials contamination. There are no further violations for this site, the site has been remediated,

	and the case is closed.
5730 Ciccarelli Road 0-1/8 mile South of site, down gradient	This site is listed in the CA FID UST database. This database contains active and inactive underground storage tank locations. This site is listed in the HIST UST database. This database contains historical underground storage tank locations. This site is listed in the SWEEPS UST database. This is a historical database that contained underground storage tank listings. There are no violations reported for this site.
5206 Hammett Road ½ -1 mile Southwest of site, down gradient	This site is listed on the SCH database. This category contains proposed and existing school sites that are being evaluated by the Department of Toxic Substances Control for possible hazardous materials contamination. There are no violations reported for this site.
6137 Hammett Road ½ - 1 mile Northwest of site, up gradient	This site is listed in the ENVIROSTOR database. This database identifies sites that have known contamination or sites for which there may be reasons to investigate further. The site received several compliance violations in the 1980s and has been under Regional Water Quality Control Board monitoring since that time. No further violations are reported for this site.
5258 Pirrone Road ¼ - ½ mile Southeast of site, up gradient	This site is listed in the LUST database. This database identifies sites have had leaking underground storage tank incidents. The site is listed in the HIST CORTESE database. This database contains sites that were designated by the State Water Resources Control Board and Integrated Waste Board as being sites with hazardous materials contamination. There are no further violations for this site, and the case is closed.
5600 Pirrone Road 1/8 – ¼ mile Southeast of site, down gradient	This site is listed in the SWEEPS UST database. This is a historical database that contained underground storage tank listings. There are no violations reported for this site.
5990 Pirrone Road	This site is listed on the SWEEPS UST database. This database identifies sites that have an underground storage tank.

0-1/8 mile Northwest of site, up gradient	This site is listed on the SCH database. This category contains proposed and existing school sites that are being evaluated by the Department of Toxic Substances Control for possible hazardous materials contamination. There are no violations reported for this site.
5050 Salida Road ½-1 mile Southeast of project site, Up gradient	This site is listed in the CORRACTS database. This database tracks which nationally-defined correction action core events have occurred for every handler that has had corrective action activity. This site is listed in the ENVIROSTOR database. This database identifies sites that have known contamination or sites for which there may be reasons to investigate further. This site is listed in the HWP database. This database provides detailed information on permitted hazardous waste facilities and corrective action "cleanups" tracked in EnviroStor. This site was a small and large hazardous waste generator. There are numerous reporting and compliance violations listed for the site from 1990-2005. The Department of Toxic Substances Control reviewed the project site closure and removal of storage tanks from the site in 2006-2007. The closure plan has been approved and no further actions are required for the site.

Source: State Route 99/Hammett Road Interchange Improvements Initial Site Assessment (2008) and updated Records Search (2010).

Environmental Consequences

Due to the age of the existing interchange and its proximity to State Route 99, testing for aerially deposited lead will be conducted. A previous aerial deposited lead study for a different State Route 99 project (10-STA-99-PM 22.4/22.7) was done by Caltrans in 2007, and found aerial deposited lead at levels ranging from 1 to 240 mg/kg total lead and 2.5 -29 mg/l soluble lead. The total lead average was 118 mg/kg and 7.8 mg/l soluble lead. Based on these results the Environmental Protection Agency's Pro- Upper Confidence Limit program would likely predict an Upper Confidence Limit at levels below regulatory threshold for Total and Soluble lead and as such, additional testing for hazardous levels of aerially-deposited lead would be done during the design phase.

There are structures (including bridges) within the existing right-of-way. Due to the age of these structures there is a potential for presence of asbestos containing materials and lead based paint.

Due to the proximity of the project to lands utilized for agriculture there is a possibility that soils may contain contamination from organochlorine pesticides, organophosphorous pesticides, chlorinated herbicides, and heavy metals other than lead.

Other potential sources for hazardous materials in the project right-of-way limits include thermoplastic striping (roadway paint).

Review of Environmental Data Research, Inc. Report and agency databases has not identified any sites with potential hazardous wastes/materials to impact the project.

Other than those noted above during the site reconnaissance of the project area, environmental areas of concern were not readily identified or apparent based on the scope of work performed in this project. Initial Site Assessment findings, environmental conditions or issues of concerns, other than noted above, were not identified or indicated.

Avoidance, Minimization, and/or Mitigation Measures

However, if there is excess soil on the project that is relinquished to the contractor, a project specific study would be required.

- The appropriate standard special provisions would be used during the design phase once the analytical results are known. A Lead Compliance Plan would be required no matter what levels of lead are in the soil. If soil testing results in a determination of elevated levels of lead, it may be possible to encapsulate soil following the Department of Toxic Substances Control Act variance under certain conditions. If this is not possible, then soil that is hazardous material would need to be disposed of in a Class 1 landfill.
- Demolition any structure built prior to 1969 would require an assessment of asbestos-containing building materials and lead-based paint. An asbestos investigation should be performed by an inspector certified by the Asbestos Hazardous Emergency Response Act under Toxic Substance Control Act Title II. Lead-based paint surveys should be conducted by an inspector certified by the California Occupational Safety and Health Administration under State of California rules and regulations. These surveys would be conducted by Caltrans

Right-of-Way during acquisition and/or prior to building demolition. Asbestos-containing building materials and lead-based paint should be surveyed and abated (as needed) by using a contractor certified to perform such work.

- Past land use studies suggest the potential for hazardous chemical contamination from organochlorine pesticides, organophosphorous pesticides, chlorinated herbicides, and heavy metals other than lead. Consequently, additional studies for these contaminants should be done on selected properties within the project area to minimize future liability. A risk assessment of the potential hazards (pesticides and heavy metal contamination) should be conducted during the design phase on properties to be acquired throughout the project area and along the railroad right-of-way.
- Thermoplastic striping (roadway paint) removal activity would be conducted in compliance with all applicable laws and regulations such as the guidelines by the California Occupational Office of Safety and Health, San Joaquin Valley Unified Air Pollution Control District, and applicable best-management practices. Standard special provisions would be used for removal of the traffic stripe.

2.2.5 Air Quality

Regulatory Setting

The Federal Clean Air Act as amended in 1990 is the federal law that governs air quality. The California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency and California Air Resources Board, set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. National Ambient Air Quality Standards and State ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns. The criteria pollutants are: carbon monoxide, nitrogen dioxide, ozone, particulate matter (particulate matter, broken down for regulatory purposes into particles of 10 micrometers or smaller – PM_{10} and particles of 2.5 micrometers and smaller – $PM_{2.5}$), lead, and sulfur dioxide. In addition, State standards exist for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The National Ambient Air Quality Standards and State standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both State and Federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and State air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act and the California Environmental Quality Act. In addition to this type of environmental analysis, a parallel "Conformity" requirement under the Federal Clean Air Act also applies.

Federal Clean Air Act Section 176(c) prohibits the United States Department of Transportation and other Federal agencies from funding, authorizing, or approving plans, programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of Clean Air Act requirements related to the National Ambient Air Quality Standards. "Transportation Conformity" takes place on two levels: the regional, or planning and programming, level, and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the National Ambient Air Quality Standards, and only for the specific National Ambient Air Quality Standards that are or were violated. United States Environmental Protection Agency regulations at 40 Code of Federal Regulations 93 govern the conformity process.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM_{10} and $PM_{2.5}$), and in some areas sulfur dioxide. California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except sulfur dioxide, and also has a nonattainment area for lead. However, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis. Regional conformity is based on Regional Transportation Plans and Federal Transportation Improvement Programs that include all of the transportation projects planned for a region over a period of at least 20 years for the Regional Transportation Plans) and 4 years (for the Federal Transportation Improvement Programs). Regional Transportation Plans and Federal Transportation Improvement Programs conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration, make determinations that the Regional Transportation Plans and Federal Transportation Improvement Programs are in conformity with the State Implementation Plan for achieving the goals of the

Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plans and/or Federal Transportation Improvement Programs must be modified until conformity is attained. If the design concept, scope, and "open to traffic" schedule of a proposed transportation project are the same as described in the Regional Transportation Plans and Federal Transportation Improvement Programs, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if one or more of the monitoring stations in the region measures violation of the relevant standard and United States Environmental Protection Agency officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by United States Environmental Protection Agency and are then called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for National Environmental Policy Act purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot spot analysis. In general, projects must not cause the "hot spot"-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known carbon monoxide or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Affected Environment

An Air Quality Assessment Report and Air Quality Conformity Report were completed for the project in April 2011.

Meteorology

A region's topographic features have a direct correlation with air pollution flow and therefore are used to determine the boundary of air basins. The proposed project is located in the San Joaquin Valley Air Basin, which is comprised of approximately 25,000 square miles and covers all of seven counties including Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare, and the western portion of an eighth, Kern. The San Joaquin Valley Air Basin is defined by the Sierra Nevada mountains in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000

to 8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. An aerial view of the San Joaquin Valley Air Basin would simulate a "bowl" opening only to the north. These topographic features restrict air movement through and out of the basin.

Although marine air generally flows into the basin from the San Joaquin River Delta, the Coast Range hinders wind access into the San Joaquin Valley Air Basin from the west, the Tehachapi Mountains prevent southerly passage of air flow, and the high Sierra Nevada range is a significant barrier to the east. These topographic features result in weak air flow that becomes blocked vertically by high barometric pressure over the San Joaquin Valley Air Basin. As a result, the San Joaquin Valley Air Basin is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet).

The State Route 99/Hammett Road Interchange Reconstruction Project was included in the regional emissions analysis done by the Stanislaus Council of Governments for the conforming Stanislaus Council of Governments 2011 Regional Transportation Plan and Stanislaus Council of Governments Federal Transportation Improvement Program (July 2010). The project's design concept and scope have not changed significantly from what was analyzed in the Regional Transportation Plan. This analysis found that the plan, and therefore, the individual projects contained in the plan, are conforming projects, and will have air quality impacts consistent with those identified in the state implementation plans for achieving the National Ambient Air Quality Standards.

Air Pollution Constituents

Pursuant to the federal Clean Air Act of 1970, the U.S. Environmental Protection Agency established national ambient air quality standards. The national ambient air quality standards were established for major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health. The national ambient air quality standards are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (e.g., impairment of visibility, damage to vegetation and property).

The criteria pollutants are ozone, carbon monoxide, suspended particulate matter (less than 10 microns and less than 2.5 microns, nitrogen dioxide, sulfur dioxide, and lead. The Environmental Protection Agency established new national air quality standards for ground-level ozone and for fine particulate matter (particulate matter 2.5 microns or less in diameter) in 1997. The primary standards for these pollutants are shown in Table 2.13 and the health effects from exposure to the criteria pollutants are described later in this section.

Air quality monitoring stations are located throughout the nation and maintained by the local air districts and state air quality regulating agencies. Data collected at permanent monitoring stations are used by the Environmental Protection Agency to identify regions as “attainment” or “nonattainment,” depending on whether the regions met the requirements stated in the primary national ambient air quality standards. Nonattainment areas are imposed with additional restrictions as required by the Environmental Protection Agency. In addition, different classifications of attainment, such as marginal, moderate, serious, severe, and extreme, are used to

Table 2.13: State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
Ozone (O_3) [2]	1 hour 8 hours 8 hours (conformity process [5])	0.09 ppm 0.070 ppm ---	--- [4] 0.075 ppm [6] 0.08 ppm (4th highest in 3 years)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.	Federal: Nonattainment State: Nonattainment
Carbon Monoxide (CO)	1 hour 8 hours 8 hours (Lake Tahoe)	20 ppm 9.0 ppm [1] 6 ppm	35 ppm 9 ppm ---	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Federal: Attainment/ Maintenance State: Attainment/ Unclassified
Respirable Particulate Matter (PM_{10}) [2]	24 hours Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 --- [2]	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction	Federal: Attainment/ Maintenance State:

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
				haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM_{10}.	and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).	Nonattainment
Fine Particulate Matter ($PM_{2.5}$) [2]	24 hours Annual 24 hours (conformity process [5])	--- 12 µg/m^3 ---	35 µg/m^3 15.0 µg/m^3 65 µg/m^3 (4^{th} highest in 3 years)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.	Federal: Nonattainment State: Nonattainment
Nitrogen Dioxide (NO_2)	1 hour Annual	0.18 ppm 0.030 ppm	0.100 ppm [7] (98^{th} percentile over 3 years) 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.	Federal: Attainment/ Unclassified State: Attainment
Sulfur Dioxide (SO_2)	1 hour 3 hours	0.25 ppm ---	0.075 ppm [8] (98^{th} percentile over 3 years) 0.5 ppm	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like	Federal: Attainment/ Unclassified State: Attainment

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
	24 hours Annual	0.04 ppm ---	0.14 ppm 0.030 ppm		active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	
Lead (Pb)[3]	Monthly Quarterly Rolling 3-month average	1.5 µg/m^3 --- ---	--- 1.5 µg/m^3 0.15 µg/m^3	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from gasoline may exist in soils along major roads.	Federal: No Designation State: Attainment
Sulfate	24 hours	25 µg/m^3	---	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	State Only: **Attainment (entire state)**
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	State Only: Unclassified
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at	---	Reduces visibility. Produces haze. NOTE: not related to the Regional Haze program	See particulate matter above.	State Only: Unclassified

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
		relative humidity less than 70%		under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas.		
Vinyl Chloride[3]	24 hours	0.01 ppm	---	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes	State Only: **Unclassified (entire state)**

Based on the California ARB Air Quality Standards chart (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

classify each air basin in the state on a pollutant by pollutant basis. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the national ambient air quality standards. The San Joaquin Valley Air Basin's attainment status for each of the criteria pollutants is listed in Table 2.13.

Local Air Quality

The project is located within jurisdiction of the San Joaquin Valley Air Pollution Control District, which is responsible for monitoring air quality at several locations within the San Joaquin Valley. The closest multi-pollutant monitoring site that has data available for most pollutants is located in Modesto, and its air quality trends are representative of the ambient air quality in the project area.

The two pollutants known to exceed the State standards in the project area are regional pollutants. Ozone and particulate matter 10 microns are regional emissions and are not determined by proximity to individual sources, but show a relative uniformity over a region. The pollutants monitored are carbon monoxide, ozone, particulate matter less than 10 microns, particulate matter less than 2.5 microns, and nitrogen dioxide. Table 2.14 summarizes where State and federal standards were exceeded at this monitoring site during the period 2007 through 2009. The data shows that the monitor did exceed State particulate matter 10 microns 24-hour standards but not the federal particulate matter 10 microns 24-hour standards during the three-year period. The pollutant concentrations exceeded the federal particulate matter 2.5 microns 24-hour standard (98th percentile), as well as State particulate matter 2.5 microns annual standard, during the three-year period. Eight-hour ozone levels exceeded both State and federal standards in the years 2007, 2008 and 2009. Table 2.14 shows that carbon monoxide and nitrogen dioxide levels are well below relevant State and federal standards. There are no sulfur dioxide monitors within the project area.

Table 2.14: Local Air Quality Levels

Pollutant	Standard	2007	2008	2009
Carbon Monoxide (CO)				
Maximum 1 hour concentration (ppm)		6.9	3.7	ND
Number of days exceeded:	State: > 20 ppm	0	0	ND
	Federal: > 35 ppm	0	0	ND
Maximum 8 hour concentration (ppm)		3.16	1.94	2.41
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1 hour concentration (ppm)		0.100	0.127	0.112

Pollutant	Standard	2007	2008	2009
Number of days exceeded:	State: > 0.09 ppm	1	10	1
Maximum 8 hour concentration (ppm)		0.081	0.106	0.098
Number of days exceeded:	State: > 0.07 ppm	10	24	14
	Federal: > 0.08 ppm	4	18	7
Coarse Particulates (PM_{10})				
Maximum 24 hour concentration (micro g/m^3)		83.0	111.1	65.6
Number of days exceeded:	State: > 50 micro g/m^3	37.7	ND	36.4
	Federal: > 150 micro g/m^3	0	0	0
Annual arithmetic average concentration (micro g/m^3)		32	32	32
Exceeded for the year:	State: > 20 micro g/m^3	Yes	Yes	Yes
	Federal: > 50 micro g/m^3	No	No	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24 hour concentration (micro g/m^3)		64.0	88.3	59.3
98th Percentile 24 hour concentration (micro g/m^3)		57.4	53.9	54.5
Exceeded 98th Percentile[1]:	Federal: > 35 micro g/m^3	Yes	Yes	Yes
State Annual Standard Design Value (micro g/m^3)		16.0	16.0	16.0
Exceeded for the year:	State: > 12 micro g/m^3	Yes	Yes	Yes
National Annual Standard Designation Value (micro g/m^3)		14.6	15.3	14.7
Exceeded for the year:	Federal: > 15 □g/m^3	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1 hour concentration (ppm)		0.053	0.063	0.058
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.012	0.012	0.012
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)				
Maximum 1 hour concentration (ppm)		ND[2]	ND	ND
Number of days exceeded:	State: > 0.25 ppm	ND	ND	ND
Maximum 3 hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.5 ppm	ND	ND	ND
Maximum 24 hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	State: > 0.04 ppm	ND	ND	ND
	Federal: > 0.14 ppm	ND	ND	ND
Annual arithmetic average concentration (ppm)		ND	ND	ND
Exceeded for the year:	Federal: > 0.030 ppm	ND	ND	ND

Source: ARB. http://www.arb.ca.gov/adam/welcome.html; EPA. http://www.epa.gov/air/data/geosel.html. 2010.

[1] Effective December 2006, EPA tightened the PM2.5 24-hour standard from 65 to 35 µg/m^3. New area designations will become effective in early 2010.

[2] ND = No data. There was insufficient (or no) data to determine the value. The closest SO_2 monitoring station is located in Fresno.

ppm = parts per million

micro g/m3 = micrograms per cubic meter

Environmental Consequences

Regional Conformity

The proposed project is listed in the Stanislaus Council of Governments (StanCOG) financially constrained 2011 Regional Transportation Plan (RTP) which found to conform by FHWA and FTA on December 14, 2010. The project is also included in the StanCOG financially constrained 2011 Federal Transportation Improvement Program (FTIP) (Tier I Roadway Projects, Appendix M-1, Page 1). The StanCOG 2011 FTIP was determined to conform by FHWA and FTA on December 14, 2010. The design concept and scope of the proposed project is consistent with the project description in the 2011 RTP and the 2011 FTIP, and the open to traffic assumptions of the StanCOG's regional emissions analysis.

Project Level Conformity

Carbon Monoxide (CO) Hot Spots

Caltrans has developed a Transportation Project-Level Carbon Monoxide Protocol for assessing CO impacts of transportation projects. The procedures and guidelines comply with the following regulations without imposing additional requirements: Section 176(c) of the 1990 CAA Amendments, federal conformity rules, State and local adoptions of the federal conformity rules, the National Environmental Policy Act, and the California Environmental Quality Act requirements [California Code of Regulations Title 21 Section 1509.3(25)].

The California Project- Level Carbon Monoxide Protocol was used to analyze CO impacts for the State Route 99/Hammett Road Interchange Reconstruction Project. The hot-spot analysis covered the most congested roadway segments affected by the project in 2015 and 2035.

The proposed project is primarily an interchange reconfiguration project which would be exempt from regional emissions analysis per CFR 93.127. However, the project also includes the widening of Hammett Road. A regional emission analysis was conducted by StanCOG as part of the air quality conformity analysis and it was demonstrated that the emissions would be consistent with the motor vehicle emissions budgets and goals of the relevant State Implementation Plans. The proposed project is considered regionally significant due to the increase in the number of lanes on Hammett road and was listed as a regionally significant project in the 2011 RTP. The project is in federal and state attainment areas.

Section 4 of the Protocol assesses local analysis. Assessment of the project's effect on localized ambient air quality is based on analysis of CO and PM10 emissions, with the focus on CO. Localized emissions of CO and PM10 may increase with implementation of the proposed project. CO is used as an indicator of a project's direct and indirect impact on local air quality, because CO does not readily disperse in the local environment in cool weather when the wind is fairly still. As stated in the Protocol, the determination of project-level CO impacts should be carried out according to the Local Analysis flow chart. The following discussion provides explanatory remarks for every step of the local analysis.

Level 1:

4.1.1 Is the project in a CO nonattainment area? NO. The project site is located in a federal attainment area.

4.1.2 Was the area redesignated as "attainment" after the 1990 Clean Air Act? YES. EPA proposed approved the maintenance plans and redesignation request in 1998.

4.1.3 Has "continued attainment" been verified with the local Air District, if appropriate? YES. The Modesto Urbanized Area continues to be in attainment for CO.

Level 7:

4.7.1 Does the project worsen air quality? NO. The following criteria were used to determine whether the project is likely to worsen air quality:

Project does not significantly increase the percentage of vehicles operating in cold start mode. Increasing the number of vehicles operating in cold start mode by as little as 2% should be considered potentially significant.

The percentage of vehicles operating in cold start mode is the same or lower for the interchange geometry under study compared to those used for the interchange geometry in the attainment plan. It is anticipated that all vehicles in the interchange are in a fully warmed-up mode. Therefore, this condition is met.

Project does not significantly increase traffic volumes. Increases in traffic volumes in excess of 5% should be considered potentially significant. Increasing the traffic volume by less than 5% may still be potentially significant if there is a corresponding reduction in average speeds.

As indicated in Table 2.15, traffic volumes on Hammett Road do not change as a result of the project. The proposed project is an interchange reconstruction project that also does not increase the capacity or average daily traffic of State Route 99. In addition, there is no reduction in average speeds; the project alternative generally increases average speeds and reduce delay when compared with the No Build Alternative. Therefore, this condition is met.

Table 2.15: Traffic Data –Average Daily Traffic on Hammett Road

Model Year	No Build	Build Alternative	Project Related Increase in ADT	Percent Increase
2015	10,360	10,360	N/A	N/A
2035	58,800	58,800	N/A	N/A

Source: Hammett Road/State Route 99 Interchange Reconstruction Project Traffic Operations Report, March 2010.

Project improves traffic flow. For uninterrupted roadway segments, higher average speeds (up to 50 mph) should be regarded as an improvement in traffic flow. For intersection segments, higher average speeds and a decrease in average delay should be considered an improvement in traffic flow.

The project would improve the traffic flow by improving the level of service (LOS) at key intersections in the project area. In addition, hours of system-wide delay are significantly reduced with the proposed project compared to the No Build scenario. Therefore, this criterion is met.

The CO Protocol indicates that further analysis is not necessary. Therefore, a detailed hotspot analysis is not required.

PM Hot Spot Analysis

Nonattainment/maintenance areas are subject to the Transportation Conformity Rule, which requires local transportation and air quality officials to coordinate planning to ensure that transportation projects such as road construction do not affect an area's ability to reach its clean air goals.

The proposed project is within a nonattainment area for federal particulate matter 2.5 and particulate matter 10 microns standards. Therefore, per 40 Code of Federal Regulations Part 93 analyses are required for conformity purposes. However, the Environmental Protection Agency does not require hot-spot analyses, qualitative or

quantitative, for projects that are not listed in section 93.123(b)(1) as an air quality concern.

According to the Environmental Protection Agency Transportation Conformity Guidance, an "interchange configuration project that involves either turn lanes or slots, or lanes or movements that are physically separated" is not a project of air quality concern. These kinds of projects improve operations by smoothing traffic flow and vehicle speeds by improving weave and merge operations, which would not be expected to create or worsen particulate matter 2.5 or 10 microns violations. In addition, the guidance indicates that "interchange reconfiguration projects that are designed to improve traffic flow and vehicle speeds, and do not involve any increases in idling" are also not considered projects of air quality concern.

The proposed project would not result in significant changes in traffic volume, vehicle mix, or other factors that would cause an increase in emissions compared to the No Build condition. Implementation of the proposed project would not change interchange LOS significantly between Build and No Build conditions. Therefore, according to the March 10, 2006 Final Rule, this project would not be considered a POAQC under 40 CFR 93.123(b)(1).

Interagency consultation was initiated August 2011 and Environmental Protection Agency /Federal Highway Administration concurrence that the project is not a Project of Air Quality Concern was received September 20, 2011 (Appendix F). The project is not expected to cause or contribute to, or worsen, any new localized PM2.5 and PM10 violations. The project is expected to reduce the severity and number of localized PM2.5 and PM10 violations in the project area.

Short-Term Impacts

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment also are anticipated and would include carbon monoxide, nitrogen oxides, volatile organic compounds, directly-emitted particulate matter, and toxic air contaminants such as diesel exhaust particulate matter.

Construction is anticipated to be completed by 2015. The San Joaquin Valley Air Pollution Control District does not provide a model for calculating construction emissions. Construction emissions, however, were estimated for the project using the

Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 6.3.2, which can also be used for projects in the San Joaquin Valley. Construction-related emissions are presented in Table 2.16. The emissions presented below are based on the best information available at the time of calculations and assume that the schedule for all improvements is anticipated to begin in 2013. Default equipment assumptions for the Road Construction Emissions Model were used in developing the emissions estimates. The estimates can be refined once final engineering has been completed for the project. As building the project is expected to take less than five years, construction-related emissions were not considered in the conformity analysis.

Site preparation and roadway construction would involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. If not properly controlled, these activities would temporarily generate particulate matter of 2.5 microns or less and 10 microns or less in diameter, and small amounts of carbon monoxide, sulfur dioxide, nitrogen oxides, and volatile organic compounds.

Table 2.16: Project Construction Emissions

Project Phases	ROG (lbs/day)	CO (lbs/day)	NO_x (lbs/day)	Total PM_{10} (lbs/day)	Exhaust PM_{10} (lbs/day)	Fugitive Dust PM_{10} (lbs/day)
Grubbing/Land Clearing	4.2	17.5	30.9	11.4	1.4	10.0
Grading/Excavation	5.1	22.6	37.4	11.8	1.8	10.0
Drainage/Utilities/Sub-Grade	3.8	16.3	25.5	11.4	1.4	10.0
Paving	2.5	10.7	12.8	1.1	1.1	-
Maximum (pounds/day)	5.1	22.6	37.4	11.8	1.8	10.0
Total (tons/construction project)	1.7	7.2	11.5	4.0	0.6	3.4
Recommended thresholds	10	10	10	15	15	15

Source: Hammett Road/State Route 99 Interchange Reconstruction Project Air Quality Analysis, April 2011.
ROG=reactive organic gases (pounds per day)
CO=carbon monoxide (pounds per day)
NO_x=nitrogen oxides (pounds per day)
PM_{10}=particulate matter, 10 micron diameter (pounds per day)
As noted in the table, construction emissions would not exceed the recommended thresholds.

Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving

the site would deposit mud on local streets, which could be an additional source of airborne dust after the mud dries. Particulate matter emissions of 10 microns or less would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Particulate matter emissions of 10 microns or less would depend on soil moisture, silt content of the soil, wind speed, and the number of equipment being operated. Larger dust particles would settle near the source, while finer particles would be dispersed over greater distances from the construction site.

Long-Term Impacts

The proposed project is locally defined as regionally significant because the project will increase the number of lanes on Hammett Road. The project is listed as a regionally significant project in the Stanislaus Council of Governments Air Quality Conformity Analysis for the 2011 Regional Transportation Plan.

However, the project is not considered to worsen air quality for the following reasons:

- The project does not significantly increase the percentage of vehicles operating in cold start mode. The percentage of vehicles operating in cold start mode is the same or lower for the intersection under study compared to those used for the intersection in attainment plan. It is anticipated that all vehicles in the intersection are in a fully warmed-up mode. Therefore, this condition is met.
- The project does not significantly increase traffic volumes. As indicated in the Traffic Operations Report, traffic volumes on Hammett Road do not change as a result of the project. The proposed project is an interchange reconstruction project that also does not increase the capacity or average daily traffic of State Route 99. In addition, there is no reduction in average speeds; the project alternative generally increases average speeds and reduces delay. Therefore, this condition is met.
- The project improves traffic flow. As shown in the Traffic Operations Report, the project would improve the traffic flow by improving level of service at key intersections in the project area. In addition, hours of system-wide delay are significantly reduced with the proposed project compared to the No Build Alternative. Therefore, this condition is met.

Mobile Source Air Toxics (MSATs)

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards, Environmental Protection Agency also regulates air toxics. Most

air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics are a subset of the 188 air toxics defined by the Clean Air Act. Mobile Source Air Toxics are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through an engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The Environmental Protection Agency is the lead federal agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of Mobile Source Air Toxics. The Environmental Protection Agency issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 Federal Register 17229 [March 29, 2001]). This Rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, the Environmental Protection Agency examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, its national low-emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements.

Evaluating the environmental and health impacts from Mobile Source Air Toxics on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and then a final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the Mobile Source Air Toxics health impacts of the proposed project.

Exposure to toxics has been a focus of a number of Environmental Protection Agency efforts. Most notably, the Environmental Protection Agency conducted the National Air Toxics Assessment to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local

exposure, the modeled estimates in the National Air Toxics Assessment database best illustrate the levels of various toxics when aggregated to a national or State level.

The Environmental Protection Agency is in the process of assessing the risks of various kinds of exposures to these pollutants. The Environmental Protection Agency Integrated Risk Information System is a database of human health effects that may result from exposure to various substances found in the environment (http://www.epa.gov/iris). The following toxicity information for the six prioritized Mobile Source Air Toxics was taken from the Integrated Risk Information System database Weight of Evidence Characterization summaries. This information, from the Environmental Protection Agency's Integrated Risk Information System database, represents the Environmental Protection Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- Benzene is characterized as a known human carcinogen.
- The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- Formaldehyde is a probable human carcinogen, based on limited evidence in humans and sufficient evidence in animals.
- 1,3-butadiene is characterized as carcinogenic to humans by inhalation.
- Acetaldehyde is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- Diesel Exhaust is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel Exhaust is the combination of diesel particulate matter and diesel exhaust organic gases.
- Diesel Exhaust also represents chronic respiratory effects, possibly the primary noncancer hazard from Mobile Source Air Toxics. Prolonged exposures to Diesel Exhaust may impair pulmonary function and could produce symptoms such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow reasonable prediction of relative emission changes between alternatives for larger projects, the amount of Mobile Source Air Toxics emissions from the project alternatives and Mobile Source Air Toxics concentrations

or exposures created by each project alternative cannot be predicted with sufficient accuracy to be useful in estimating health impacts. Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have significant adverse impacts on the human environment.

Under the project build alternative, it is expected that there would be similar or lower Mobile Source Air Toxics emissions in the study area relative to the No Build Alternative due to improvements in the Level of Service (see Table 2.17). On a regional basis, the U.S. Environmental Protection Agency vehicle and fuel regulations, coupled with fleet turnover, will over time cause a substantial reduction that, in almost all cases, will cause region wide Mobile Source Air Toxics levels to be substantially lower than they are today.

Table 2.17: Mobile Source Air Toxics Peak Hour Emissions (grams)

	Existing	2035 No Project	2035 Alternative 3
Diesel PM	92.1	79.8	78.7
Formaldehyde	37.6	48.9	48.2
1,3-Butadiene	4.1	4.9	4.8
Benzene	23.2	29.3	28.9
Acrolein	0.9	1.0	1.0
Acetaldehyde	15.8	20.9	20.7

Source: Hammett Road/State Route 99 Interchange Reconstruction Project Air Quality Analysis, April 2011.

Avoidance, Minimization, and/or Mitigation Measures

Construction Impacts

Construction of the project requires the implementation of control measures set forth under Regulation VIII. The following additional control measures would further reduce construction emissions and should be implemented with the project:

- Limit traffic speeds on unpaved roads to 15 mph;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent;
- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;
- Install wind breaks at windward side(s) of construction area;
- Suspend excavation and grading activity when winds exceed 20 mph (regardless of wind speed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation); and

- Limit area excavation, grading, and other construction activity at any one time.

The following construction equipment control measures would reduce construction exhaust emissions:

- Properly and routinely maintain all construction equipment, as recommended by the manufacturer manuals, to control exhaust emissions;
- Shut down equipment when not in use for extended periods of time to reduce emissions associated with idling emissions;
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use; and
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.

Compliance with the above standard measures would lessen the PM_{10} and regional emissions impact during construction.

Long-term Impacts

No mitigation measures required, as the build alternative would not result in substantial long-term air-quality impacts.

2.2.6 Noise and Vibration

Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating the effects of highway traffic noise. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between the National Environmental Policy Act and the California Environmental Quality Act.

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then California Environmental Quality Act dictates that

mitigation measures must be incorporated into the project unless such measures are not feasible.

National Environmental Policy Act and 23 Code of Federal Regulations 772

For highway transportation projects with Federal Highway Administration, (and Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise-abatement criteria that are used to determine when a noise impact would occur. The noise-abatement criteria differ depending on the type of land use under analysis. For example, the criterion for residences (67 decibels) is lower than the criterion for commercial areas (72 decibels). The following Table 2.17 lists the noise-abatement criteria for use in the National Environmental Policy Act and 23 Code of Federal Regulations 772 analyses.

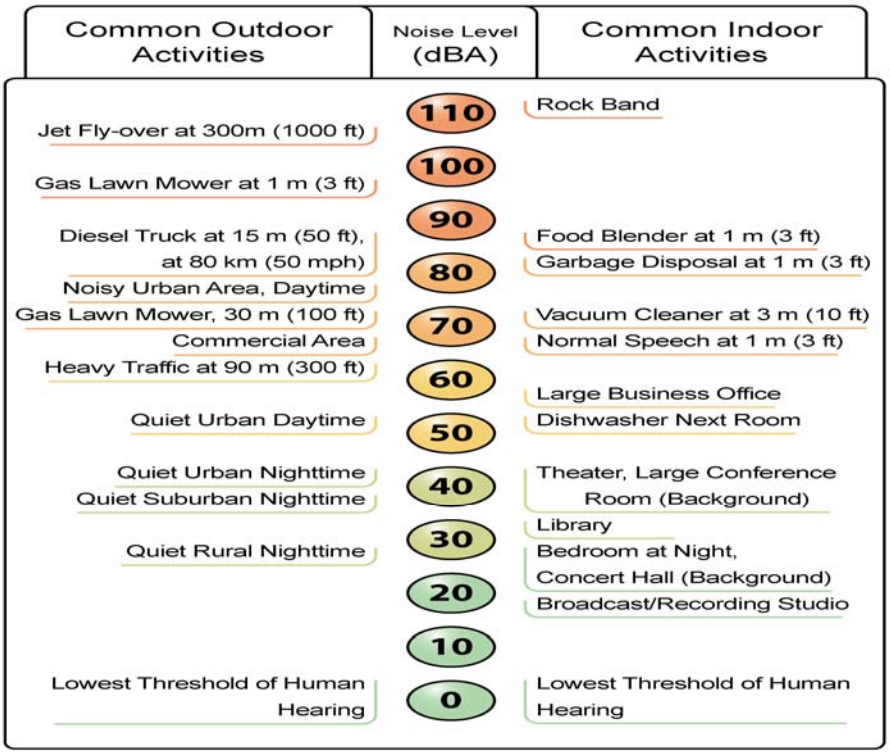
Table 2.17: Noise Abatement Criteria

Activity Category	NAC, Hourly A- Weighted Noise Level, dBA $L_{eq}(h)$	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above
D	–	Undeveloped lands.
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans Traffic Noise Analysis Manual, 2006
A-weighted decibels are adjusted to approximate the way humans perceive sound. Equivalent Continuous Noise Level is the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual time-varying levels over 1 hour.

Figure 2.4 below lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

Figure 2.4: Typical Noise Levels



In accordance with Caltrans' Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12-decibel or more increase), or when the future noise level with the project approaches or exceeds the noise-abatement criteria. Approaching the noise abatement-criteria is defined as within 1 decibel of the noise-abatement criteria.

If it is determined that the project would have noise impacts, then potential abatement measures must be considered. Noise-abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise-abatement measures that would likely be incorporated into the project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5-decibel reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit

analysis. The following factors are used to determine whether a proposed noise-abatement measure is reasonable: residents' acceptance and the cost per benefited residence; the absolute noise level; build alternative versus existing noise; environmental effects of noise abatement; public and local agency input; newly constructed development versus development pre-dating 1978.

Affected Environment

The following analysis is based on the Noise Study Report completed May 2010 and Noise Abatement Decision Report completed in June 2011.

The existing noise environment in the project area is dominated by traffic noise from vehicular traffic on State Route 99. Noise monitors were placed in strategic locations around the project area to obtain the existing noise levels. The results indicated that existing ambient noise levels at modeled sensitive receptors along the project alignment range from 58 A-weighted decibel to 65 A-weighted decibel equivalent continuous noise level. Land uses were also assessed to identify where noise impacts would potentially occur. Single-family and multi-family residences, places of worship, and school outdoor land uses were identified in the project area and were classified under Activity Category B, with a Noise Abatement Criteria of 67 A-weighted decibels for exterior areas. Existing commercial and industrial areas in the project area were identified as Activity Category C uses with a Noise Abatement Criteria of 72 decibels for exterior areas. For the purposes of the noise study, sensitive receptors were numbered R1 through R15 (refer to Figure 2.5). Soundwalls currently exist along sections of the project site.

Environmental Consequences

The proposed project is considered a Type I project because the project will use federal aid to modify the horizontal and vertical alignment of Hammett Road overcrossing and the State Route 99 on-and-off-ramps, moving noise sources closer to sensitive receptors.

Table 2.18 summarizes the traffic noise modeling results for both existing conditions and design-year (2035) conditions under the No Build and Build Alternative (Alternative 3). Predicted design-year traffic noise levels with the project are compared to existing conditions and to design-year no-build conditions. The comparison to existing conditions is included in the analysis to determine whether a substantial noise increase would occur. The modeled future noise levels for each of the project build alternative was also compared to the Noise Abatement Criteria to

determine whether a traffic noise impact would occur. The comparison to no-build conditions indicates the direct effect of the project.

Table 2.18: Predicted Traffic Noise Levels (dba L_{eq}(h)) Alternative 3

Receptor # and Location	Existing Noise Level	Predicted Noise Level without Project	Predicted Noise Level with Project	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement						Reasonable and Feasible
					6-ft Wall	8-ft Wall	10-ft Wall	12-ft Wall	14-ft Wall	16-ft Wall	
R1-Gateway Drive	64	**66**[1]	65	Yes	64	63	63	62	61	61	No
R2-Gateway Drive	65	**66**	**66**	Yes	65	64	64	63	63	62	No
R3-Gardenview Way	62	65	64	No	63	63	63	62	62	62	No
R4-Gardenview Way	60	65	64	No	63	63	63	63	63	63	No
R5-Gardenview Way	58	64	63	No	63	63	63	62	62	62	No
R6-Gardenview Way	57	65	64	No	64	64	64	64	64	64	No
R7-Gardenview Way	61	63	63	No	62	62	62	61	61	61	No
R8-Edgefield Way	61	64	63	No	62	62	62	62	62	62	No
R9-Gateway Drive	63	64	64	No	63	62	62	60	61	61	No
R10-Gateway Drive	61	62	62	No	61	60	60	58	59	59	No
R11-Gateway Drive	62	63	63	No	62	61	61	60	59	59	No
R12-Gateway Drive	59	60	60	No	60	60	59	58	58	58	No
R13-Gateway Drive	59	60	60	No	59	58	58	57	57	57	No
R14-Trailwood Court	58	59	59	No	58	58	58	57	57	57	No

Receptor # and Location	Existing Noise Level	Predicted Noise Level without Project	Predicted Noise Level with Project	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement						Reasonable and Feasible
					6-ft Wall	8-ft Wall	10-ft Wall	12-ft Wall	14-ft Wall	16-ft Wall	
R-15 Hammett Road	59	63	63	No	63	63	63	63	63	63	No

Source: Hammett Road/State Route 99 Interchange Reconstruction Project Noise Study Report, May 2010.
[1] Numbers in **bold** indicate noise levels that approach or exceed the NAC.
dBA = A-weighted decibel $L_{eq}(h)$ = Equivalent Sound Level per hour NAC = Noise Abatement Criteria

The predicted 2035 traffic sound levels at the representative sensitive receptor locations along the project corridor were determined with existing terrain and barrier features modeled (including existing buildings, solid fences and walls) and using the future predicted peak-hour traffic volumes for the considered project build alternative (Figure 2.5). The model input and output data for the predicted future no-build conditions (assuming existing roadway conditions but with year 2035 traffic volumes) are included in the Noise Study Report.

If the peak-hour traffic noise level at a sensitive receptor location is predicted to "approach or exceed" the Noise Abatement Criteria, or if the predicted traffic noise level is 12 A-weighted decibels or more higher than the corresponding existing modeled noise level at the sensitive receptor location analyzed, noise abatement measures must be considered. Modeling results indicate that of the 15 modeled receptor locations, predicted traffic noise levels for the future year 2035 conditions without the project (No Build) would "approach or exceed" the Noise Abatement Criteria under the Activity Category B (67) for two modeled receptor locations: modeled receptor locations R1 and R2 representing four residential units. However, predicted traffic noise levels under future 2035 conditions with the project would "approach or exceed" the Noise Abatement Criteria under the Activity Category B (67) for only one modeled receptor location: modeled receptor location R2 representing two residential units. For California Environmental Quality Act purposes as shown in Table 2.18, none of the modeled receptor locations would experience a substantial noise increase of 12 A-weighted decibels or more over existing conditions. Modeled noise levels that "approach or exceed" the Noise Abatement Criteria are shown in bold in Table 2.18.

Under future conditions with the project, four modeled receptor locations would experience a decrease of 1 A-weighted decibel in traffic noise levels compared to

Figure 2.5
Monitoring and Modeled Receptor Locations
EA # 10-0L3200
10-STA-99-PM 23.8/24.7

those that would be experienced under future conditions without the project (No Build). These modeled receptor locations are R3, R4, R5, and R6, representing a total of twelve single family residential units. This decrease in traffic noise levels is due to the decrease in traffic volumes that is expected to occur on Pirrone Road with implementation of the proposed project compared to those expected without the project, as shown in the traffic operations report for this project. Traffic noise impacts are predicted to occur at Activity Category B land uses within the project area, and, therefore, noise abatement must be considered.

Construction Noise

Two types of short-term noise impacts would occur during project construction: noise from construction crew commutes to and from the site and noise from the construction work itself.

The noise from construction-crew commutes and the transport of construction equipment and materials to the project site would incrementally raise noise levels on access roads leading to the site. Heavy equipment for grading and construction activities would be moved to the site, remain for the duration of each construction phase, and not add to the daily traffic volume in the project vicinity. A high single-event noise-exposure potential at a maximum level of 87 dBA L_{max} from trucks passing within 50 feet would also exist. However, the projected construction traffic would be minimal when compared to existing traffic volumes on State Route 99 and other affected streets, meaning the project's associated long-term noise-level change would not be perceptible. Therefore, short-term construction-related worker commutes and equipment-transport noise would be less than substantial.

Noise is generated during excavation, grading, and roadway construction. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and, therefore, the noise levels along the project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

The closest noise sensitive receptors are located approximately 160 feet from roadway improvement construction areas. These sensitive receptors include the residences on Gateway Drive, represented by modeled receptor locations R1 and R2, whose western property boundary borders Pirrone Road, and the residence in the

southwest quadrant of Hammett Road and State Route 99 interchange, represented by modeled receptor location R15. Therefore, these sensitive receptor locations may be subject to short-term noise reaching 81 dBA, the maximum sound level generated by construction activities along the project alignment.

Avoidance, Minimization, and/or Abatement Measures

A Noise Abatement Decision Report (June 2011) was conducted to determine the reasonableness of soundwalls for this project by comparing the estimated cost of building the soundwall against the total reasonable allowance. The total reasonable allowance was determined based on the number of benefited residences multiplied by the reasonable allowance per residence. Construction cost estimates were based on standard masonry block construction. If the estimated soundwall construction cost exceeded the total reasonable allowance, the soundwall was determined not to be reasonable. However, if the estimated soundwall construction cost was within the total reasonable allowance, the soundwall was determined to be reasonable.

Based on the studies completed to date, Caltrans does not intend to incorporate noise abatement in the form of barriers. Section 3 of the Caltrans Noise Standards Protocol states that a minimum noise reduction of 5 A-weighted decibels must be achieved at the impacted receivers in order for the proposed noise abatement measure to be considered feasible. As shown in Table 2.18, calculations based on preliminary design data indicate that none of the modeled sound barriers would result in at least a minimum reduction of 5 A-weighted decibels at the impacted receptor location and therefore no sound barriers are feasible as part of the proposed project.

Construction Noise

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 7-1.01I, “Sound Control Requirements,” and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by existing local traffic noise. Further, implementing the following measure would minimize the temporary noise impacts from construction:

- All equipment would have sound-control devices that are no less effective than those provided on the original equipment. No equipment would have an unmuffled exhaust.
- As directed by Caltrans, the contractor would implement appropriate additional noise mitigation measures, including changing the location of stationary

construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

California Environmental Quality Act

The maximum existing noise level at is 66 dBA; the predicted noise level under build Alternative 3 is 66 dBA. This 1 dBA increase between existing noise levels and the build alternative would be barely perceptible to the human ear. Therefore, under California Environmental Quality Act, no significant noise impact would occur as a result of the project and no mitigation is required.

2.3 Biological Environment

2.3.1 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The United States Fish and Wildlife Service, the National Oceanic and Atmospheric Administration Fisheries and the California Department of Fish and Game are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.4 below. All other special-status animal species are discussed here, including the California Department of Fish and Game fully protected species and species of special concern, and the United States Fish and Wildlife Service or the National Oceanic and Atmospheric Administration Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

Affected Environment

A Natural Environment Study was completed for the project in May 2011. The Biological Study Area as defined in the Natural Environment Study for the project includes approximately 117 acres. Lands in the Biological Study Area include agricultural, disturbed/ruderal, and developed/industrial. No natural lands occur in the Biological Study Area.

Bats

There are several species of bats that could use the Biological Study Area. The bridge and surrounding riparian area may provide suitable day roosting habitat for greater western mastiff bats (*Eumops perotis californicus*), pallid bats (*Antrozous pallidus*), and western red bats (*Lasiurus blossevillii*), which are all California Species of

Special Concern. Another species that may use the Biological Study Area is the Yuma myotis (*Myotis yumanensis*), which is classified as a California Department of Fish and Game 'special animal'. None of these species have any formal federal status.

Bats are nocturnal and are found in a variety of habitats. Many species forage over water; some also hunt over shrubs or meadows, within trees, and along forest edges. Some species have separate roosts for day, night, maternal, and hibernation use, whereas some species may use the same roost for more than one purpose. Bats roost in a variety of crevices, cavities, and protected sites; roosting sites may include bridges, buildings, cliff crevices, caves, mines, and trees. Multiple species often roost together.

Greater western mastiff bats are found in broad, open areas in a variety of habitats, such as deserts, flood plains, chaparral, open forests, grasslands, and agricultural areas. They feed primarily on moths. Roosts are high above the ground, allowing a clear drop of about nine feet; cliffs are the preferred roost site, though crevices in boulders and buildings are also used.

Pallid bats use a variety of habitats at low elevations. They often forage on the ground, and prey on large insects and spiders. Caves, crevices, and sometimes hollow trees and buildings are used for day roosts. Night roosts may be in more sites that are open.

Western red bats are found from sea level up through mixed conifer forests. They roost among tree leaves, and prefer a site that is open below, protected from above, and located over dark groundcover. Roosts may be from 2-40 feet above ground. Foraging occurs over a variety of habitats, from high above treetops to nearly ground level.

The Yuma myotis is usually associated with permanent sources of water, typically rivers and streams. It occurs in a variety of habitats including riparian, arid scrublands and deserts, and forests, from sea level to 8,000 feet. This species roosts in bridges, buildings, cliff crevices, caves, mines, and trees, and occasionally abandoned swallow nests under bridges. This species hibernates in winter and may make short elevational migrations according to the season. Yuma myotis roost in large groups, and may roost with other bat species.

The agricultural lands in the Biological Study Area provide suitable foraging habitat for these bat species, and the orchards provide suitable night roost habitat for red bats.

Due to the small size of the trees, the orchards do not provide suitable day or maternity roost sites. Since suitable foraging and night roost habitat is present, these bat species could occur in the Biological Study Area.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a California Species of Concern; it has no federal status. Burrowing owls occur in warmer valleys, open, dry grasslands, deserts, and scrublands associated with areas that support populations of California ground squirrels. Burrowing owls nest below ground, using abandoned burrows of other species, most commonly ground squirrel burrows. They feed on insects and small mammals.

Numerous burrows suitable for wintering or nesting habitat occur in the ruderal/disturbed areas of the Biological Study Area. However, the disturbed/ruderal vegetation on the project site and adjacent properties provides only marginally suitable foraging habitat, which reduces overall habitat value for burrowing owls. In addition, no sign of burrowing owls (e.g., owls, feathers, pellets, prey remains) were observed during site surveys. Due to the lack of nearby records and the absence of any sign of owl use, it is unlikely that owls occur in the Biological Study Area. However, since this species is migratory, it cannot be definitively precluded from occurring in the Biological Study Area.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is a California Species of Concern and a United States Fish and Wildlife Service Migratory Non-game Bird of Management Concern.

Tricolored blackbirds are highly colonial, gregarious in all seasons, and nomadic in fall. They are largely endemic to the lowlands of California, and prefer to nest in freshwater marshes with dense growths of herbaceous vegetation, such as mustard, blackberry, and thistle. Willow and cottonwood riparian areas are also used for nesting. A nesting area must be large enough to support a minimum colony of about 50 pairs. They feed in flocks even when breeding; foraging in grassy fields, crops, flooded areas and edges of ponds, and eating insects, seeds, and cultivated grains.

No suitable nesting habitat is present for this species in the Biological Study Area but the agricultural lands (row/field crops) could provide suitable foraging habitat. Consequently, this species could forage in the Biological Study Area.

White-tailed Kite

The white-tailed kite (*Elanus leucurus*) is classified by the California Department of Fish and Game as Fully Protected; this species has no formal federal status.

White-tailed kites nest and forage in a variety of settings and range throughout the Central Valley. White-tailed kites build stick nests in the tops of trees. They forage for small rodents over grassland and open savanna and are commonly observed foraging along freeway medians and edges.

Although white-tailed kites were not observed during site surveys, this species could potentially forage in the disturbed/ruderal areas and agricultural lands within the Biological Study Area. No suitable nesting habitat is present for this species.

Environmental Consequences

The project will remove row and field crops, orchard, and disturbed/ruderal areas that could provide habitat for various animal species. Row and field crops, totaling 10.72 acres, will be removed along the east side of State Route 99 near the extension of Hammett Road (due the construction of retention basins) and to the north along the new northbound on-ramp. Orchards, totaling 2.13 acres, will be removed on the west side of State Route 99 due to the construction of retention basins and reconstruction of the intersection at Hammett Road and Hammett Court. Disturbed/ruderal areas, totaling 14.26 acres, will be removed within the interchange and adjacent areas. Most components of the interchange reconstruction will impact disturbed/ruderal areas.

Bats

The project will remove approximately 11 acres of row/field crops that provide suitable foraging habitat for bats, and approximately 2 acres of orchards that provide suitable night roost habitat for red bats. The project will not impact day or maternity roost habitat. Considering the abundance of row/field crops and orchards in the region, project impacts to bats will be minimal

Burrowing Owl

The project will remove approximately 14 acres of disturbed/ruderal vegetation that is potential nesting and foraging habitat for burrowing owls. Considering the marginal quality of the habitat and the negative survey results, project impacts to this species will be minimal.

Tricolored Blackbird

The project will remove approximately 11 acres of row/field crops that is potential foraging habitat for tricolored blackbirds. Considering the abundance of row/field crops in the region, project impacts to this species will be minimal.

White-tailed Kite

The project will remove approximately 14 acres of ruderal/disturbed vegetation which is potential foraging habitat for white-tailed kites. Considering the marginal quality of the habitat, project impacts to this species will be minimal.

Avoidance, Minimization, and/or Mitigation Measures

Migratory Bird Treaty Act and California Fish and Game Code (Breeding Birds)

The proposed project could potentially result in take of migratory birds nesting in the Biological Study Area if they are present when construction begins. Take is prohibited under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code. Fish and Game Code (Section 3513) also prohibits take or destruction of bird nests or eggs.

The following seasonal work restrictions will be implemented during construction to minimize the potential for take of nesting birds:

1. If work must begin during the nesting season (February 16 to August 31), no more than ten working days prior to the start of construction, a qualified biologist would survey all suitable nesting habitat in the Biological Study Area for presence of nesting birds. If no nesting activity is observed, work may proceed as planned. If an active nest is discovered, Environmentally Sensitive Area fencing would be installed around the drip line of the nest tree and maintained in good condition until the end of the nesting season or until the young have fledged, as determined by a qualified biologist.

Bats

Since the project will only remove potential night roost habitat (orchards) for red bats, orchard trees would be removed during the day light hours to avoid disturbing nesting bats.

Burrowing Owl

Burrowing owls have the potential to nest in the project area between February 1 through August 31. The following measures are proposed to minimize impacts to burrowing owls:

1. A maximum of 30 days prior to construction, a preconstruction survey for burrowing owls would be conducted in the Biological Study Area and vicinity by a qualified biologist. If burrowing owls are found within the Biological Study Area, a protective buffer and/or exclusion measures would be implemented as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (March 2012).

2. Compensatory mitigation, potentially including providing replacement habitat and/or enhancing existing habitat, may also be required per the California Department of Fish and Game guidelines. The California Department of Fish and Game would be consulted to determine the appropriate course of action.

Tricolored Blackbird

The following would be implemented to minimize impacts to this species:

1. If possible, all trees that will be impacted by project construction would be removed during the non-nesting season (December 1 to March 31), to avoid take of a nest or bird. If this is not possible, a survey for nesting tricolored blackbirds would be conducted in the Biological Study Area and within a 100-foot radius by a qualified biologist. The survey would be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

2. If trees are removed outside the nesting season, a preconstruction survey would be conducted by a qualified biologist in a 100 feet radius around the project footprint for nesting tricolored blackbirds. The survey would be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

3. If nesting tricolored blackbirds are found within 100 feet of the Biological Study Area, a setback of 100 feet from nesting areas would be established and marked with Environmentally Sensitive Area fencing. This setback applies whenever construction or other ground disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Environmentally Sensitive Area fencing would be maintained during the nesting season until construction is complete or the young have fledged, as determined by a qualified biologist.

4. Alternatively, the setback (if required) may be reduced if a qualified biologist is present to monitor the nest(s) when construction begins. If the biologist determines nesting is not affected by construction activities with the reduced setback, work can proceed. If it is determined that construction activities are adversely affecting the nesting birds with the reduced setback, all construction within 100 feet of a nest would be halted until the biologist can establish an appropriate setback.

Nesting/Foraging Raptors: White-tailed Kite

In addition to following the Environmentally Sensitive Area measures detailed in Section 4.1.1.2 of the Natural Environment Study, the following avoidance and minimization measures should reduce any potential impacts to Cooper's hawks and white-tailed kites:

1. If possible, all trees that will be impacted by project construction would be removed during the non-nesting season (between September 16 and February 28), to avoid take of a nest or bird. If this is not possible, a survey for nesting hawks, white-tailed kites, and other raptors would be conducted in the Biological Study Area and within a 500-foot radius by a qualified biologist. The survey would be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

2. If trees are removed outside the nesting season, a preconstruction survey would be conducted by a qualified biologist in a 500 foot radius around the project footprint for nesting raptors. The survey would be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

3. If nesting raptors are found within 500 feet of the Biological Study Area, a qualified biologist would evaluate the potential for the proposed project to disturb nesting activities, which is a significant impact under the California Environmental Quality Act. The evaluation criteria would include, but are not limited to, the location/orientation of the nest in the nest tree, the distance of the nest from the Biological Study Area, and line of sight between the nest and the Biological Study Area.

4. The California Department of Fish and Game would be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.

5. If work is allowed to proceed, a qualified biologist would be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist will have the authority to stop work if it is determined the project is adversely affecting nesting activities.

2.3.2 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway administration, are required to consult with the United States Fish and Wildlife Service and the National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of the Federal Endangered Species Act defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code, Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The California Department of Fish and Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise

lawful development projects; for these actions an incidental take permit is issued by the California Department of Fish and Game. For projects requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Game may also authorize impacts to the California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Affected Environment

A Natural Environment Study was completed for the project in May 2011. In March 2012, Caltrans prepared a letter initiating consultation with the U.S. Fish and Wildlife Service regarding project effects to Valley elderberry longhorn beetle.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is a State-listed threatened species. It has no federal status. Swainson's hawks are long distance migrants, wintering primarily in South America and returning north to breed, using grasslands with scattered trees, riparian areas, and agriculture and pasture lands. They require suitable nest trees and foraging areas that support rodent populations. In the Central Valley, they typically nest in cottonwood, willow, sycamore, oak or walnut trees in a semi-exposed position in the upper canopy or lateral branches. Swainson's hawks are known to forage up to fifteen miles from their nest sites.

The California Natural Diversity Database has numerous nesting records for Swainson's hawks within ten miles of the Biological Study Area, and Swainson's hawks are common in the region. About half of the records are along either the Stanislaus or the San Joaquin River. The most recent records within 10 miles of the Biological Study Area are from 2003 (3 records approximately 8 miles away) and 2002 (2 records approximately 3 miles away and one record 1.2 miles away).

The disturbed/ruderal areas and row/field crops in the Biological Study Area provide suitable foraging habitat for Swainson's hawks. No suitable nesting habitat is present.

No Swainson's hawks were observed during the 2009 site surveys, nor were any large stick nests observed in any of the trees within the Biological Study Area. However, during the 1998 studies of this area, the possible presence of a nesting territory just west of the State Route 99 bridge was noted. A raptor nest was also found in a large cottonwood just east of the Biological Study Area.

Since suitable foraging habitat is present, and there are multiple records in the vicinity, Swainson's hawks are reasonably likely to occur in the Biological Study Area.

Valley Elderberry Longhorn Beetle

The Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is federally listed as threatened[1], and could occur in the Biological Study Area. This species ranges from Redding to Bakersfield, into the western foothills of the Sierra Nevada, and into the eastern foothills of the Coast Range. Critical habitat was designated for Valley elderberry longhorn beetle in Sacramento County; essential habitat for the recovery of the species also exists in Solano County. The Valley elderberry longhorn beetle is typically found in mature riparian vegetation associated with large river systems, but its range extends from the valley floor to 3,000 feet elevation.

The beetle is dependent on its host plant, blue elderberry (*Sambucus mexicana*), which is a common component of Central Valley riparian forests. Valley elderberry longhorn beetle larvae feed and mature within elderberry stems one inch or larger in diameter and then exit prior to metamorphosing to the pupal stage. Exit holes created by the larvae are generally the only evidence of beetle use. Because the larval beetles cannot be detected within the stems until the adults emerge, Valley elderberry longhorn beetle are assumed to be present within stems of sufficient size anywhere within the beetle's known range.

There is one elderberry within the Biological Study Area, growing along the edge of the bike path near the existing northbound on-ramp. The elderberry has multiple stems of sufficient size to support Valley elderberry longhorn beetle larvae. No exit holes were observed. Additionally, the California Natural Diversity Database has records of Valley elderberry longhorn beetle within ten miles of the Biological Study Area. Because of these factors, Valley elderberry longhorn beetle are presumed to be present.

Environmental Consequences

Swainson's Hawk

The project will remove approximately 14 acres of disturbed/ruderal and approximately 11 acres of row/field crop vegetation that could provide a total of 25 acres of foraging habitat for this species. The disturbed/ruderal vegetation surrounds

[1] In 2006, the USFWS completed a five-year review for this species and recommended delisting the Valley elderberry longhorn beetle (USFWS 2007).

the interchange; all 14 acres of this habitat type is within 160 feet of a major road, highway, or on-/off-ramp. Though Swainson's hawks could forage around the interchange, the proximity to a major traffic route reduces the area's foraging value. Both the disturbed/ruderal and row/field crop vegetation types are found in abundance in the region, and the loss of these habitats (25 acres combined) is not expected to adversely affect Swainson's hawk foraging.

Valley Elderberry Longhorn Beetle

There is one elderberry plant in the Biological Study Area. The plant has multiple stems of sufficient size to support Valley elderberry longhorn beetle larvae. The elderberry is growing along the edge of the bike path within the project footprint and would be removed.

Caltrans, as the Federal Highway Agency designee, prepared a letter in March 2012 to initiate consultation with U.S. Fish and Wildlife Service for this species, as required under Section 7 of Federal Endangered Species Act.

Avoidance, Minimization, and/or Mitigation Measures

Swainson's Hawk

Caltrans proposes pre-construction surveys for Swainson's hawk that could potentially nest in the vicinity of the project. If an active nest is observed within 0.5 mile of the project area, the California Department of Fish and game would be consulted. No compensatory mitigation loss of foraging habitat is needed.

Valley Elderberry Longhorn Beetle

One elderberry shrub growing along the edge of the bike path is within the project footprint and will be removed. Caltrans has initiated consultation with the U.S. Fish and Wildlife Service requesting the project be appended to the Programmatic Agreement for Valley Elderberry Longhorn Beetle. Caltrans proposed the following measures to avoid and minimize impacts to Valley elderberry longhorn beetle:

1. Sufficient credits will be purchased at French Camp Conservation Bank, or other USFWS-approved conservation bank, to compensate for potential effects to VELB due to the removal of the elderberry shrub in the Biological Study Area.
2. The elderberry stem information used to determine the appropriate number of credits shall not be more than 2 years old. If necessary, current surveys shall be conducted to update the elderberry stem information.

3. The elderberry shrub that will be affected (see Project Effects below) will be transplanted to a suitable location and protected in perpetuity.

2.3.3 Invasive Species

Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued on August 10, 1999 directs the use of the State's noxious weed list to define the invasive plants that must be considered as part of the Environmental Protection Agency analysis for a proposed project.

Affected Environment

A Natural Environment Study was completed for the project in May 2011. Several areas within the Hammett Interchange are dominated by non-native annual grasses and ruderal forbs, and are more open than nearby areas planted with ornamentals. Dominant grass species include rye, barley, black mustard, bromes, yellow star thistle, and wild oats.

Environmental Consequences

Vegetation in the biological study area is highly disturbed and it is highly unlikely that project-related activities would further degrade the vegetative composition in the biological study area. However, construction-related activities would potentially promote the distribution of invasive plant species to off-site areas through ground disturbance and movement of earth moving equipment.

Avoidance, Minimization, and/or Mitigation Measures

To avoid the distribution of invasive species to the off-site areas during project construction, contract specifications would include, at a minimum, the following measures:

- All earthmoving equipment to be used during project construction would be thoroughly cleaned before arriving on the project site.
- All seeding equipment (i.e., hydroseed trucks) would be thoroughly rinsed at least three times prior to arriving at the project site and beginning seeding work.

- To avoid spreading any non-native invasive species already existing on-site, to off-site areas, all equipment would be thoroughly cleaned before leaving the site.

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project would not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions would be taken if invasive species were found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

2.4 Construction Impacts

Affected Environment

A Historic Property Survey Report, June, 2010; Archaeological Survey Report, June, 2010; Historical Resources Evaluation Report, April, 2010 was prepared and identified any cultural resources within the Area of Potential Effect. The Architectural and Archaeological Areas of Potential Effect for the proposed project do not contain any built environment resources that were previously listed, or determined eligible for listing, in the National and California registers. As such no impacts to Archaeological and Historical resources are anticipated.

Environmental Consequences

No cultural resources were identified during analysis of the Architectural and Archaeological Areas of Potential Effect. The possibility of buried and prehistoric and historical archaeological sites in the project area is low.

The Architectural and Archaeological Areas of Potential Effect for the proposed project do not contain any built environment resources that were previously listed, or determined eligible for listing, in the National and California registers. As such no impacts to Archaeological and Historical resources are anticipated.

Avoidance, Minimization, and/or Mitigation Measures

- If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities would cease in any area or nearby

area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission who will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact the District 6 Heritage Resources Coordinator so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

2.5 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, and disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act Guidelines Section 15130 describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under the California Environmental Quality Act can be found in Section 15355 of the California Environmental Quality Act Guidelines. A definition of cumulative impacts under the National Environmental Policy Act can be found in 40 Code of Federal Regulations, Section 1508.7 of the Council on Environmental Quality regulations.

Affected Environment

Regional Context

This document is based on accepted, regional land use forecasts for 2035, and assumes transportation improvements programmed within the same time frame. The effects evaluated with the project include the cumulative effects of development within the region. Permanent cumulative effects of the proposed project would be beneficial, as the reconstruction of the interchange would improve traffic operations for intersections, mainline and ramp operations. An analysis of cumulative effects related to specific development and transportation improvement projects within the region has been included in the discussion of transportation and noise impacts included in previous sections. No further discussion of cumulative impacts for these sections is necessary.

Local Context

The proposed project was analyzed to determine whether less-than-significant environmental effects that would be experienced locally, rather than regionally, could become significant when considered in combination with other reasonably foreseeable future projects in the project area. Projects are considered "reasonably foreseeable" if they: (a) have applications pending with a government agency; (b) are included in an agency's budget or capital improvement program; or (c) are foreseeable future phases of existing projects. Table 2.19 identifies the proposed development in the Hammett Road Interchange area that may contribute to cumulative impacts for the proposed project. This table includes reasonably foreseeable future projects that would potentially affect the same resources as the proposed project. This list was compiled from various sources, including the 2011 Regional Transportation Plan, Stanislaus County Planning Department, and local knowledge of the project area.

Table 2.19: Projects Evaluated for Cumulative Impacts Analysis

Project	Location	Project Description	Percent Built
Hammett Interchange Widening/Reconstruction	County of Stanislaus	Widen from 4-6 lanes	0% Built
Kiernan from State Route 99 to Stoddard	County of Stanislaus	Widen from 4-6 lanes	0% Built
Sisk from Kiernan to Pirrone	County of Stanislaus	Widen from 2-4 lanes	0% Built
Sisk from Pelandale to Kiernan	County of Stanislaus	Widen from 2-4 lanes	0% Built

Project	Location	Project Description	Percent Built
Stoddard from Kiernan to Ladd	County of Stanislaus	Widen from 2-4 lanes	0% Built

Environmental Consequences

The proposed State Route 99/Hammett Road Interchange Reconstruction project would result in no impacts to project-specific resources. Section 2.1 Human Environment described potential environmental impacts in Land Use, Parks and Recreational Facilities, Growth, Utilities, Traffic and Transportation/Pedestrian and Bicycle Facilities and Visual Aesthetics. Section 2.2 Physical Environmental addressed potential impacts to, Water Quality and Storm Water Runoff, Geology/Soils/Seismic/Topography, Paleontology, Hazardous Waste/Materials, Air Quality and Noise and Vibration. Section 2.3 Biological Environment described potential impacts to Animal Species, Threatened and Endangered Species, and Invasive Species. Section 2.4 describes Construction Impacts.

Based on these analyses, it was determined that the following resources may be cumulatively affected by the proposed project:

- Air Quality;
- Biological Environment.

Table 2.20 explains each of the above resources and the area studied for the purpose of the cumulative impact analysis.

Table 2.20: Resource Area Considered for Cumulative Impacts Analysis

Resource	Area Studied
Air Quality	San Joaquin Valley Air Pollution Control District regulatory boundary
Biological Environment	The Biological Study Area, totaling approximately 124 acres, consists of the project footprint, existing roadways, cut/fill slopes, and access and staging areas. The Biological Study Area also includes lands beyond the footprint that could potentially be affected by project construction.

Global climate change was not included in this cumulative analysis. Climate change is by its very nature a cumulative impact and is discussed separately in Section 2.6.

Air Quality

Modeling of Air Quality impacts are based on land uses from the State Transportation Improvement Program and State Implementation Plan, which is a cumulative assessment. Since the project is consistent with both of these programs additional cumulative analysis is not warranted. With the mitigation measures proposed in the Air Quality section, the proposed project would not have cumulatively considerable impacts to air quality.

Biological Resources

This project, in conjunction with other reasonably foreseeable projects in the region, will not result in significant cumulative effects on threatened and endangered species and animal species. Although the project area supports several different biological resources, proposed avoidance and minimization measures will reduce project related impacts. Compensatory mitigation for certain resources is required (please see section 2.3 for this discussion), and over time will offset the project's cumulative effects. Other projects in the region with similar impacts will also be required to mitigate those impacts.

Avoidance, Minimization, and/or Mitigation Measures

The analysis shows that the incremental effects of the proposed project, combined with the effects of past, present, and probable future projects are not cumulatively considerable for this project. No avoidance, minimization or mitigation measures are required in addition to those already contained in this document.

Climate Change under the California Environmental Quality Act

Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change, the efforts devoted to greenhouse gas emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of greenhouse gas emissions related to human activity that include carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493, California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the Environmental Protection Agency. The waiver was denied by Environmental Protection Agency in December 2007 and efforts to overturn the decision had been unsuccessful (see *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011).

On January 26, 2009, however, it was announced that Environmental Protection Agency would reconsider their decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 miles per gallon fuel economy standard for automobiles and light duty trucks, which will take effect in 2012. On June 30, 2009 the Environmental Protection Agency granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the

passage of Assembly Bill 32, the Global Warming Solutions Act of 2006. Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the California Air Resources Board create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing Assembly Bill 32, including the recommendations made by the state's climate action team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas emissions reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing greenhouse gas emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the Environmental Protection Agency to regulate greenhouse gas as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.*, 549 U.S. 497 (2007). The court ruled that greenhouse gas does fit within the Clean Air Act's definition of a pollutant, and that the Environmental Protection Agency does have the authority to regulate greenhouse gas emissions. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

On December 7, 2009, the Environmental Protection Agency Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the Environmental Protection Agency's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009[1]. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register[2].

The final combined Environmental Protection Agency and National Highway Traffic Safety Administration standards that make up the first phase of this National Program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut greenhouse gas emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

According to *Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate Change in California Environmental Quality Act Documents* (March 5, 2007), an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of greenhouse gas emissions. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act Guidelines sections 15064(i)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, the California Air Resources Board recently released an updated version of the greenhouse gas

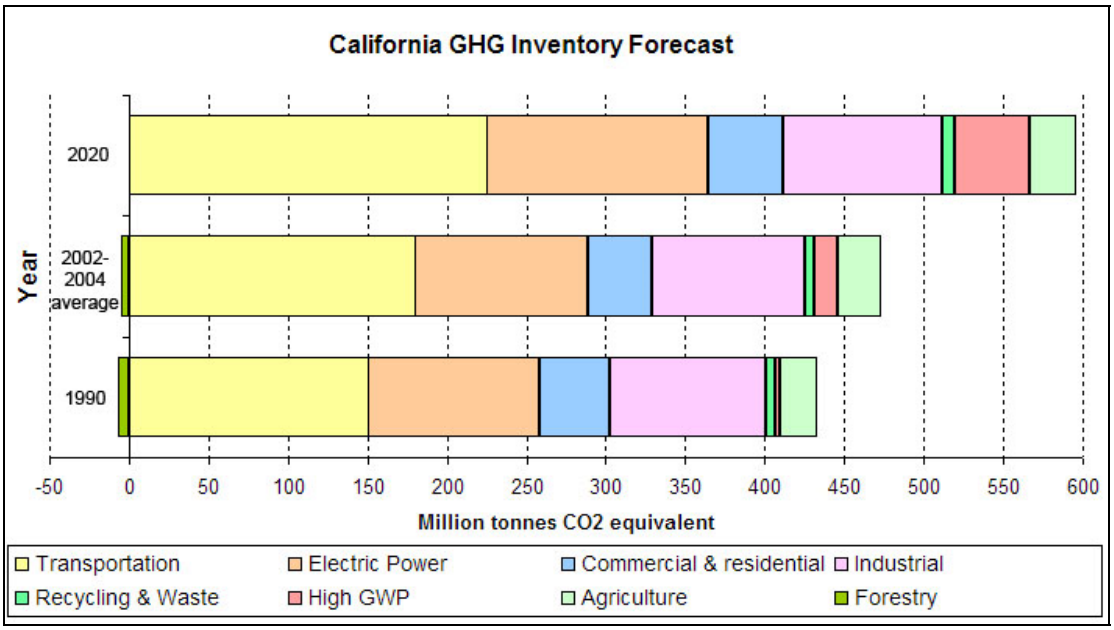
[1] http://www.epa.gov/climatechange/endangerment.html

2 http://www.regulations.gov/search/Regs/contentStreamer?objectId=0900006480a5e7f1&disposition=attachment&contentType=pdf

emissions inventory for California (June 26, 2008). Shown below is a graph from that update that shows the total greenhouse gas emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emissions reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human made greenhouse gas emissions are from transportation (Caltrans, 2006b), Caltrans has created and is implementing the *Climate Action Program at Caltrans* that was published in December 2006.

Figure 2.6: California Greenhouse Gas Inventory

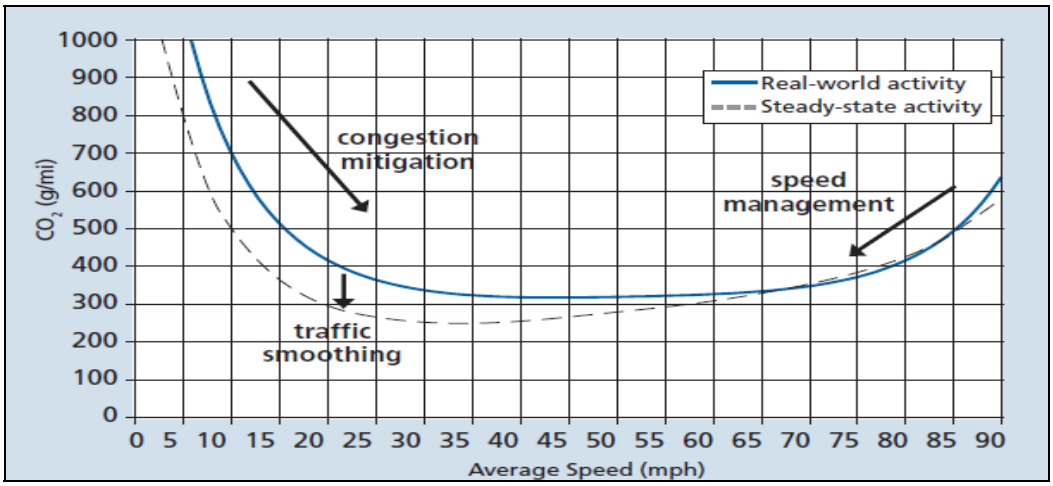


Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Project Analysis

One of the main strategies in Caltrans' Climate Action Program to reduce greenhouse gas emissions is to make California's transportation system more efficient. As shown in the Figure 2.5, The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 miles per hour. Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in greenhouse gas emissions.

Figure 2.7: Possible Effect of Traffic Operation Strategies in Reducing On-Road CO2 Emissions



The purpose of the proposed project is to reduce traffic congestion and delay at the State Route 99/Hammett Road Interchange to accommodate existing and future travel demands. The improvements associated with the proposed project are expected to reduce existing and future delays and extensive stacking up of vehicles due to congestion, which if not addressed, will lead to inefficient fuel consumption, deteriorating air quality, and unacceptable level of service conditions.

The improvements proposed for traffic congestion relief include the following:

- Increases interchange capacity by widening the existing Hammett Road from two lanes to six lanes to reduce delay (congestion)
- Improve traffic operations
- Add auxiliary lanes
- Reconfigure ramps

While there is predicted to be an increase in vehicle miles travelled and number of vehicles in the future condition when compared to existing conditions, the anticipated increase is a result of population increase and existing and planned residential and commercial development in the area. The proposed project will improve the level of service at the interchange and reduce overall delay, but is not expected to increase the number of vehicles or vehicle miles traveled in the area compared to the future No Build Alternative condition.

As shown in Tables 2.21 and 2.22 below, the proposed project is expected to improve level of service and control delay in year 2015 and year 2035. Accordingly, the project will result in a reduction of vehicle hours of delay, and carbon dioxide emissions in the 2015 and 2035 years compared to the no-build conditions (see Tables 2.23 and 2.24).

Table 2.21: Intersection Analysis – Year 2015 Conditions

Intersection	Traffic Control	Peak Hour	No Build		Alternative 3	
			Control Delay	LOS	Control Delay	LOS
1. Ciccarelli Road / Hammett Road	SSSC[1]	AM	1 (5)	A (A)	2 (5)	A (A)
		PM	2 (5)	A (A)	2 (6)	A (A)
2. Hammett Court / Hammett Road	SSSC[1]	AM	2 (10)	A (A)	1 (4)	A (A)
		PM	2 **(64)**	A **(F)**	2 (8)	A (A)
3. State Route 99 Southbound Ramps / Hammett Road	Signal[2]	AM	21	C	10	A
		PM	**>100**	**F**	12	B
4. State Route 99 Northbound Ramps / Hammett Road	Signal[2]	AM	11	B	4	A
		PM	34	C	5	A
5. Pirrone Road / Hammett Road	SSSC[1]	AM	2 (3)	A (A)	1 (2)	A (A)
		PM	**>100**	**F**	2 (2)	A (A)
System-wide Vehicle Hours of Delay[3]		AM	12		5	
		PM	98		8	

Notes: Results based on SimTraffic simulation of 10 runs

1. Signalized intersection level of service based on weighted average control delay per vehicle, according to the *2000 Highway Capacity Manual*.
2. Side-street stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the *2000 Highway Capacity Manual* in the notation: average (worst approach).
3. The vehicle delay was computed by adding up each intersection's vehicle delay, which is computed by multiplying the demand volume by the intersection delay (measured in vehicle-hours).

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

Table 2.22: Intersection Analysis – Year 2035 Conditions

Intersection	Traffic Control	Peak Hour	No Build		Alternative 3	
			Control Delay	LOS	Control Delay	LOS
1. Ciccarelli Road / Hammett Road	SSSC[1]	AM	**>100 (>100)**	**F (F)**	2 (7)	A (A)
		PM	2 (5)	A (A)	2 (8)	A (A)
2. Hammett Court / Hammett Road	SSSC[1]	AM	**>100 (>100)**	**F (F)**	2 (3)	A (A)
		PM	**>100 (>100)**	**F (F)**	2 (8)	A (A)
3. State Route 99 Southbound Ramps / Hammett Road	Signal[2]	AM	**>100**	**F**	19	B
		PM	**>100**	**F**	35	C
4. State Route 99 Northbound Ramps / Hammett Road	Signal[2]	AM	43	D	6	A
		PM	**>100**	**F**	5	A

Intersection	Traffic	Peak	No Build		Alternative 3	
5a. Pirrone Road / Salida Expressway Westbound Ramps[3]	Signal[2]	AM	13	B	21	C
		PM	**>100**	**F**	19	B
5b. Pirrone Road / Salida Expressway Eastbound Ramps[3]	Signal[2]	AM	14	B	24	C
		PM	**>100**	**F**	25	C
System-wide Vehicle Hours of Delay[4]		AM	4,702		51	
		PM	3,875		68	

Notes: Results based on SimTraffic simulation of 10 runs

1. Signalized intersection level of service based on weighted average control delay per vehicle, according to the *2000 Highway Capacity Manual*.
2. Side-street stop intersection level of service based on weighted average control delay per vehicle and worst approach control delay per vehicle, according to the *2000 Highway Capacity Manual* in the notation: average (worst approach).
3. The vehicle delay was computed by adding up each intersection's vehicle delay, which is computed by multiplying the demand volume by the intersection delay (measured in vehicle-hours).

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

Table 2.23: System-Wide Vehicle Hours of Delay

	No Build	Alternative 3
2015 AM Peak	12	5
2015 PM Peak	98	8
2035 AM Peak	4,702	51
2035 PM Peak	3,875	68

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

Table 2.24: Carbon Dioxide Emissions by Alternative (metric tons)

	No Build	Alternative 3
2015 AM Peak	0.38	0.43
2015 PM Peak	0.50	0.51
2035 AM Peak	3.90	1.97
2035 PM Peak	5.31	2.44

Source: State Route 99/Hammett Road Interchange Improvements Traffic Operations Report, 2010.

It is important to note that the carbon dioxide emissions numbers are only useful for a comparison between alternatives. The numbers are not necessarily an accurate reflection of what the true carbon dioxide emissions will be because carbon dioxide emissions are dependent on other factors that are not part of the model such as the

fuel mix (model emission rates are only for direct engine-out carbon dioxide emissions not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration, and the aerodynamics and efficiency of the vehicles.

California Environmental Quality Act Conclusion

Caltrans does not anticipate any increase in overall Greenhouse Gas emissions with the proposed project when compared to the future No-Build conditions. Nonetheless, Caltrans is taking further measures to help reduce energy consumption and Greenhouse Gas emissions. It is Caltrans' determination that in the absence of further regulatory or scientific information related to Greenhouse Gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change.

Construction Emissions

Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Construction-related greenhouse gas emissions are expected to occur with the project. These include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through implementation of measures, such as idling restrictions, in the plans and specifications and by implementing better traffic management during construction phases

Assembly Bill 32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as Air Resources Board works to implement Assembly Bill 1493 and help achieve the

targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $107 billion in transportation funding during the next decade.

As shown on the figure to the left, the California Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in greenhouse gas emissions. The California Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The California Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

As part of the Caltrans Climate Action Program, Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority.

Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light- and heavy-duty trucks. However, it is important to note that the control of the fuel economy standards is held by the United States Environmental Protection Agency and Air Resources Board.

Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California at Davis. The table

provided below summarizes Caltrans' and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006).

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

Sample measures:

1. Caltrans and the California Highway Patrol are working with regional agencies to implement intelligent transportation systems to help manage the efficiency of the existing highway system. It is commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
2. In addition, the County provides ridesharing services and park-and-ride facilities to help manage the growth in demand for highway capacity.
3. The project would incorporate the use of energy efficient lighting, such as LED traffic signals. LED bulbs — or balls, in the stoplight vernacular — cost $60 to $70 apiece but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED balls themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the projects carbon dioxide emissions.

Strategy	Program	Partnership	Method/Process	Estimated Carbon Dioxide Savings (MMT) 2010	2020
Smart Land Use	IGR	Lead: Caltrans Partner: Local Governments	Review and seek to mitigate development proposals	Not Estimated	**Not Estimated**
	Planning Grants	Lead: Caltrans Partner: Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	**Not Estimated**
	Regional Plans and Blueprint Planning	Lead: Regional Agencies Partner: Caltrans	Regional plans and application process	0.975	**7.8**
Operational Improvements and Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Lead: Caltrans Partner: Regions	State ITS; Congestion Management Plan	.007	**2.17**
Mainstream Energy and greenhouse gas into Plans and Projects	Office of Policy Analysis & Research; Division of Env. Analysis	Interdepartmental effort	Policy establishment, guidelines, technical assistance	Not Estimated	**Not Estimated**
Educational and Information Program	Office of Policy Analysis & Research	Partner: Interdepartmental, CalEnvironmental Protection Agency, California Air Resources Board, CEC	Analytical report, data collection, publication, workshops, outreach	Not Estimated	**Not Estimated**
Fleet Greening and Fuel Diversification	Division of Equipment	Department of General Services	Fleet Replacement B20 B100	0.0045	**0.0065** **0.45** **.0225**
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team	Energy Conservation Opportunities	0.117	**.34**
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries	2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	**3.6**
Goods Movement	Office of Goods Movement	CalEnvironmental Protection Agency, California Air Resources Board, BT&H, MPOs	Goods Movement Action Plan	Not Estimated	**Not Estimated**
Total				2.72	18.67

MMT: Million Metric Tons

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change.

The California Resources Agency (now the Natural Resources Agency), through the interagency Climate Action Team, was directed to coordinate with local, regional, state and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, Natural Resources Agency was directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010 to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates
- Range of uncertainty in selected sea level rise projections

- Synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems
- Discussion of future research needs regarding sea level rise for California

Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level affecting safety, maintenance and operational improvements of the system and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding the next five years (through 2013), or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. This project was programmed for construction in 2013 and is exempt at this time from the requirement to analyze the impacts of sea level rise as directed in Executive Order S-13-08".

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels.

Caltrans is an active participant in the efforts being conducted as part of Governor's Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on Sea Level Rise Assessment, which is due to be released by December 2010. Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design

standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able review its current design standards to determine what changes, if any, may be warranted to protect the transportation system from sea level rise.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, public meetings, and informal communication with the public, businesses, and interested parties as studies were being conducted.

This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

3.1 Public Agencies

United States Fish and Wildlife Service

In March 2012, Caltrans prepared a letter initiating consultation with the U.S. Fish and Wildlife Service regarding project effects to Valley elderberry longhorn beetle.

Stanislaus County-Public Works Department

The project is within the boundaries of the Stanislaus County's jurisdiction. Through monthly project-development team meetings, the Stanislaus County Public Works Department has consistently provided input to ensure there are minimal impacts to local residents and business owners. Coordination of traffic staging, temporary closures and detours would be provided during construction of improvements.

Stanislaus Council of Governments – Model Coordination Committee

Caltrans coordinates with this committee for air quality conformity through monthly project-development team meetings.

San Joaquin Council of Governments

A small portion of the proposed project is located within the County's jurisdiction; however, the San Joaquin Council of Governments has assigned any project related jurisdiction to Stanislaus Council of Government.

3.2 Public Outreach

Historical Resources Consultation

On January 11, 2010, letters describing the project and maps showing the Area of Potential Effects were sent to the Native American representatives on the contact list provided by the Native American Heritage Commission. The letters requested any information or concerns they might have regarding the proposed project. No responses to the letters were received within eight weeks despite several follow-up telephone calls to each representative. A summary of these calls is presented below:

- *Ryan Garfield, Vice Chairman, Tule River Indian Tribe*: On November 20, 2009, LSA left a voice mail message asking Mr. Garfield to contact LSA with any information or concerns regarding cultural resources within the Area of Potential Effect. No response has been received to date.
- *Jay Johnson, Spiritual Leader, Southern Sierra Miwuk Nation*: On November 20, 2009, LSA left a voice message asking Mr. Johnson to contact LSA with any information or concerns regarding cultural resources within the Area of Potential Effect. No response has been received to date.
- *Katherine Erolinda Perez, North Valley Yokuts Tribe*: On November 20, 2009, LSA left a voice message asking Ms. Perez to contact LSA with any information or concerns regarding cultural resources within the Area of Potential Effect. No response has been received to date.
- *Anthony Brochini, Chairperson, Southern Sierra Miwuk Nation*: On November 20, 2009, LSA left a voice mail message asking Mr. Brochini to contact LSA with any information or concerns regarding cultural resources within the Area of Potential Effect. No response has been received to date.
- *Les James, Spiritual Leader, Southern Sierra Miwuk Nation*: On November 20, 2009, LSA left a voice mail message asking Mr. James to contact LSA with any information or concerns regarding cultural resources within the Area of Potential Effect. No response has been received to date.

On December 16, 2009, a letter describing the project and maps showing the proposed project were sent to the Native American Heritage Commission in Sacramento asking the commission to review its Sacred Lands File for any Native American cultural resources that might be affected by the proposed project. Also requested were the names of Native Americans who might have information or concerns about the proposed project. Ms. Katy Sanchez, Native American Historical Commission Program Analyst, replied in a fax

dated December 21, 2009, that a review of the Sacred Lands File did not indicate any "Native American cultural resources in the immediate project area." Ms. Sanchez also provided a list of Native American contacts. LSA contacted Native American from the contacts provided by Ms. Sanchez. Letters were sent January 11, 2010 describing the project with maps depicting the Area of Potential Effects. No response has been received to date.

- On December 16, 2009, a letter describing the project with maps depicting the Area of Potential Effect was sent to the McHenry Museum and Historical Association. No response to the letter was received within eight weeks and LSA made a follow-up telephone call. On January 11, 2010, LSA left a voice mail message asking the McHenry Museum and Historical Society to contact LSA with any information or concerns regarding cultural resources within the Area of Potential Effect. No response has been received to date.

Public Meeting – November 10, 2009

On November 10, 2009 at 5:30 pm a public information meeting was held at the Nick W. Blom Salida Regional Library. Approximately 88 persons signed in at the door.

The meeting format included two open house periods, one before and one after a presentation by the consultant team project manager. Upon arriving, attendees were asked to sign in to maintain an attendance record and to ensure all interested parties would be added to the project mailing list. Each attendee received a handout with an agenda, project background and purpose, project limits, and information on how to comment on the project. Attendees were encouraged to visit the information stations around the room and to view maps, graphics, and display boards. Project development team members were available at the stations to explain the displays, answer questions, and receive public input.

Below is a brief summary of the written or dictated comments received at the public information meeting:

- Concentrate on Kiernan and do it right
- Do not build a Hammett Road Interchange
- Consider bicycle and pedestrian needs
- Extend Ladd Road to State Route 99/Hammett Road Interchange
- Widen State Route 99

- Avoid impacts to agricultural land
- Avoid urban sprawl
- Synchronize traffic lights
- Consider groundwater issues
- Design Kiernan Road Interchange for the North County Corridor
- Improve Kiernan Road Interchange
- Widen Kiernan
- Improve Pelandale
- For State Route 99/Kiernan Avenue, select Alternative 2
- For State Route 99/Hammett Road, select Alternative 2
- For State Route 99/Hammett Road, select Alternative 3
- "No" against it all
- Concern about impact on Salida
- Open frontage road/parking lot at American Chapman College

Chapter 4 List of Preparers

This document was prepared by the following staff:

Caltrans Staff

Allam Alhabaly, Transportation Engineer. B.S., Industrial Engineering, California State University, Fresno; 10 years environmental technical studies experience. Contribution: Oversight review of the Noise Study Report.

Michael Calvillo, Associate Environmental Planner. B.S., Biology, California State University, Fresno; 10 years environmental planning experience. Contribution: Coordinated oversight review of the technical studies and provided oversight review of the Initial Study/Environmental Assessment.

Abdul Rahim Chafi, Transportation Engineer. Ph.D., Engineering Management, California Coast University, Santa Ana; 14 years environmental technical studies experience. Contribution: Oversight review of the Air Quality technical report.

William Lawrence Dutterra, Landscape Architect. B.S., Landscape Architecture, California Polytechnic State University, San Luis Obispo; 20 years experience in landscape architecture. Contribution: Oversight review of the Visual Impact Assessment.

Rajveev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 18 years environmental technical studies experience. Contribution: Oversight review the Water Quality Analysis.

Susan Greenwood, Associate Environmental Planner. B.S., Environmental Health Science, California State University, Fresno; 20 years environmental health, hazardous waste, and hazardous material management experience. Contribution: Oversight review of the Initial Site Assessment.

Christina Hibbard, Project Manager. M.A., Anthropology, 1998; PMP certified with the Project Management Institute, 2004. Contribution: Caltrans District 10 Project Manager.

Jose Huerta, Senior Transportation Engineer. Contribution: Provided supervision of design engineering oversight review.

Gail Miller, Senior Environmental Planner. B.A., Public Administration, California State University, Fresno; 19 years of land use and environmental planning experience. Contribution: Provided supervision of the environmental oversight review.

Wendy M. Nettles, Associate Environmental Planner. M.A., Anthropology, Florida State University; B.A., Anthropology, Florida State University; 18 years of archaeology/cultural resources management experience. Contribution: Oversight review of the Archaeological Survey Report and Historic Property Survey Report.

Phyllis Sarto, Right-of-Way Agent. Contribution: Oversight review of the Draft Relocation Impact Memorandum and Draft Relocation Impact Statement.

Wuthy Seng, Transportation Engineer-Civil. Contribution: Provided design engineering oversight.

Raychel Skeen, Associate Environmental Planner. B.A., Geography, Minor in Geology, California State University, Humboldt; 16 years of environmental and land use planning experience. Contribution: Coordinated oversight review of the technical studies.

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; 21 years of hazardous waste and water quality experience; 4 years of paleontology/geology experience. Contribution: Oversight review of the Paleontological Initial Report/Paleontological Evaluation Report.

Philip Vallejo, Environmental Planner (Architectural History), B. A., History, California State University, Fresno; 8 years experience in architectural history field. Contribution: Oversight review of the Historic Resources Evaluation Report.

Charles Walbridge, Associate Environmental Planner. B.S., Biological Sciences, California State University, Fresno; 10 years of environmental planning experience. Contribution: Oversight review of the Natural Environment Study

LSA Associates (Environmental Consulting Staff)

Jeff Bray, Principal Biologist . B.S., Wildlife Biology, Humboldt State University, Arcata; 17 years of wildlife biology and wetlands experience. Contribution: Project management and project coordination.

Edward Heming, Senior Environmental Planner. M.S., Environmental Planning, California State University, Fullerton; 7 years of environmental planning and environmental science experience. Contribution: Initial Study/Environmental Assessment.

Justin Howland, Assistant Environmental Planner. B.L.A., Landscape Architecture, University of Oregon, Eugene; 3 years of environmental planning experience. Contribution: Initial Study/Environmental Assessment.

Bill Mayer, Principal Environmental Planner. B.S., Urban Planning, California State Polytechnic University, Pomona; 35 years of environmental planning experience. Contribution: Project management and project coordination.

Amberly Morgan, Environmental Planner. B.A., Environmental Studies, California State University, Sacramento; 4 years of environmental planning experience. Contribution: Floodplain Evaluation Technical Report.

Ali Summers, Biologist. B.S., Wildlife Science, Oregon State University, Corvallis; 12 years of biology experience. Contribution: Contribution: Natural Environment Study.

Mike Trueblood, Biologist. B.S., Wildlife, Fish, and Conservation Biology; University of California, Davis; 8 years of biology experience. Contribution: Natural Environment Study.

Appendix A California Environmental Quality Act Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this Environmental Impact Report/Environmental Assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to Greenhouse Gas emissions and California Environmental Quality Act significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.			
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☒	☐
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☒	☐	☐
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711
www.dot.ca.gov

Flex your power!
Be energy efficient!

March 16, 2012

NON-DISCRIMINATION
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Mario Solis, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353, TTY 711, fax (916) 324-1869, or via email: *mario_solis@dot.ca.gov*.

MALCOLM DOUGHERTY
Acting Director

"Caltrans improves mobility across California"

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711
www.dot.ca.gov

Flex your power!
Be energy efficient!

Marzo 16, 2012

LA NO DISCRIMINACION
POLITICA DE ESTADO

El Departamento de Transporte de California, en el Título VI del Acta de Derechos Civiles de 1964 y los estatutos relacionados, asegura que ninguna persona en el Estado de California podrán, por motivos de raza, color, origen nacional, sexo, discapacidad, religion, la orientacion sexual, o edad, se excluidos de la participación en, negársele los beneficios de, o ser de otra manera sujeto a discriminación bajo cualquier programa o actividad que administra.

Para obtener información sobre cómo presentar una denuncia basada en motivos de raza, color, origen nacional, sexo, discapacidad, religion, la orientacion sexual, o edad, por favor visite la siguiente página: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Si necesita esta información en un formato alternativo, por ejemplo en Braille o en un idioma distinto del Inglés, por favor póngase en contacto con Mario Solis, Gerente, el Título VI y el Programa de estadounidenses con Discapacidades, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Teléfono: (916) 324-1353, TTY 711, fax (916) 324-1869, o vía e-mail: *mario_solis@dot.ca.gov*.

MALCOLM DOUGHERTY
Accion Directora

"Caltrans improves mobility across California"

Appendix C Minimization and/or Mitigation Summary

Parks and Recreational Facilities

- The project applicant will ensure that the recreational use pedestrian and bicycle path remain open to bicyclists and pedestrians during all stages of project construction. If necessary, an interim bicycle path will be constructed if it is infeasible to keep the existing path open before the new path is constructed.
- If construction equipment is moved across the recreational use pedestrian and bicycle path during construction, the contractor will required to have flaggers on the recreational use bicycle path to ensure the safety of pedestrians and bicyclists.

Relocations and Real Property Acquisition

- Caltrans would provide relocation assistance to displaced residents in accordance with the Business and Farm Relocation Assistance Program and the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970 (see Appendix E). In accordance with federal and state laws and Caltrans policy, a relocation plan would be developed and used for the residents and businesses displaced under the proposed project.

Utilities/Emergency Services

A number of utilities for water, wastewater, storm drainage, electric and natural gas services, and other services are in the project area. Construction of the proposed project may require the relocation of utilities that would be affected by the project. These relocations should not present any unusual circumstances and are considered routine for roadway construction projects. Minimization measures to alleviate utilities/emergency services impacts are as follows:

- The project would be designed to minimize conflicts with utilities in the project area.
- The project would include relocation of those utilities that would not be reached for maintenance or access purposes as a result of the project.
- The contractor would be required to provide notification to utility users of any short-term, limited interruptions of service.
- If unexpected underground utilities were encountered, the contractor would coordinate with the utility provider to develop plans that address the utility conflict, protect the utility if needed, and limit service interruptions.

- The contractor would circulate construction schedules and traffic control information to county emergency-service providers at least one to two weeks before any road closures.
- The Traffic Management Plan would address redirecting emergency services during temporary lane closures.

Traffic and Transportation/Pedestrian and Bicycle Facilities

The project would implement the following measures to reduce construction-related traffic impacts:

- The contractor would be required to prepare and implement a traffic management plan that would identify the locations of temporary detours and signage to facilitate local traffic patterns and through-traffic requirements.
- The project special provisions of the highway contract would require that emergency service providers (i.e., law enforcement, fire protection, and ambulance services) be given adequate advance notice of any street closures during the construction phases of the proposed project.
- Construction activities would be coordinated to avoid blocking or limiting access to homes and businesses to the extent possible. Residents would be notified in advance about potential access or parking effects before construction activities begin.
- Any interchange, ramp, or road closures required during construction would, to the extent possible, be limited to nighttime hours to reduce effects on businesses in the study area.
- Construction activities would be coordinated to avoid blocking or limiting access to businesses along during business hours. Businesses would be notified in advance concerning construction activities before construction begins.
- The traffic management plan would be prepared to address short-term disruptions in existing circulation patterns during construction; for example, the traffic management plan would identify the locations of temporary detours or temporary roads to facilitate local traffic circulation and through-traffic requirements.
- Construction activities would be coordinated with Union Pacific Railroad in order to limit disruption to the rail line affected by the proposed project.

Visual/Aesthetics

The following minimization measures, to be completed in cooperation with the Caltrans Landscape Architect, incorporate design features and methods to avoid permanent adverse impacts:

- Architectural detailing and/or surface treatments consistent with the surrounding community should be incorporated into new bridge design.
- Artistic soundwall design should be implemented to break up and mask the built environment and enhance the driving experience. Soundwall design should be compatible with the surrounding area and meet community goals.
- Soundwalls should be designed to discourage the proliferation of graffiti. Some examples of soundwall design may include rough-textured finishes or uneven surfaces, graffiti-resistant coatings, and vine plantings of a type that would attach to walls.
- Replacement planting would include the replacement of removed landscaping. Areas affected or disturbed by construction would be replanted in the form of new landscape planting and irrigation systems.

Water Quality and Storm Water Runoff

This project will have minimal impacts to water quality with the following avoidance, minimization, and proposed mitigation measures incorporated:

- Preparation and implementation of construction site Best Management Practices in compliance with the provisions of the Department's Statewide National Pollutant Discharge Elimination System Permit and any subsequent permit as they relate to construction activities for the project. This will include submission of a Notice of Construction to the Regional Water Quality Control Board at least 30 days before the start of construction, preparation and implementation of a Stormwater Pollution Prevention Plan, and submission of a Notice of Construction Completion to the Regional Water Quality Control Board upon completion of construction and stabilization of the project site. Design Pollution Prevention and Treatment Control best management practices for the project in accordance with the procedures outlined in the Stormwater Quality Handbooks, Project Planning and Design Guide will be followed. This will include coordination with the Regional Water Quality Control Board with respect to feasibility, maintenance, and monitoring of Treatment Control best management

practices as set forth in the Department's Statewide Stormwater Management Plan.

- If dewatering activities are necessary for the project, the provision of the General Waste Discharge requirements for discharges to surface waters that pose an insignificant (de minimus) Threat to Water Quality, Order No. R8-2003-0061 National Pollutant Discharge Elimination System Permit No. CAG998001, as they relate to construction activities for the project, will be followed. This will include submission of a Notice of Intent to the Regional Water Quality Control Board at least three months before the start of dewatering and compliance with all applicable provision in the de minimus permit, including water sampling, analysis, and reporting of dewatering-related discharges.
- The project's design would ensure that all stormwater runoff from the new interchange ramps and Hammett Road will discharge into new drainage basins within the project limits. The basins would be designed to accommodate all the stormwater runoff from new paved areas (ramps and Hammett Road) per District 10 Hydraulics design guidelines. The proposed basins will be interconnected and there will be no overflow outlets. There will be no connections to Municipal Separate Storm Sewer Systems, and with the exception of the portion of the northbound on-ramp, runoff from new impervious surfaces will not discharge to surface waters.

Geology/Soils/Seismic/Topography

The project would incorporate recommendations and design features from the Preliminary Geotechnical Report to minimize geologic impacts, including the following:

- Exploratory soil borings to investigate the subsurface soil conditions (specifically corrosivity) should be planned.
- Foundations, embankments, soundwalls, and retaining walls should be designed to Caltrans Highway Design Manual and standard specifications. Caltrans standard grading and erosion control measures should be implemented to mitigate slope stability concerns.
- Before project implementation, additional data should be collected to confirm that liquefaction potential at the project site is low.

Paleontology

The Paleontological Identification Report/Paleontological Evaluation Report recommends that the section of the Paleontological Identification Report describing the excavation monitoring for the project include the following to avoid and minimize impacts to paleontological resources as part of a Paleontological Mitigation Plan:

- A preconstruction field survey should be conducted followed by salvage of any observed surface paleontological resources prior to the beginning of grading.
- Attendance at the pregrade meeting by a qualified paleontologist or his/her representative. At this meeting, the paleontologist will explain the likelihood for encountering paleontological resources, what resources may be discovered and the methods that will be employed if anything is discovered.
- During construction excavation, a qualified vertebrate paleontological monitor would initially be present on a full-time basis whenever exaction will occur within the sediments that have a high sensitivity rating. Monitoring maybe reduced to a part-time basis if no resources are being discovered in sediments with a high sensitivity rating (monitoring reductions and when they occur will be determined by the qualified Principal Paleontologist). The monitor would be empowered to temporarily divert construction equipment away from the immediate area of the discovery. The monitor would be equipped to rapidly stabilize and remove fossils to avoid prolonged delays to construction schedules. If large mammal fossils or large concentrations of fossils are encountered, Caltrans would consider using heavy equipment on site to assist in the removal and collection of large materials.
- Localized concentrations of small (or micro-) vertebrates may be found in all native sediments. Therefore, it is recommended that these native sediments occasionally be sport-screened through one-twentieth-inch mess screens to determine whether microfossils are present. If microfossils are encountered, sediment samples (up to 3 cubic yards, or 6,000 pounds) would be collected and processed through stacked sets of twenty-mesh over thirty-mesh screens to recover additional fossils.
- Any recovered specimens would be prepared to the point of identification and permanent preservation. This includes the sorting of any washed mass samples to recover small invertebrate and vertebrate fossils, the removal of surplus sediment from around larger specimens to reduce the volume of storage from around larger specimens to reduce the volume of storage for the repository and the storage cost and the application of approved chemical hardeners/stabilizers to fragile specimens.

- Specimens would be identified to the lowest taxonomic level possible and curated into an institutional repository with retrievable storage. The repository institutions usually charge a one-time fee based on volume, so removing surplus sediment is important. The repository institution may be a local museum or university that has a curator who can retrieve the specimens on request. Caltrans requires that a draft duration agreement be in place with an approved curation facility prior to the initiation of any paleontological monitoring or mitigation activities.

Hazardous Waste/Materials

A previous aerial deposited lead study was done by Caltrans in 2007 along post miles 22.4/22.7. Aerial deposited lead was found at levels ranging from 1 to 240 mg/kg total lead and 2.5 -29 mg/l soluble lead. The total lead average was 118 mg/kg and 7.8 mg/l soluble lead. Based on these results the Environmental Protection Agency's Pro- Upper Confidence Limit program would likely predict an Upper Confidence Limit at levels below regulatory threshold for Total and Soluble lead and as such, additional testing for hazardous levels of aerially-deposited lead would be done during the design phase. However, if we have excess soil on the project that is to relinquished to the contractor a project specific study would be required.

- The appropriate standard special provisions would be used during the design phase once the analytical results are known. A Lead Compliance Plan would be required no matter what levels of lead are in the soil. If soil testing results in a determination of elevated levels of lead, it may be possible to encapsulate soil following the Department of Toxic Substances Control Act variance under certain conditions. If this is not possible, then soil that is hazardous material would need to be disposed of in a Class 1 landfill.
- Demolition any structure built prior to 1969 would require an assessment of asbestos-containing building materials and lead-based paint. An asbestos investigation should be performed by an inspector certified by the Asbestos Hazardous Emergency Response Act under Toxic Substance Control Act Title II. Lead-based paint surveys should be conducted by an inspector certified by the California Occupational Safety and Health Administration under State of California rules and regulations. These surveys would be conducted by Caltrans Right-of-Way during acquisition and/or prior to building demolition. Asbestos-containing building materials and lead-based paint should be surveyed and abated (as needed) by using a contractor certified to perform such work.

- Past land use studies suggest the potential for hazardous chemical contamination from organochlorine pesticides, organophosphorous pesticides, chlorinated herbicides, and heavy metals other than lead. Consequently, additional studies for these contaminants should be done on selected properties within the project area to minimize future liability. A risk assessment of the potential hazards (pesticides and heavy metal contamination) should be conducted during the design phase on properties to be acquired throughout the project area and along the railroad right-of-way.
- Cylindrical transformers maybe located within project right-of-way limits and may need to be relocated during the course of the project. These transformers could contain polychlorinated biphenyls that are known to be harmful to humans and the environment. The transformers would need to be handled using the appropriate standards and procedures for their removal. The proper utility company would be notified.
- Thermoplastic striping (roadway paint) removal activity would be conducted in compliance with all applicable laws and regulations such as the guidelines by the California Occupational Office of Safety and Health, San Joaquin Valley Unified Air Pollution Control District, and applicable best-management practices. Standard special provisions would be used for removal of the traffic stripe.

Air Quality

Construction Impacts

- Compliance with Caltrans' Dust Control Plan will minimize impacts to Air Quality from construction emissions:
  - To reduce fugitive dust emissions the construction contractor will adhere to the requirements of San Joaquin Valley Air Pollution Control District Regulation VIII;
  - The construction contractor would comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications;
  - The construction contractor would comply with San Joaquin Valley Air Pollution Control District Rule 9510 and submit and air impact assessment application, if it is determined that the construction-related emissions exceed the established thresholds.
  - Limit traffic speeds on unpaved roads to 15 mph;
  - Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1 percent;

- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;
- Install wind breaks at windward side(s) of construction area;
- Suspend excavation and grading activity when winds exceed 20 mph (regardless of wind speed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation);
- Limit area excavation, grading, and other construction activity at any one time.
- Properly and routinely maintain all construction equipment, as recommended by the manufacturer manuals, to control exhaust emissions; and
- Shut down equipment when not in use for extended periods of time to reduce emissions associated with idling emissions.

Noise and Vibration

A Noise Abatement Decision Report (June 2011) was conducted to determine the reasonableness of soundwalls for this project by comparing the estimated cost of building the soundwall against the total reasonable allowance. The total reasonable allowance was determined based on the number of benefited residences multiplied by the reasonable allowance per residence. Construction cost estimates were based on standard masonry block construction. If the estimated soundwall construction cost exceeded the total reasonable allowance, the soundwall was determined not to be reasonable. However, if the estimated soundwall construction cost was within the total reasonable allowance, the soundwall was determined to be reasonable.

Based on the studies completed to date, Caltrans does not intend to incorporate noise abatement in the form of barriers. Section 3 of the Caltrans Noise Standards Protocol states that a minimum noise reduction of 5 A-weighted decibels must be achieved at the impacted receivers in order for the proposed noise abatement measure to be considered feasible. Calculations based on preliminary design data indicate that none of the modeled sound barriers would result in at least a minimum reduction of 5 A-weighted decibels at the impacted receptor location and therefore no sound barriers are feasible as part of the proposed project.

Construction Noise

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 7-1.01I, "Sound Control Requirements," and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by existing

local traffic noise. Further, implementing the following measure would minimize the temporary noise impacts from construction:

- All equipment would have sound-control devices that are no less effective than those provided on the original equipment. No equipment would have an unmuffled exhaust.
- As directed by Caltrans, the contractor would implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Animal Species

Bats

Bats are most susceptible to disturbance at roost sites during the breeding season due to presence of pregnant females and non-volant pups, and during the winter when many bats enter torpor. During the rest of the year, many bat species are migrating or otherwise less likely to be strongly tied to roost sites and therefore are less susceptible to disturbance.

The following measures are recommended to mitigate potential impacts to special status bats:

- All potential roost trees (i.e., 20 dbh or greater) within the Biological Study Area that will be impacted by the project, including snags, would be removed between September 1 and October 14, or between February 16 and April 14. Removal of trees during these periods will avoid impacts to any bats occurring on the project site during the normal breeding season (April 15 to August 30) and winter torpor (October 15 to February 15). Removal would occur as follows:
- Prior to removal of the potential roost site trees, smaller trees and brush from the area near the potential roost tree would be removed in order to expose bats potentially using the roost tree to the sounds and vibrations of equipment. These activities would be conducted on at least two consecutive days before the roost tree is removed.
- Equipment and vehicles would not be operated under potential roost trees, while nearby trees and brush are being removed, to prevent exhaust fumes from filling roost cavities.

- Alternatively, all potential roost trees within the Biological Study Area would be surveyed by a qualified biologist to determine if any trees can be excluded as suitable bat roosts due to the lack of suitable structural characteristics. If any trees can be excluded as bat roosts, removal of these trees will not be subject to the seasonal restrictions in Item 1.

Wintering Raptors: Merlin

The proposed project will not impact this plant community, therefore, no avoidance or minimization efforts are proposed.

Burrowing Owl

Burrowing owls have the potential to nest in the project area between February 1 through August 31. The following measures are proposed to minimize impacts to burrowing owls:

- A maximum of 30 days prior to construction, a preconstruction survey for burrowing owls would be conducted in the Biological Study Area and vicinity by a qualified biologist. If burrowing owls are found within the Biological Study Area, the following measure would be implemented:
    - During the non breeding season (September 1 through January 31), any burrowing owls occupying the project site should be evicted from the site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct. 1995).
    - During the breeding season (February 1 through August 31), occupied burrows would not be disturbed and would be provided with a 250-foot protective buffer, unless a qualified biologist approved by the permitting agencies verifies through non-invasive means that the birds have not begun egg laying. The buffer would remain until a qualified biologist determines that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed.

- If burrowing owls are found to be using any area in the Biological Study Area, the following compensatory mitigation measures, based on California Department of Fish and Game's guidelines, would be implemented:
    - To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat (calculated on a 100 m {approximately 300 ft} foraging radius around the burrow) per pair or unpaired resident bird, would be acquired and permanently protected. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to California Department of Fish and Game's.
    - When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.
    - If owls must be moved away from the disturbance area, passive relocation techniques (as described in the 1995 California Department of Fish and Game's Staff Report on Burrowing Owls) would be used rather than trapping. One or more weeks will be necessary to accomplish this and allow the owls to acclimate to alternate burrows.
    - The project sponsor should provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to California Department of Fish and Game's.

Tricolored Blackbird

The following would be implemented to minimize impacts to this species:

- If possible, all trees that will be impacted by project construction would be removed during the non-nesting season (December 1 to March 31), to avoid take of a nest or bird. If this is not possible, a survey for nesting tricolored blackbirds would be conducted in the Biological Study Area and within a 100-foot radius by a qualified biologist. The survey would be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.
- If trees are removed outside the nesting season, a preconstruction survey would be conducted by a qualified biologist in a 100 feet radius around the project footprint for nesting tricolored blackbirds. The survey would be conducted a maximum of

14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

- If nesting tricolored blackbirds are found within 100 feet of the Biological Study Area, a setback of 100 feet from nesting areas would be established and marked with Environmentally Sensitive Area fencing. This setback applies whenever construction or other ground disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Environmentally Sensitive Area fencing would be maintained during the nesting season until construction is complete or the young have fledged, as determined by a qualified biologist.
- Alternatively, the setback (if required) may be reduced if a qualified biologist is present to monitor the nest(s) when construction begins. If the biologist determines nesting is not affected by construction activities with the reduced setback, work can proceed. If it is determined that construction activities are adversely affecting the nesting birds with the reduced setback, all construction within 100 feet of a nest would be halted until the biologist can establish an appropriate setback.

Nesting/Foraging Raptors: White-tailed Kite

In addition to following the Environmentally Sensitive Area measures detailed in Section 4.1.1.2 of the Natural Environment Study, the following avoidance and minimization measures should reduce any potential impacts to Cooper's hawks and white-tailed kites:

- If possible, all trees that will be impacted by project construction would be removed during the non-nesting season (between September 16 and February 28), to avoid take of a nest or bird. If this is not possible, a survey for nesting hawks, white-tailed kites, and other raptors would be conducted in the Biological Study Area and within a 500-foot radius by a qualified biologist. The survey would be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.
- If trees are removed outside the nesting season, a preconstruction survey would be conducted by a qualified biologist in a 500 foot radius around the project footprint for nesting raptors. The survey would be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

- If nesting raptors are found within 500 feet of the Biological Study Area, a qualified biologist would evaluate the potential for the proposed project to disturb nesting activities, which is a significant impact under the California Environmental Quality Act. The evaluation criteria would include, but are not limited to, the location/orientation of the nest in the nest tree, the distance of the nest from the Biological Study Area, and line of sight between the nest and the Biological Study Area.
- The California Department of Fish and Game would be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.
- If work is allowed to proceed, a qualified biologist would be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist will have the authority to stop work if it is determined the project is adversely affecting nesting activities.

Threatened and Endangered Species

Swainson's Hawk

Caltrans proposes pre-construction surveys for Swainson's hawk that could potentially nest in the vicinity of the project. If an active nest is observed within 0.5 mile of the project area, the California Department of Fish and game would be consulted. No compensatory mitigation loss of foraging habitat is needed.

Valley Elderberry Longhorn Beetle

One elderberry shrub growing along the edge of the bike path is within the project footprint and will be removed regardless of the alternative chosen. Once a preferred alternative is selected the Department would consult with the U.S. Fish & Wildlife Service for impacts to Valley Elderberry Longhorn Beetle requesting the project be appended to the Programmatic Agreement for Valley Elderberry Longhorn Beetle.

This alternative may impact additional elderberries in the riparian area. To the maximum extent practicable, all project activities would be set back a minimum of 100 feet from all elderberry shrubs with one or more stems of one-inch diameter at ground level growing on or adjacent to the property. If this 100-foot setback cannot be maintained, plants and Valley elderberry longhorn beetle may be indirectly affected, and implementation of additional measures described below would be required in accordance with USFWS guidelines:

- Prior to initiation of construction, the limits of all construction, access roads, staging areas, etc., would be staked. The staked areas would be inspected by a qualified biologist. Based on this inspection, additional refinements to construction areas would be performed as necessary and as feasible to ensure a minimum 20-foot setback from the dripline of all elderberry plants.
- Once the final limits of construction are set, brightly colored fencing (i.e., snow fencing) would be installed at the 20-foot setback around the perimeter of each elderberry plant or plant group. A qualified biologist would be present during the installation of fencing.
- Signs would be posted every 50 feet along the edge of the Valley elderberry longhorn beetle avoidance area with the following information: "This area is habitat for the Valley Elderberry Longhorn Beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of the project.
- Operators would be briefed on the need to avoid damage to elderberry plants and the possible penalties for not complying with these requirements. All work crews would be advised of the status of the beetle and the need to protect the elderberry plants.
- During the construction period, a qualified biologist would inspect the work area periodically to assure that the project is not affecting elderberry plants. Every two years, Stanislaus County would survey and report to the Service the status of elderberry plants on the project site per the Service's Conservation Guidelines for the Valley elderberry longhorn beetle (as long as the Valley elderberry longhorn beetle continues to be listed under the Federal Environmentally Sensitive Area or as long as the project is operational).
- No insecticides, herbicides, fertilizers, or other chemicals that might harm the Valley elderberry longhorn beetle or elderberry plants would be used within 100 feet of any elderberry plant with stems measuring greater than 1-inch in diameter.

Invasive Species

To avoid the distribution of invasive species to the off-site areas during project construction, contract specifications would include, at a minimum, the following measures:

- All earthmoving equipment to be used during project construction would be thoroughly cleaned before arriving on the project site.
- All seeding equipment (i.e., hydroseed trucks) would be thoroughly rinsed at least three times prior to arriving at the project site and beginning seeding work.
- To avoid spreading any non-native invasive species already existing on-site, to off-site areas, all equipment would be thoroughly cleaned before leaving the site.

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and subsequent guidance from the Federal Highway Administration, the landscaping and erosion control included in the project would not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions would be taken if invasive species were found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

Construction

- If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission who will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact the District 6 Heritage Resources Coordinator so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Appendix D Farmland Conversion Impact Rating

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 12/15/10
Name Of Project Hammett Road/State Route 99 Interchange	Federal Agency Involved Caltrans acting for FHWA
Proposed Land Use Interchange	County And State Stanislaus County, Community of Salida
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 12/15/10

Does the site contain prime, unique, statewide or local important farmland? Yes ☐ No ☑ Acres Irrigated Average Farm Size
(If no, the FPPA does not apply -- do not complete additional parts of this form).

Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined in FPPA Acres: %
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS 12/16/10

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	18.0	15.0		
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	18.0	15.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*				
PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points			
1. Area In Nonurban Use	15	11	11	
2. Perimeter In Nonurban Use	10	7	7	
3. Percent Of Site Being Farmed	20	2	2	
4. Protection Provided By State And Local Government	20	20	20	
5. Distance From Urban Builtup Area	15	0	0	
6. Distance To Urban Support Services	15	0	0	
7. Size Of Present Farm Unit Compared To Average	10	0	0	
8. Creation Of Nonfarmable Farmland	10	0	0	
9. Availability Of Farm Support Services	5	4	4	
10. On-Farm Investments	20	1	1	
11. Effects Of Conversion On Farm Support Services	10	0	0	
12. Compatibility With Existing Agricultural Use	10	1	1	
TOTAL SITE ASSESSMENT POINTS	160	46	46	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or a local site assessment)*	160	46	46	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	46	46	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side) **Form AD-1006 (10-83)**

This form was electronically produced by National Production Services Staff

Appendix E Summary of Relocation Benefits

NONRESIDENTIAL RELOCATION ASSISTANCE

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the Right of Way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to $10,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses which meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than $20,000.

ADDITIONAL INFORMATION

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, except for any Federal law providing local "Section 8" Housing Programs.

Any person, business, farm or nonprofit organization which has been refused a relocation payment by the Caltrans relocation advisor or believes that the payment(s) offered by the agency are inadequate, may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a pubic project. A list of ineligible expenses can be obtained from Caltrans Right of Way. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Business and Farm Relocation Assistance Program

For more information or a brochure on the relocation of a business or farm, please contact Scott Smith, Associate Environmental Planner, Central Sierra Environmental Analysis Branch, California Department of Transportation, 855 M Street, Suite 200, Fresno, CA 93721

The brochure on the business relocation program is also available in English at http://www.dot.ca.gov/hq/row/pubs/business_farm.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/business_sp.pdf.

Additional Information

No relocation payment received would be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law (except for any federal law providing low-income housing assistance).

Persons who are eligible for relocation payments and who are legally occupying the property required for the project would not be asked to move without being given at

least 90 days advance notice, in writing. Occupants of any type of dwelling eligible for relocation payments would not be required to move unless at least one comparable "decent, safe, and sanitary" replacement residence, open to all persons regardless of race, color, religion, sex, or national origin, is available or has been made available to them by the state.

Any person, business, farm, or non-profit organization, which has been refused a relocation payment by Caltrans, or believes that the payments are inadequate, may appeal for a hearing before a hearing officer or Caltrans' Relocation Assistance Appeals Board. No legal assistance is required; however, the displacee may choose to obtain legal council at his/her expense. Information about the appeal procedure is available from Caltrans' Relocation Advisors.

The information above is not intended to be a complete statement of all of Caltrans' laws and regulations. At the time of the first written offer to purchase, owner-occupants are given a more detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted immediately after the first written offer to purchase, and also given a more detailed explanation of Caltrans' relocation programs.

Important Notice

To avoid loss of possible benefits, no individual, family, business, farm, or non-profit organization should commit to purchase or rent a replacement property without first contacting a Department of Transportation relocation advisor at:

Scott Smith, Associate Environmental Planner
Central Sierra Environmental Analysis Branch
California Department of Transportation
855 M Street, Suite 200
Fresno, CA 93721

Appendix F PM Interagency Consultation

StanCOG
Stanislaus Council Of Governments

City of Ceres • City of Hughson • City of Modesto • City of Newman • City of Oakdale • City of Patterson
City of Riverbank • City of Turlock • City of Waterford • County of Stanislaus

Memorandum

To: Matt Machado, Stanislaus County Public Works Department
Edward Hemming, Stanislaus County Public Works Department

From: Mike Costa, Associate Programming/Transit Planner

Date: September 28, 2011

Subject: Concurrence Received from the EPA and FHWA Regarding the $PM_{2.5}$ and PM_{10} Hot Spot Air Quality Assessment for the Hammett Road/State Route 99 Interchange Reconstruction Project and Determination that the Project is Not a Project of Air Quality Concern

---

This memo serves to confirm that StanCOG circulated a memo to the Interagency Consultation (IAC) Group requesting concurrence from both the Environmental Protection Agency (EPA) and the Federal Highway Administration (FHWA) that the Hammett Road/State Route 99 Interchange Reconstruction Project is not a project of air quality concern (POAQC). The circulation period for this review ended on September 22, 2011.

On August 18, 2011, the EPA provided concurrence that this project is not a POAQC. The FHWA provided concurrence that this project is not a POAQC on September 20, 2011. Attached is the correspondence from these two agencies indicating their concurrence that the Hammett Road/State Route 99 Interchange Reconstruction Project is not a POAQC.

If you have any questions regarding this memo or its attachments, please contact Mike Costa at (209) 525-4644. Thank you.

1111 I Street • Suite 308 • Modesto, CA • 95354 • 209-525-4600 • 209-558-7833 Fax •www.stancog.org

From: <OConnor.Karina@epamail.epa.gov>
To: "Michael Costa" <MCOSTA@Stancog.org>
CC: <abhijit_bagde@dot.ca.gov>, <achesley@sjcog.org>, <Alex@sierraresearch.c...
Date: 8/18/2011 11:07 AM
Subject: Re: Stanislaus County IAC Memo - PM 2.5 and PM 10 Hot Spot Assessment forSR 99-Hammett Rd. Interchange Improvement

EPA concurs that this is not a project of air quality concern.

Karina O'Connor
(775) 434-8176
oconnor.karina@epa.gov

From: "Michael Costa" <MCOSTA@Stancog.org>
To: <dwade@arb.ca.gov>, <jcrow@arb.ca.gov>, <jlindber@arb.ca.gov>, <jtaylor@arb.ca.gov>, <cari@caconsulting.org>, <Bruce.Abanathie@co.kings.ca.us>, <Rachel.Audino@co.kings.ca.us>, <BGiuliani@co.tulare.ca.us>, <Ewendt@co.tulare.ca.us>, <MAHays@co.tulare.ca.us>, <RBrady@co.tulare.ca.us>, <abhijit_bagde@dot.ca.gov>, <arvinder_bajwa@dot.ca.gov>, <dennis_jacobs@dot.ca.gov>, <garth.hopkins@dot.ca.gov>, <heidi_andrade@dot.ca.gov>, <james.perrault@dot.ca.gov>, <ken_baxter@dot.ca.gov>, <ken_j_romero@dot.ca.gov>, <la.nae.van.valen@dot.ca.gov>, <lima_huy@dot.ca.gov>, <Mike_Brady@dot.ca.gov>, <Muhaned.Aljabiry@dot.ca.gov>, <pat_robledo@dot.ca.gov>, <sharri_bender_ehlert@dot.ca.gov>, <sinarath_pheng@dot.ca.gov>, <steve_curti@dot.ca.gov>, <Terry_Goewert@dot.ca.gov>, <tom_dumas@dot.ca.gov>, <Joseph.Vaughn@dot.gov>, <Scott.Carson@dot.gov>, <ksterner@dowlinginc.com>, Doris Lo/R9/USEPA/US@EPA, Karina OConnor/R9/USEPA/US@EPA, Frances Wicher/R9/USEPA/US@EPA, <kcai@fresnocog.org>, <khan@fresnocog.org>, <ldawson@fresnocog.org>, <mbitner@fresnocog.org>, <mgarza@fresnocog.org>, <Ted.Matley@fta.dot.gov>, <jstramaglia@kerncog.org>, <rball@kerncog.org>, <rpacheco@kerncog.org>, <thightower@kerncog.org>, <vliu@kerncog.org>, <derek@maderactc.org>, <richard@maderactc.org>, <Matt.Fell@mcagov.org>, <Ty.Phimmasone@mcagov.org>, <Alex@sierraresearch.com>, <Hoyt@sjcog.org>, <Kaur@sjcog.org>, <kkloeb@sjcog.org>, <ridder@sjcog.org>, <Taylor@sjcog.org>, "Carlos Yamzon" <CYAMZON@Stancog.org>, "Jaylen French" <JCFRENCH@Stancog.org>, "Jim Schoeffling" <JSCHOEFFLING@Stancog.org>, <daniel.barber@valleyair.org>, <errol.villegas@valleyair.org>, <Katy.Linebach@valleyair.org>
Cc: <Terri.King@co.kings.ca.us>, <EWright@co.tulare.ca.us>, <tsmalley@co.tulare.ca.us>, "Stephen Ruiz" <stephen_ruiz@dot.ca.gov>, <bjsteck@fresnocog.org>, <tboren@fresnocog.org>, <RBrummett@kerncog.org>, <rphipps@kerncog.org>, <patricia@maderactc.org>, <Jesse.Brown@mcagov.org>, <Marjie.Kirn@mcagov.org>, <achesley@sjcog.org>, <cowell@sjcog.org>, "Michael Costa" <MCOSTA@Stancog.org>, "Rosa Park" <RPARK@Stancog.org>, "Vince Harris" <VHARRIS@Stancog.org>
Date: 08/15/2011 04:34 PM
Subject: Stanislaus County IAC Memo - PM 2.5 and PM 10 Hot Spot Assessment for SR 99-Hammett Rd. Interchange Improvement

Good Afternoon IAC Team,

StanCOG, on behalf of Stanislaus County, is providing the attached PM 2.5 and PM 10 Hot-Spot Conformity Assessment memo for the State Route 99-Hammett Road Interchange Improvement Project for Interagency Consultation. As part of the environmental review, it is requested that the Interagency Consultation Partners concur that this project is not a "Project of Air Quality Concern" (POAQC) and will not result in new violations of Federal PM 2.5 and PM 10 air quality standards. Please reply to all with concurrence and/or comments by 5:00 p.m. on Tuesday, August 30, 2011.

An interagency conference call will be held upon request. The project qualifies for a 6005 categorical exclusion under NEPA. Caltrans and EPA concurrence is requested.

If you have any questions regarding this email or the attached memo, please feel free to contact me directly. Thank you.

Sincerest Regards,

Mike

Mike Costa
Associate Planner
Stanislaus Council of Governments
1111 I Street, Suite 308
Modesto, CA 95354
T: 209.525.4644
E: mcosta@stancog.org

[attachment "SR 99-Hammett Interchange IAC for Stanislaus County_8-15-11.pdf" deleted by Karina OConnor/R9/USEPA/US]

Subject:	RE: Stanislaus County IAC Memo - PM 2.5 and PM 10 Hot SpotAssessment for SR 99-Hammett Rd. Interchange Improvement_NEPA6005_Re-Circulation
Received:	Tue, 20 Sep 2011 12:43:17 -0400
From:	<Joseph.Vaughn@dot.gov>
To:	<MCOSTA@Stancog.org>
Cc:	<OConnor.Karina@epamail.epa.gov>,<mike_brady@dot.ca.gov>, <cari@caconsulting.org>

FHWA concurs that this is not a project of air quality concern.

Joseph Vaughn
Air Quality Specialist/MPO Coordinator
FHWA, CA Division
(916) 498-5346

-----Original Message-----
From: Michael Costa [mailto:MCOSTA@Stancog.org]
Sent: Wednesday, September 07, 2011 6:11 PM
To: dwade@arb.ca.gov; jcrow@arb.ca.gov; jlindber@arb.ca.gov;
jtaylor@arb.ca.gov; cari@caconsulting.org;
Bruce.Abanathie@co.kings.ca.us; Rachel.Audino@co.kings.ca.us;
BGiuliani@co.tulare.ca.us; Ewendt@co.tulare.ca.us;
MAHays@co.tulare.ca.us; RBrady@co.tulare.ca.us;
abhijit_bagde@dot.ca.gov; arvinder_bajwa@dot.ca.gov;
dennis_jacobs@dot.ca.gov; garth.hopkins@dot.ca.gov;
heidi_andrade@dot.ca.gov; james.perrault@dot.ca.gov;
ken_baxter@dot.ca.gov; ken_j_romero@dot.ca.gov;
la.nae.van.valen@dot.ca.gov; lima_huy@dot.ca.gov; Mike_Brady@dot.ca.gov;
Muhaned.Aljabiry@dot.ca.gov; pat_robledo@dot.ca.gov;
sharri_bender_ehlert@dot.ca.gov; sinarath_pheng@dot.ca.gov;
steve_curti@dot.ca.gov; Terry_Goewert@dot.ca.gov; tom_dumas@dot.ca.gov;
Vaughn, Joseph (FHWA); Carson, Scott (FHWA); ksterner@dowlinginc.com;
Lo.Doris@epamail.epa.gov; OConnor.Karina@epamail.epa.gov;Wicher.Frances@epamail.epa.gov;
kcai@fresnocog.org; khan@fresnocog.org;
ldawson@fresnocog.org; mbitner@fresnocog.org; mgarza@fresnocog.org;
Matley, Ted (FTA); jstramaglia@kerncog.org; rball@kerncog.org;
rpacheco@kerncog.org; thightower@kerncog.org; vliu@kerncog.org;
derek@maderactc.org; richard@maderactc.org; Matt.Fell@mcagov.org;
Ty.Phimmasone@mcagov.org; Alex@sierraresearch.com; Hoyt@sjcog.org;
Kaur@sjcog.org; kkloeb@sjcog.org; ridder@sjcog.org; Taylor@sjcog.org;
Carlos Yamzon; Jaylen French; Jim Schoeffling;
daniel.barber@valleyair.org; errol.villegas@valleyair.org;
Katy.Linebach@valleyair.org
Cc: Terri.King@co.kings.ca.us; EWright@co.tulare.ca.us;
tsmalley@co.tulare.ca.us; Stephen Ruiz; bjsteck@fresnocog.org;
tboren@fresnocog.org; RBrummett@kerncog.org; rphipps@kerncog.org;
patricia@maderactc.org; Jesse.Brown@mcagov.org; Marjie.Kirn@mcagov.org;
achesley@sjcog.org; cowell@sjcog.org; Michael Costa; Rosa Park; Vince
Harris
Subject: Stanislaus County IAC Memo - PM 2.5 and PM 10 Hot
SpotAssessment for SR 99-Hammett Rd. Interchange
Improvement_NEPA6005_Re-Circulation

Good Afternoon IAC Partners,

StanCOG, on behalf of Stanislaus County, is re-circulating the attached PM 2.5 and PM 10 Hot-Spot Conformity Assessment memo for the State Route99-Hammett Road Interchange Improvement Project for Interagency Consultation. This assessment was originally sent out for concurrence in August 2011. The memo has been modified to provide some additional clarifying language to the air quality assessment section; however, no changes to the ambient air quality information, traffic data, or intersection analysis data have occurred. As part of the environmental review, it is requested that the Interagency Consultation Partners concur that this project is not a "Project of Air Quality Concern" (POAQC) and will not result in new violations of Federal PM 2.5 and PM 10 air quality standards. Please reply to all with concurrence and/or comments by 5:00 p.m. on Thursday, September 22, 2011. An interagency call will be held upon request.

An Environmental Assessment and Initial Study/Mitigated Negative Declaration has been prepared for this project. The project is a NEPA 6005; therefore, FHWA and EPA concurrence is requested.

If you have any questions regarding this e-mail or the attached memo, please feel free to contact me directly. Thank you.

Sincerest Regards,

MikeMike Costa
Associate Planner
Stanislaus Council of Governments
1111 I Street, Suite 308
Modesto, CA 95354
T: 209.525.4644
E: mcosta@stancog.org

List of Technical Studies that are Bound Separately

- Air Quality Analysis
- Air Quality Conformity Analysis
- Natural Environment Study
- Archaeological Survey Report
- Historic Property Survey Report
- Historical Resources Evaluation
- Farmland Conversion Assessment
- Preliminary Geotechnical Report
- Hazardous Waste Initial Site Assessment
- Noise Abatement Decision Report
- Noise Study Report
- Paleontological Identification and Evaluation Report
- Traffic Operations Report
- Visual Impact Assessment
- Water Quality Assessment Report
- Floodplain Evaluation Report
- Relocation Impact Memorandum