

State Route 99 Manteca Widening Project

On State Route 99 from the Austin Road Interchange to the
Arch Road Interchange

10-SJ-99-PM 5.1/15.0

10-0E6100

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment



Prepared by the
U.S. Department of Transportation
Federal Highway Administration
and the
State of California Department of Transportation



November 2009



General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans), and the Federal Highway Administration have prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project located in San Joaquin County, California. 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 of each of the alternatives. The document also describes the proposed avoidance, minimization, and/or mitigation measures for the project.

What should you do?

- Please read this Initial Study/Environmental Assessment. Additional copies of this document as well as the technical studies are available for review at the Caltrans District 10 office at 1976 Dr. Martin Luther King Jr. Boulevard (1976 East Charter Way), Stockton, CA 95201; at the City of Manteca Public Works Department, 1001 West Center Street, Manteca, CA 95337; at the San Joaquin County Public Works Department, 1810 E. Hazelton Avenue, Stockton, CA 9520; or at the following libraries: Manteca Branch Library, 320 West Center Street, Manteca, CA 95336.
- Attend the public hearing.
- Submit your comments. We welcome your comments. If you have any concerns regarding the proposed project, please attend the public hearing, or send your written comments to Caltrans by the deadline below. Submit comments by U.S. mail at the following address:
Gail Miller, Senior Environmental Planner
Central Sierra Environmental Analysis Branch
California Department of Transportation
2015 East Shields Avenue, Suite 100
Fresno, CA 93726
- Submit comments via email to: gail.miller@dot.ca.gov.
- Be sure to submit comments by the deadline: Monday, December 14, 2009.

What happens next?

After comments are received from the public and reviewing agencies, Caltrans and the Federal Highway Administration may: 1) give environmental approval to the proposed project, 2) prepare 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. It should be noted that at a future date, the Federal Highway Administration or another federal agency may publish a notice in the Federal Register, pursuant to 23 U. S. Code Section 139(l), indicating that a final action has been taken on this project by the Federal Highway Administration or another federal agency. If such notice is published, a lawsuit or other legal claim will be barred unless it is filed within 180 days after the date of publication of the notice (or within such shorter time period as is specified in the federal laws pursuant to which judicial review of the federal agency action is allowed). If no notice is published, then the lawsuit or claim can be filed as long as the periods of time provided by other federal laws that govern claims are met.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please contact Caltrans District 10 Public Affairs Office at (209) 948-7977, or use the California Relay Service TTY number, (800) 735-2929.

To widen State Route 99 from the existing four-lane facility to six lanes from the Austin Road interchange in the City of Manteca (Post Mile 5.1) to the Arch Road interchange in the City of Stockton (Post Mile 15.0) with structural and operational improvements.

**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)

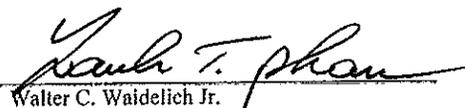
U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration

THE STATE OF CALIFORNIA
Department of Transportation

11/9/09
Date of Approval


Christine Cox-Kovacevich
Office Chief, Central Region
Environmental North

11/9/09
Date of Approval

for 
Walter C. Waidelich Jr.
Division Administrator
Federal Highway Administration

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) and the Federal Highway Administration, in cooperation with the City of Manteca, San Joaquin County, and the San Joaquin Council of Governments, propose to widen State Route 99 from the existing four-lanes to six lanes within the median from the Austin Road interchange in the City of Manteca (Post Mile 5.1) to the Arch Road Interchange in the City of Stockton (Post Mile 15.0) with structural and operational improvements.

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 coastal zone, wild and scenic rivers, parks and recreation, timberlands, energy, cultural resources, and geology/soils/seismic/topography.

In addition, the proposed project would have no significant effect on land use, parks and recreational facilities, growth, farmlands, community, visual/aesthetics, utilities/emergency services, traffic and transportation, hydrology and floodplain, water quality and stormwater runoff, paleontology, and air quality.

The proposed project would have no significant adverse effect on hazardous waste or materials, noise, and biological environment because the following mitigation measures would reduce potential effects to insignificance.

- A Preliminary Site Investigation of hazardous waste sites will be conducted before the final environmental document. Conceptual hazardous waste remediation plans, if needed, will be presented in the final environmental document.
- Noise effects would be mitigated by incorporating noise abatement measures in the form of masonry block barriers (sound walls) at five separate locations.
- Biological environment effects would be mitigated as follows:
 - Purchase of off-site mitigation credits for giant garter snake; and
 - Inclusion of avoidance, minimization, and mitigation measures for migratory birds, environmentally sensitive areas, erosion control, and water quality in the construction specifications and provisions.

Date

Christine Cox-Kovacevich
Office Chief, Central Region
Environmental North

Summary

The California Department of Transportation (Caltrans) and the Federal Highway Administration, in cooperation with the City of Manteca, San Joaquin County, and the San Joaquin Council of Governments, propose to widen State Route 99 from the existing four-lane facility to six lanes within the median from the Austin Road interchange in the City of Manteca (post mile 5.1) to the Arch Road interchange in the City of Stockton (post mile 15.0) with structural and operational improvements. The total length of the proposed project would be 9.9 miles. Three alternatives have been considered: two build alternatives and a no-build alternative.

The State Route 99/French Camp Road Alternative (Alternative A) would widen State Route 99 to six-lanes between the Austin Road and Arch Road interchanges by adding two 12-foot lanes in the median and constructing a concrete median barrier. Widening the freeway would also require the widening of three bridge structures: at Lone Tree Creek, French Camp Slough, and Littlejohns Creek. The project proposes to add an auxiliary lane to the southbound on-ramp at the Arch Road interchange. The Turner Station overhead at French Camp Road would be replaced, including ramp realignments with new acceleration and deceleration lanes, and frontage road realignment. Existing hook ramp connections near Littlejohns Creek, south of the Stockton Airport, do not meet current design standards and would be closed. Intelligent transportation systems features throughout the project area are proposed, including changeable message signs, traffic management subsystems, roadside weather information systems, closed circuit television, highway advisory radio, emergency medical services, and fiber optic systems.

The State Route 99/French Camp Road/Main Street-Lathrop Road Alternative (Alternative B) would include all of the features discussed in the previous section, in addition to reconstruction of the Lathrop Road interchange, which would be renamed the Main Street interchange. The Lathrop overcrossing would be reconstructed and frontage roads would be realigned in all four quadrants. With this alternative, the existing Main Street ramps (including the connector) would be removed because of unacceptable weaving operations. In the southwest quadrant, Main Street would be extended to the southbound ramp terminal intersection and aligned opposite the southbound off-ramp.

Summary

The No-Build Alternative (No Project) would also be considered and would involve no changes to the existing State Route 99 and no interchange modifications at French Camp Road or Main Street/Lathrop Road.

Project Impacts

The following table summarizes the results of the environmental studies, displaying the potential impacts for each alternative.

Summary of Major Potential Impacts from Alternatives

Potential Impact		State Route 99/French Camp Road Alternative (Alternative A)	State Route 99/French Camp Road/Main Street-Lathrop Road Alternative (Alternative B)	No-Build Alternative (No Project)
Land Use	Consistency with the City of Manteca and City of Stockton General Plans	Yes; the project is consistent with the City of Manteca and the City of Stockton General Plans		No
	Consistency with the San Joaquin County General Plan	Yes; the project is consistent with the San Joaquin County General Plan		No
Parks and Recreation		Both alternatives would require acquisition of a minor amount of right-of-way from a privately owned golf course due to improvements to the French Camp Road Interchange		No impact
Growth		The project would not have a growth inducing effect		No impact
Farmland/Timberland		9 acres of converted Important Farmlands	23 acres of converted Important Farmlands	No impact
Community Character and Cohesion		The project would not permanently disrupt existing community character or cohesion		No impact
Relocations	Residential Displacements	3 full and 0 partial property acquisition	8 full and 6 partial property acquisitions	No impact
	Business Displacements	0 full and 0 partial property acquisitions	7 full and 4 partial property acquisitions	No impact
	Utility Displacements	The project would cause only temporary (construction-related) impacts to local utility infrastructure		No impact

Summary

Potential Impact	State Route 99/French Camp Road Alternative (Alternative A)	State Route 99/French Camp Road/Main Street-Lathrop Road Alternative (Alternative B)	No-Build Alternative (No Project)
Environmental Justice	There would be no disproportionate impacts to environmental justice populations		No impact
Utilities/Emergency Services	The project would cause only temporary (construction-related) impacts to utilities and emergency service and/or providers		No impact
Traffic and Transportation/ Pedestrian and Bicycle Facilities	The project would improve conditions for vehicles; The project would cause only temporary (construction-related) impacts to sidewalks and bus stops and/or routes.	The project would improve conditions for vehicles; The project would cause only temporary (construction-related) impacts to sidewalks and bus stops and/or routes	Unacceptable levels of service (E or F) without the project
Visual/Aesthetics	Realignments and new or replacement structures would have visual impacts		No impact
Cultural Resources	No known historical or archaeological resources are located within the project area; Seeking concurrence with determination of no historic properties effected from State Historic Preservation Office		No impact
Hydrology and Floodplain	Floodplain encroachments in the form of construction of piles in project area waterways would occur for all project alternatives		No impact
Water Quality and Storm water Runoff	12 infiltration basins	14 infiltration basins	No impact
Geology/Soils/Seismic/Topography	Temporary construction impacts related to soil disturbance would occur; Potential for surface rupture due to fault movement in the project area is considered low; potential for liquefaction along the project alignment is also considered low		No impact
Paleontology	Unlikely to encounter scientifically important fossils		No impact
Hazardous Waste/Materials	An Initial Site Assessment was prepared and indicated	An Initial Site Assessment was prepared and indicated that	No impact

Summary

Potential Impact	State Route 99/French Camp Road Alternative (Alternative A)	State Route 99/French Camp Road/Main Street-Lathrop Road Alternative (Alternative B)	No-Build Alternative (No Project)
	that potential hazardous substances are present at 4 sites; A Preliminary Site Investigation is currently being prepared to evaluate these sites, and will be completed before the final environmental document	potential hazardous substances are present at 11 sites; A Preliminary Site Investigation is currently being prepared to evaluate these sites, and will be completed before the final environmental document	
Air Quality	The project would cause temporary (construction-related) emissions; No permanent impacts		No impact
Noise and Vibration	Increased noise levels would require implementation of noise abatement; This alternative would result in the construction of four reasonable and feasible noise barriers	Increased noise levels would require implementation of noise abatement; This alternative would result in the construction of five reasonable and feasible noise barriers	No impact
Natural Communities	Loss of ruderal habitat and agricultural land, and tree removal in landscape planting areas		No impact
Wetlands and other Waters	Temporary disturbance to potentially jurisdictional waters of the U.S is approximately 0.54 acres; Permanent disturbance to potentially jurisdictional waters of the United States is approximately 0.069 acres	Temporary disturbance to potentially jurisdictional waters of the United States is approximately 0.55 acres; Permanent disturbance to potentially jurisdictional waters of the United States is approximately 0.074 acres	No impact
Plant Species	The project is not expected to result in permanent or temporary impacts, or direct or indirect impacts to slough thistle, rose mallow, Sanford's arrowhead, Suisun marsh aster, or Wright's trichocoronis		No impact

Summary

Potential Impact	State Route 99/French Camp Road Alternative (Alternative A)	State Route 99/French Camp Road/Main Street-Lathrop Road Alternative (Alternative B)	No-Build Alternative (No Project)
Animal Species	Potential project impacts to western burrowing owl, white-tailed kite, other raptors and migratory birds, pale big-eared bat, and yuma myotis		No impact
Threatened and Endangered Species	Potential project impacts to Central Valley steelhead, giant garter snake, and Swainson's hawk		No impact
Invasive Species	Project activities have the potential to cause or promote the introduction or spread of invasive species as a result of construction		No impact
Construction	Project construction would cause temporary impacts, as noted above		No impact
Cumulative Impacts	The incremental effects of the proposed project, combined with the effects of present, past, and probable future projects result in no cumulative impacts for this project		No impact

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List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
FHWA	Federal Highway Administration
NEPA	National Environmental Policy Act
PM	post mile
U.S.	United States

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) and the Federal Highway Administration, in cooperation with the City of Manteca, San Joaquin County, and the San Joaquin Council of Governments propose to widen State Route 99 to six lanes within the median from the Austin Road interchange in the City of Manteca (Post Mile 5.1) to the Arch Road interchange in the City of Stockton (Post Mile 15.0). The total length of the proposed project would be 9.9 miles (see Figures 1-1 and 1-2). The proposed project also incorporates a number of structural and operational improvements to overcrossings and interchanges throughout the project area, specifically at Lathrop Road, Main Street, and French Camp Road.

State Route 99 is the principal north/south highway traversing the major cities within California's Central Valley. It provides primary access for the movement of people, goods, and services and is considered the main transportation route for agricultural products. It is also a major connector to all east/west routes throughout the Central Valley, providing links between the San Francisco Bay Area and the Sierra Nevada Range.

The project is included in the Fiscal Year 2007 Federal Statewide Transportation Improvement Program (approved by the Federal Highway Administration on October 2, 2006), and the San Joaquin Council of Governments' 2007 Regional Transportation Plan (completed in May 2007) and 2007 Regional Transportation Improvement Program. The project would be funded through the Regional Transportation Improvement Program, Interregional Transportation Improvement Program, State of California Congestion Relief Bond Program, and Measure K sales tax funds. The total estimated cost to implement Alternative A is \$146.5 million (\$137.6 million for construction and \$8.9 million for right-of-way and utility relocation). The total estimated cost to implement Alternative B is \$215.1 million (\$183.5 million for construction and \$31.6 million for right-of-way and utility relocation).

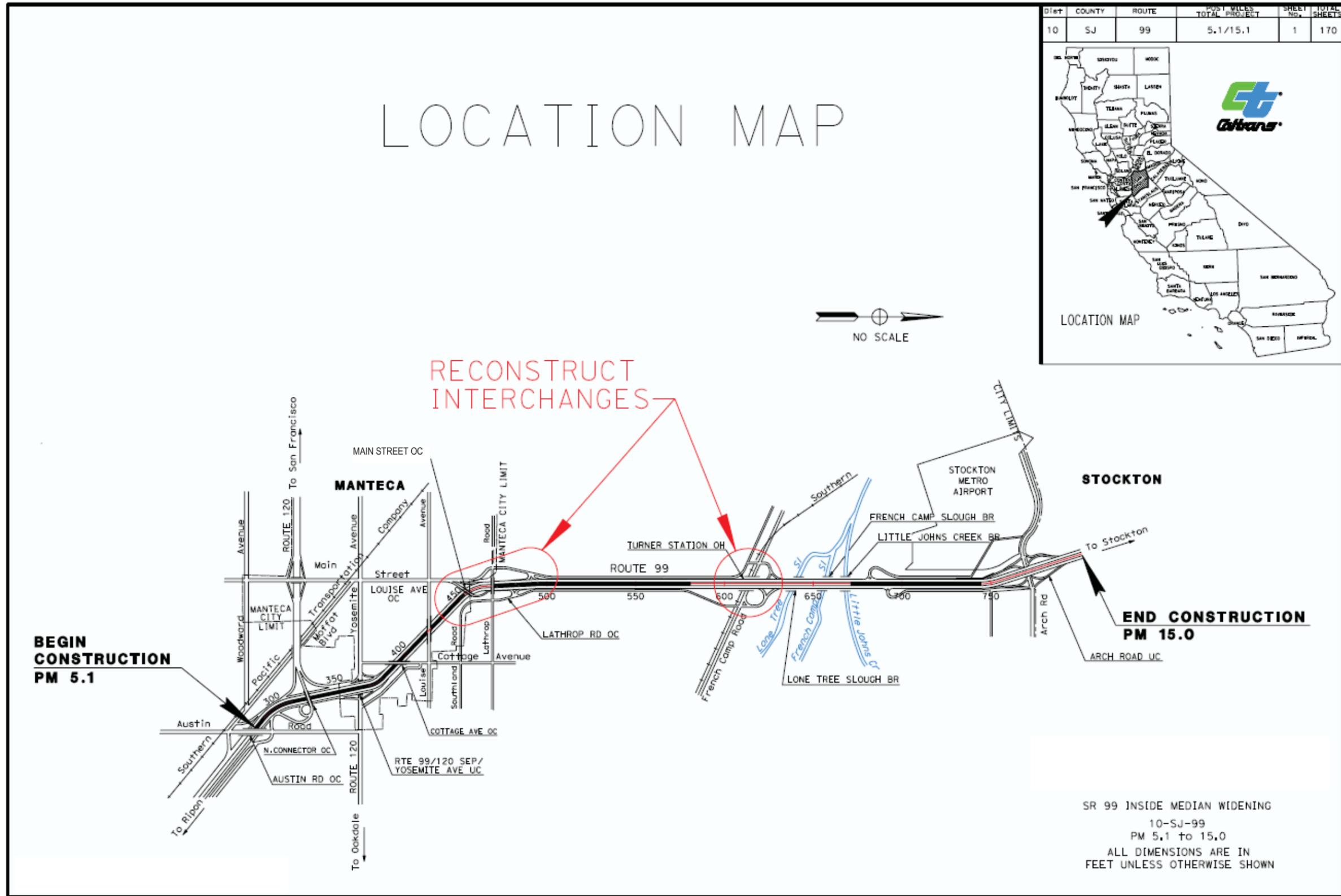


Figure 1-2
Project Location Map

Options for accelerating construction of the proposed project have also been considered. These options include completing the proposed project in phases, with early phases to include widening State Route 99 from Austin Road to the existing Main Street overcrossing and from the existing French Camp Road interchange to the Arch Road interchange. Later phases of the proposed project would complete interchange improvements at Main Street and French Camp Road, as well as the widening of State Route 99 between these interchanges.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the proposed project is to improve State Route 99 to:

- Provide congestion relief along a stretch of State Route 99 from the Austin Road interchange to the Arch Road interchange
- Improve future traffic operations
- Provide route continuity for State Route 99

1.2.2 Need

Within the project limits, State Route 99 is a four-lane freeway with overcrossings and interchanges. Traffic is congested during peak hours, with a high demand from both regional and local traffic. High traffic volumes, together with local motorists changing lanes and merging on and off the freeway, are key factors in slowing the traffic flow to below acceptable levels of service.

Traffic studies for this project were completed in August 2009. Studies are conducted using traffic indicators such as *average daily traffic volume* and *level of service ratings* to measure the effectiveness of the existing roadway and to help design solutions to meet the purpose of the project: provide congestion relief, improve future traffic operations, and provide route continuity.

The addition of one travel lane for each direction of travel is anticipated to provide increased capacity and improved traffic flow. The proposed project would ultimately make the traveled way safer as the improvements would more closely conform to current Caltrans design standards.

1.3 Capacity

Average Daily Traffic volume numbers represent the average volume of traffic using the roadway in a 24-hour period. The traffic data shown in Table 1.1 represents the existing average daily traffic volumes, as well as forecasted volumes for 2015 and 2035. As shown in Table 1.1, average daily traffic is forecasted to increase by an average of 25 percent by 2015, and by an average of 45 percent by 2035, for all segments. These percentages show the increasing demand for the roadway along these segments.

Table 1.1 State Route 99 Average Daily Traffic

State Route 99 Segment	Existing Average Daily Traffic	2015 Average Daily Traffic	2035 Average Daily Traffic
Austin Road to State Route 120	108,000	121,000	139,000
Between State Route 120 and Yosemite Avenue	88,000	97,000	121,000
Between Yosemite Avenue and Main Street	76,000	96,000	118,000
Between Main Street and Lathrop Road	74,000	99,000	112,000
Between Lathrop Road and French Camp Road	72,000	92,000	104,000
Between French Camp Road and Arch Road	70,000	93,000	107,000
Between Arch Road and Mariposa Road	75,000	100,000	117,000

Source: Fehr & Peers, 2009

1.4 Level of Service

Level of service describes the effectiveness of the roadway to transport vehicles through a corridor. The level of service rating system organizes traffic conditions into groups represented by letters “A” through “F” that indicate service quality. A designation of level of service “A” indicates excellent travel conditions, while traffic operating at level of service “F” is in slow and congested travel conditions. According to Caltrans and Federal Highway Administration standards, an acceptable level of service rating for freeways is “D.” See Figure 1-3 for a description of levels of service for freeways.

Table 1.2 shows the level of service of State Route 99 in its existing condition, as well as the forecasted condition for 2015 and 2035, with no improvements (No-Build conditions). Level of service was measured at peak morning and afternoon travel times. The peak hour volume is the volume of traffic using the lane(s) in question during the hour of the day with the highest traffic volumes. An acceptable level of service rating is within the range of “A” through “D,” and an “E” or “F” rating indicates the conditions need improvement. The current conditions on State Route 99 between Austin Road and Arch Road are generally meeting an acceptable level of service with a “C” or “D” rating. The ratings are predicted to deteriorate to “D”, “E” or “F” for all but one segment by the years 2015 and 2035. Deficient levels of service are indicated by the shaded cells in Table 1.2. The ratings show that traffic conditions will continue to degrade if no improvements are made to State Route 99.

Table 1.2 State Route 99 Level of Service in Project Area

State Route 99 Segment		Southbound Level of Service			Northbound Level of Service		
		Existing	No-Build 2015	No-Build 2035	Existing	No-Build 2015	No-Build 2035
Austin Road On-ramp to State Route 120 Off-ramp	AM	D	E	F	D	F	F
	PM	F	F	F	B	E	F
State Route 120 On-ramp to Yosemite Avenue Off-ramp	AM	D	F	E	C	D	E
	PM	D	F	F	D	F	F
Yosemite Avenue On-ramp to Main Street On-ramp	AM	C	D	E	C	F	F
	PM	C	F	F	C	D	F
Main Street On-ramp to Lathrop Road Off-ramp	AM	C	D	F	D	F	F
	PM	D	F	F	D	E	F
Lathrop Road On-ramp to French Camp Road Off-ramp	AM	C	D	D	D	F	F
	PM	D	F	F	D	D	F
French Camp Road On-ramp to CA 99 Off-ramp	AM	C	D	E	D	F	F
	PM	D	F	F	D	D	F
CA 99 On-ramp to Arch Road Off-ramp	AM	C	D	E	C	F	F
	PM	D	F	F	D	D	F

Source: Fehr & Peers, 2009

Figure 1-3 Levels of Service for Freeways

LEVELS OF SERVICE

for Freeways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		70	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. No delays
B		70	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted. No delays
C		67	Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes. Minimal delays
D		62	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited. Minimal delays
E		53	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor. Significant delays
F		<53	Very congested traffic with traffic jams, especially in areas where vehicles have to merge. Considerable delays

1.5 Traffic Operations

Operational deficiencies on State Route 99 within the project limits include insufficient space for motorists to safely change lanes while merging onto or off of the freeway between the Main Street overcrossing and the Lathrop Road interchange, and the vertical curve at French Camp Road interchange. Because of the proximity of the existing Main Street overcrossing and Lathrop Road interchange, maintaining access at both locations would leave that situation unchanged. Consequently, alternatives were developed to improve one of these locations, including local circulation as appropriate, while eliminating direct ramp access at the other location. The vertical curve at French Camp Road interchange would also be corrected to improve visibility for drivers using the interchange (specifically, stopping sight distance), along with adding ramp improvements. Stopping sight distance is the distance required for a driver to react to a hazard in the roadway ahead and bring the vehicle to a stop. In addition, installation of acceleration and deceleration lanes at French Camp Road interchange ramps would assist with correction of congestion related operational deficiencies. See Section 1.3, Alternatives, below for further details on these project features.

Potential structural limitations for State Route 99 within the project limits include existing vertical clearances at the Cottage Avenue, Louise Avenue, Main Street, and Lathrop Road overcrossings. At these locations, depths of new or resurfaced pavement would need to be limited to ensure adequate vertical clearance is maintained.

1.6 Route Continuity

The proposed project would help to improve the regional transportation system by providing a continuous route capacity of six lanes from Ripon to Lodi. The proposed project connects existing six lane segments to the south with two proposed six lane segments to the north, as it is the last in a series of three major roadway improvements planned to widen State Route 99. The first project in the series consists of widening State Route 99 from a four-lane freeway to a six-lane freeway in the City of Stockton between State Route 4 and Hammer Lane, and adding auxiliary lanes between Wilson Way and Hammer Lane. The second project in the series consists of widening State Route 99 from a four-lane freeway to a six-lane freeway in the City of Stockton between Arch Road and State Route 4. Implementation of the proposed project prevents a gap in lane coverage from occurring in between the existing six

lane segments to the south and the proposed roadway improvements taking place to the north.

1.7 Cost of Congestion

To understand the costs resulting from no improvements on State Route 99, calculations have been made to identify the average time savings for vehicles traveling the route and dollars saved in time delay. This average is based on potential savings of the build alternatives, which translates into savings for the consumer. Table 1.3 shows the average time delay savings in vehicle hours and cost savings per year.

Table 1.3 Cost of Congestion for Alternative A or B

Vehicle Hour Savings Per Year	Delay Cost Savings Per Year
4,600,000	\$66,000,000

Source: Fehr & Peers, 2009

1.8 Alternatives

This section describes the proposed action and the design alternatives that were developed by an interdisciplinary project development team to achieve the project's purpose and need while avoiding or minimizing environmental impacts. Major features used for comparison may include project cost, level of service and other traffic data, and specific environmental impacts.

1.8.1 Build Alternatives

Common Design Features of the Build Alternatives

The State Route 99/French Camp Road Alternative (Alternative A) would widen State Route 99 from four lanes to six lanes between the Austin Road and Arch Road interchanges by adding two 12-foot lanes in the median and constructing a concrete median barrier. Figure 1-4 represents a typical cross section for the proposed project. Both Alternatives A and B include the following improvements:

- Replace Turner Station overhead at French Camp Road, including ramp realignments with new acceleration and deceleration lanes, State Route 99 profile grade correction, and frontage road realignment (see Figure 1-5)

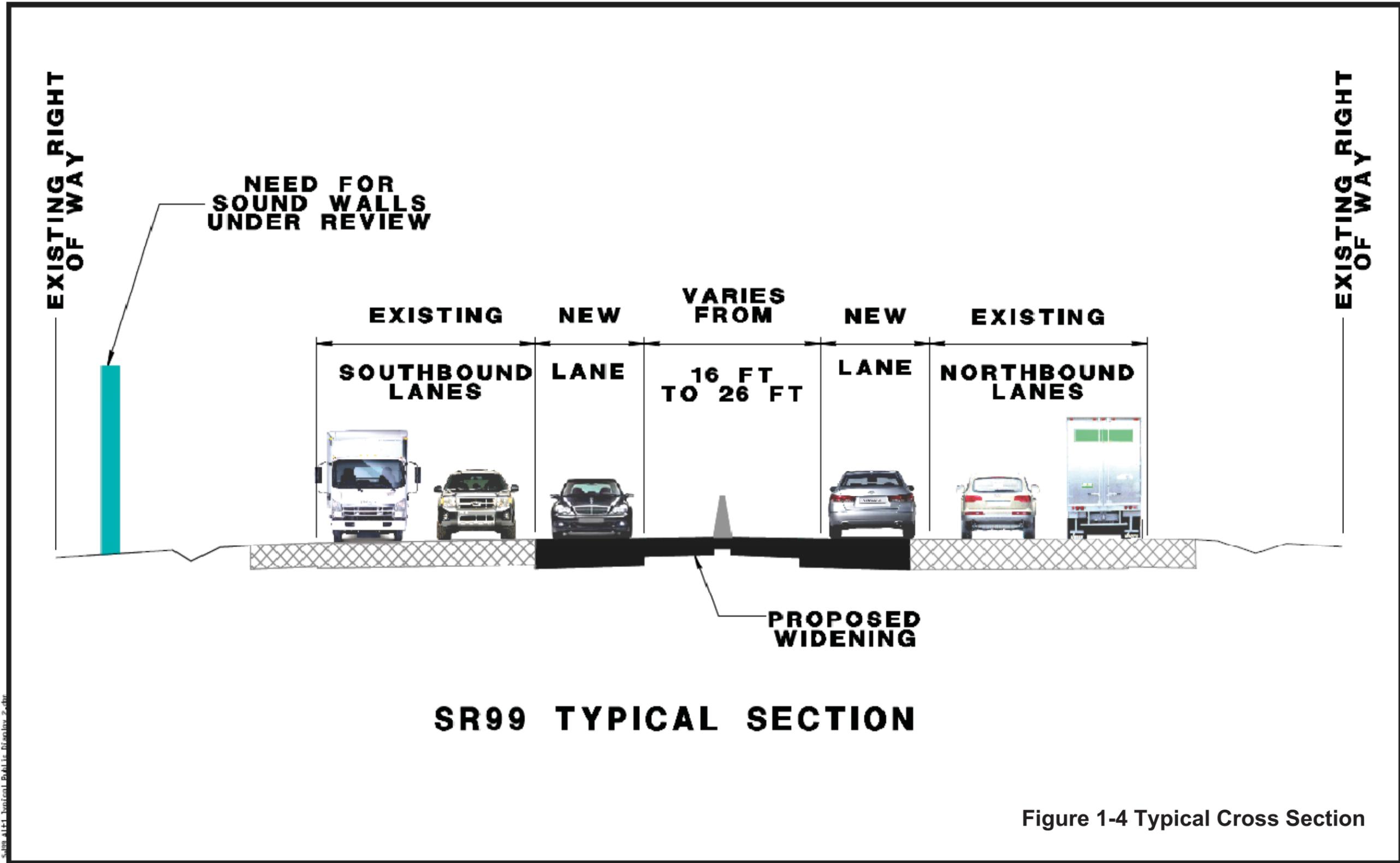
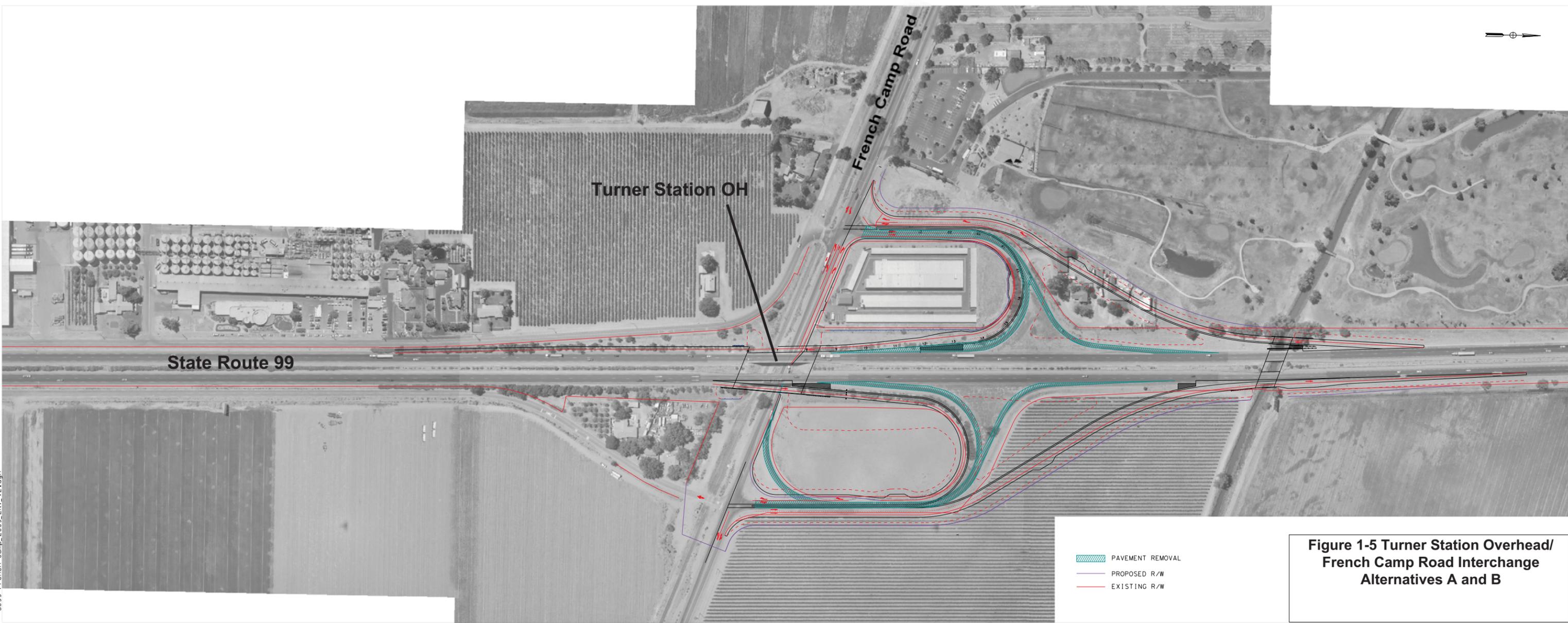


Figure 1-4 Typical Cross Section



- PAVEMENT REMOVAL
- PROPOSED R/W
- EXISTING R/W

**Figure 1-5 Turner Station Overhead/
French Camp Road Interchange
Alternatives A and B**

S:\99_French_Camp_2009_ENV_v2.dgn

- Widen bridge structure medians at Lone Tree Creek, French Camp Slough, and Littlejohns Creek
- Remove oleanders in the existing State Route 99 median; Provide replacement planting in new interchange reconstruction areas, avoiding removal of existing plant material where feasible
- Add an additional lane on southbound State Route 99 from the southbound State Route 120 West on-ramp to the Austin Road overcrossing
- Add an auxiliary lane to the southbound on-ramp at the Arch Road Interchange to extend the southbound merge distance
- Close hook ramp connections near Littlejohns Creek south of the Stockton Airport (see Figure 1-6)
- Install intelligent transportation system features throughout the project area, to include changeable message signs, traffic management subsystems, roadside weather information systems, closed circuit television, highway advisory radio, emergency medical services, and fiber optic systems. Intelligent transportation systems involve the use of advanced computer, electronic and communications technologies to increase the effectiveness of the surface transportation system.
- Add high-occupancy vehicle bypass lanes to all on-ramps except the northbound Main Street/Lathrop Road loop on-ramp and the southbound French Camp Road on-ramp. All new on-ramps would have California Highway Patrol enforcement areas, and accommodations for ramp metering.

Unique Features of Alternative B

In addition to the common features discussed above for Alternative A, the State Route 99/French Camp Road/Main Street-Lathrop Road Alternative (Alternative B) would include reconstruction of the Lathrop Road interchange, which would be renamed the Main Street interchange (see Figure 1-7). Alternative B also includes the following improvements:

- Partial cloverleaf interchange alternative would include new southbound diagonal on- and off-ramps for State Route 99 to Lathrop Road, plus a westbound to southbound loop on-ramp. For northbound movements, the interchange would include a diagonal off-ramp and loop on-ramp.
- The overcrossing would be reconstructed, and frontage roads would be realigned in all four quadrants. In the southwest quadrant, Main Street would be extended to

the southbound ramp terminal intersection and aligned opposite the southbound off-ramp.

With this alternative, the existing Main Street ramps (including the connector) would be removed because maintaining access at both locations would create unacceptable weaving operations.

Transportation System Management and Transportation Demand Management Alternatives

Transportation system management strategies consist of actions that increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of transportation system management strategies include: ramp metering, auxiliary lanes, turning lanes, reversible lanes and traffic signal coordination. Although measures of this type could not alone satisfy the purpose and need of the proposed project, they have been incorporated into the proposed project alternatives. An auxiliary lane would be included between the southbound Austin Road interchange and the State Route 120 connector. The auxiliary lane would improve traffic operations by reducing the potential for collisions resulting from short merge sections on mainline State Route 99. All on-ramps except the northbound Main Street/Lathrop Road loop on-ramp and the southbound French Camp Road on-ramp would have high-occupancy vehicle bypass lanes. All new on-ramps would have California Highway Patrol enforcement areas, and accommodations for ramp metering.

There is a 4.5-acre parcel near the Main Street Interchange between North Main Street and State Route 99 that is owned by Caltrans. The proposed Main Street interchange improvements would remove the existing ramps at this location. This parcel would be identified as a potential park-and-ride facility, which would be constructed as a separate project and is not part of the proposed project.

1.8.2 No-Build Alternative (No Project)

The No-Build Alternative (No Project) maintains the existing configuration and conditions for this segment of State Route 99. The current roadway would remain classified as a four-lane divided freeway, and all lanes, shoulders, and medians would remain at their current widths. If no improvements are made, conditions are expected to deteriorate and the road would not provide efficient, effective travel through the State Route 99 corridor. Under the No-Build Alternative (No Project), the identified transportation needs for the area would not be addressed.

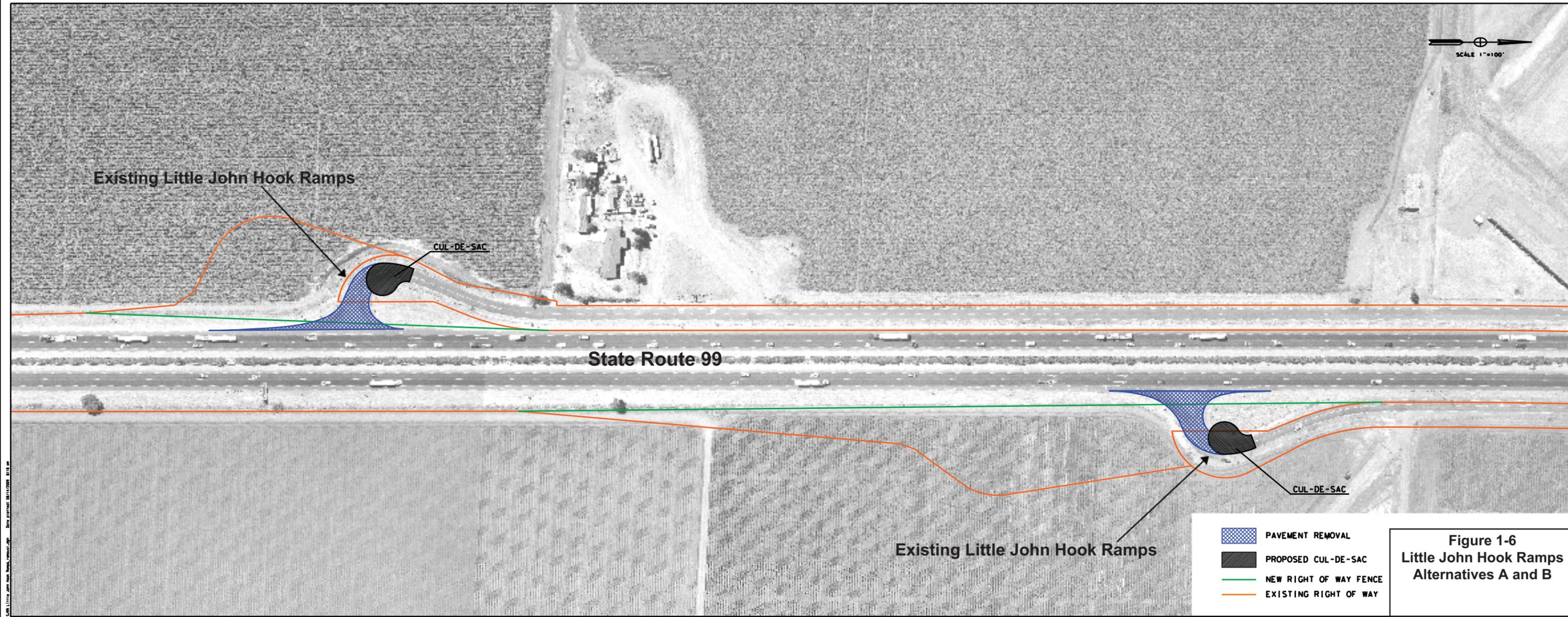


Figure 1-6
Little John Hook Ramps
Alternatives A and B

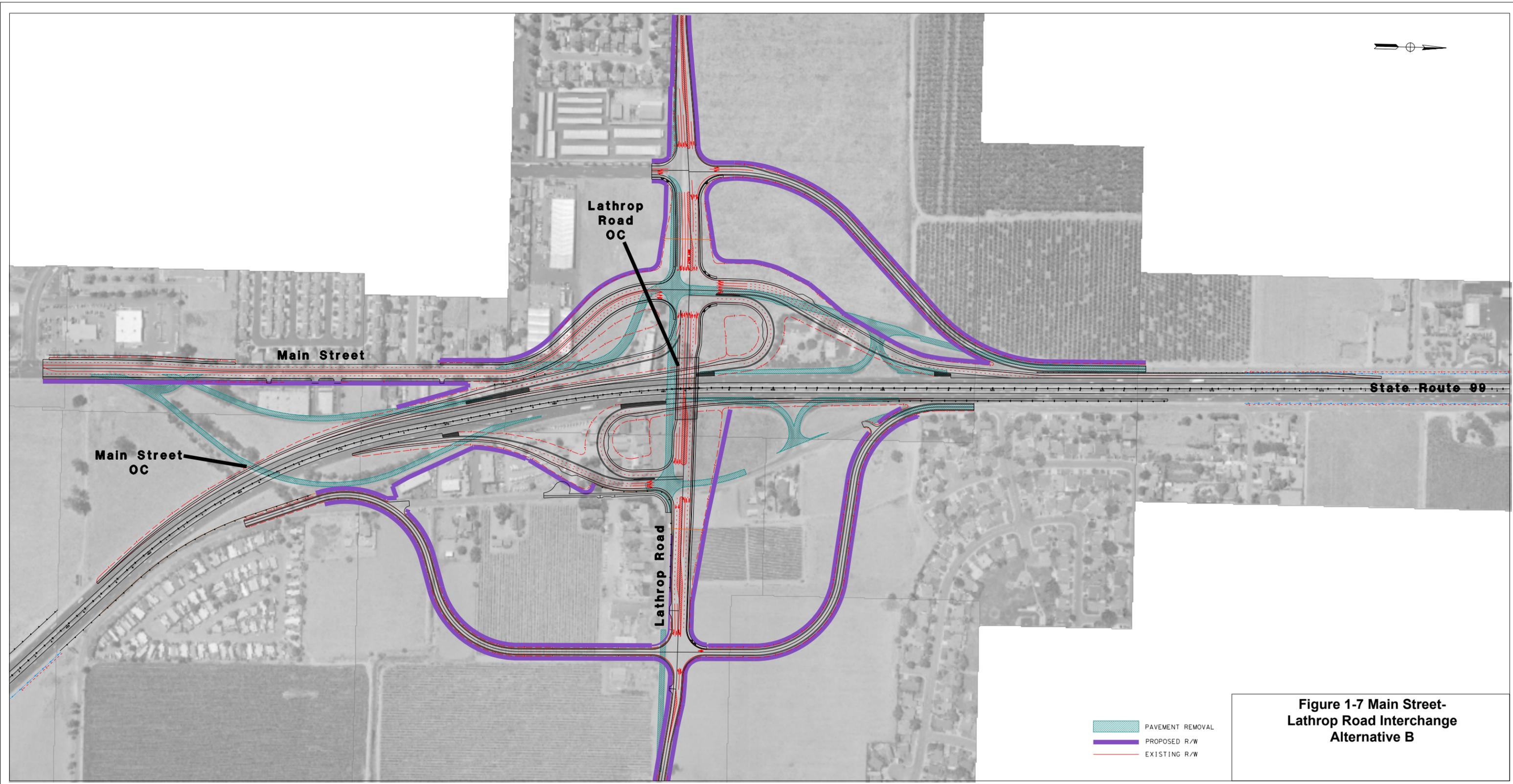


Figure 1-7 Main Street-Lathrop Road Interchange Alternative B

1.8.3 Comparison of Alternatives

Criteria considered by the Project Development Team to evaluate the project alternatives included project purpose and need objectives, project costs, potential environmental effects, and input from public services, public agencies, property owners, and the general public.

Implementation of the proposed project (widening of State Route 99) would meet the project purpose and need by adding capacity to and providing route continuity for State Route 99. Alternative B has been identified initially as the locally preferred alternative. However, final selection of the preferred alternative would not occur until after the public review and comment period.

The project alternatives differ in estimated cost for construction, plus right-of-way and utility cost. The differences in estimated costs are based on the proposed improvements and associated impact to local properties for each alternative. The total estimated project cost for this improvement project is approximately \$214.9 million. This project would be funded through the Regional Transportation Improvement Program, Interregional Transportation Improvement Program, State of California Congestion Relief Bond Program, and Measure K sales tax funds. The estimated cost of the proposed improvements for the mainline widening and the French Camp Road and Main Street interchanges is shown in Table 1.4.

Environmental impacts vary by build alternative. The Summary of Major Potential Impacts table in the summary of this document shows potential impacts by project alternative for each environmental resource analyzed. Each resource is analyzed in detail below in Chapter 2, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures.

After comparing and weighing the benefits and impacts of all of the feasible alternatives, the project development team has identified Alternative B as the recommended alternative, subject to public review. Final identification of a preferred alternative will occur subsequent to the public review and comment period.

Table 1.4 Project Cost

Project Feature	Roadway Cost	Structure Cost	Right-of-Way Cost	Utility Cost	Total Cost
State Route 99 Mainline Widening (both alternatives)	\$90,512,000	\$2,486,000	\$1,571,000	\$510,000	\$95,079,000
French Camp Road Interchange (both alternatives)	\$34,808,000	\$9,812,000	\$6,653,000	\$128,000	\$51,401,000
Main Street-Lathrop Road Interchange (Alternative B)	\$39,673,000	\$6,209,000	\$21,020,000	\$1,751,000	\$68,653,000
Total	\$164,993,000	\$18,507,000	\$29,244,000	\$2,389,000	\$215,133,000

After the public review and comment period, all comments will be considered, and Caltrans and the Federal Highway Administration 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 the proposed project would not have a significant effect on the environment, or would not have a significantly adverse effect on the environment with mitigation measures, Caltrans would prepare a Negative Declaration or Mitigated Negative Declaration. Similarly, if the Federal Highway Administration determines the action does not significantly impact the environment, a Finding of No Significant Impact would be issued in accordance with the National Environmental Policy Act.

1.8.4 Alternatives Considered but Eliminated From Further Discussion

Four build alternatives (State Route 99 widening alternatives), four separate Main Street interchange alternatives (plus a no-build alternative for Main Street), and a No-Build Alternative (No Project) were originally proposed for study by Caltrans. Caltrans evaluated each alternative with the intent to select either one widening alternative combined with one Main Street interchange alternative or the No-Build Alternative (No Project). Three of the four State Route 99 widening alternatives were considered and withdrawn in the early stages of project development based on

engineering design and cost. None of those three State Route 99 widening alternatives were evaluated in the course of this Initial Study. Three of the four Main Street interchange alternatives were also considered and eliminated from further discussion, as described below.

Two of the Main Street interchange alternatives proposed to remove and replace the existing ramps and direct connector structure at Main Street, remove the existing Lathrop Road ramps, and add new northbound and southbound on- and off-ramps at Main Street in a compact diamond configuration. Those two Main Street interchange alternatives were rejected because they did not meet the purpose and need based on operational deficiencies.

The third Main Street interchange alternative proposed a partial cloverleaf interchange connecting from Northgate Drive on the west side of State Route 99 to Southland Road on the east side of State Route 99, reconfiguration of Main Street north of Northgate Drive, a new roadway to provide for connecting movements from Southland Road to Lathrop Road, and removal of the existing Lathrop Road ramps. This third Main Street interchange alternatives was rejected because it did not meet the purpose and need based on connectivity and circulation deficiencies.

1.9 Permits and Approvals Needed

Table 1.5 shows the permits, reviews, and approvals that would be required for project construction.

Table 1.5 Permits, Reviews, and Approvals

Agency	Permit/Review/Approval	Status
Federal		
United States Fish and Wildlife Service	Federal Endangered Species Act, Section 7 Consultation for Threatened and Endangered Species	Formal consultation for Giant Garter Snake was initiated on April 30, 2009. Biological Opinion received from the United States Fish and Wildlife Service on October 7, 2009.
National Marine Fisheries Service	Federal Endangered Species Act, Section 7 Consultation for Threatened and Endangered Species	Informal consultation for Central Valley Steelhead and essential fish habitat was initiated by Caltrans on January 22, 2009 and was completed on April 15, 2009.
United States Army Corps of Engineers	Clean Water Act, Section 404 Permit for filling or dredging waters of the United States	Pending completion in the Project Specifications and Estimates phase of the project. Anticipate completion by 2012 or before.

Agency	Permit/Review/Approval	Status
Federal		
Federal Highway Administration	Interagency consultation for conformity and air quality planning in the project area	Interagency consultation was initiated with the San Joaquin Council of Governments in September 2009. Concurrence with the assumptions and analyses from the Federal Highway Administration and the United States Environmental Protection Agency is still pending.
United States Environmental Protection Agency	Interagency consultation for conformity and air quality planning in the project area	Interagency consultation was initiated with the San Joaquin Council of Governments in September 2009. Concurrence with the assumptions and analyses from the Federal Highway Administration and the United States Environmental Protection Agency is still pending.
Natural Resources Conservation Service	Consultation for activities that may irreversibly convert farmland to nonagricultural uses	A Farmland Conversion Impact Rating form (Form AD-1006) was completed in conjunction with the Stockton Office of the Natural Resources Conservation Service in June 2008. Written communication was received from the Natural Resources Conservation Service on July 7, 2008 to confirm completion of Form AD-1006. In August 2009 Form AD-1006 was updated.
State		
California Department of Fish and Game	Section 1600 Agreement for Streambed Alteration State Endangered Species Act, Consultation for Threatened and Endangered Species	Pending completion in the Project Specifications and Estimates phase of the project Anticipate completion by 2012 or before.
State Historic Preservation Office	Consultation for concurrence on a finding of "no historic properties affected."	Consultation with the State Historic Preservation Office was initiated in September 2009 and is still pending.
Central Valley Flood Protection Board	Encroachment Permit	Pending completion in the Project Specifications and Estimates phase of the project Anticipate completion by 2012 or before.
California State Water Resources Control Board	Clean Water Act, Section 401 Water Quality Certification	Pending completion in the Project Specifications and Estimates phase of the project Anticipate completion by 2012 or before.
Central Valley Regional Water Quality Control Board	General Order for Dewatering and other Low Threat Discharge to Surface Waters Permit Clean Water Act, Section 402, National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit	Pending completion in the Project Specifications and Estimates phase of the project Anticipate completion by 2012 or before.
California Public Utilities Commission	Consultation for authority to construct pursuant to the Public Utility Code, Sections 1201-1205 an at-grade crossing of a railroad track or an overpass or underpass of a railroad track.	Pending completion in the Project Specifications and Estimates phase of the project Anticipate completion by 2012 or before.

Agency	Permit/Review/Approval	Status
Local		
San Joaquin Area Flood Control Agency	Consultation for approval of construction that affects levees along French Camp Slough.	Pending completion in the Project Specifications and Estimates phase of the project Anticipate completion by 2012 or before.
San Joaquin Valley Air Pollution Control District	Consultation for an Authority to Construct and Permit to Operate.	Pending completion in the Project Specifications and Estimates phase of the project Anticipate completion by 2012 or before.
Union Pacific Railroad Company	Consultation prior to receiving authority to construct by the California Public Utilities Commission for a construction and maintenance agreement.	Pending completion in the Project Specifications and Estimates phase of the project Anticipate completion by 2012 or before.
San Joaquin Council of Governments	Coordination on project planning and consistency with regional plans	Coordination is ongoing. Representatives of the San Joaquin Council of Governments participate in regularly scheduled (monthly) Project Development Team meetings
San Joaquin County	Coordination on project planning, consistency with local plans, and efforts to ensure there are minimal impacts to residents and business owners	Coordination is ongoing. Representatives of San Joaquin County participate in regularly scheduled (monthly) Project Development Team meetings
City of Stockton	Coordination on project planning, consistency with local plans, and efforts to ensure there are minimal impacts to residents and business owners	Coordination is ongoing. Representatives of the City of Stockton participate in regularly scheduled (monthly) Project Development Team meetings
Agency	Permit/Review/Approval	Status
Local		
City of Manteca	Coordination on project planning, consistency with local plans, and efforts to ensure there are minimal impacts to residents and business owners	Coordination is ongoing. Representatives of the City of Manteca participate in regularly scheduled (monthly) Project Development Team meetings

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

This chapter discusses 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 of each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

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.

- **Coastal Zone**—The proposed project area is located in San Joaquin County and would not affect or be developed within a coastal area. Therefore, there would be no impact to this resource as a result of the proposed project.
- **Wild and Scenic Rivers**—There are no nationally recognized Wild and Scenic Rivers in San Joaquin County. Therefore, there would be no impact to this resource as a result of the proposed project.
- **Timberlands**—There are no state recognized or local designated timberlands in San Joaquin County. Therefore, there would be no impact to this resource as a result of the proposed project.
- **Energy**—According to the Caltrans “Energy Decision Tree,” the proposed project is not considered a “Major Project” requiring further energy analysis. When balancing energy used during construction and operation against energy saved by relieving congestion and other transportation efficiencies, the project would not have substantial energy impacts, but would provide travel time efficiencies and savings in fuel consumption, as compared with the No-Build Alternative.

- **Cultural Resources**—The Historic Property Survey Report was completed in August of 2009 and resulted in a Finding of No Historic Properties Affected. An archaeological survey of the project area did not identify any archaeological resources. The Historical Resources Evaluation Report, a technical study appended to the Historic Property Survey Report, provides documentation of the evaluation of 22 architectural properties and 2 engineering properties (linear resources, such as roadways). All evaluated properties were determined ineligible for the National Register of Historic Places and the California Register of Historical Resources. Consultation with consulting parties and the interested public has been ongoing throughout the environmental compliance process. In accordance with 36 Code of Federal Regulations Part 800.11, the consulting parties (State Historic Preservation Officer, the City of Manteca, San Joaquin County, and federally recognized Native American tribes) were provided the Historic Property Survey Report and all attachments on October 20, 2009. The formal 30-day consultation period for the consulting parties will end on November 20, 2009. If Caltrans receives comments that affect the Federal Highway Administration's Section 106 determinations of ineligibility or finding of no historic properties affected, then Caltrans will recirculate the draft environmental document.
- **Geology/Soils/Seismic/Topography**—A Draft Geotechnical Design and Materials Report was prepared in April 2009 states that no known earthquake faults lie in the project area. The proposed project would not result in substantial soil erosion or loss of topsoil. Therefore, there would be no impact to this resource as a result of the proposed project.
- **Plant Species**—The proposed project would not result in permanent or temporary impacts, or direct or indirect impacts to special-status plant species, as none are expected to occur in the project impact area. Therefore, there would be no impact to this resource as a result of the proposed project.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

Affected Environment

A Community Impact Assessment, which included an assessment of the current and future land uses in the project area, was completed in October 2009. The purpose of this section is to describe the land use environment and discusses the potential land use effects associated with the proposed project.

Land Use Patterns in the Study Area

The study area includes land adjacent to the existing section of State Route 99 in San Joaquin County between the Arch Road interchange in the City of Stockton and the Austin Road interchange in the City of Manteca. Land uses surrounding the affected section of State Route 99 are a mix of farmland, low-density residential, commercial, and other freeway-related uses.

Grapes are one of San Joaquin County's main agricultural commodities. Vineyards are the main agricultural land use located in the study area and in the surrounding vicinity, and along the State Route 99 corridor. Vineyards are prevalent outside of the cities of Stockton and Manteca as well as the surrounding region. A variety of row crops (including strawberries) and currently fallow agricultural lands are located adjacent to the urbanized city limits of Manteca.

The residential properties located in the study area are predominately single-family rural residential homes. There is a wide range of property values associated with the residences in the study area. Many factors influence the range of property values, including proximity to State Route 99, lot size, property improvements, and distance from the urban centers of Stockton or Manteca. Property values can also be influenced by other surrounding residential land uses and whether the property is located in a subdivision.

Commercial properties located in the vicinity of the proposed widening and interchange improvements include two mini storage businesses, a vehicle smog test shop, a pest control business, a multi-business strip center, a mobile home dealer, an RV storage area, and a gas station. Most of these businesses are located in the City of

Manteca near the Main Street interchange. A small number of commercial properties are also located near French Camp Road.

Land Use Development Trends

San Joaquin County

The county's land use development patterns reflect the growth of its main industries. In 2006, the sectors of Manufacturing, Agriculture, and Trade, Transportation and Utilities were the largest employers in the county, which comprised nearly 40 percent of the county's annual average employment (State of California, 2007). With the recent availability of several large tracts of undeveloped land zoned for industrial use and several undeveloped commercially zoned parcels throughout the county, many industrial companies and commercial businesses, seeking to relocate or to expand their operations, are attracted to the opportunities available in San Joaquin County. Due to its relative proximity to the San Francisco Bay Area and Sacramento, companies seldom have to sacrifice their market positions when they relocate or expand to San Joaquin County. The available and affordable land costs, lower operating costs and easy access to major transportation routes have enabled the county to attract new industries to the region in recent years. As a whole, the county's land use opportunities have afforded the region with great economic gains, which also trigger population growth.

City of Stockton

With the exception of the downtown area, the City of Stockton is characterized by low density, predominantly single-family housing, multi-family housing, low density commercial uses, and large industrial base. The central downtown is comprised of mainly high density commercial and residential uses. The majority of Stockton's development has historically grown from its urban center and along highway connectors. Using State Route 4 as a dividing line, the northern portion of the city is made up of mostly low-density residential and commercial uses with the southern portion characterized by low-density commercial and industrial uses.

In accordance with the goals of the City of Stockton Land Use Element, Table 2.1 shows business developments that are proposed or newly opened within the City of Stockton. The following tables represent the most recent information made available by the Cities of Stockton and Manteca.

Table 2.1 Business Developments in the City of Stockton as of 2008

Name	Jurisdiction	Intended Use	Status
Office			
Verona Office Plaza	City of Stockton	Two 3-story office buildings totaling 34,043 square feet, each to be subdivided into commercial condominium units	Opened 2007
Commercial			
Morada Ranch Shopping Center	City of Stockton	Mixed commercial uses	Opened 2007
Stonecreek Village Shopping Center	City of Stockton	15 acres, 161,000 square feet, 638 parking spaces	Opened 2008
Industrial			
Pacific Ethanol, Inc.	City of Stockton	New plant designed to produce 60 million gallons of ethanol per year, located in Port of Stockton	Operational 2008

Sources: City of Stockton, 2007, 2008a, and 2008b

The City’s updated General Plan uses districts and villages to help organize and plan future growth and reinvestment within existing parts of the community while encouraging infill development opportunities to help revitalize central Stockton. Stockton encompasses a number of county islands and underutilized areas within the existing community. The community development framework anticipates annexation, infrastructure extensions, neighborhood and district revitalization, and reinvestment as an integral part of growing a healthy city, and provides for the orderly development of the city with a 2035 planning horizon and to accommodate a target population of 580,000. Within the City’s sphere of influence, a number of new developments are currently proposed and under review by the City. According to current City records, the total estimated number of housing units under consideration is approximately 35,000. A summary of key features for each development is provided below in Table 2.2.

**Table 2.2 Major Residential Developments in the
City of Stockton as of 2008**

Development Name	Proposed Uses
Mariposa Lakes	Mariposa Lakes is a master-planned community proposed for development on approximately 3,810 acres in southeast Stockton near State Route 99 and State Route 4. 1,500 acres of residential development would provide 10,560 new housing units. Six new K-8 public schools and a new high school would be built. More than 670 acres of land for industrial, professional and office development is included, and these acreages are expected to generate up to a total of 13,500 new jobs.
Duck Creek	Duck Creek project, located along Duck Creek, includes 132 acres and 950 housing units.
River Run	River Run includes 2,100 acres and 10,500 dwelling units centered on Howard Road west of Interstate-5.
Empire Ranch	Empire Ranch has 502 acres with 2,121 dwelling units located east of State Route 99 and north of Cherokee Road; this project is contiguous with Origone Ranch.
Origone Ranch	Origone Ranch is on the west side of State Route 99, which includes 460 acres and 1,500 dwelling units.
Oakmore Gateway	Oakmore Gateway includes 630 acres of 2,500 dwelling units, where Cherokee Road is the southern boundary.
Riverbend	Riverbend is northwest of and contiguous to the Oakmore Gateway project and includes 168 acres and 756 housing units.
Tidewater Crossing	Tidewater Crossing is an 878 acres development of 2,500 dwelling units located west of State Route 99 and just north of the proposed French Camp development. The Stockton Metropolitan Airport is located on the north side.
French Camp	French Camp development includes 810 acres and 3,500 housing units

City of Manteca

The City of Manteca General Plan was designed to attain an adequate supply of land to accommodate the projected population through the General Plan horizon year 2023 within the City's Growth Management ordinance. The City of Manteca General Plan Study Area encompasses approximately 25,975 acres within and outside of the existing city limits. This area has been identified as within Manteca's sphere of influence and will serve as a receptor for its future growth. The availability of land, properly located, in appropriate lot configuration and with a range of uses is critical to the development of the Manteca community. The General Plan sets the foundation for land use designations that will enhance and preserve the community while still responding effectively to market pressures.

In accordance with the goals of the General Plan Land Use Element, Table 2.3 shows current business developments that are proposed or newly completed within the City of Manteca.

Table 2.3 Business Developments in the City of Manteca as of 2008

Name	Jurisdiction	Intended Use	Status
Office			
Southwest Manteca Planned Employment Center	City of Manteca	1,000 acres zoned Planned Employment Center; Campus-style business park	Planning and approval processes underway for a specific plan; Scheduled construction 2010
Commercial			
Spreckels Park	City of Manteca	200 acre mixed use development; residential, industrial and commercial areas	Ongoing; Limited commercial space for lease
Stadium Center	City of Manteca	52 acre major retail development center; 500,000 square feet of building space	Opened 2006
The Promenade Shops at Orchard Falls	City of Manteca	70 acre development; upscale retail, dining, and entertainment	Opened 2007
Industrial			
Manteca Industrial Park and Southeast Manteca Area	City of Manteca	49 parcels totaling 103 acres make up the existing Park, which is primarily zoned Industrial Park (I-P); 13 parcels of undeveloped land totaling 246 acres available, which is primarily agricultural	The Manteca Industrial Park was built in 1974; Undeveloped land available
West Manteca Area	City of Manteca	Partially developed, twin 63,000 square feet facilities are vacant and in need of rehabilitation	Two existing facilities were built in 1999; Undeveloped land available
Pacific Business Park	City of Manteca	80 acre industrial area	Currently under construction; Commercial space available

Source: City of Manteca, 2008a

According to statistics provided by the Economic Development Division of the City of Manteca, the population in the city limits surpassed a noteworthy milestone of 50,000 in 2000, and the city's rate of growth is outpacing that of the State of California. Current population statistics are provided in Section 2.1.5, Community Impacts. Consequently, residential growth in Manteca is both strong and widespread, with many new housing developments in the community. The City of Manteca issued 754, 803,

and 617 single-family residential building permits in 2003, 2002 and 2001 respectively. Currently, residential growth is just under 3 percent per year.

Environmental Consequences

The proposed widening of State Route 99 is designed to alleviate existing patterns of congestion rather than create a new route to an area not currently served by major transportation routes. Although the proposed project would widen a mainline portion of State Route 99, widening activities would largely occur within the existing right-of-way or in other areas along the current highway corridor. The interchange improvements would affect existing interchanges and are designed to increase efficient access to and through the community. The proposed project would not cause further division of an established community or impede the future implementation of designated land uses of those jurisdictions located within the study area. Closure of the hook ramps near Littlejohns Creek would not prevent vehicles from reaching residential properties between the hook ramps and Arch Road, because the east and west frontage roads would remain accessible, continuing to provide a connection between Arch Road and the State Route 99 interchange at Arch Road.

Land would have to be acquired for each alternative. However, 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 inconsistent land uses. The project also improves roadway conditions that support the current and future land use activities within the project area

Avoidance, Minimization, and/or Mitigation Measures

No specific measures would be required. However, to ensure consistency with the existing and future land uses described above, proposed project construction activities would be coordinated under the cooperation of San Joaquin County, the Cities of Stockton and Manteca, the San Joaquin Council of Governments.

2.1.1.2 Consistency with State, Regional, and Local Plans

Affected Environment

The study area falls largely within the unincorporated lands of San Joaquin County, with small portions within the City of Stockton (to the north) and the City of Manteca (to the south). Consequently, both City and County planning documents are of relevance to this analysis and are briefly described below.

San Joaquin County General Plan 2010

The San Joaquin County General Plan (adopted July 1992 as amended) contains goals and implementation measures for community development, housing, transportation, infrastructure services, public facilities, public health and safety, and natural resources in accordance with State of California Government Code 65300 et seq. The General Plan defines planned land uses and infrastructure based on a 2010 future horizon and is currently in the process of being updated. Although the General Plan addresses a range of countywide issues, its area of effect is focused on the unincorporated areas of the county.

Applicable San Joaquin County General Plan Policies

The proposed project is substantially in conformance with the adopted policies of the county's existing General Plan. A primary policy consideration of the General Plan is that new infrastructure improvements should support planned growth rather than induce unanticipated growth.

Applicable San Joaquin County General Plan Land Uses

A variety of land use designations are found throughout the study area (see Figure 2-1). As shown in the figure, urbanized uses (residential, commercial, freeway, industrial, etc.) are located in the more developed northern and southern portions of the study area (adjacent to the Cities of Stockton and Manteca), with agricultural uses dominating the center or less developed areas.

City of Stockton 2035 General Plan

The City of Stockton recently adopted an updated General Plan. The updated General Plan contains policies and implementation measures for a variety of elements including those for Land Use, Transportation and Circulation, Public Facilities and Services, Health and Safety, and Natural and Cultural Resources. The General Plan defines planned land uses and infrastructure based on a 2035 future horizon. As part of the current update, the City is also considering expansions to both its existing Urban Services Boundary and Sphere of Influence. The proposed project is located within the limits of the existing Urban Services Boundary. The proposed boundaries of the expanded sphere of influence include Armstrong and Live Oak Roads to the north; portions of State Route 99, the Stockton Diverting Canal and Jack Tone Road to the east; and Manila and Roth Roads to the south.

The western boundary is formed by several features including a portion of the San Joaquin River, State Route 4, Burns Cutoff and Bishop Cut. Key land use goals of the

updated General Plan are to increase infill development and expand the City's growth pattern to accommodate anticipated population growth, with future residential growth to occur in the form of villages located along the northern, eastern, and southwestern edges of the existing urban area. Regional commercial and office centers are also planned for these growth areas.

Applicable City of Stockton General Plan Policies

The portion of the proposed project within the jurisdiction of the City is required to comply with the policies of the City of Stockton 2035 General Plan. The proposed project is considered in conformance with the adopted policies of the City's existing General Plan.

Applicable City of Stockton General Plan Land Uses

A variety of land use designations are found throughout the study area (see Figure 2-2). As shown in the figure, urbanized uses (industrial and commercial uses) are focused near the existing interchanges and adjacent to State Route 99.

City of Manteca General Plan 2023

A portion of the proposed project is located within the City of Manteca. This portion is required to comply with the policies of the City of Manteca General Plan 2023. The proposed project is considered in conformance with the adopted policies of the City's existing General Plan.

Applicable City of Manteca General Plan Policies

The portion of the proposed project within the jurisdiction of the City is required to comply with the policies of the City of Manteca 2023 General Plan. The proposed project is considered in conformance with the adopted policies of the City's existing General Plan.

Applicable City of Manteca General Plan Land Uses

Similar to the City of Stockton, various urbanized uses (industrial and commercial) are focused near the existing interchanges and adjacent to State Route 99 (see Figure 2-3).

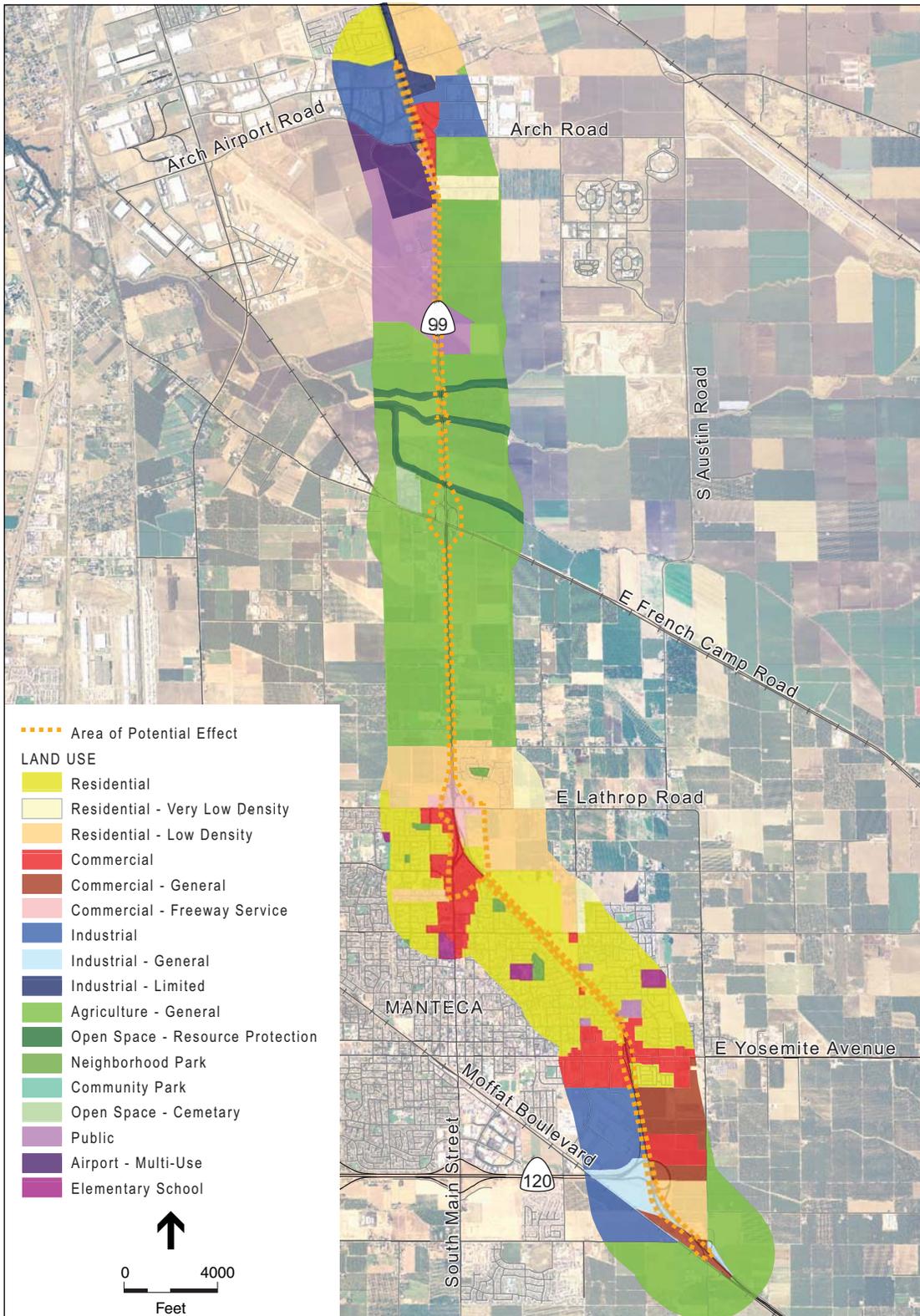


Figure 2-1
San Joaquin County Land Use Designations

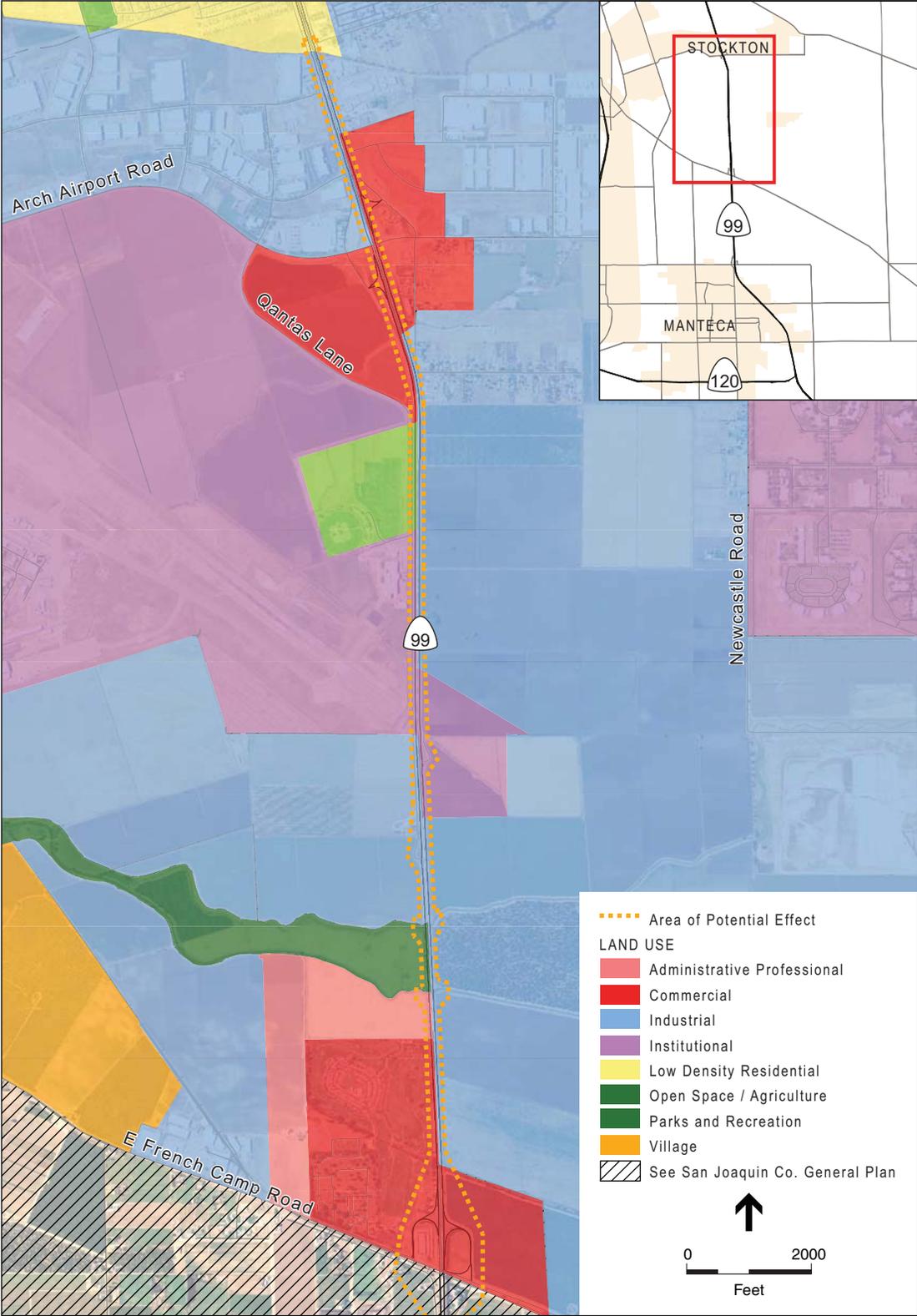
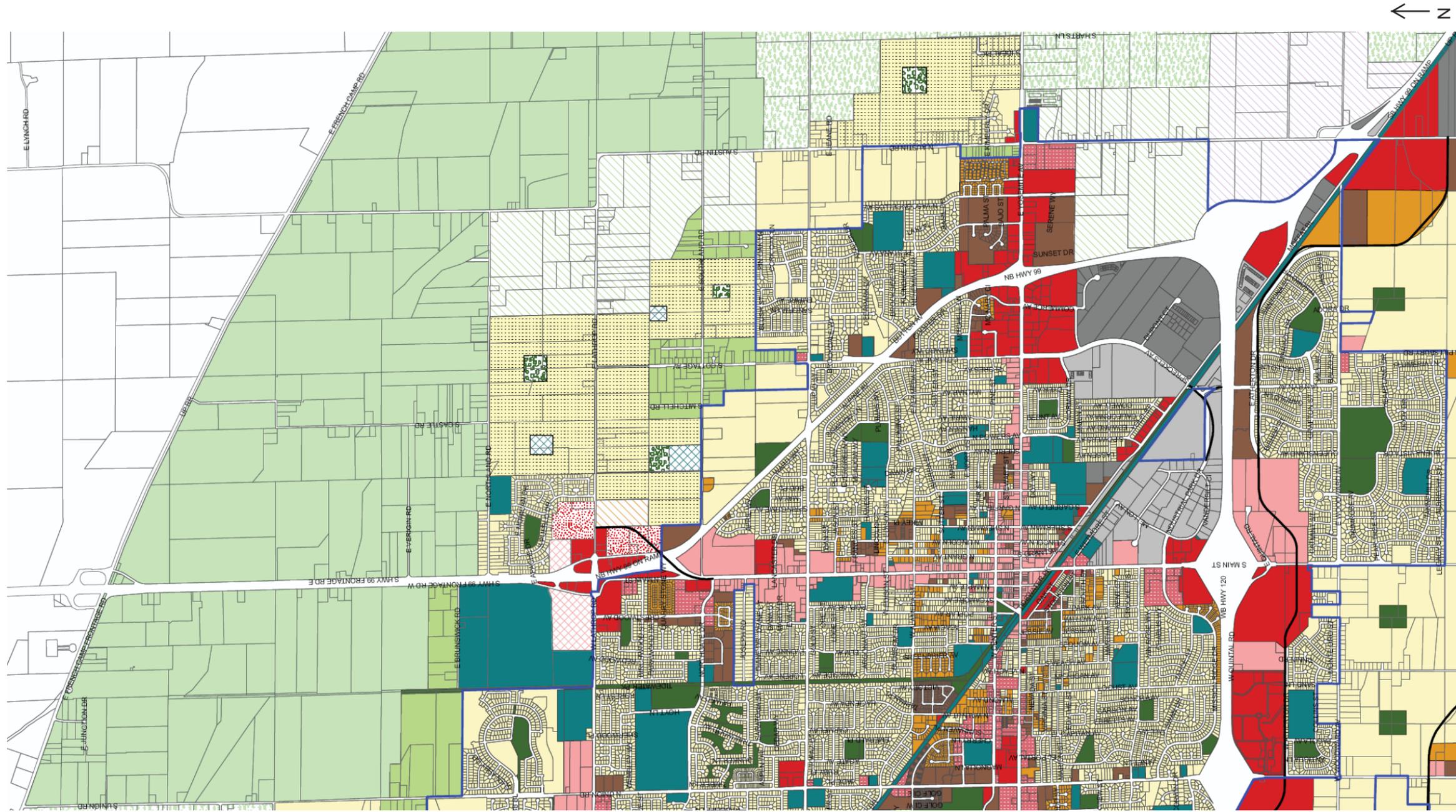


Figure 2-2
City of Stockton Land Use Designations



GENERAL PLAN

- CITY OF MANTECA**
- AG (Agriculture)
 - NC (Neighborhood-Commercial)
 - CMU (Commercial Mixed Use)
 - GC (General Commercial)
 - VLDR (Very Low Density Res. 0.5 to 2 du/ac)
 - LDR (Low Density Res. 2.1 to 8 du/ac)
 - MDR (Medium Density Res. 8.1 to 15 du/ac)
 - HDR (High Density Res. 15.1 to 25 du/ac)
 - BP (Business Industrial Park)
 - BP (Business Professional)
 - L (Light Industrial)
 - HI (Heavy Industrial)
 - OS (Open Space)
 - F (Park)
 - POP (Public/Quasi-Public)
 - UR (Urban-Reserve)
 - UR-AG (Urban Reserve-Agriculture)
 - UR-CMU (Urban Reserve-Commercial Mixed Use)
 - UR-GC (Urban Reserve-General Commercial)
 - UR-VLDR (Urban Reserve Very Low Density Res.)
 - UR-LDR (Urban Reserve Low Density Residential)
 - UR-MDR (Urban Reserve Medium Density Residential)
 - UR-HDR (Urban Reserve High Density Res.)
 - UR-BIP (Urban Reserve - Business Ind. Park)
 - UR-LI (Urban Reserve - Light Industrial)
 - UR-P (Urban Reserve - Park)
 - UR-POP (Urban Reserve - Public/Quasi-Public)
 - Panels
 - City Limit
 - New Roads
- 0 1,000 2,000 4,000 6,000 8,000 Feet

Figure 2-3
City of Manteca Land Use Designations

CITY OF MANTECA
COMMISSIONER
MANTECA, CALIFORNIA

This map is intended for general use and is not a warranty of accuracy, quality, or completeness of information. The City of Manteca does not warrant the accuracy, quality, or completeness of information on this map. It is not intended to replace engineering, survey, or other primary research methods.

APPROVED
CITY OF MANTECA
COMMISSIONER
MANTECA, CALIFORNIA
APPROVED
APRIL 2011

San Joaquin Council of Governments Regional Transportation Plan

The San Joaquin Council of Governments 2007 Regional Transportation Plan is considered the San Joaquin region's statement of priorities for the future transportation system. The San Joaquin Council of Governments' Regional Transportation Plan consists of several goals and objectives that serve as a framework for providing guidance to policy makers for decisions impacting the region's transportation system. In addition, the Regional Transportation Plan includes Revenue Policies that serve to guide revenue decisions relating to the state funded Regional Transportation Improvement Program, the federally funded Regional Surface Transportation Program, and the locally developed Smart Growth Program. In addition, there are Local Project Delivery Policies under the Regional Transportation Plan that help to ensure progress towards delivering projects in San Joaquin County.

To prepare the Regional Transportation Plan, San Joaquin Council of Governments staff conducted a comprehensive review that resulted in eight goals to address the issues facing the development of the region's transportation system, which are to:

- Improve Safety and Security
- Improve System Maintenance and Operations
- Promote Interagency Coordination, Public Participation, and Citizen Involvement
- Improve Quality of Life
- Improve Goods Movement
- Improve Mobility and Accessibility
- Enhance the Environment; and
- Maximize Cost Effectiveness.

The proposed project is among the short range planning improvements listed in the Regional Transportation Plan to help achieve the plan's goals. The proposed project is also listed on the 2007 Regional Transportation Plan Project List, Mainline Highway Improvements Category

San Joaquin County Multi Species Habitat Conservation and Open Space Plan

In 1994, the San Joaquin Council of Governments, Caltrans, the U.S. Fish and Wildlife Service, the California Department of Fish and Game and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton, and Tracy signed a memorandum of understanding which established the objectives of the San Joaquin County Multi Species Habitat Conservation and Open Space Plan. The San Joaquin County Multi Species Habitat Conservation and Open Space Plan was developed with intent to:

- Provide a strategy for balancing the need to conserve wildlife habitat while protecting the region's agricultural economy;
- Preserve landowner property rights;
- Provide for long-term management of plant, fish and wildlife species (including species listed as special status or endangered);
- Provide and maintain multiple-use open spaces which contribute to the quality of life of the residents of San Joaquin County; and,
- Accommodate a growing County population while minimizing costs to project proponents and society at large.

San Joaquin County Draft 2008 Regional Transportation Improvement Program

The 2008 Regional Transportation Improvement Program is a multi-year capital improvement program of transportation projects on and off the State Highway System. The Regional Transportation Improvement Program is a listing of state highway, grade separation, and local road projects that the San Joaquin region proposes for funding through the Fiscal Year 2008/09 to 2012/13 State Transportation Improvement Program. The primary purpose of the Regional Transportation Improvement Program is to help implement the San Joaquin region's adopted long range Regional Transportation Plan.

The San Joaquin Council of Governments, as the Regional Transportation Planning Agency for the San Joaquin region, is responsible for developing the region's funding priorities for the State Transportation Improvement Program, and for submitting the projects to the California Transportation Commission by way of the Regional Transportation Improvement Program.

Environmental Consequences

The proposed project is consistent with state, regional, and local planning for the project area and has been developed in accordance with the land use plans and policies described above. Future implementation and operation of the proposed project would involve the collaboration of San Joaquin County, the Cities of Stockton and Manteca, San Joaquin Council of Governments, and Caltrans to ensure that the proposed project is consistent with their respective land use policies.

Avoidance, Minimization, and/or Mitigation Measures

No specific measures would be required. However, to ensure consistency with the plans described above, proposed project construction activities would be coordinated under the cooperation of San Joaquin County, the Cities of Stockton and Manteca, the San Joaquin Council of Governments.

2.1.2 Parks and Recreational Facilities

Affected Environment

The French Camp RV Park Resort and Golf Course is a privately owned recreation area located along State Route 99 to the northwest of the French Camp Road interchange. The French Camp Golf Course borders the site of the proposed Turner Station Overhead replacement at French Camp Road and realignment of State Route 99 ramps and associated frontage roads.

Within the project vicinity, the City of Manteca oversees several community and neighborhood parks, all of which are outside the project's direct impact area. There are no equestrian trails, recreational bikeways, or other recreational trails in the project vicinity. There are no Section 4(f) resources in the project area, and the proposed project would not use a Section 4(f) park or recreational facility.

Environmental Consequences

The French Camp Golf Course is in the vicinity of the proposed project improvements, and implementation of the proposed project may affect the southwest corner of the golf course property (currently used as a storage yard for the facility). However, the proposed project would not affect the green, recreational activities, or other features of the French Camp RV Park and Golf Course. No other park or recreational facilities would be affected by the proposed project.

Avoidance, Minimization, and/or Mitigation Measures

No specific measures would be required.

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 of 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

A Community Impact Assessment was prepared for the project in October 2009. The Community Impact Assessment addresses the potential for the project to foster economic or population growth, or the construction of additional housing, and indicates that the project does not have a growth inducing effect.

The General Plans for San Joaquin County and the Cities of Stockton and Manteca describe how rapid population growth within these jurisdictions over the last decade has shaped their long-term planning goals. Over the last decade, the county's growth rate was among the fastest in the Central Valley and has resulted in profound effects on the County's ability to finance, deliver, and maintain existing infrastructure and community service facilities to support its growing population (see Section 2.1.5 of this document for detailed discussion of socioeconomic effects of the project). Thus, the project was designed in response to the growth experienced throughout the county and in its Cities of Stockton and Manteca. For San Joaquin County and the Cities of Stockton and Manteca, adequate circulation is a critical element for both social and economic development. Therefore, the project is needed for the accommodation of existing and planned local development, as well as for appropriate management of projected population growth within the region.

Environmental Consequences

The proposed project's objectives are to improve existing transportation infrastructure and interchanges along State Route 99 from Austin Road in Manteca to Arch Road in Stockton. These planned improvements would improve access, circulation, and safety along the highway corridor, which is a major route for the transportation of people, goods, and services throughout the region. Overall, the proposed project is designed to implement the adopted goals and policies of the planning documents of the various jurisdictions that comprise the study area.

No developable land areas would be made more accessible by the proposed project, and the proposed project would not open new areas to development or lead to changes in land use and density. Under any of the alternatives, the only land use changes would be associated with the acquisition of property for modifications to existing transportation facilities and construction of new roadway facilities.

Any limited changes in residential growth resulting from the proposed project are unlikely to have a measurable effect on actual population growth. The proposed project would help alleviate some of the future traffic congestion on State Route 99, but would not be intended to resolve all future traffic congestion due to the high rate of ongoing growth in the region. Therefore, the proposed project would not stimulate unplanned residential or related commercial growth.

Avoidance, Minimization, and/or Mitigation Measures

No specific measures would be required.

2.1.4 Farmlands/Timberlands

Regulatory Setting

The National Environmental Policy Act and the Farmland Protection Policy Act (United States Code 4201-4209; and its regulations, 7 Code of Federal Regulations Chapter VI Part 658) require federal agencies, such as the Federal Highway Administration, to coordinate with the Natural Resources Conservation Service if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the Farmland Protection Policy Act, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space

preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to deter the early conversion of agricultural and open space lands to other uses.

Affected Environment

San Joaquin County contains large areas of highly productive soils which are capable of producing a wide variety of crops. Field crops, vineyards, and pasture lands are predominant throughout the county. Agriculture constitutes an important part of the county's economic base by generating a variety of jobs and income including those related to crop production, trucking, and agricultural/food processing. The Cities of Stockton and Manteca are historical agricultural centers of the county. Today, both cities serve as a center of both production and distribution of the agricultural industry. The gross value of agricultural production in 2006 in San Joaquin County reached over \$1.6 billion dollars, and the county was ranked 7th in the state for agricultural production for that same year (California Farm Bureau Federation, 2008).

The California Department of Conservation's Farmland Mapping and Monitoring Program provides data for use in planning for the present and future of California's agricultural land resources. These farmland designations are based on the definitions presented below in Table 2.4. In recent decades, increasing amounts of agricultural lands in San Joaquin County have been converted to nonagricultural land uses. From 2004 to 2006, San Joaquin County experienced a net loss of approximately 6,765 acres of agricultural lands, of which 4,045 acres were classified as important farmland. In comparison to this trend, the acreage of urban and developed lands has increased over this period, which suggests that a majority of the farmland lost in the county is being converted to a mix of developed uses such as urban, commercial, residential and industrial in order to meet the growing population and business demands within the county.

There are no active Williamson Act parcels located within the study area for the proposed project and this issue is not described further in this report.

Table 2.4 Farmland Definitions

Category	Definition
Prime Farmland	Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
Farmland Of Statewide Importance	Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
Unique Farmland	Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
Farmland Of Local Importance	Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. In Yolo County, these areas consist of Local Importance (L): Cultivated farmland having soils which meet the criteria for Prime or Statewide importance, except that the land is not presently irrigated, and other nonirrigated farmland; and Local Potential (LP): Prime or Statewide soils which are presently not irrigated or cultivated.
Grazing Land	Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

Source: State of California, 2004

Environmental Consequences

The reconfiguration of the interchanges at Main Street and French Camp Road would encroach upon agricultural parcels nearest to the study area. Within these areas, farmland acquisitions would be required as a result of the implementation of the project. Both the Main Street and French Camp Road interchange improvements would result in impacts to lands classified as Important Farmlands. Table 2.5 shows the acres of farmland conversion by each alternative. Based on the acres of Important Farmlands inventoried for San Joaquin County, converted farmland for either Alternative A or Alternative B would represent less than 0.001 percent of the county's total Important Farmlands.

A majority of the farmlands to be converted are currently identified as fallow, and a small portion are now in vineyard and strawberry production. Most acquisitions

minimize impacts to existing agricultural operations, but improvements to the northeast quadrant of the Main Street interchange (State Route 99/French Camp Road/Main Street-Lathrop Road Alternative) could mean that lands currently under production, in particular those associated with vineyard and strawberry production, would be broken up into smaller parcels, some of which might be too small to be useful for agricultural purposes. Alternative A would avoid all of the farmland impacts associated with the Main Street interchange; however, improvements at the French Camp Road interchange would still occur and result in the conversion of lands classified as Important Farmlands.

Table 2.5 Important Farmland Conversion by Alternative

Alternative	Total Important Farmlands Converted (acres)	Prime Farmland Converted (acres)	Farmland of Statewide Importance Converted (acres)	Farmland of Local Importance Converted (acres)
State Route 99/ French Camp Road Alternative (Alternative A)	9	6	3	0
State Route 99/ French Camp Road/Main Street-Lathrop Road Alternative (Alternative B)	23	8	10	5

Source: Natural Resources Conservation Service, Farmland Conversion Impact Rating form (Form AD-1006), August 2009; See Appendix D

In order to evaluate the impacts of the proposed project on farmland, a Farmland Conversion Impact Rating form (Form AD-1006) was completed in conjunction with the Stockton Office of the United States Natural Resources Conservation Service on June 11, 2008, and was updated in August 2009 to reflect the current proposed alternatives. A score of 160 or greater on Form AD-1006 is the typical threshold which indicates that the project agency must consider alternatives which avoid or minimize farmland impacts. According to Form AD-1006, both Alternative A and Alternative B would each score below 160 points, and therefore would not require implementation of avoidance or minimization measures. The score for Alternative A is 137, and the score for Alternative B is 142. A copy of the completed Form AD-1006 is provided in Appendix E.

Avoidance, Minimization, and/or Mitigation Measures

No specific measures would be required.

2.1.5 Community Impacts

2.1.5.1 Community Character and Cohesion

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, established that the federal government use all practicable means to ensure safe, healthful, productive, and aesthetically and culturally pleasing surroundings for all Americans [42 United States Code 4331(b)(2)]. 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. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, effects on community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is considered significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the proposed project's effects.

Affected Environment

A Community Impact Assessment was prepared for the project in October 2009. This assessment, summarized below, describes the socioeconomic environment and discusses the potential socioeconomic effects associated with the proposed project. As described in the Community Impact Assessment, the project study area (study area) for community impacts includes the geographic region expected to be affected by the project, and includes portions of the Cities of Manteca and Stockton, and areas in San Joaquin County. The study area was determined based on Caltrans public meetings, surveys and interviews with local businesses and residents, census tract information, and interagency coordination discussions. The study area for the Community Impact Assessment is composed of portions of Census Tracts 3803, 5110, 5111, 5112, 5113, 5118, and 5126. Data used to characterize the study area and the region were obtained primarily from the 2000 U.S. Census, the California

Department of Finance, the California Economic Development Department, and the San Joaquin County, Stockton, and Manteca general plans.

Regional Population Characteristics

For the purposes of this analysis, San Joaquin County is the basis for describing the region and regional characteristics in relation to the study area. San Joaquin County is located in the northern portion of the Central Valley and is one of the fastest growing areas in the State of California. San Joaquin County’s growth has been similarly paced with the overall population growth and development occurring in the Central Valley over the last several decades. This growth is due in part to the affordable land and housing in the county and to the accessibility of major transportation routes for the movement of people, goods and services and to the larger metropolitan areas of Sacramento and the San Francisco Bay Area.

The State Department of Finance’s most recent population estimate for San Joaquin County tallied a total population of 685,660 in January of 2008. The majority of the County’s population (540,763 persons or 79 percent) reside within incorporated cities with the greatest population concentration (289,927 persons or 42 percent of the total County population) residing within the City of Stockton. The City of Manteca has an estimated population of 66,451, which accounts for approximately 10 percent of the total County population. Historic patterns of population growth between 1970 and 2007 for San Joaquin County, as well for as Stockton and Manteca, are shown in Table 2.6.

Table 2.6 Historic Regional Population Trends

Year	San Joaquin County	Percent Change	City of Stockton	Percent Change	City of Manteca	Percent Change
1970	291,020	-	107,650	-	13,850	-
1980	347,340	19	149,780	39	24,930	80
1990	480,630	38	210,940	41	40,770	64
2000	563,600	17	243,770	16	49,260	21
2007*	679,690	21	289,790	19	65,080	32

Sources: U.S. Census Bureau, 2000a; California Department of Finance, 2007

Growth forecasts for the study area are based on the planned build-out of the current General Plans for San Joaquin County and the Cities of Stockton and Manteca. Population projections prepared by the San Joaquin County Council of Governments are shown in Table 2.7. The steady population growth patterns anticipated for the county and the Cities of Stockton and Manteca will subsequently create the need for future employment opportunities, infrastructure development, and the expansion of community facilities and services within each jurisdiction.

Table 2.7 Future Projected Regional Population Trends

Year	San Joaquin County	Percent Change	City of Stockton	Percent Change	City of Manteca	Percent Change
2010	708,360	-	298,270	-	66,210	-
2020	888,540	25	366,330	23	85,610	29
2030	1,117,010	26	438,770	20	108,720	27

Source: SJCOG, 2004

Ethnicity

Table 2.8 provides a breakdown of the racial and ethnic profile of the population in San Joaquin County, the Cities of Stockton and Manteca, and the project study area. The table also compares the percentage of each ethnicity with the total for each jurisdiction listed. As shown in Table 2.8, the population of the study area is predominately white (69.5 percent) compared to the City of Stockton (43.3 percent) and San Joaquin County (58.2 percent), but fairly consistent with the City of Manteca (74.1 percent). The study area has a substantial Hispanic population (24.2 percent), fairly consistent with the other jurisdictions identified in Table 2.8. The next largest study area population groups include Black/African American (6 percent) and Asian (4 percent).

Regional Housing Conditions and Trends

The State of California's population and housing trends reflect those of San Joaquin County and the Cities of Stockton and Manteca. For example, from 1990 to 2000, California received an influx of over 4 million new residents (State of California, 2007). As a result of supporting a population increase of 13.8 percent during that decade, the housing sector experienced a 12.7 percent rise in the number of single family homes, which outweighed the 3.6 percent increase in multi-family unit developments (State of California, 2007). During this time, developments consisting of single family units surpassed the number of multi-family developments statewide. The same is true of Stockton and Manteca, which showed similar changes to their housing sectors during this time. The California Department of Finance's research in January 2008 found that the majority of housing stock in San Joaquin County and the Cities of Stockton and Manteca was single family detached homes, which accounted for roughly 72.3 percent of all housing units in the county, 64.9 percent of all housing units in Stockton, and 76.4 percent of all housing units in Manteca (see Table 2.9).

Table 2.8 U.S. Census: Racial and Ethnic Profile

Ethnicity	San Joaquin County		City of Stockton		City of Manteca		Study Area	
	Population	Percent of Total	Population	Percent of Total	Population	Percent of Total	Population	Percent of Total
White	327,607	58.2	105,446	43.3	36,534	74.1	15,117	69.5
Black/African American	37,689	6.7	27,417	11.2	1,406	2.9	1,317	6.1
American Indian/Alaska Native	6,377	1.1	2,727	1.1	643	1.3	327	1.5
Asian	64,283	11.4	48,506	19.9	1,733	3.5	790	3.6
Native Hawaiian/Other Pacific Islander	1,955	0.3	981	0.4	179	0.4	80	0.4
Some Other Race	91,613	16.3	42,208	17.3	5,693	11.6	3,011	13.8
Two or More Races	34,074	6.0	16,486	6.8	3,070	6.2	1,120	5.1
Total Population	563,598	100	243,771	100	49,258	100	21,762	100
Hispanic/Latino (of any race)	172,073	30.5	79,217	32.5	12,363	25.1	5,270	24.2

Source: U.S. Census Bureau 2000a

Table 2.9 Housing Stock by Type Estimates (2008)

Housing Type	San Joaquin County		City of Stockton		City of Manteca	
	Number	Percent	Number	Percent	Number	Percent
Single Family						
Detached	164,378	72.3	62,729	64.9	17,198	76.4
Attached	11,689	5.1	6,592	6.8	739	3.3
Multiple family						
2 to 4 Units	13,765	6.1	8,487	8.7	1,136	5.1
5+ Units	27,776	12.2	17,457	18.1	2,561	11.4
Mobile Homes						
Mobile Homes	9,731	4.3	1,288	1.3	851	3.8
TOTAL	227,339	100	96,553	100	22,485	100
Percent Vacant	3.94		4.25		3.36	

Source: State of California, 2008

San Joaquin Council of Governments’ employment projections can be compared to housing projections in order to better estimate the current and prospective future jobs-housing balance. Jobs-housing balance is an important planning consideration in developing communities with the appropriate infrastructure to support balanced growth. Due to San Joaquin County’s position in the Central Valley and its accessibility to the metropolitan areas of Sacramento and San Francisco, there are a large number of “bedroom communities,” residential areas that house mostly people who commute to other areas for work, in the county. Bedroom communities contribute to overall jobs-housing imbalance within cities, due to the abundance of employees that commute to other locations for work. Table 2.10 presents information on the percentages of County residents that commute to work outside of the county, reported for the years 2000, 2004, and 2006.

**Table 2.10 Journey to Work: San Joaquin County,
Years 2000, 2004, and 2006**

Description (Workers age 16 years and over of the County’s total population)	2000 (Percent)	2004 (Percent)	2006 (Percent)
Worked Outside of the County	23.5	29.7	25.8
Mode of Transportation: Car, Truck, or Van (Drives Alone)	91.6 (74.6)	90.3 (80.4)	92.4 (77.2)
Commute Time Greater than 1 hour	7.6	19.9	16.0

Source: U.S. Census Bureau, 2000d and 2006b

Regional Economic Conditions

Regional Economy

San Joaquin County is one of the original California counties, created in 1850. Economic growth in the County was greatly influenced by gold discoveries in the Sierra Nevadas. Soon after, a variety of agricultural operations were established in the county.

Agriculture continues to be the mainstay of the regional economy, although the share of agriculture-related jobs is declining as the various cities within the county grow and generate a variety of other employment opportunities (including retail, professional, and industrial). Large agriculture-related employers include General Mills Inc., Morada Produce Company, O-G Packing Company, and Pacific Coast Producers. Other large regional employers include WalMart, San Joaquin Delta College, the University of the Pacific, and several hospitals.

Tourism is an emerging industry in northern San Joaquin County, primarily due to the Lodi wine appellation and the efforts of the Lodi-Woodbridge Winegrape Commission, the Lodi Convention and Visitors Bureau, and the Stockton Convention and Visitors Bureau.

Employment and Income

Historically, employment growth in the County has not kept pace with growth in the population and housing sectors. For example, the population of San Joaquin County increased from 302,000 in 1975 to 437,221 in 1987, which equals a 38 percent increase. In contrast, employment growth for this same period was only 30 percent (City of Stockton, 1994). One of the reasons for this disparity was likely due to an influx of immigrants to the area without a subsequent increase in available jobs. Limited job skills in the newly immigrated population contributed to the disparity between population growth and job growth (City of Stockton, 1994). An additional factor that affects local employment is the increasing number of households who commute to employment centers in Sacramento, Silicon Valley or the Bay Area while residing in Stockton or Manteca.

Industry employment in San Joaquin County gained 13,700 jobs from the years 2002 to 2006, an increase of 6.5 percent (California Employment Development Department, 2007). However, the greatest employment growth in San Joaquin County occurred in the sectors of trade, transportation, and utilities (5,600 jobs total). The wholesale trade and retail trade sectors also gained 2,500 and 2,300 total jobs, respectively. During this four-year period, Countywide employment in educational and health services increased by 2,800 jobs (or 12 percent), with a majority of growth in the health care and social assistance sector (2,300 jobs total). Construction added 2,600 jobs, all in specialty trade contractors, which represents an increase of nearly 30 percent for this sector. The industry sectors of “Trade, Transportation & Utilities,” “Government,” and “Education and Health” services made up the largest sectors of employment in the County. Although the Agriculture sector only employed 6.8 percent of the working population 16 years of age and over, it is a constant source of annual economic revenue for the County.

The State reported a loss of 800 jobs in agriculture during the period 2002-2006, with a slight decrease of 0.9 percent in the value of County agricultural production in 2006. Despite a minor decrease in jobs and economic value for agricultural production, San Joaquin County was ranked 7th in the State for the total value of its agricultural

commodities. Therefore, the agricultural workforce continues to be one of the main sources of employment and economic revenue in San Joaquin County.

City of Stockton

The City of Stockton's employment base is heavily concentrated in retail and service businesses, with manufacturing representing the third largest major economic sector at approximately 10,300 jobs, or 10 percent of the City's total number of employers (City of Stockton, 2007). The main manufacturing industries in Stockton include food processing and the production of lumber and wood products as well as paper products. The City's employment base is heavily concentrated in durable goods manufacturing, wholesale trade, transportation, and warehousing (City of Stockton, 2007).

Affordable prices for housing and industrial lands in Stockton contributed to steady population and economic growth during the past decade. The SJCOG predicts employment growth within the City of Stockton to increase by an annual average of 1.4 percent through the year 2015, 1.3 percent between 2015 and 2020, and 1.2 percent between 2020 and 2025, to reach 123,923 jobs by 2025 (City of Stockton, 2007). San Joaquin County is expected to grow at a comparable rate to reach approximately 284,000 jobs by 2025 (City of Stockton, 2007). However, future growth in Stockton will depend on the City's continued attraction as a residential location, but will also require expansion of community infrastructure and basic industry jobs.

City of Manteca

According to the 2000 U.S. Census, the City of Manteca had an employed citizen population (16 years of age and over) of 20,560 workers. The top employment industry categories for Manteca in 2000 were Education, Health, and Social Services with 3,930 workers (or 19 percent), Manufacturing with 2,780 workers (13.5 percent), and Retail Trade with 2,700 workers (13.1 percent) (U.S. Census Bureau, 2000e).

Employment projections and forecasts for the county (and associated cities) are prepared by the San Joaquin Council of Governments. As shown in Table 2.11 San Joaquin Council of Governments employment projections for the City of Stockton assume that the City will continue to support 40 percent of the County's job base, with the City of Manteca supporting roughly 6 percent. However, the County will probably see significantly less growth in manufacturing, wholesale, and transportation sectors than it has in the past. Retail, services, and to a lesser extent, government, are all projected to see accelerating growth over the next 25 years. Therefore, in order to maintain its share of regional employment growth, the cities of Stockton and Manteca

will need to enhance their traditional employment base and look to new opportunities in business services, office-based employment sectors and commercial development.

Table 2.11 Employment Projections (2000-2030)

Location	2000	2005	2010	2020	2030
City of Stockton	88,650	92,120	95,900	105,850	116,900
City of Manteca	11,910	12,810	13,740	15,720	18,050
Unincorporated San Joaquin County	48,030	50,990	54,190	61,710	73,720
San Joaquin County Total	195,710	207,400	220,000	250,620	289,460

Source: SJCOG, 2009

In recent years, San Joaquin County has had higher rates of unemployment than the State overall. Table 2.12 shows unemployment rates in Stockton and Manteca from 2000 to 2007 as compared to the County and the State.

Table 2.12 Average Unemployment Rate, 2000-2007

Year	California Unemployment Rate (Percent)	San Joaquin County Unemployment Rate (Percent)	Stockton Unemployment Rate (Percent)	Manteca Unemployment Rate (Percent)
2000	4.3	7.0	8.5	6.0
2001	Not available	7.5	9.2	6.4
2002	6.7	8.9	10.8	7.7
2003	6.8	9.2	Not available	Not available
2004	6.2	8.8	Not available	Not available
2005	5.4	7.9	Not available	Not available
2006	4.9	7.4	Not available	Not available
2007	Not available	8.2	10.0	7.1

Sources: California Department of Finance, 2008 and California Employment Development Department, 2008.

As seen in Table 2.12, San Joaquin County consistently experienced higher rates of unemployment through the years 2000 to 2007 as compared to the statewide averages. Stockton and Manteca also showed higher rates of unemployment during the same time period; however, note that yearly data from 2003 to 2006 was unavailable.

San Joaquin County is one of California's leading counties for farm products. Since agriculturally-oriented counties tend to have greater seasonal variations in employment and higher unemployment rates, it is not surprising that Stockton's unemployment rate was almost double that of California's. Despite the loss of 800 jobs in agriculture during 2001 to 2005, San Joaquin County still ranked seventh statewide in total value (over \$1.6 billion dollars) of leading commodities, including milk, grapes, almonds, tomatoes, and cherries (California Employment Development Department, 2007).

Table 2.13 depicts economic characteristics for San Joaquin County, the Cities of Stockton and Manteca, and the State of California from the years 2000 and 2006.

The available labor force (civilians, aged 16 or over) of San Joaquin County and the City of Stockton in the year 2000 comprised roughly 60 percent and 59 percent of the total population, respectively. In comparison, these percentages were slightly lower than the median State average of 62 percent. Additionally, the City of Manteca had a slightly higher percentage overall (63 percent) in 2000. The estimated percentages for the year 2006 also show a similar (slightly higher) pattern.

**Table 2.13 Labor Force and Income (Civilians, Aged 16+),
2000¹ and 2006²**

Area	Labor Force (Percent)		Median Household Income	
	2000	2006 (Est.)	2000 (in 1999 dollars)	2006 (in 2006 inflation-adjusted dollars)
State of California	15,977,879 (62)	18,064,498 (64)	\$47,463	\$56,645
San Joaquin County	244,516 (59)	314,728 (62)	\$41,282	\$51,951
City of Stockton	101,850 (58)	132,631 (63)	\$35,453	\$45,615
City of Manteca	22,415 (63)	N/A	\$46,677	N/A

Sources: 1) U.S. Census Bureau, 2000a 2) U.S. Census Bureau, 2006

As of the 2000 Census, San Joaquin County and the cities of Stockton and Manteca had lower median household incomes than the State's median of \$47,463 (see Table 2.13 above). The 2006 American Community Survey, conducted by the U.S. Census Bureau, estimated that the median household incomes for the County, Stockton, and Manteca still remained below the statewide median of \$56,645, up from the median value of six years prior. While the State had a higher median household income from 2000 to 2006, the County and the cities of Stockton and Manteca still maintained household income levels above the national median household income values of \$41,994 (2000) and \$48,451 (2006) (U.S. Census Bureau, 2000a; 2006a, b, c).

Environmental Consequences

Regional Population Characteristics and Housing Conditions and Trends

At present, large portions of Stockton and Manteca's workforce live outside their respective downtowns, where housing is more affordable and largely dominated by single-family detached homes. The resulting commuting patterns increase traffic, strain infrastructure, fracture the community, and undermine environmental quality (City of Manteca, 2003). The proposed project's objectives are to improve existing transportation infrastructure and interchanges along State Route 99 from Arch Road in Stockton to Austin Road in Manteca. The proposed project also provides for the transportation needs projected for the region's build-out. Therefore, the proposed project is not anticipated to impact regional population. Additionally, as described above in Section 2.1.3, Growth, the project does not have a growth inducing effect. A

detailed discussion of low-income and minority populations in the project footprint is included below in Section 2.1.5.3, Environmental Justice.

The proposed project would not have an impact on housing availability and would not affect any defined neighborhoods or communities. The proposed project would not have an impact on the study area's community cohesion, the degree to which residents have senses of belonging to their neighborhood or experience attachment to community groups and institutions. In addition, the proposed project would not introduce any new physical or psychological barriers that would further divide, disrupt, or isolate neighborhoods, individuals, or community focal points on either side of the existing corridor. State Route 99 was put in service in 1949 as a major highway; the communities present at this time have grown up around this freeway. Because the proposed project would widen State Route 99 primarily within its median, most communities and neighborhoods adjacent to State Route 99 would not experience a disruption.

In some cases, individual residences would be displaced from the communities from which they are a part of on either side of State Route 99. Single family residential communities that would be affected by the project alternatives include the neighborhoods that are directly adjacent to the State Route 99 and French Camp Road, Main Street, or Lathrop Road overcrossings. In these areas, parcels that directly abut State Route 99 or the proposed ramps or frontage road realignments may need to be acquired for the project. All proposed project relocations are described in further detail below in Section 2.1.5.2, Relocations.

At the beginning of the right-of-way acquisition process, Caltrans right-of-way agents follow an established process to investigate the special needs of all parties being relocated or selling a portion of their land. A questionnaire is used to identify special needs, which can be considered. Accommodations are made to meet strict standards to address all special needs. Caltrans displacement/relocation policies are included in Appendix C.

Regional Economic Conditions

The proposed project is not expected to create negative impacts on the regional economy. On the contrary, since the proposed project is intended to improve existing transportation infrastructure and interchanges along State Route 99 in the project area, and to provide for the transportation needs projected for the region's build-out, the proposed project would provide a benefit to the regional economy by increasing

circulation and mobility. Construction of the proposed project is also anticipated to boost the local economy from construction expenditures, and to improve long-term access to local businesses.

The proposed project would not result in negative impacts on population characteristics, locations of employment centers, and regional facilities' functions. All businesses potentially relocated by the proposed project are anticipated to relocate within the community or region because commercial property is available. Given the type of business that would be potentially relocated by the proposed project it is not expected that these relocations would result in impacts to unemployment or loss of key employees to businesses.

During the construction period for the proposed project, temporary lane closures along State Route 99 and the interchanges are expected to result in reduced freeway capacity and congestion. Local travel routes within the interchange improvement areas (for all alternatives) would also be subject to detours and lane closures during the construction period. Construction period effects would occur over the length of the improvement corridor with most expected to occur in the area of the Main Street interchange area. Additionally, during construction, access constraints and detours may result in additional temporary decreased business activity and related sales tax revenues.

Following completion of the proposed project, communities adjacent to the project corridor would benefit from improved safety and circulation that would support continued economic growth of the area. Improved access and circulation would encourage regional access to local commercial districts adjacent to the State Route 99 corridor and interchanges.

Under Alternative A or Alternative B, acquisition of commercial property for public purposes could temporarily remove property from property tax roles, resulting in a temporary loss of sales tax revenues to the City of Manteca. However, given the type of businesses that would be potentially relocated by the proposed project, it is not anticipated that these relocations would result in long-term impacts to the regional economy since there are similar businesses that would remain open and accessible within the community, and because adequate replacement commercial sites are available for relocation of businesses. The proposed project would make businesses along the State Route 99 corridor more visible to passing motorists. All proposed business relocations are described in further detail below in Section 2.1.5.2, Relocations.

Avoidance, Minimization, and/or Mitigation Measures

No specific measures would be required.

2.1.5.2 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 would not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix C 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.). Please see Appendix B for a copy of Caltrans' Title VI Policy Statement.

Affected Environment

A Relocation Impact Report was prepared for the proposed project in May 2009. The purpose of a Relocation Impact Report is to provide decision makers and the public with information on any potential for the project to relocate residents and businesses, or to temporarily and/or permanently change access to properties along local streets.

A majority of the proposed widening of State Route 99 in the study area is proposed for areas within the roadway right-of-way with minimal disruption of the existing patterns of land use or properties anticipated. However, where the improvements affect overhead structures or interchanges, there would be areas of direct impact.

The relocation area for the project is comprised of the Cities of Stockton and Manteca and San Joaquin County, which all have similar amenities as those present in the displacement area. Residential and commercial land uses are predominate within the jurisdiction of the Cities of Manteca and Stockton along the State Route 99 corridor, while County areas contain a mix of residential and agricultural lands along with some low intensity commercial. Housing units in the study area are mainly single family homes. State Route 99 predates most housing in the area with the exception of an occasional farm house or rural residence. The residential communities within the identified study area grew up alongside the corridor. Thus, establishment of the

original freeway did not divide or otherwise impact an existing community upon its construction through the Cities of Manteca and Stockton, and San Joaquin County. Businesses in the study area are light commercial, professional/office, and light industrial uses including but not limited to automotive, mixed commercial shopping centers, household services, and storage.

Environmental Consequences

The areas of direct impacts resulting from implementation of the proposed project include removal of structures, acquisition of private lands for right-of-way, or changes to property access. Residential and nonresidential relocations would occur within the jurisdictions of the City of Manteca and San Joaquin County. However, no relocations would occur within the jurisdiction of the City of Stockton. The preliminary assessment of impacts to residences and businesses included in the Relocation Impact Report was conducted based on information supplied by the design engineer regarding right-of-way needs. These impacts are described in further detail below.

Residential Relocations

Table 2.14 shows the type of residential unit and degree of displacement anticipated by each of the project alternatives. Alternative B affects the greatest number of units (8 full and 6 partial acquisitions), while the smaller Alternative A affects the fewest (3 full and 0 partial acquisitions). Partial residential acquisitions shown in Table 2.14 represent minimal take of property for proposed retaining or sound walls only, and do not indicate relocation. Although Alternative A would avoid the residential relocation impacts associated with the Main Street interchange (Alternative B), improvements at the French Camp Road interchange would still occur and would result in displacements.

Table 2.14 Comparison of Residential Displacements by Alternative

Residence Type	State Route 99/French Camp Road (Alternative A)		State Route 99/French Camp Road/Main Street-Lathrop Road (Alternative B)	
	Full Acquisition and Relocation	Partial Acquisition	Full Acquisition and Relocation	Partial Acquisition
Single Family Residences	3	0	8	6
Multiple Unit Residences	0	0	0	0
Mobile Homes	0	0	0	0
Total Residential Units	3	0	8	6

Nonresidential Relocations

Table 2.15 shows the type of nonresidential unit and degree of displacement anticipated by each of the project alternatives. Alternative B affects the greatest number of units (7 full and 4 partial acquisitions), while Alternative A affects the fewest (0 acquisitions). Partial nonresidential acquisitions shown in Table 2.15 represent potential take of property for proposed right-of-way, and do not indicate relocation. Alternative A would avoid the nonresidential relocation impacts associated with the Main Street interchange and would not result in any displacements.

An existing business is located within the new Caltrans access control at French Camp Road. Access to the business is provided by a driveway located inside the southbound loop on-ramp. The existing southbound off-ramp at French Camp Road is also a frontage road which provides access to residences. The proposed realignment of the southbound off-ramp would result in displacement of these residences, as described above, and would eliminate the need for the existing off-ramp/frontage road. As a result, the existing business would be within the interchange loop on-ramp, and Caltrans intends to purchase access rights encircling the business property so that future access is restricted to the existing driveway and width.

Market availability is expected to remain adequate through the time of displacement as a result of project implementation. The current real estate market in the study area provides an adequate supply and a stable, if not decreasing, cost for replacement parcels.

Table 2.15 Comparison of Nonresidential Displacements by Alternative

Nonresidential Unit Type	State Route 99/French Camp Road (Alternative A)		State Route 99/French Camp Road/Main Street-Lathrop Road (Alternative B)	
	Full Acquisition and Relocation	Partial Acquisition	Full Acquisition and Relocation	Partial Acquisition
Commercial Businesses	0	0	7	4
Industrial/ Manufacturing Businesses	0	0	0	0
Nonprofit Organizations	0	0	0	0
Agricultural/ Farms	0	0	0	0
Total Nonresidential Units	0	0	7	4

There are adequate housing and commercial sites available in the Cities of Stockton and Manteca and in San Joaquin County to accommodate residents and businesses that may be displaced by this project. There are currently vacant housing units, which vary from mobile homes to multiple- and single-family residences. Based on information provided in the Relocation Impact Report, a relatively small number of residential and nonresidential displacements could occur as a result of the project, and adequate replacement dwellings and commercial sites are available for relocation of residences and businesses.

The Caltrans Relocation Assistance Program would be implemented for the proposed project, and would provide benefits for relocating residences and businesses. A range of benefits is available, such as assistance with finding comparable replacement housing and paying for costs associated with moving. Details are identified at the time property is acquired. All parties would be treated in a fair and equal manner as prescribed by Caltrans policy, the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended), Title 49–Code of Federal Regulations–Part 24, and Title VI of the Civil Rights Act (42 US Code 2000d, et seq.). See Caltrans’ Title VI Policy Statement in Appendix B.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project alternatives have been developed to minimize relocation impacts to the study area. Potential avoidance, minimization, and mitigation measures to address both permanent relocation and temporary construction-related impacts include the following:

- Provide standard relocation assistance in compliance with Caltrans Relocation Assistance Program and the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.
- All efforts would be made to identify relocation opportunities for affected businesses which would reduce the loss of goodwill and historic patronage. Wherever feasible, assistance would be made available in identifying suitable relocation sites within the service area of existing businesses.

Caltrans displacement/relocation policies are included in Appendix C.

2.1.5.3 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority*

Populations and Low-Income Populations, signed by President Bill Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2009, this was \$22,050.00 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix B of this document.

Affected Environment

A Community Impact Assessment, which included an assessment of the current and future land uses in the project area, was completed in October 2009. The Community Impact Assessment study area consists of communities that could be affected either directly or indirectly by the project alternatives. Data from the 2000 US Census and the 2009 Department of Health and Human Services poverty guidelines was used to determine the presence of minority and low-income populations, as directed in Executive Order 12898. As described above, the study area is composed of block groups within several census tracts, including census tracts 3803, 5110, 5111, 5112, 5113, 5118, and 5126 within the jurisdictions of San Joaquin County and the City of Manteca. The analysis of the study area is described at the census tract block level, and focuses on those blocks that would experience the direct impacts of the project (residential displacements).

In order to accurately examine the equity of the project alternatives, the San Joaquin County population was examined according to census tract. The population at the census tract level was then analyzed by racial demographics and poverty level statistics produced by the most recent 2000 U.S. Census data and the 2009 Department of Health and Human Services poverty guidelines. For purposes of this analysis, the potential for environmental justice impacts was identified when the population in any census tract block group met the following criteria:

- **Minority Population**

Definition: individual(s) who are members of the following population

groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.

- **Low-income Population**

Definition: low-income populations were identified using the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series on Income and Poverty.

Refer above to Section 2.1.5, Community Impacts, for the existing and projected demographic characteristics of the study area, considering population, housing, and employment growth; household size and composition; ethnic composition; mobility status, age, and household income within the affected community.

To identify and evaluate affects associated with the project, each of the project alternatives were reviewed and analyzed to identify whether any of them would adversely affect low-income or minority populations. Impacts for topic areas that are site-specific (e.g., minority and low income status) are described for the following two areas: French Camp Road interchange and Main Street interchange.

All categories of race and ethnicity are represented in the Cities of Manteca and Stockton, and San Joaquin County. White and Hispanic individuals are dominant in the affected block groups and study area, similar to the Cities of Manteca and Stockton, and San Joaquin County. Other than Hispanic however, no single minority population accounts for more than 3.5 percent in the City of Manteca, 19.9 percent in the City of Stockton, and 11.4 percent in San Joaquin County. Table 2.8 in Section 2.1.5 compares the racial and ethnic profiles of the Cities of Manteca and Stockton, San Joaquin County, the study area, and the census blocks that would experience residential displacement.

Table 2.16 shows the racial demographics of populations in the study area at the census tract block level, with a focus on those blocks that would experience the direct impacts of the project (residential displacements). The majority of the populations identified in the Study Area and affected census blocks are white. However, the racial demographics of the population of census tract 3803, block group 3, block 3050 consists of 32.6 percent minority. Census block 3050 is located adjacent to the proposed French Camp Road interchange improvements in the northwest quadrant.

Table 2.17 provides poverty levels statistics by census tract and block level. There were 25.4 percent of families living below the poverty level in 1999 for census tract

3803, block group 3, block 3050. In comparison with Table 2.16, this same block had a 32.6 percent racial minority population. These statistics may indicate a higher percentage of individuals of a racial minority and poverty level status in census tract 3803, as compared to the other census tracts studied.

Table 2.16 Racial Demographics at the Census Tract, Block Group, Block Level

Census Tract, Block Group, Block	Population	Race					
		White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Hispanic
French Camp Road Interchange							
Census Tract 3803, Block Group 3, Block 3050	43	29	0	0	0	0	14
Main Street Interchange							
Census Tract 5112, Block Group 2, Block 2010	9	9	0	0	0	0	0
Census Tract 5118, Block Group 1, Block 1002	48	44	0	0	0	0	4
Census Tract 5126, Block Group 2, Block 2000	21	20	0	0	0	0	1
Total	121	102	0	0	0	0	19
Percent of Total	100	88.5	0	0	0	0	17.8

Source: U.S. Census Bureau, 2000j

Table 2.17 Percent of Families Below the Poverty Level in 1999

Location	Percent of Families Below the Poverty Level
French Camp Road Interchange	
Census Tract 3803, Block Group 3, Block 3050	25.4
Main Street Interchange	
Census Tract 5112, Block Group 2, Block 2010	7.8
Census Tract 5118, Block Group 1, Block 1002	5.9
Census Tract 5126, Block Group 2, Block 2000	6.8
Study Area	
City of Manteca	7.2
City of Stockton	18.9
San Joaquin County	13.5

Source: U.S. Census Bureau, 2000j; Department of Health and Human Services, 2009

Environmental Consequences

A comparison of the minority and low-income populations for the affected blocks with those of the Cities of Manteca and Stockton, San Joaquin County, and the study area indicates that the blocks in census tracts 5112, 5118, and 5126 have minority and low-income populations that are comparable to or less than those in the Cities of Manteca and Stockton, San Joaquin County, and the study area. However, as described above,

statistics may indicate that there is a higher percentage of individuals of a racial minority and poverty level status in census tract 3803, as compared to the other census tracts studied.

Under the proposed project, a maximum number of eight residential displacements would occur. Based on census data and field observation, an estimated four of these eight residences are likely to represent minority and low-income populations, and four residences represent non-minority and average/above average-income populations. Therefore, a similar number of residential displacements would occur in both minority and non-minority populations, and in both low-income and in average/above average-income populations.

Based on statistical analysis, the difference between the proportion of the protected class (i.e., minority and low-income) affected and the proportion of all classes affected has a normal distribution with a mean and standard deviation. A result of less than two standard deviations is generally considered non-significant. The displacement statistics for the proposed project show that the proportion of minority and low-income relocations is zero standard deviations above the proportion of non-minority and average/above average-income relocations.

The purpose of analyzing environmental justice is to ensure that all people, regardless of race, color, national origin or income, are protected from disproportionate negative or adverse impacts due to the implementation and operation of the proposed project. Due to the fact that the proposed project aims to widen an existing roadway, alternatives to the widening realignments are often limited. Evaluations of safety and level of service conditions for freeways were included in the assessment of the improvements to the State Route 99 corridor and the development of project alternatives. These alternatives were designed to minimize impacts from project construction activities and operations to the environment and surrounding community.

As described above, the proposed project includes widening State Route 99, and improving the French Camp Road and Main Street interchanges. Although the project involves widening work along the State Route 99 mainline, construction activities for the widening would be focused within the freeway median, therefore, there would be minimal impacts to the surrounding land uses and the community as a result of the widening. All available existing freeway right-of-way would be used to the extent feasible to further reduce impacts on residents in the project area. However, there are no

feasible options for implementing the project's proposed interchange improvements at French Camp Road and Main Street that would not affect small percentages of the communities that have established themselves next to these interchanges.

Improvements at the French Camp Road and Main Street interchanges have been included with the proposed project to help meet its purpose and need. The purpose of the proposed project is to provide congestion relief by increasing capacity; to improve traffic flow on the interregional and regional transportation system; improve traffic operations; and provide route continuity for State Route 99. Implementation of the proposed project would benefit all residents of the Cities of Manteca and Stockton, San Joaquin County, and the Central Valley region by providing safe, effective travel through the State Route 99 corridor.

Based on the above discussion and analysis, the project alternatives would not cause disproportionately high and adverse effects on any minority or low-income populations as per E.O. 12898 regarding environmental justice.

Avoidance, Minimization, and/or Mitigation Measures

No specific measures would be required.

2.1.6 Utilities/Emergency Services

Affected Environment

Potential impacts to local utilities and public services were primarily analyzed for San Joaquin County and the City of Manteca due to the proposed interchange improvements at French Camp Road and Main Street. Project activities within the jurisdiction of the City of Stockton would not impact utilities or emergency services because widening of State Route 99 would occur within the existing median and would not affect the surrounding community.

This section identifies the various public service and utility providers that provide service to or maintain utility infrastructure in the project area.

Water Supply and Sewer

For properties located near the French Camp Road interchange, irrigation water is provided by the Stockton East Water District, South San Joaquin Irrigation District, or Central San Joaquin Water Conservation District. Water supply facilities in the City of Manteca consist primarily of water wells and transmission mains. Past development has generally occurred concentrically out from the center of the

community. Water distribution facilities in the portion of the City that is generally developed have been almost fully constructed and have the capacity to serve existing development as well as future infill development (City of Manteca, 2003). Within the developed area, the City has trunk sewer constructed to fully serve development.

Solid Waste

The Solid Waste Division of San Joaquin County offers disposal and recycling services to businesses and residents throughout the county. The county utilizes both the Foothill Landfill located in San Joaquin County and the Lovelace Transfer Station located in the City of Manteca, both owned and operated by San Joaquin County, to process and ship its solid waste and materials. The Lovelace Transfer Station is of regional significance in that it provides services to the majority of south San Joaquin County.

The Solid Waste Department of the City of Manteca Public Works helps to ensure that the City's residential and commercial demands are met effectively and that landfill capacity remains available for future generations. The City utilizes the Lovelace Transfer Station to process and ship its solid waste and materials.

Law Enforcement

The Manteca Police Department is a full service municipal law enforcement agency. The Department provides aggressive crime prevention services through neighborhood watch, proactive enforcement, community policing, and citizen involvement.

The San Joaquin County Sheriff's Department provides service to the unincorporated areas of the county. The California Highway Patrol also enforces traffic regulations in the unincorporated area of San Joaquin County.

Fire Protection

The Manteca Fire Department provides fire protection and prevention services and paramedic emergency service to all areas of the City of Manteca. San Joaquin County Emergency Medical Services Agency provides fire protection to the City of Stockton and the unincorporated areas of San Joaquin County. Emergency service vehicles use State Route 99 and local streets in the proposed project area to respond to emergency situations.

Electricity and Gas

Pacific Gas and Electric is the main provider of electricity and natural gas services in San Joaquin County. No capacity or service limitations have been identified relative

to the proposed project. Proposed project improvements may result in the relocation of distribution lines and temporary disruption of services. An initial assessment of overhead and underground utility systems was conducted for the project and is described in further detail below. Project staff would establish appropriate coordination with private and public service providers before the project gets underway.

Environmental Consequences

During project construction, utilities and emergency services would probably be temporarily affected due to the nature of the projects. Construction activities would be consistent with the transportation and safety policies of Caltrans, as well as those of Manteca and San Joaquin County, in order to minimize affects on the community. In addition, utility infrastructure would be identified, and Caltrans would work in concert with local entities to reduce the effects of any relocations or interruptions to service on the community.

A review of existing utility systems was conducted to identify utility impacts, which are outlined below. Utility poles outlined below are located either adjacent to the ramps or along the streets described. The anticipated utility relocations are as follows:

- Northbound State Route 99 off-ramp: one existing electrical pole would require relocation
- Southbound State Route 99 off-ramp (from eastbound French Camp Road): one existing streetlight pole would require relocation
- Southbound on-ramp (from westbound French Camp Road): one existing drain inlet would require relocation. Two streetlight poles would require relocation
- Southbound State Route 99 on-ramp: one existing overhead telephone pole would require relocation

The proposed configuration for the Main Street interchange also requires relocation of existing overhead utilities poles on the on- and off-ramps to State Route 99, and along the highway frontage roads. The anticipated utility relocations are as follows:

- South Frontage Road (east of State Route 99, south of Lathrop Rd): one existing overhead electrical pole would require relocation
- Northbound State Route 99 off-ramp: an existing overhead telephone pole would require relocation
- Northbound State Route 99 on-ramp: one existing overhead electrical pole would require relocation
- South Frontage Road (west of State Route 99): two existing overhead electrical poles would require relocation
- Southbound State Route 99 off-ramp: one existing joint pole (electrical and cable), two overhead electrical, and one streetlight pole would require relocation
- Southbound State Route 99 on-ramp: one existing streetlight pole would require relocation
- Southbound State Route 99 on-ramp: two existing streetlight poles and one joint pole (electrical and cable) would require relocation
- Main Street (east side): up to eight existing overhead electrical poles would require relocation

Although the utility relocations described above would be necessary for implementation of the proposed project, adverse impacts are not anticipated. Relocating utility service lines is a routine task, and the utility relocation will be completed at the same time as other ground-disturbing activities. Caltrans has established procedures to work with individual utility companies (i.e., gas, electric, and telecommunications providers), and the relocation process is designed to minimize impacts.

Portions of the proposed project improvements are located adjacent to the Stockton Metropolitan Airport; however these improvements would occur entirely within the median and would not affect airport operations. Airport utilities (i.e., telecommunications lines) are not anticipated to be affected by the proposed project; however, should any airport utilities require relocation, Caltrans would coordinate with the Stockton Metropolitan Airport in advance of ground-disturbing activities occurring adjacent to or in the vicinity of the airport.

Emergency access routes could be affected during construction. However, completion of the proposed project would improve the service of emergency vehicles through the project area. Closure of the hook ramps near Littlejohns Creek would not preclude emergency vehicle access to residences between the hook ramps and Arch Road. At these locations, the east and west frontage roads would continue to connect Arch Road and the State Route 99 interchange at Arch Road. In addition, an Emergency Access Plan would be prepared for the proposed project and is described in further detail below.

No long-term impacts to utilities and emergency services are anticipated for the project. The construction and long-term operation of the proposed project would be consistent with the purpose and need for the project, which is identified in Chapter 1, Proposed Project.

Avoidance, Minimization, and/or Mitigation Measures

By following the established process, Caltrans would minimize impacts due to utility relocation. Potential minimization measures include the following:

- Before construction starts, underground utility alert services would identify the location of all underground service as to avoid the unplanned disruption of utilities during roadway excavation and other activities.
- Through construction management and project scheduling, all available measures shall be taken to minimize the duration of any utility or service shutdowns.
- Before construction starts, Caltrans would coordinate with local law enforcement, fire protection, and emergency response providers in the study area to prepare an Emergency Access Plan, which will identify phases of the project and construction scheduling, and would identify appropriate alternative emergency access routes where necessary.

2.1.7 Traffic and Transportation/Pedestrian and Bicycle Facilities

Affected Environment

A Traffic Operations Analysis Report was completed for the proposed project in August 2009. The report presents the results of studies conducted on traffic operations on State Route 99. The traffic study analyzed a 9.9 mile stretch of State Route 99 between Austin Road in Manteca to Arch Road in Stockton. State Route 99

is currently a four-lane divided freeway with 12-foot-wide travel lanes, 8-foot-wide outside shoulders, and 5-foot-wide inside shoulders. The current median is 40 feet wide from State Route 120 West to Lathrop Road, 46 feet wide from Lathrop Road to French Camp Slough, and 50 feet wide from French Camp Slough to Arch Road.

Manteca Transit operates a two-route bus system in the city. Route 2 is the bus route closest to the project area, and travels along Lathrop Road and Main Street, west of the project area. San Joaquin Regional Transit District operates several routes north of the proposed project area, mostly in Stockton. Routes 26 and 91 are the bus routes closest to the project area. These routes travel to the Stockton Metropolitan Airport, as well as through Manteca along a route similar to Manteca Transit Route 2.

Bicycle routes exist in the project vicinity as defined in the City of Manteca Bicycle Master Plan (City of Manteca, 2003). There are no designated bicycle routes within the project area. However, there are several proposed Class I, II, and III bicycle routes within the project area.

Pedestrians use the local streets throughout the project area, mostly near the existing Main Street overcrossing. Local streets in the project area include Lathrop Road, Main Street, and Northgate Drive to the west of State Route 99, and East Lathrop Road and Southland Road to the east of State Route 99. Children walk to the Golden West Elementary School on Main Street along nearby local streets.

The proposed project is located within the Area of Influence for the Stockton Metropolitan Airport, as outlined in the San Joaquin Council of Governments 1993 Airport Land Use Plan. Most traffic along State Route 99 gets to the airport via the Arch Road interchange at the northern end of the project area and Airport Road, which runs west to the airport.

The existing Turner Station Overhead at French Camp Road crosses over existing Union Pacific railroad tracks. The Union Pacific railroad tracks run parallel to French Camp Road at this location.

Environmental Consequences

Traffic analysis indicates that widening State Route 99, and adding through lanes and auxiliary-lanes, would increase the capacity of the route and improve traffic flows and travel times. Additional lanes would also add more lane length to the route so motorists have more room to safely change lanes and merge with traffic, which would improve

traffic operations and safety. In addition, proposed interchange improvements would improve traffic flow along the route.

Table 2.18 shows the level of service data for State Route 99 in its existing condition, as well as the forecasted condition for 2015 and 2035, with no improvements (No-Build Alternative). The level of service data shows how the route is performing as a result of increasing traffic volumes. An acceptable level of service rating is within the range of “A” through “D,” and an “E” or “F” rating indicates the conditions need improvement. The current conditions on State Route 99 between Austin Road and Arch Road are generally meeting an acceptable level of service with a “C” or “D” rating. Table 2.18 also shows how the freeway is forecast to perform in the future, with no improvements. The ratings are predicted to deteriorate to “D”, “E” or “F” for all by the years 2015 and 2035, suggesting that the freeway will experience congestion and reduced traffic flow, and that traffic conditions will continue to degrade if no improvements are made to State Route 99.

Table 2.18 also shows future traffic conditions on the freeway if Alternative A or Alternative B are constructed. The results of the analysis show that in the years 2015 and 2035 either of the proposed build alternatives generally operate at level of service “C” and “D,” which is acceptable under Caltrans standards. However, even with the proposed improvements, some segments still operate at level of service “E” or “F” in the years 2015 and 2035.

Based on the analysis of existing, construction year 2015 and design year 2035 conditions, the following are the key conclusions from the traffic operations analysis:

- Under No-Build Alternative conditions, State Route 99 between Arch Road and State Route 120 will experience substantial delays and congestion, with reduced speeds and levels of service degrading to “D”, “E” or “F” for all but two segments.
- Under build conditions for either Alternative A or Alternative B, State Route 99 operations between Arch Road and State Route 120 would generally improve to level of service “C” and “D,” with anticipated improvement in vehicle miles traveled (mobility) and travel speeds, and anticipated decreases in travel times and delays (congestion). However, even with the proposed improvements, some segments still operate at level of service “E” or “F.”

**Table 2.18 State Route 99 Level of Service in the Project Area
Existing and Future Traffic Conditions**

State Route 99 Segment		Northbound Level of Service						
		Existing	No-Build Alternative 2015	Alternative A 2015	Alternative B 2015	No-Build Alternative 2035	Alternative A 2035	Alternative B 2035
Austin Road On-ramp to State Route 120 Off-ramp	AM	D	F	F	F	F	F	F
	PM	B	E	E	E	F	F	F
State Route 120 On-ramp to Yosemite Avenue Off-ramp	AM	C	D	C	C	E	D	D
	PM	D	F	D	D	F	E	E
Yosemite Avenue On-ramp to Main Street On-ramp (old)	AM	C	F	D	N/A	F	D	N/A
	PM	C	D	C		F	D	
Yosemite Avenue On-ramp to Lathrop Road Off-ramp (new)	AM	N/A	N/A	N/A	D	N/A	N/A	D
	PM				C			D
Main Street On-ramp (old) to Lathrop Road Off-ramp	AM	D	F	D	N/A	F	D	N/A
	PM	D	E	C		F	E	
Lathrop Road On-ramp (new) to French Camp Road Off-ramp	AM	N/A	N/A	N/A	D	N/A	N/A	D
	PM				C			D
Lathrop Road On-ramp to French Camp Road Off-ramp	AM	D	F	D	N/A	F	D	N/A
	PM	D	D	C		F	D	
French Camp Road On-ramp to CA 99 Off-ramp	AM	D	F	D	D	F	D	D
	PM	D	D	C	C	F	D	D
CA 99 On-ramp to Arch Road Off-ramp	AM	C	F	D	D	F	D	D
	PM	D	D	C	C	F	D	D

State Route 99 Segment		Southbound Level of Service						
		Existing	No-Build 2015	Alternative A 2015	Alternative B 2015	No-Build 2035	Alternative A 2035	Alternative B 2035
Austin Road On-ramp to State Route 120 Off-ramp	AM	D	E	C	C	F	D	F
	PM	F	F	E	E	F	F	F
State Route 120 On-ramp to Yosemite Avenue Off-ramp	AM	D	F	D	D	E	D	D
	PM	D	F	F	F	F	F	F
Yosemite Avenue On-ramp to Main Street On-ramp (old)	AM	C	D	C	N/A	E	D	N/A
	PM	C	F	D		F	F	
Yosemite Avenue On-ramp to Lathrop Road Off-ramp (new)	AM	N/A	N/A	N/A	C	N/A	N/A	D
	PM				D			F
Main Street On-ramp (old) to Lathrop Road Off-ramp	AM	C	D	C	N/A	F	D	N/A
	PM	D	F	E		F	F	
Lathrop Road On-ramp (new) to French Camp Road Off-ramp	AM	N/A	N/A	N/A	C	N/A	N/A	C
	PM				E			F
Lathrop Road On-ramp to French Camp Road Off-ramp	AM	C	D	C	N/A	D	C	N/A
	PM	D	F	D		F	F	
French Camp Road On-ramp to CA 99 Off-ramp	AM	C	D	C	C	E	D	D
	PM	D	F	D	E	F	F	F
CA 99 On-ramp to Arch Road Off-ramp	AM	C	D	C	C	E	D	D
	PM	D	F	D	E	F	F	F

Source: Fehr and Peers, 2009

While traffic studies show failing conditions on State Route 99 for the required planning year of 2035, the planning team recognizes there would be benefits to building a six-lane roadway. Widening the state route to eight lanes has been considered in the past to achieve the required acceptable level of service for 20 years, but the cost to do so would be prohibitive, and such a project would negatively affect numerous property owners and businesses. Caltrans determined that the roadway could be widened to six lanes without widening to the outside of the current roadway, providing some benefit at a reasonable cost, with fewer impacts to the community.

The proposed project would enhance conditions for local traffic traveling on State Route 99 or to properties located within the project area. The project would not negatively affect any existing public transportation, bicycle, or pedestrian routes or affect access to the Stockton Metropolitan Airport. Traffic traveling to and from the airport using State Route 99 would benefit from the proposed project improvements. Further, portions of the proposed project improvements that are located adjacent to the airport would occur entirely within the State Route 99 median and would not affect airport operations or navigable airspace for the Stockton Metropolitan Airport as outlined in Federal Aviation Regulations Part 77, *Objections Affecting Navigable Airspace*. Coordination with the Stockton Metropolitan Airport regarding impacts to airport operations would not be required. See section 2.1.6, Utilities/Emergency Services, for possible coordination with the Stockton Metropolitan Airport for impacts to airport utilities. The proposed project would not affect long-term operations along the existing Union Pacific railroad tracks adjacent to French Camp Road.

As described in Chapter 1, a 4.5-acre parcel owned by Caltrans and located near the Main Street Interchange would be identified as a potential future park-and-ride facility. The facility itself is not proposed as part of this project; however, such a facility would be evaluated as a separate future project.

Avoidance, Minimization, and/or Mitigation Measures

No specific measures would be required. Any potential temporary construction impacts to the project area would be minimized and avoided with implementation of guidelines in the Caltrans Best Management Practices Manual, as well as implementation of a Traffic Management Plan. The Traffic Management Plan is a detailed plan that describes exactly where and when vehicle, bicycle, and pedestrian traffic would be detoured during the different phases of construction to minimize construction impacts. This plan would be developed during the Project Specifications

and Estimates Phase, following conclusion of the environmental process. Caltrans would also coordinate with the Union Pacific Railroad to minimize any short term, temporary construction impacts to operations during implementation of the French Camp Road interchange improvements.

2.1.8 Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, establishes that the federal government use all practicable means to ensure safe, healthful, productive, and aesthetically and culturally pleasing surroundings for all Americans [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

The overall regional landscape of the study area is typical to the Central Valley of California, that is, large open expanses with little differences in elevation. In most cases, views include the range of foreground, middle-ground and background views. The topographic features of the project area are mainly flat. Landform differences do occur within the project limits but are typically the result of manmade features including elements such as elevated overpasses and interchanges or depressed roadways.

A Visual Impact Assessment was prepared for the proposed project in March 2009. The assessment included a field review where two distinct landscape units were identified within the project area. A landscape unit is a portion of the regional landscape that corresponds to a place or district that is commonly known among the local viewers. Characteristics for each of the landscape units are described below.

Landscape Unit 1 - Southern 99 Corridor Development

Landscape Unit 1 extends north from the southern project limit at the Austin Road interchange on State Route 99, to the Manteca city limits at East Lathrop Road. The visual character of this landscape unit is defined by urban development; however, the unit is predominantly residential in nature. Commercial businesses exist within this unit, though they are mainly located near the State Route 99 and Yosemite Avenue interchange and near the State Route 99 and Main Street overcrossing. Residential parcels exist along both sides of State Route 99 between the freeway and Yosemite Avenue interchange and the East Louise Avenue overcrossing. Residential parcels continue on the west side of State Route 99 north of East Louise Avenue to East Lathrop Road. Open space, agricultural, and undeveloped parcels are also present in landscape unit 1.

Existing vegetation is mature and continuous throughout landscape unit 1. Vegetation exists in the form of residential and municipal landscaping, as well as landscaping along State Route 99, which consists primarily of oleander plantings within the median and tree and shrub plantings at the Cottage Avenue, East Louise Avenue, and Main Street overcrossings. The majority of State Route 99 within this landscape unit is at or just above existing grade. At the Yosemite Avenue interchange, State Route 99 is elevated.

The visual quality of landscape unit 1 is moderate to low due to the low levels of vividness, unity, and intactness. The visual character is that of an urban landscape because of the existing commercial and residential development along the highway. Distance views are all but eliminated by development adjacent to State Route 99, forcing views to the foreground and ultimately forward along State Route 99 except in a few isolated areas. The noticeable lack of striking or distinctive visual patterns leaves travelers on State Route 99 with little or no memorable views.

Landscape Unit 2 - Northern 99 Corridor Development

Landscape Unit 2 is located on the north side of the East Lathrop Road Interchange on State Route 99 to the northern project limit north of Arch Road. The visual character for this landscape unit is defined by rural agricultural/open space lands. This less intensive land use provides an abrupt visual contrast to the intensive urban development to the south of East Lathrop Road in landscape unit 1. The types of land uses within this area are mainly dominated by intensive agriculture, with a limited number of businesses and residences that are spatially spread out along State Route 99. Most of these businesses and residences are located between East Lathrop Road and

French Camp Road. A residential tract is located northeast of the East Lathrop Road interchange along the East Frontage Road. The Delicato Winery and operations are located along the West Frontage Road southwest of French Camp Road. Land use north of French Camp Road is dominated mainly by agriculture. A storage facility, the French Camp Golf Course, and several residences/businesses are located northwest of the French Camp Road interchange. The Stockton Airport is located southwest of the Arch Road interchange.

Landscaping consists primarily of oleander plantings within the median of State Route 99 and trees and shrubs sparsely planted throughout the landscape unit. The majority of State Route 99 within this landscape unit is at or just above existing grade. At the French Camp Road interchange, State Route 99 is elevated. French Camp Slough is an intermittent drainage while both Lone Tree Creek and Littlejohns Creek are perennial drainages. Because these waterways run perpendicular to State Route 99, views are brief and remain primarily unnoticed by travelers. In addition, the water in the creeks also remains predominantly unseen to State Route 99 travelers.

The visual quality of landscape unit 2 is moderate to low due to the low level of vividness and the moderate levels of unity and intactness. Regionally, the visual character is that of a rural landscape because of the natural openness of the valley and expansive views to the east and west. Distance views are prominent and offer an increased sense of visual coherence and compositional harmony.

Environmental Consequences

The Visual Impact Assessment concluded that impacts to the visual environment caused by the proposed project construction would be noticeable and generally compatible with the existing visual character. Visual impacts for noticeable proposed project features are described below.

- The removal of oleander plantings within the median over the length of the project area would create a moderate visual impact; however, the removal is warranted based on the project's purpose and need, including to provide congestion relief and to improve traffic operations. Replacement planting for the oleanders in the existing median would be provided with landscaping in new interchange reconstruction areas. This landscaping would consist of irrigated trees, shrubs, and ground cover in the open areas interior and adjacent to the interchange. Removal of existing plant material would be avoided where feasible

- Several new noise barriers were modeled in a separate noise study report for the proposed project, with proposed barriers typically 12 feet in height. However, installation of new barriers is warranted based on the goal of noise attenuation for sensitive receptors along the project corridor. The new noise barriers would also shield views of the proposed widening.
- Retaining walls are also proposed at five locations, with wall heights ranging from 7 to 20 feet. The proposed retaining walls would shield views of the proposed ramps, interchange improvements, and highway widening and would create a moderate visual impact for viewers in the project area, but would generally occur at existing intersections or locations where interchange structures are already present. Landscape planting would be implemented in an effort to help lessen the visual impacts caused by construction. Retaining walls are proposed at the following locations:
 - Lathrop Road and State Route 99, northbound State Route 99 off-ramp to Lathrop Road, with a proposed height of 15 feet;
 - Between North Main Street and the southbound on-ramp to State Route 99, with a proposed height range of 7-8 feet;
 - Along both the east and west sides State Route 99 immediately south of French Camp Road (State Route 99 is proposed to be elevated at this location), with a proposed height range of 17-20 feet; and,
 - French Camp Road and State Route 99, inside loop of southbound on-ramp to State Route 99, with a proposed height of 16 feet.
- For Alternative B, the proposed partial cloverleaf interchange at Lathrop Road and State Route 99 would have a larger footprint than the existing overcrossing. However, while there would be an increase in size of the proposed structure, the existing Main Street overcrossing would be removed.
- The realignment of Main Street with the West Frontage Road would encroach upon adjacent residences and businesses. However, the realigned frontage roads would create similar visual impacts to the existing frontage roads.
- The new roadway proposed for connecting movements from Southland Road to Lathrop Road would create new a visual feature in the project area. The

footprint of this proposed new roadway would extend through an open space/agricultural area. However, the new roadway would be generally visually consistent with existing roadway development in the project area.

- The frontage road realignments on both sides of State Route 99 would encroach upon residences and businesses adjacent to the freeway. The realigned frontage roads would create moderate visual impacts to adjacent businesses and residents. However, the realigned frontage roads would have similar visual impacts as those created by the existing frontage roads.

Design changes to State Route 99 for any of the proposed alternatives would introduce urban elements into remaining adjacent open spaces and natural areas because of wider right-of-way boundaries. Conversely, proposed project construction would in some areas reduce undesirable views by replacing older infrastructure, thereby enhancing portions of the highway system.

Views from the highway would remain virtually constant due in part to the fact that urban development is preexisting along State Route 99. Proposed structural additions along with related appurtenances are for the most part replacement facilities that exhibit similar design qualities and characteristics to the existing highway facilities and are therefore not anticipated to create additional visual impacts. As described above, changes to the State Route 99 corridor would occur and would be noticeable to users. Noticeable changes would include the addition of retaining walls and noise barriers, which would block views and create a hard-line edge extending to the outer right-of-way limits. Views to the highway would have a higher degree of visual impact, primarily due to viewer proximity. Other views affected would be areas where highway right-of-way would encroach into areas otherwise unaffected by the current State Route 99 alignment. Such encroachments would result in a greater potential visual effect due to the size and scale of the new structures (such as interchanges) and related work near established residential communities and businesses. The demolition, realignment, and replacement of existing structures would also have a temporary visual impact during construction.

Viewers of the highway would be exposed to a moderate degree of visual impact as a result of the proposed project, in some locations potentially diminishing existing visual quality and character in the project area. This is particularly true for viewers in close proximity to State Route 99. In addition, the proposed project would encroach

onto areas adjacent to State Route 99 that are currently unaffected as a result of acquiring additional right-of-way, thus exposing new viewers to State Route 99.

These proposed new interchanges and related appurtenances associated with the Main Street interchange and the French Camp Road interchange are located near established residential communities and businesses. The demolition, realignment, and replacement of the existing structures would result in temporary visual impacts during construction. Since the proposed new interchanges and related appurtenances would replace existing highway facilities, there would be minimal visual impacts resulting from the constructed project features.

Avoidance, Minimization, and/or Mitigation Measures

The design of avoidance and minimization measures is undertaken with the understanding that the State Route 99 corridor is a preexisting facility and would therefore not impose a completely new impact to the adjacent area. Nevertheless, visual impacts would occur and avoidance and minimization measures would be required to lessen the effects of construction.

The proposed avoidance and minimization measures incorporate design features and methods to avoid permanent adverse visual impacts and include the following:

- Architectural detailing and/or surface treatments consistent with the surrounding community would be incorporated into new bridge designs.
- Landscape planting, where possible, would be implemented in an effort to help lessen the visual impacts caused by construction.
- Highway and retaining wall planting would be provided, where possible, to screen and/or soften undesirable views both to and from the project area.
- Every effort would be made to avoid the removal of existing plant material.
- Areas impacted or disturbed by construction would be revegetated in the form of new landscape planting and irrigation systems. Replacement planting areas would be available within the ramps of the two proposed interchange areas.
- Vegetation for highway or replacement planting would be plant species adapted to the specific zone or region of the project area.

- Areas of vegetation disturbance around Littlejohns Creek, Lone Tree Creek, and French Camp Slough would be restored with plantings.
- Trees potentially protected by City and County ordinances may exist within the proposed project limits. Prior to construction, a tree survey would be conducted for the project area. As needed, the results of the survey would be used for consultation and permit application with San Joaquin County and the Cities of Manteca and Stockton.
- Graded slopes would be maintained at 1:4 or flatter wherever possible to help in the revegetation process.
- Where feasible, slope contouring would be implemented in such a way as to match existing adjacent contours.
- Where possible, slopes would not exceed 1:2 (Vertical: L Horizontal) in gradient.
- Pedestrian and bicycle accessibility would be incorporated to meet mandated access requirements.

Additionally, if determined to be feasible, one or more of the following avoidance and minimization measures would be implemented:

- Highway Art may also be incorporated to break up the built environment and enhance the quality of the driving experience. Artistic design elements must be consistent with community goals.
- Every effort would be made to implement anti-graffiti products and introduce landscape designs to reduce and prevent graffiti on proposed project structures (e.g. vines plantings on walls, possible design materials and textures, etc.).
- Replacement planting areas would be available within the ramps of the two proposed interchange areas.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless that action is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations 650 Subpart A. To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

According to 23 Code of Federal Regulations 650 subpart A the base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

Affected Environment

A Final Hydrology and Hydraulics Report was prepared for the proposed project in July 2009. The report was prepared by a registered engineer to evaluate potential impacts resulting from the proposed project on the 100- year floodplain.

There are three watercourses within the project area: Littlejohns Creek, French Camp Slough, and Lone Tree Creek. State Route 99 crosses over each of these and their respective floodplain zones (Zone AO, Zone AE, and Zone X), as defined on the Flood Insurance Rate Map panels produced by the Federal Emergency Management Agency. See Appendix F for copies of the Flood Insurance Rate Map panels — 0602990465C April 2, 2002 and 0602990605B December 16, 2005.

The effective Federal Emergency Management Agency Flood Insurance Rate Maps for Littlejohns Creek, French Camp Slough, and Lone Tree Creek show the detailed base flood elevations within the channel and the approximate flood zones in the overbanks. Zone AE is defined as an area of special flood hazard where the one percent annual chance flood elevations (100-year) are determined. The approximate flood zone represented as Zone AO (Depth 3 feet) is defined as an area of shallow flooding with average depths of three feet west of State Route 99 and two feet deep east of State Route 99. Zone X is defined as an area of 0.2 percent annual chance of flood (500-year), areas of one percent annual chance of flood with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from one percent annual chance of flood.

Littlejohns Creek is an east-to-west flowing channel. The creek is an overflow channel for flows controlled by Farmington Dam. Littlejohns Creek converges with Lone Tree Creek and French Camp Slough approximately one mile west (downstream) of the project area before emptying into the San Joaquin River approximately five to six miles downstream of the project area. Littlejohns Creek is mapped as a perennial drainage on the United States Geological Survey Stockton East quadrangle map. Littlejohns Creek is a channelized agricultural drainage with a mud bottom and steep banks composed of soil and scattered patches of riprap. The width of Littlejohns Creek ranges between roughly 20 and 30 feet wide at the ordinary high water mark.

French Camp Slough is an east-to-west flowing channel. French Camp Slough is fed by Littlejohns Creek and several agricultural ditches that originate about eight miles east of the project area. French Camp Slough converges with Lone Tree Creek and Littlejohns Creek approximately one mile west (downstream) of the project area before emptying into the San Joaquin River approximately five to six miles downstream of the project area. French Camp Slough is mapped as an intermittent drainage on the United States Geological Survey Stockton East quadrangle map. French Camp Slough is a channelized agricultural drainage with a mud bottom and steep banks. French Camp Slough is about 30 feet wide at the ordinary high water mark.

Lone Tree Creek is an east-to-west flowing channel fed by several agricultural ditches that in turn are fed by both the Farmington Flood Control Basin roughly 14 miles east of the project area and Woodward Reservoir, about 16 miles east of the project area. Lone Tree Creek converges with Littlejohns Creek and French Camp Slough about a mile west (downstream) of the project area before emptying into the San Joaquin River five to six miles downstream of the project area. Lone Tree Creek is mapped as a

perennial drainage on the United States Geological Survey Stockton East quadrangle map. Lone Tree Creek is a channelized agricultural drainage with a mud bottom and steep banks and is around 30 feet wide at the ordinary high water mark.

A detailed hydraulic model was prepared for each of the bridge crossings and proposed structures. Each of the existing bridges over the project area waterways are simple span reinforced concrete decks on steel girders. The bridge vertical piles extend downward through the waterways to the channel beds. These piles are approximately 1.3 feet in diameter by 12 feet high. The proposed project improvements to the bridges over the project area waterways include pile locations that are in line with the existing structure to minimize hydraulic impacts.

The areas north of Littlejohns Creek within the project area consist of Zone AO (Depth 2') and (Depth 1'), Zone B with average depths of less than one foot, and Zone C with minimal flooding. These three zones occur from Littlejohns Creek to the northern project limit at Arch Road. Zone AO is defined as an area of shallow flooding with average depths of one foot west of State Route 99 and two feet deep east of State Route 99. The existing floodplain is presented on the effective Federal Emergency Management Agency Flood Insurance Rate Map dated April 2, 2002 (Appendix F). The effective Federal Emergency Management Agency flood hazard zone is represented as approximate depths with no detailed base flood elevations.

South of Lone Tree Creek the effective Federal Emergency Management Agency floodplain is represented as Zone X. This floodplain area occurs within a strip of land approximately 70-feet-wide, parallel to and north of French Camp Road. The proposed improvements would not substantially influence the floodplain in this area.

Environmental Consequences

The proposed improvements for Alternatives A and B are, with the exception of bridge crossings described below, located outside of the effective Federal Emergency Management Agency 100-year floodplain except for an area designated as susceptible to shallow flooding located north of Littlejohn Creek. Additional improvements include modifications to the three bridge crossings over Littlejohns Creek, French Camp Slough, and Lone Tree Creek to support the widening improvements in the median. The Preliminary Hydrology and Hydraulic Report includes a detailed hydraulic evaluation for each of the bridge improvement locations over the project area waterways. The details of the bridge improvement evaluations are described below.

The proposed project would include the realignment of the on- and off-ramps at the French Camp Road interchange. The new northbound on-ramp would fill in a portion of the 100-year floodplain in an area designated as susceptible to shallow flooding where impacts would be negligible. The new southbound off-ramp alignment would include a new bridge structure over Lone Tree Creek, which would require the construction of approximately six new piles in Lone Tree Creek.

To accommodate two more lanes at each of the bridge structures over the project area waterways, the proposed improvements would include median decking. The median decking structural improvements would require approximately 8 additional piles for Littlejohns Creek; approximately 12 additional piles for French Camp Slough; and, approximately 14 additional piles for Lone Tree Creek (resulting in a total of 20 new piles for Lone Tree Creek).

The proposed vertical profile of the improvements for State Route 99 are relatively consistent with the surrounding existing ground surface; therefore, it is anticipated that any flooding that may occur would remain as sheet flow from east to west across the highway. The anticipated flooding depths would remain as shallow flow consistent with the effective average depths located on the effective Federal Emergency Management Agency Flood Insurance Rate Maps. Surface flows would be expected to move through the proposed median barrier through six inch tall curved openings spaced appropriately for anticipated flows. At locations where the proposed concrete barrier could impede flood waters, replacement with thrie beam barrier is also being considered. As a result, the project would not result in a “significant encroachment” on project area floodplains as defined in federal regulations. In addition, the Preliminary Hydrology and Hydraulic Report prepared for the project concluded that there are no impacts to the existing floodplains, as the project would not alter existing circumstances, nor does it create a longitudinal encroachment, significant encroachment, or support any incompatible floodplain development. Furthermore, the project would not present a significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or that provides a community’s only evacuation route. The proposed project would not present a significant risk to life or property or impact natural and beneficial floodplain values.

Avoidance, Minimization, and/or Mitigation Measures

Measures to minimize floodplain impacts are included in the project design and are incorporated in the Caltrans Statewide Storm Water Permit, with which the project

would comply. Multiple infiltration basins are being considered as part of the design of the project that would effectively accommodate proposed runoff from the project. As a result, no additional avoidance, minimization and/or mitigation measures are proposed for project related hydrology and floodplain effects.

2.2.2 Water Quality and Storm Water Runoff

Regulatory Setting

Section 401 of the Clean Water Act requires water quality certification from the State Water Resources Control Board or from a Regional Water Quality Control Board when a project requires a Clean Water Act Section 404 permit to regulate the discharge of dredged and fill material into waters of the United States, including wetlands.

Along with Section 401 of the Clean Water Act, Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System permit program for the discharge of any pollutant into waters of the United States. The U.S. Environmental Protection Agency has delegated administration of the National Pollutant Discharge Elimination System program to the State Water Resources Control Board and nine Regional Water Quality Control Boards in the state of California. The State Water Resources Control Board and Regional Water Quality Control Boards also regulate other waste discharges to lands within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The State Water Resources Control Board has developed and issued a statewide National Pollutant Discharge Elimination System permit to regulate storm water discharges from all Caltrans activities on its highways and facilities. Caltrans construction projects are regulated under the statewide permit, and projects performed by other entities on Caltrans right-of-way (encroachments) are regulated by the State Water Resources Control Board's Statewide General Construction Permit. All construction projects require a Storm Water Pollution Prevention Plan to be prepared and implemented during construction.

Affected Environment

A Water Quality Assessment was prepared for the project in September 2009. The Water Quality Assessment identified potential impacts to surface water and storm water that may result from the proposed project.

Surface Water

Within the project area, State Route 99 intersects three waterways: Littlejohns Creek, French Camp Slough, and Lone Tree Creek. Caltrans proposes to modify the existing bridges over these waterways to accommodate the roadway improvements in the median. All three waterways flow in a westerly direction to the San Joaquin River, which is located approximately five to six miles downstream of the project area.

Littlejohns Creek is an overflow channel for flows controlled by Farmington Dam. Littlejohns Creek converges with Lone Tree Creek and French Camp Slough approximately one mile west (downstream) of the project area. Littlejohns Creek is mapped as a perennial drainage on the United States Geological Survey Stockton East quadrangle map. Littlejohns Creek is a channelized agricultural drainage with a mud bottom and steep banks composed of soil and scattered patches of riprap.

French Camp Slough is fed by Littlejohns Creek and several agricultural ditches that originate roughly eight miles east of the project area. French Camp Slough converges with Lone Tree Creek and Littlejohns Creek about a mile west (downstream) of the project area. French Camp Slough is mapped as an intermittent drainage on the United States Geological Survey Stockton East quadrangle map. French Camp Slough is a channelized agricultural drainage with a mud bottom and steep banks.

Lone Tree Creek is fed by several agricultural ditches that in turn are fed by both the Farmington Flood Control Basin, about 14 miles east of the project area, and Woodward Reservoir, around 16 miles east of the project area. Lone Tree Creek converges with Littlejohns Creek and French Camp Slough about a mile west (downstream) of the project area. Lone Tree Creek is mapped as a perennial drainage on the United States Geological Survey Stockton East quadrangle map. Lone Tree Creek is a channelized agricultural drainage with a mud bottom and steep banks.

The existing bridges over the project area waterways are reinforced concrete decks on steel girders. The bridge vertical piles extend downward through the waterways to the channel beds. These piles are approximately 1.3 feet in diameter by 12 feet high. The proposed project improvements to the bridges over the project area waterways include pile locations that are in line with the existing structures to minimize impacts to the waterways.

Under Section 303(d) of the Clean Water Act, states, territories, and authorized Native American tribes are required to develop lists of impaired waters. These impaired waters do not meet water quality standards that states, territories, and

authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop total maximum daily loads for these waters. The project area waterways described above are considered to be within the boundaries of the Sacramento–San Joaquin River Delta, and are included on the total maximum daily loads list for herbicides and dissolved oxygen.

Total maximum daily loads specify the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and allocates pollutant loadings among point and nonpoint sources. Total maximum daily loads are the sum of allocated loads of pollutants set at a level necessary to implement the applicable water quality standards, including wasteload allocations from point sources and load allocations from nonpoint sources and natural background conditions. Total maximum daily loads must contain a margin of safety and a consideration of seasonal variations. By law, the U.S. Environmental Protection Agency must approve or disapprove lists and total maximum daily loads established by states, territories, and authorized tribes.

Lone Tree Creek is listed on the 2006 Clean Water Act Section 303(d) List as impaired for ammonia, biological oxygen demand, and electrical conductivity. Potential sources cited for these impairments include dairies (Central Valley Regional Water Quality Control Board, 2006).

The Central Valley Regional Water Quality Control Board has established water quality objectives for surface and groundwater in the region. Water quality objectives consist of both narrative and numerical goals, and are established to preserve existing and potential future beneficial uses of regional water bodies. The existing and potential beneficial uses of the project area waterways: Littlejohns Creek, French Camp Slough, and Lone Tree Creek are not clearly defined in the Basin Plan (Central Valley Regional Water Quality Control Board, 2007).

Ground Water

The project area lies within the jurisdiction of the District 5 – Central Valley Regional Water Quality Control Board and the Central District of the California Department of Water Resources. The project is located in the San Joaquin Valley Groundwater Basin, Eastern San Joaquin Subbasin. Groundwater levels have declined over the past 40 years at an average rate of 1.7 feet per year and have dropped as much as 100 feet in some areas in the subbasin (California Department of Water Resources, 2006). Groundwater

overdraft within the subbasin during the past 40 years has caused significant groundwater depressions below and east of the City of Stockton (California Department of Water Resources, 2006). Several of these groundwater depressions extend to depths of approximately 100 feet below ground surface (or more than 40 feet below mean sea level) (California Department of Water Resources, 2006).

Environmental Consequences

Alternatives A and B would include the realignment of the on- and off-ramps at the French Camp Road interchange. The new southbound off-ramp alignment would include a new bridge structure over Lone Tree Creek. In addition, to accommodate two more lanes at each of the bridge structures over the project area waterways, the proposed improvements would include median decking. These structural improvements would require additional piles for each of the bridge structures that span Littlejohns Creek, French Camp Slough, and Lone Tree Creek. As stated previously, the proposed new piles for the widened bridge decks in the project area waterways would be constructed in line with the existing piles. During construction water would be diverted from the project area waterways and would be returned to the channels after bridge construction is completed. Short-term impacts to water quality could occur during construction of the proposed project. The primary impacts would occur from exposure of loose soils during excavation, grading, and filling activities during construction. The suspended solids, dissolved solids, and potential organic pollutants in surface water runoff could increase while nearby soils are disturbed and dust is generated.

These potential short-term water quality impacts are anticipated to be minor and are not expected to threaten beneficial uses of the project area waterways or downstream beneficial uses. Following appropriate best management practices during construction would mitigate these potential short-term impacts. Best management practices are discussed in detail in the *Avoidance, Minimization, and/or Mitigation Measures* section below. In addition, construction activities from this project are not expected to intercept or alter groundwater recharge, discharge, or flow or to threaten groundwater quality.

Surface runoff from the highway is anticipated to increase based on the proposed lane additions. However, following appropriate best management practices during construction would mitigate these potential long-term impacts.

Avoidance, Minimization, and/or Mitigation Measures

The project would include construction of up to 14 infiltration basins. The proposed infiltration basins would collect and treat all runoff from the highway, including the proposed lane additions, to ensure there would be no impact to surface or ground water. Surface flows would continue to move from east to west across the highway through the proposed median barrier in six inch tall curved openings spaced appropriately for anticipated flows.

The design and construction of the proposed project must adhere to the requirements of the National Pollutant Discharge Elimination System, Caltrans Storm Water Management Plan, the Caltrans Project Planning and Design Guide, and include best management practices.

To minimize water quality impacts within the project area, waterways would be diverted before any construction within the channel to keep silt from entering the waterway. Temporary falsework would be used where possible and would be removed immediately upon the conclusion of all work within the channel. After construction is completed, all disturbed soils would be hydroseeded and covered with erosion control fabric to prevent erosion of the channel banks. Seeds used for revegetation would consist of native plants typical in this region of the Central Valley.

The Caltrans National Pollutant Discharge Elimination System – Statewide Storm Water Pollution Prevention Plan would be implemented to address all requirements for pollution prevention, and erosion and sediment control. A Storm Water Pollution Prevention Plan would be prepared for the project and implemented during construction. Avoidance and minimization measures for storm water would be accomplished through implementation of approved best management practices, which are generally broken down into four categories: pollution prevention, treatment, construction, and maintenance. Caltrans' Storm Water Program provides guidance for implementation of each of these best management practices. Selection and design of permanent project best management practices would be refined as the project progresses into final design.

In the construction phase, the contractor would have the responsibility, as stated in Caltrans' Standard Specifications Section 7-1.01G, to take the necessary steps to eliminate potential water quality impacts during construction. These steps include but are not limited to the following:

- Soil stabilization

- Sediment control
- Wind erosion control
- Tracking control
- Non-storm water control
- Waste management and material pollution control

A Notification of Construction would be submitted to the Central Valley Regional Water Quality Control Board at least 30 days before the start of construction. A Notice of Construction Completion would be submitted to the Central Valley Regional Water Quality Control Board upon completion of construction.

With the incorporation of accepted engineering practices; avoidance and/or minimization measures; and, coordination with the State Water Resources Control Board, the Central Valley Regional Water Quality Control Board, and other local agencies with jurisdiction over water quality and storm water in the project area the proposed project would not produce substantial or lasting impacts to water quality or storm water runoff during construction or its operation.

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 (such as the Antiquities Act of 1906 [16 U.S. Code 431-433], Federal-Aid Highway Act of 1935 [20 U.S. Code 78]). Under California law, paleontological resources are protected by the California Environmental Quality Act, the California Administrative Code, Title 14, Section 4306 et seq., and Public Resources Code Section 5097.5.

Affected Environment

A Paleontological Identification/Evaluation Report was prepared for the project in June 2009. The assessment consisted of a review of pertinent geologic maps and a literature search to identify fossil-containing stratigraphic units (rock layers) in the project area. The literature search included resources from the California State

University, Fresno, Department of Geology Paleontological Sensitivity Mapping Project database; geologic maps; and geologic and paleontologic literature.

The project area is located in the San Joaquin Valley within the central portion of the Great Valley Geomorphic Province, which is bound by the Sierra Nevada to the east, the Coast Ranges to the west, and the Klamath Mountains and Cascade Range to the north. The project is underlain by Quaternary deposits, the majority of which consist of the Pleistocene age Modesto Formation and older Pleistocene age alluvium. The Modesto Formation represents deposits created by ancient alluvial fans of the San Joaquin River deposited approximately 9,000 to 73,000 years before present. Portions of the project area are also underlain by Holocene age Dune Sand, consisting of unconsolidated sands deposited within the past 10,000 years.

Although Quaternary sedimentary deposits are generally ranked as low sensitivity, they have a potential of yielding fossils, and highly sensitive fossil localities have been noted in the Modesto Formation. The preliminary evaluation (California State University, Fresno, 2000) determined that there are vertebrate and plant fossil localities present within one mile of the project area. The determination was based on a review of the California State University, Fresno Paleontological Sensitivity Mapping Project's technical report and database. The database lists State Route 99 Post Mile 11.5 to 12.5 as a high sensitivity zone occurring within a 1-mile radius of the University of California Museum of Paleontology Record Number 5107 (California State University, Fresno, 2000). The University of California Museum of Paleontology 5107 site yielded seven specimens determined to be mammoth, horse, and unidentified carnivore fossils. Review of the University of California Museum of Paleontology collections database for Record Number 5107 revealed that this record represents a fossil site in the area of Mormon Slough located approximately three miles north of the project area in the City of Stockton.

A more detailed paleontological resources search of the University of California Museum of Paleontology database covering the project area was completed on June 30, 2008 (University of California Museum of Paleontology, 2008). A total of 83 localities within San Joaquin County with paleontologically sensitive resources such as microfossil, plant, invertebrate, and vertebrate fossils were identified. Invertebrate and plant fossils were identified, the nearest of which are two locations within reaches of Lone Tree Slough; however these locations are outside of and approximately 30 miles east of the project area. The resources search also confirmed the presence of fossil localities in Quaternary sediments in the vicinity of the City of Stockton, north

of the project area, as described above. The California State University, Fresno database ranked the remainder of the project area as low sensitivity.

Environmental Consequences

The project area is underlain by Quaternary strata, which have produced vertebrate fossils throughout the region. The Paleontological Identification/Evaluation Report concluded that the project area is considered to be a low sensitivity area. Even though the strata in the project area are ranked as low sensitivity for yielding scientifically significant vertebrate remains, there are fossil locations in the region, yet the sensitivity rating for the project area is still designated as low.

Throughout the project area, historic impacts to the surface and subsurface deposits have been substantial, resulting primarily from prior construction of major roadways (State Route 99, frontage roads, etc.), placement of various types of utilities, including trenching for underground features, construction of bridges, ranch/farm uses, and residential and urban development. For the proposed roadway improvements in the median, the excavation depth is anticipated to be approximately 3 feet. For the proposed frontage road realignments, the excavation depth is anticipated to be approximately 1.5 feet. For the proposed interchange improvements, the excavation depth is anticipated to be approximately 2.5 feet. Construction staging areas and storm water detention basins are proposed within the footprint of the proposed interchange improvements at Main Street and French Camp Road. For proposed storm water detention basins, the excavation depth is anticipated to range from 0 to 12 feet.

Shallow excavations in the Quaternary deposit throughout the project area are not likely to produce significant vertebrate fossil remains. Because of fossil localities within the region from the Modesto Formation and older Quaternary strata, there is a low possibility that deeper excavation would yield vertebrate fossils.

Avoidance, Minimization, and/or Mitigation Measures

Due to planned excavation for the project, the Paleontological Identification/Evaluation Report recommended that monitoring take place, as outlined below, where excavation would disturb in-place sedimentary strata below the upper soil layers (upper three feet). The project area would also require monitoring if excavation were performed below the uppermost three feet of sediment.

- A nonstandard special provision for paleontology mitigation would be included in the construction contract special provisions section to advise the

construction contractor of the requirement to cooperate with the paleontological salvage.

- A qualified principal paleontologist (M.S. or PhD in paleontology or geology familiar with paleontological procedures and techniques) would be retained to prepare a detailed Paleontological Mitigation Plan prior to the start of construction. All geologic work would be performed under the supervision of a California Professional Geologist.
- A qualified principal paleontologist would be retained to be present at pre-grading meetings to consult with grading and excavation contractors.
- Near the beginning of excavations, the principal paleontologist would conduct an employee environmental awareness training session for all persons involved in earth moving for the project.
- A paleontological monitor, under the direction of the qualified principal paleontologist, would be onsite to inspect cuts for fossils at all times during original grading involving sensitive geologic formations.
- The paleontologist (or paleontological monitor) would recover any fossils that were discovered. Construction work in these areas would be halted or diverted to allow recovery of fossil remains in a timely manner.
- Bulk sediment samples would be recovered from fossiliferous horizons and processed for microvertebrate remains as determined necessary by the principal paleontologist.
- Fossil remains collected during the monitoring and salvage portion of the mitigation program would be cleaned, repaired, sorted, and cataloged.
- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, would then be deposited in a scientific institution with paleontological collections.
- A final report would be completed that outlines the results of the mitigation program.

2.2.4 Hazardous Wastes and Materials

Regulatory Setting

Hazardous wastes and hazardous materials are regulated by 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 primary federal laws regulating hazardous wastes and materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous wastes. 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. Other relevant federal laws include the following:

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

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

Hazardous waste in California is regulated primarily 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 handling and disposal of hazardous materials is vital if encountered or disturbed during project construction.

Affected Environment

An Initial Site Assessment and an Initial Site Assessment Addendum were prepared for the proposed project in December 2008, and determined the presence of contaminated properties within the project boundaries that may affect selection of project alternatives, right-of-way property acquisition, and construction of the proposed improvements. Acquisition of right-of-way property would be required for the proposed highway widening, improvements to local connector streets, and construction of interchanges and bridge improvements. Information for the assessment was obtained from regulatory database records, historical references, physical setting references, and onsite field reviews.

Project area land uses potentially affected by hazardous wastes or materials generally include State Route 99 with west and east frontage roads, railway facilities, suburban and rural residences of varying ages, and commercial and light industrial development of varying ages. These properties can contain or have contained in the past underground storage tanks, petroleum products, facilities that handle or store hazardous materials and/or wastes, and materials associated with railroads and highways. Each alternative for this project may be subject to a risk for encountering hazardous waste during construction.

Portions of the project will be located on agricultural land historically cultivated in row crops, orchards and vineyards. Consequently, there is potential for the presence of residual pesticides and/or herbicides.

Aerially deposited lead can be found in soil next to older highways and along more heavily traveled highways resulting from the past use of leaded gasoline. Studies are performed to identify lead in high concentrations according to California hazardous waste criteria. The soil is tested so that excavated soil can be managed properly in accordance with California Code of Regulations Titles 22 and 26 and Assembly Bill 2784. The results of the aerially deposited lead study are also used to notify the contractor so that proper safety precautions are implemented as required by California Code of Regulations Title 8, section 1532.1.

Environmental Consequences

The Initial Site Assessment and Initial Site Assessment Addendum identified 11 sites within the project area that have the potential to contain hazardous wastes. Additional sites having the potential to contain hazardous wastes adjacent to and within 1/8 mile of the proposed improvements were also reviewed. These sites were referenced within the Initial Site Assessment and Initial Site Assessment Addendum. However, based on the location of the proposed project and currently available information, none of these properties will require right-of-way or complete acquisition for this project and are therefore not discussed further in this document.

Table 2.19 below identifies the sites containing hazardous substances of concern and what the potential is for encountering the materials during project construction.

- Alternative A has the potential to affect four sites: no low-risk sites, three moderate-risk sites, and one high-risk site.
- Alternative B has the potential to affect 11 sites: no low-risk sites, six moderate-risk sites, and five high-risk sites.

Hazardous waste concerns associated with the proposed project alternatives include potential herbicides, pesticides, metals, petroleum hydrocarbons, hazardous building materials, and dry cleaning chemicals. Based on the results of the Initial Site Assessment, a Preliminary Site Investigation was recommended. The Preliminary Site Investigation of properties affected by the proposed project is currently being prepared at an approximate cost of \$360,000.00, and would be completed prior to approval of the Final Initial Study/Environmental Assessment.

Additionally, based on the potential for the presence of residual pesticides and/or herbicides, and aeriaily deposited lead in soil adjacent to the highway, an Aeriaily Deposited Lead Assessment and a Pesticide Assessment are currently being prepared. The results of the Preliminary Site Investigation, Aeriaily Deposited Lead Assessment, and Pesticide Assessment will be reported in the Final Initial Study/Environmental Assessment. These studies are described in further detail below.

Table 2.19 Summary of Potential Hazardous Waste Sites

	Facility or Current Use	Address	Assessor's Parcel Number	Potential Hazardous Waste Substances	Risk Class	Chemical of Concern
State Route 99/French Camp Road Interchange (under either build alternative)						
1	Golf Course	3919 East French Camp Road	201-030-14	Dumped landscape materials/chemicals	High	Herbicides, pesticides
2	Rail Lines	No Address	206-010-01	Slag ballast, Petroleum hydrocarbons, other chemicals	Medium	Metals, petroleum hydrocarbons
South of Main Street Interchange to State Route 120 (under either build alternative)						
3	Yosemite Avenue Interchange	State Route 99	NA	Former agricultural complex, possible underground storage tanks, agricultural chemicals, pesticides	Medium	Petroleum hydrocarbons, pesticides, hazardous building materials
4	State Route 99	State Route 99, 2600 feet to 4400 feet south of Yosemite Avenue	NA	Former lime waste disposal ponds	Medium	Metals
Main Street Interchange (under Alternative B)						
5	Valero Service Station	14800 Highway 99 West Frontage Road	197-020-04	Underground storage tanks, residual hydrocarbon-impacted soil and groundwater	High	Petroleum hydrocarbons
6	Farm/Residence	6160 East Lathrop Road	218-030-01	Underground storage tanks of unknown location and status	High	Petroleum hydrocarbons
7	Center Plumbing	2001 North Main Street	216-060-01	Closed underground storage tank, hydrocarbon-impacted soil	High	Petroleum hydrocarbons
8	Western Walker	15255 South Highway 99	218-020-13	Former dry cleaner	High	Dry cleaning chemicals
9	State Route 99 onramp	Lathrop Road onramp to northbound State Route 99	NA	Structures removed from east side of Main Street for State Route 99 construction in 1950s	Medium	Petroleum hydrocarbons, hazardous building materials
10	State Route 99	State Route 99 form Lathrop Road south 1300 feet	NA	Structures removed from east side of Main Street for State Route 99 construction in 1950s	Medium	Petroleum hydrocarbons, hazardous building materials
11	Multiple	Former orchards	NA	Persistent pesticides	Medium	Metals, pesticides

Avoidance, Minimization, and/or Mitigation Measures

A Preliminary Site Investigation was recommended and is currently being prepared for properties affected by the proposed project, as described above. The investigation will focus on assessing potential and/or documented soil and groundwater impacts associated with the identified potential hazardous waste facilities proposed for partial

or complete parcel acquisitions or used as construction easements. Soil sampling was also recommended within Caltrans existing rights-of-way where soil excavation is planned in the vicinity of identified potential hazardous waste facilities; the sampling would provide data for evaluating the management and disposal of potentially contaminated soils and identifying construction worker health and safety requirements.

The Preliminary Site Investigation will also determine if lead-based paint or asbestos-containing material exists within structures to be acquired and/or demolished. The contractor would use proper health and safety measures to minimize the exposure of workers to potential asbestos or lead-based paint from affected structures. Asbestos-containing materials may also be identified on bridges within the proposed project area. Where determined by the Preliminary Site Investigation to be present, asbestos-containing materials would be removed and disposed of by a licensed contractor registered with the California Occupational Safety and Health Administration for asbestos-related work or by a licensed and certified asbestos abatement contractor before renovation, demolition, or other activities that would disturb the material. In accordance with San Joaquin Valley Air Pollution District Regulation IV, Rule 4002, written notification to the San Joaquin Valley Air Pollution District is required 10 working days before beginning of any demolition activity, whether asbestos is present or not.

The Preliminary Site Investigation will also survey for aerially deposited lead. Subsequent to the Preliminary Site Investigation and before construction, a project-specific Lead Compliance Plan must be developed and implemented for earthwork as part of Caltrans non-standard special provisions.

In accordance with Title 8, California Occupational Safety and Health Administration, Section 1532.1(p), written notification to the nearest California Occupational Safety and Health Administration district office is required at least 24 hours before commencing certain types of lead-related work.

Based on the initial results of the Preliminary Site Investigation, it was determined that a more detailed evaluation of aerially deposited lead was necessary for the proposed project. Therefore, an Aerially Deposited Lead Assessment was recommended and is

currently being prepared for the proposed project, as described above. The purpose of this assessment is to evaluate whether impacts due to aerielly deposited lead are sufficient to require additional testing and/or mitigation recommendations for construction.

A Pesticide Assessment is also being prepared for the proposed project, as described above. The purpose of this assessment is to evaluate portions of the project located in areas of historic agricultural fields and orchards for residues of persistent pesticides.

2.2.5 Air Quality

Regulatory Setting

The Clean Air Act, as amended in 1990, is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the concentration of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards. Standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), lead (Pb), and sulfur dioxide (SO₂).

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to the State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the Regional Transportation Plan, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the Clean Air Act are met. If the conformity analysis is successful, the regional planning organization, such as the San Joaquin Council of Governments for San Joaquin County and the appropriate federal agencies, such as the Federal Highway Administration, make the determination that the Regional Transportation Plan is in conformity with the State Implementation Plan for achieving the goals of the Clean Air Act. Otherwise, the projects in the Regional Transportation Plan

must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the Regional Transportation Plan, then the proposed project is deemed to meet regional conformity requirements for purposes of the project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is in “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter. A region is a “nonattainment” area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as non-attainment areas but have recently met the standard are 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 and California Environmental Quality Act purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the carbon monoxide standard to be violated, and in “nonattainment” areas, the project must not cause any increase in the number and severity of violations. 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 Technical Report was completed for the proposed project in October 2009. The report provided a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for the air quality technical analysis. The report also provided data on existing regional air quality and evaluated potential air quality impacts associated with the proposed project.

Climate Conditions

Ambient air quality is affected by climatological conditions, topography, and the types and amounts of pollutants emitted by a source. The area’s climate is considered “inland Mediterranean” and is characterized by warm, dry summers and cool winters. Summer high temperatures often exceed 100 degrees Fahrenheit, with average temperatures in the low 90s in the northern valley and high 90s in the south.

Although marine air generally flows into the basin from the Sacramento–San Joaquin River Delta, the surrounding mountain ranges restrict air movement through and out of the valley. Wind speed and direction influence the dispersion and transportation of ozone precursors, particulate matter (PM₁₀), and carbon monoxide; the more wind flow, the less accumulation of these pollutants. The vertical dispersion of air pollutants in the San

Joaquin Valley Air Basin is limited by the presence of persistent temperature inversions (warm air over cool air). Because of differences in air density, the air above and below the inversion does not mix. Ozone and its precursors will mix and react to produce higher concentrations under an inversion and will trap directly emitted pollutants, such as carbon monoxide.

Precipitation and fog tend to reduce or limit pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog block the required radiation. Carbon monoxide is slightly water soluble, so precipitation and fog tend to “reduce” carbon monoxide concentrations in the atmosphere. Particulate matter (PM₁₀) is somewhat “washed” from the atmosphere with precipitation. Annual precipitation in the valley decreases from north to south, with about 20 inches in the north, 10 inches in the middle, and less than 6 inches in the southern part of the valley.

Regional Air Quality Conformity

The proposed project is fully funded and is in the San Joaquin Council of Governments 2007 Regional Transportation Plan which was found to conform by San Joaquin Council of Governments on October 25, 2007 and the Federal Highway Administration and Federal Transit Administration adopted the air quality conformity on January 17, 2008. The proposed project is included in the 2007 Regional Transportation Plan as Metropolitan Planning Organization ID# SJ07-1017 and California Transportation Improvement Program System ID# 212-0000-0394. The project is also included in the San Joaquin Council of Governments financially constrained 2008 Regional Transportation Improvement Program, page 3. The San Joaquin Council of Governments 2008 Regional Transportation Improvement Program was found to conform by the Federal Highway Administration and Federal Transit Administration on October 3rd, 2007. The design concept and scope of the proposed project are consistent with the project description in the 2007 San Joaquin Council of Governments Regional Transportation Plan, the 2007 Federal Transportation Improvement Program, and the assumptions in the San Joaquin Council of Governments’ regional emissions analysis.

Project Level Conformity

The project is located in an attainment/unclassified area for the federal and state carbon monoxide standards. The project is located in an attainment area for the federal particulate matter (PM₁₀) standard, and a nonattainment area for the state particulate matter (PM₁₀) standard. The project is located in a nonattainment area for the federal and state particulate matter (PM_{2.5}) standards. The project is also located in a severe nonattainment area for the state ozone (1 hour) standard and nonattainment area for the

state ozone (8 hour) standard, and a serious nonattainment area for the federal ozone (8 hour) standard. Therefore, a local hot spot analysis for conformity was required. Currently, there is no hot spot procedure for ozone, which is considered to be a regional pollutant. San Joaquin County's attainment status for each pollutant relative to the National Ambient Air Quality Standards and California Ambient Air Quality Standards is summarized in Table 2.20.

Project Area Air Quality Conditions

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that the federal and state governments have established for various pollutants (Table 2.20) and by monitoring data collected in the region. The Air Quality Technical Report prepared in October 2009 used data collected from the nearest air quality monitoring station, the Stockton-Hazelton monitoring station, which is located at 1593 East Hazelton Street in the City of Stockton. This station monitors for ozone, carbon monoxide, particulate matter (PM₁₀ and PM_{2.5}), and nitrogen dioxide. Air quality monitoring data from the Stockton-Hazelton monitoring station for the last three years (2005–2007) identified the following:

- Zero days exceeding the federal 1-hour ozone standard;
- Nine days exceeding the state 1-hour ozone standard;
- Four days exceeding the federal 8-hour ozone standard;
- Zero days exceeding the federal and state carbon monoxide standards;
- Zero days exceeding the federal 24-hour PM₁₀ standard;
- Approximately 140 days exceeding the state 24-hour PM₁₀ standard; and
- Zero days exceeding the federal 24-hour PM_{2.5} standard.

There were zero days exceeding the National Annual Standard for particulate matter (PM₁₀ and PM_{2.5}) at the Stockton-Hazelton monitoring station (Table 2.21) between 2002 and 2007.

Environmental Consequences

As described above, an Air Quality Technical Report was completed for the proposed project in October 2009, and evaluated existing (2008), open to traffic-year (2015), and design-year (2035) project conditions were modeled to evaluate carbon monoxide

concentrations relative to the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The results of carbon monoxide modeling indicate that carbon monoxide concentrations are not anticipated to exceed the 1- or 8- hour National Ambient Air Quality Standards and California Ambient Air Quality Standards.

The Air Quality Technical Report also evaluated data collected from the nearest air quality monitoring station, the Stockton-Hazelton monitoring station. Based on the observed particulate matter monitoring trends from the Stockton-Hazelton monitoring station, it is anticipated that the proposed project would not exceed particulate matter standards.

Based on guidance provided by the Federal Highway Administration and the U.S. Environmental Protection Agency, the proposed project is considered to be a Project of Air Quality Concern (Federal Highway Administration, and U.S. Environmental Protection Agency 2006). According to the Air Quality Technical Report, this project is considered to be a Project of Air Quality Concern because it has an annual average daily traffic count of more than 125,000 vehicles, and because it has a diesel truck percentage higher than 8 percent in the design-year of 2035. Therefore, it required preparation of a qualitative PM₁₀ and PM_{2.5} hot spot analysis.

Based on the results of the qualitative hot spot analysis, it is not anticipated that implementation of the proposed project would cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. Consequently, the proposed project is considered a conforming project under the conformity hotspot regulations.

**Table 2.21 Number of Days Exceeding National Annual Standards
for Particulate Matter at 1593 E. Hazelton Place,
Stockton Air Monitoring Station**

Monitoring Station	Stockton 1593 E. Hazelton Place	
	PM _{2.5}	PM ₁₀
Year		
2002	0	0
2003	0	0
2004	0	0
2005	0	0
2006	0	0
2007	0	0

Source: California Air Resources Board 2008

Table 2.20 Ambient Air Quality Standards and Status

Pollutant	Averaging Time	State Standard	Federal Standard	Attainment Status of San Joaquin County		Health and Atmospheric Effects	Typical Sources
				State	Federal		
Ozone (O₃)^a	1 hour	0.09 <u>ppm</u>	– ^b	Severe nonattainment	NA	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include a number of known toxic air contaminants.	Low-altitude ozone is almost entirely formed from reactive organic gases (ROG) and nitrogen oxides (NO _x) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes. Biologically-produced ROG may also contribute.
	8 hours	0.070 <u>ppm</u>	0.08 <u>ppm</u>	Nonattainment	Serious nonattainment		
Carbon Monoxide (CO)	1 hour	20 <u>ppm</u>	35 <u>ppm</u>	Unclassified/Attainment	Unclassified/Attainment	Asphyxiant. CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen.	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.
	8 hours	9.0 <u>ppm</u> ^c	9 <u>ppm</u>	Unclassified/Attainment	Unclassified/Attainment		
Respirable Particulate Matter (PM₁₀)^a	24 hours	50 <u>µg/m³</u>	150 <u>µg/m³</u>	Nonattainment	Attainment	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM ₁₀ .	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
	Annual	20 <u>µg/m³</u>	–	NA	Attainment		
Fine Particulate Matter (PM_{2.5})^a	24 hours	–	35 <u>µg/m³</u>	NA	Nonattainment	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – considered 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 NO _x , sulfur oxides (SO _x), ammonia, and ROG.
	Annual	12 <u>µg/m³</u>	15 <u>µg/m³</u>	Nonattainment	Nonattainment		

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

Pollutant	Averaging Time	State Standard	Federal Standard	Attainment Status of San Joaquin County		Health and Atmospheric Effects	Typical Sources
				State	Federal		
Nitrogen Dioxide (NO₂)	1 hour	0.25 <u>ppm</u>	–	Attainment	NA	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain.	Motor vehicles and other mobile sources; refineries; industrial operations.
	Annual	–	0.053 <u>ppm</u>	NA	Unclassified/Attainment		
Sulfur Dioxide (SO₂)	1 hour	0.25 <u>ppm</u>	–	Attainment	NA	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.
	24 hours	0.04 <u>ppm</u>	0.14 <u>ppm</u>	Attainment	Unclassified/Attainment		
	Annual	–	0.030 <u>ppm</u>	NA	Unclassified/Attainment		
Lead (Pb)^d	Monthly	1.5 <u>µg/m³</u>	–	Attainment	NA	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also considered a toxic air contaminant.	Primary: lead-based industrial process like battery production and smelters. Past: lead paint, leaded gasoline. Moderate to high levels of aerially deposited lead from gasoline may still be present in soils along major roads, and can be a problem if large amounts of soil are disturbed.
	Quarterly	–	1.5 <u>µg/m³</u>	NA	No classification		

Sources: California Air Resources Board Ambient Air Quality Standards chart, 05/17/2006 (<http://www.arb.ca.gov/aqs/aaqs2.pdf>)
Sonoma-Marín Area Rail Transit Draft Air Pollutant Standards and Effects table, November 2005, page 3-52.
U.S. EPA and California Air Resources Board air toxics websites, 05/17/2006

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter

^a Annual PM10 NAAQS revoked October 2006; was 50 µg/m³. 24-hr. PM2.5 NAAQS tightened October 2006; was 65 µg/m³.

^b 12/22/2006 Federal court decision may affect applicability of Federal 1-hour ozone standard. Prior to 6/2005, the 1-hour standard was 0.12 ppm. Case is still in litigation.

^c Rounding to an integer value is not allowed for the State 8-hour CO standard. A violation occurs at or above 9.05 ppm.

^d The ARB has identified lead, vinyl chloride, and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM10 and, in larger proportion, PM2.5. Both the ARB and U.S. EPA have identified various organic compounds that are precursors to ozone and PM2.5 as toxic air contaminants. There is no threshold level of exposure for adverse health effect determined for toxic air contaminants, and control measures may apply at ambient concentrations below any criteria levels specified for these pollutants or the general categories of pollutants to which they belong.

For projects that affect highway capacity, or other projects where questions arise regarding conformity issues, a regional interagency consultation process is conducted to gain consensus on conformity issues. Interagency consultation for conformity and air quality planning in the project area is managed by the San Joaquin Council of Governments.

Interagency consultation for the proposed project was initiated with the San Joaquin Council of Governments in September 2009. Concurrence with the assumptions and analyses from the Federal Highway Administration and the United States Environmental Protection Agency is still pending.

Short-Term Construction Impacts

Construction activity is a source of dust and exhaust emissions that can have substantial temporary impacts on local air quality (i.e., exceed state or federal air quality standards for criteria pollutants). Such emissions would result from earthmoving and use of heavy equipment, as well as land clearing, ground excavation, cut-and-fill operations, and the construction of roadways. Emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. A major portion of dust emissions for the proposed project would likely be caused by temporary construction traffic.

Long-Term Operation Impacts

Long-term air quality impacts are those associated with motor vehicles operating on the roadway network, predominantly those operating in the project vicinity. Emissions of reactive organic gas, nitrogen dioxide, carbon monoxide, particulate matter (PM₁₀ and PM_{2.5}), and carbon dioxide for existing (2008), open to traffic-year (2015), and design-year (2035) conditions were evaluated through modeling conducted using both the California Air Resources Board's EMFAC2007 emission rate program and the traffic data from the traffic operations report prepared for the proposed project. Project-level emissions were obtained by comparing future with-project emissions to future without-project emissions.

The proposed project is intended to be consistent with existing and planned local development, and is needed to provide increased capacity on State Route 99 to address congestion concerns for local and through traffic and to accommodate future planned growth. In general, vehicle miles traveled are projected to increase, attributable to the decreased level of congestion that the proposed project would accommodate by providing additional capacity. However, congestion relief achieved through

implementation of the proposed project would help to reduce idling times, acceleration, and braking, which have been established as contributors to air pollution. Based on the modeled yearly emissions, vehicular emissions rates are anticipated to lessen in future years due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

Naturally Occurring Asbestos

San Joaquin County is not among the counties listed as containing serpentine and ultramafic rock, which may both contain naturally occurring asbestos (California Department of Conservation, 2000). Therefore, the impact from naturally occurring asbestos during construction of the proposed project would be minimal to none. If structures that may contain asbestos are to be demolished, it is the responsibility of the contractor to comply with applicable regulations for asbestos-containing materials. Refer to Section 2.2.4 Hazardous Waste for further discussion.

Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards, the Environmental Protection Agency also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (such as airplanes), area sources (such as dry cleaners), and stationary sources (such as factories or refineries).

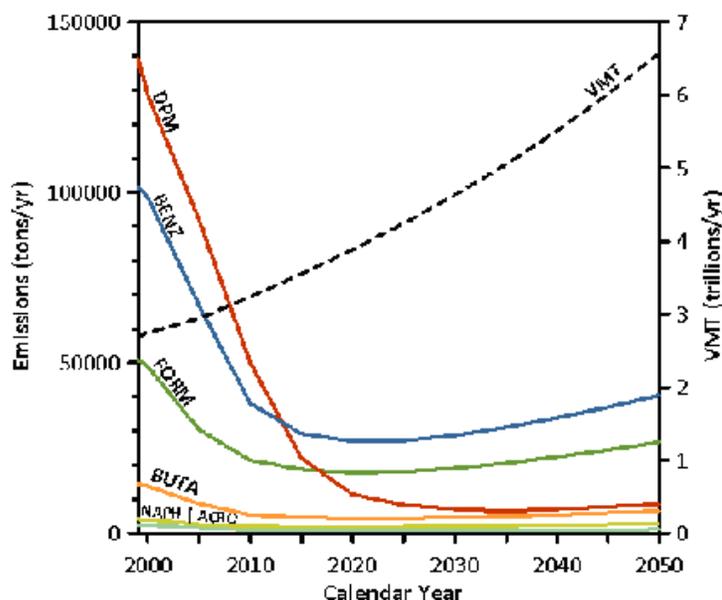
Mobile Source Air Toxics are a subset of the 188 air toxics defined in the Clean Air Act. They are now federally regulated under 40 Code of Federal Regulations 1502.22 by the U.S. Environmental Protection Agency. Mobile Source Air Toxics are 21 compounds emitted from highway vehicles and non-road equipment. There are six main toxics, including diesel exhaust, benzene, and formaldehyde.

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 Final Rule 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.

The Environmental Protection Agency has issued a number of regulations that will dramatically decrease Mobile Source Air Toxics through cleaner fuels and cleaner engines. Between 1999 and 2050, FHWA projects that even with a 145 percent increase in vehicle miles traveled, these programs would reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by a combined reduction of 72 percent in the total annual emission rate, as shown in Table 2.22.

**Table 2.22 National Mobile Source Air Toxics Emission Trends
1999 – 2050**



Unavailable Information for Project Specific Mobile Source Air Toxics Impact Analysis

This Initial Study/Environmental Assessment includes a basic analysis of the likely Mobile Source Air Toxic emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this environmental document. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality regulations (40 Code of Federal Regulations 1502.22(b)) regarding incomplete or unavailable information.

Information that is Unavailable or Incomplete

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 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 Toxic health impacts of this project.

Emissions

The Environmental Protection Agency tools to estimate Mobile Source Air Toxics emissions from motor vehicles are not sensitive to key variables determining emissions of Mobile Source Air Toxics in the context of highway projects. While EMFAC is used to predict emissions at a regional level, it has limited applicability at the project level. EMFAC is a trip-based model: emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that EMFAC does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, EMFAC can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other Mobile Source Air Toxics emission rates do change with changes in trip speed. Also, the emissions rates used in EMFAC for both particulate matter and Mobile Source Air Toxics are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, Environmental Protection Agency has identified problems with EMFAC as an obstacle to quantitative analysis.

These deficiencies compromise the capability of EMFAC to estimate Mobile Source Air Toxics emissions. EMFAC is an adequate tool for projecting emissions trends and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

Dispersion

The tools to predict how Mobile Source Air Toxics disperse are also limited. The Environmental Protection Agency's current regulatory models, CALINE3,

CALINE4, and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the National Ambient Air Quality Standards. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time and location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times and highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program is conducting research on best practices in applying models and other technical methods in the analysis of Mobile Source Air Toxics. This work also will focus on identifying appropriate methods of documenting and communicating Mobile Source Air Toxics impacts in the National Environmental Protection Agency process and to the general public. Along with these general limitations of dispersion models, Federal Highway Administration is also faced with a lack of monitoring data in most areas for use in establishing project-specific Mobile Source Air Toxics background concentrations.

Exposure Levels and Health Effects

Finally, even if emission levels and concentrations of Mobile Source Air Toxics could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of Mobile Source Air Toxics near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various Mobile Source Air Toxics, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of Mobile Source Air Toxics

Research into the health impacts of Mobile Source Air Toxics is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of Environmental Protection Agency efforts. Most notably, the agency conducted the National Air Toxics Assessment in 1996 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. The Integrated Risk Information System database is located at <<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 represents the 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 as reviewed in this document 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 may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address Mobile Source Air Toxics health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by the Environmental Protection Agency, Federal Highway Administration, and industry, has undertaken a major series of studies to research near-roadway Mobile Source Air Toxics hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes—particularly respiratory problems. Much of this research is not specific to Mobile Source Air Toxics, instead surveying the full spectrum of both criteria and other pollutants. The Federal Highway Administration cannot evaluate the validity of these studies, but more importantly they provide neither the information that would be useful to alleviate the uncertainties listed above nor that would enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment

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 us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of Mobile Source Air Toxics emissions from each of the project alternatives and Mobile Source Air Toxics concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the unavailable or incomplete

information precludes any determination of whether the alternatives would have "significant adverse impacts on the human environment."

Project Level Analysis

Caltrans conducted a quantitative analysis of Mobile Source Air Toxic emissions for the proposed project alternatives. The quantitative analysis indicated that implementation of the proposed project alternatives are anticipated to result in decreased exposure to Mobile Source Air Toxics emissions (Acetaldehyde, Acrolein, Benzene, Butadiene, DPM, and Formaldehyde) in certain locations, although the concentrations and duration of exposures are uncertain. Because of this uncertainty, the health effects from these emissions cannot be estimated.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans Standard Specifications pertaining to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emissions impacts during construction. The provisions of Caltrans Standard Specifications, Section 14-1.01 "Air Pollution Control" and Section 14-1.02 "Dust Control" require the contractor to comply with the San Joaquin Valley Air Pollution Control District's rules, ordinances, and regulations.

To control the generation of construction-related PM₁₀ emissions, Caltrans shall require construction contractors to prepare and submit a Dust Control Plan to the San Joaquin Valley Air Pollution Control District for their approval at least 30 days prior to any earthmoving or construction activities.

San Joaquin Valley Air Pollution Control District Rule 9510, Indirect Source Review, requires implementation of control measures and/or purchasing of emissions offsets to mitigate construction-related NO_x and PM₁₀ emissions from roadway projects in excess of 2.0 tons. Off-Site Emission Reduction Fees shall be calculated, as dictated by Rule 9510, to reduce construction-related NO_x emissions by 20 percent and PM₁₀ emissions by 45 percent, compared to the statewide fleet average.

Climate change is analyzed in Chapter 2 under "Climate Change (CEQA)". Neither EPA nor FHWA has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (<http://www.fhwa.dot.gov/hep/climate/index.htm>), climate change considerations would be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-

making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the CEQA chapter of this environmental document and may be used to inform the NEPA decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

2.2.6 Noise and Vibration

Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the regulatory basis for analyzing and abating the effects of highway traffic noise. The requirements for noise analysis and consideration of noise abatement and/or mitigation differ between the National Environmental Policy Act and the California Environmental Quality Act as discussed below.

National Environmental Policy Act and 23 Code of Federal Regulations 772

For highway transportation projects with Federal Highway Administration involvement, the Federal-Aid Highway Act of 1970 and 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 exterior criterion for residences (67 decibels) is lower than the exterior criterion for commercial areas (72 decibels). Table 2.23 lists the noise abatement criteria for use in the National Environmental Policy Act and 23 Code of Federal Regulations 772 analysis, and Table 2.24 shows the noise levels of typical activities.

Table 2.23 Activity Categories and Federal Noise Abatement Criteria

Activity Category	Federal Noise Abatement Criteria, A-weighted Noise Level, Leq(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	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: Caltrans Traffic Noise Analysis Manual, 1998

A-weighted decibels are adjusted to approximate the way humans perceive sound. Leq(h) 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 one hour.

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline versus build analysis to assess whether a proposed project would have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then the act dictates that mitigation measures must be incorporated into the project unless such measures are not feasible.

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 greater 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 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. Noise abatement measures that would likely be incorporated into the proposed project are discussed below.

Table 2.24 Typical Activity Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
<u>Jet Fly-over at 300m (1000 ft)</u>	110	<u>Rock Band</u>
<u>Gas Lawn Mower at 1 m (3 ft)</u>	100	
<u>Diesel Truck at 15 m (50 ft), at 80 km (50 mph)</u>	90	<u>Food Blender at 1 m (3 ft)</u>
<u>Noisy Urban Area, Daytime</u>	80	<u>Garbage Disposal at 1 m (3 ft)</u>
<u>Gas Lawn Mower, 30 m (100 ft) Commercial Area</u>	70	<u>Vacuum Cleaner at 3 m (10 ft)</u> <u>Normal Speech at 1 m (3 ft)</u>
<u>Heavy Traffic at 90 m (300 ft)</u>	60	<u>Large Business Office</u>
<u>Quiet Urban Daytime</u>	50	<u>Dishwasher Next Room</u>
<u>Quiet Urban Nighttime</u>	40	<u>Theater, Large Conference Room (Background)</u>
<u>Quiet Suburban Nighttime</u>	30	<u>Library</u>
<u>Quiet Rural Nighttime</u>	20	<u>Bedroom at Night,</u> <u>Concert Hall (Background)</u>
	10	<u>Broadcast/Recording Studio</u>
<u>Lowest Threshold of Human Hearing</u>	0	<u>Lowest Threshold of Human Hearing</u>

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. 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 also relies on a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include residents' acceptance, the absolute noise level, project versus existing noise, environmental impacts of abatement, public and local agency input, newly constructed development versus development pre-dating 1978, and the cost per benefited residence.

Affected Environment

A Noise Study Report was prepared for the project in November 2008. The Noise Study Report focused on the existing noise environment in the project area and noise from traffic traveling on State Route 99. A Noise Abatement Decision Report was prepared in April 2009. The Noise Abatement Decision Report presents the preliminary noise abatement decision based on acoustical and nonacoustical feasibility factors and the relationship between noise abatement allowances and construction cost estimates.

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Land uses in the project area were categorized by land use type, Activity Category (See Table 2.23), and the extent of frequent human use. Land uses were 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 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 for exterior areas.

As stated in Caltrans' *Traffic Noise Analysis Protocol*, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Although all potentially affected developed land uses are evaluated in this section, the focus is on locations of frequent human use that would benefit from a lowered noise level. Accordingly, the Environmental Consequences section below

focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas of multi-family residences.

A total of 51 sensitive receptors (single-family residences, multi-family residences, and one church) were identified as Activity Category B land uses in the project area. The commercial uses in the project area are classified as Activity Category C land uses. The project corridor is relatively flat, with sensitive receptors generally located within three feet of the existing State Route 99 elevation (except at the elevated overcrossings).

Table 2.25 provides the land use descriptions in the study area. For the purposes of the noise study, the project area was divided up into segments one through six as defined in the left column in the table. Figures 2-4A through 2-4N and Figure 2-5 identify and label noise features in the project area: the 51 sensitive receptors (R-1:R-51); the 22 long term noise measurement locations (R-3-LT:R-50-LT); the existing barriers or sound walls (B-1:B-12); the barriers or sound walls that were analyzed in the Noise Study Report (PB-1: PB-14 shown in blue), and the proposed barriers or sound walls that were evaluated in the Noise Abatement Decision Report (PB-1: PB-14 shown in orange).

Table 2.25 Land Use Descriptions in the Study Area

Segment (Figure)	Land Use Description	Existing Barrier
Segment 1: North of Arch Road – Figure 2-4A	This segment contains only one identified noise-sensitive location (R-1) near the northern project terminus on the west side of State Route 99. This location consists of a new single-family residential development which is under construction and shielded from view of State Route 99 by a 14-foot high masonry soundwall (B-1). This receptor area is separated from State Route 99 by a frontage road.	Yes B-1 – west side of State Route 99
Segment 2: Arch Road to French Camp Road – Figures 2-4B – 2-4F	This segment contains five receptor locations, three of which were monitored for a 24-hour period. Receptors include individual rural residences along the State Route 99 frontage roads (both east and west sides of State Route 99), and a small mobile home park (R-3-LT). Receptors R-2 and R-3-LT are shielded from view of State Route 99 by Barrier B-2, which was constructed during the recent Arch Road interchange improvement project. Receptor R-6-LT would be removed as part of the Turner Station Overhead/French Camp Road Interchange improvements.	Yes B-2 – east side of State Route 99
Segment 3: French Camp Road to Lathrop Road – Figures 2-4F – 2-4I	There are 21 receptor locations identified along this segment, nine of which were monitored for a 24-hour period. This segment contains primarily rural residences facing the State Route 99 frontage roads. Some of the residences have activity areas behind the residences, whereas for others the locations of the outdoor areas are less certain. The first concentrated group of residences (R-25) along the project corridor is located on the east side of State Route 99, just north of Lathrop Road. There are no existing noise barriers located along this segment.	No

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Segment (Figure)	Land Use Description	Existing Barrier
Segment 4: Lathrop Road to Main Street – Figure 2-4I	This relatively short segment contains five sensitive receptors and one existing noise barrier at a row of second tier residences (B-3 for R-31). Receptor R-30 is partially shielded from view of State Route 99 by the existing Main Street overcrossing northbound on-ramp which would be removed under the proposed project. Receptor R-51 is located on the west side of Main Street (Figure 2-5). Receptor R-51 was only evaluated for Alternative B therefore, it is not shown on Figure 2-4I.	Yes B-3 – east side of State Route 99
Segment 5: Main Street to Yosemite Avenue – Figures 2-4J – 2-4L	This segment contains 19 sensitive receptors (R-32 through 48). Continuous noise level measurements were conducted at eight locations along this segment, and there are nine existing noise barriers located within this segment. Some of the barriers are very old, short, and in very poor condition (B-4, B-5 and B-8), whereas others are relatively new, tall, and in very good condition (B-7, B-9, B-10 and B-11). One of the barriers (B-6) was constructed by a property owner (R-38) to shield only his residence.	Yes B-4:B-11 – located on both east and west sides of State Route 99
Segment 6: Yosemite Avenue to South Project Limits – Figures 2-4M – 2-4N	There is only one noise sensitive land use located along this segment, the El Rancho Mobile Home Park, which is represented by receptors R-49 and R-50. Both receptors were monitored continuously for a 24-hour period. There is an existing 10-foot tall noise barrier at this location constructed as part of the relatively recent State Route 120 interchange improvement project.	Yes B-12 – east side of State Route 99

Figure 2-4A Noise Features for Alternatives A and B



LEGEND

- | | | |
|---|--|--|
|  Existing Sound Wall |  Analyzed Sound Wall Location |  Proposed Sound Wall Location |
|  Receiver | |  Receiver |

Figure 2-4B Noise Features for Alternatives A and B



LEGEND

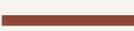
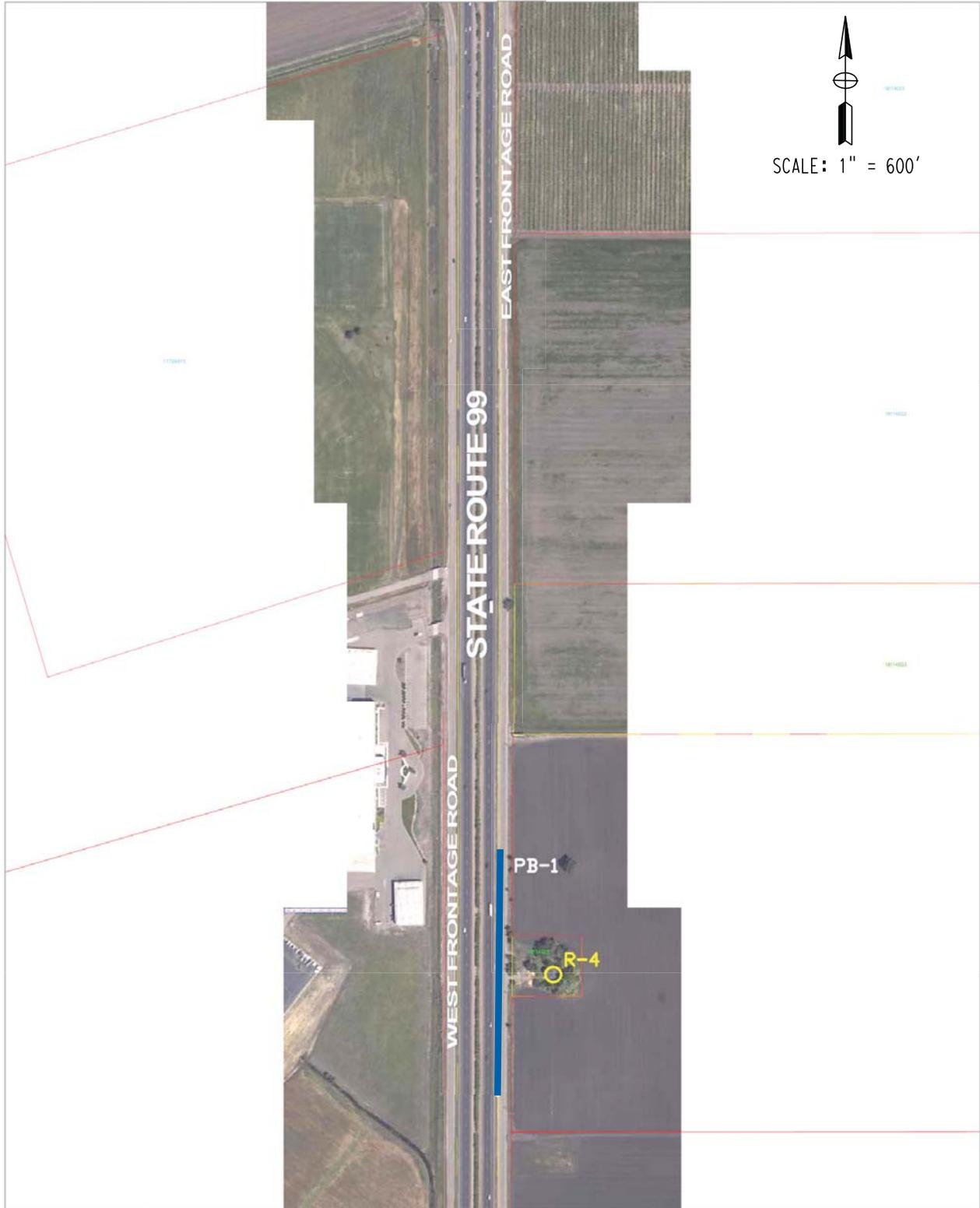
- | | |
|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

Figure 2-4C Noise Features for Alternatives A and B



LEGEND

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|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

Figure 2-4D Noise Features for Alternatives A and B



LEGEND

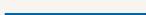
- | | |
|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

Figure 2-4E Noise Features for Alternatives A and B



LEGEND

- Existing Sound Wall
- Analyzed Sound Wall Location
- Proposed Sound Wall Location
- Receiver

Figure 2-4F Noise Features for Alternatives A and B



LEGEND

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|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

Figure 2-4G Noise Features for Alternatives A and B



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|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

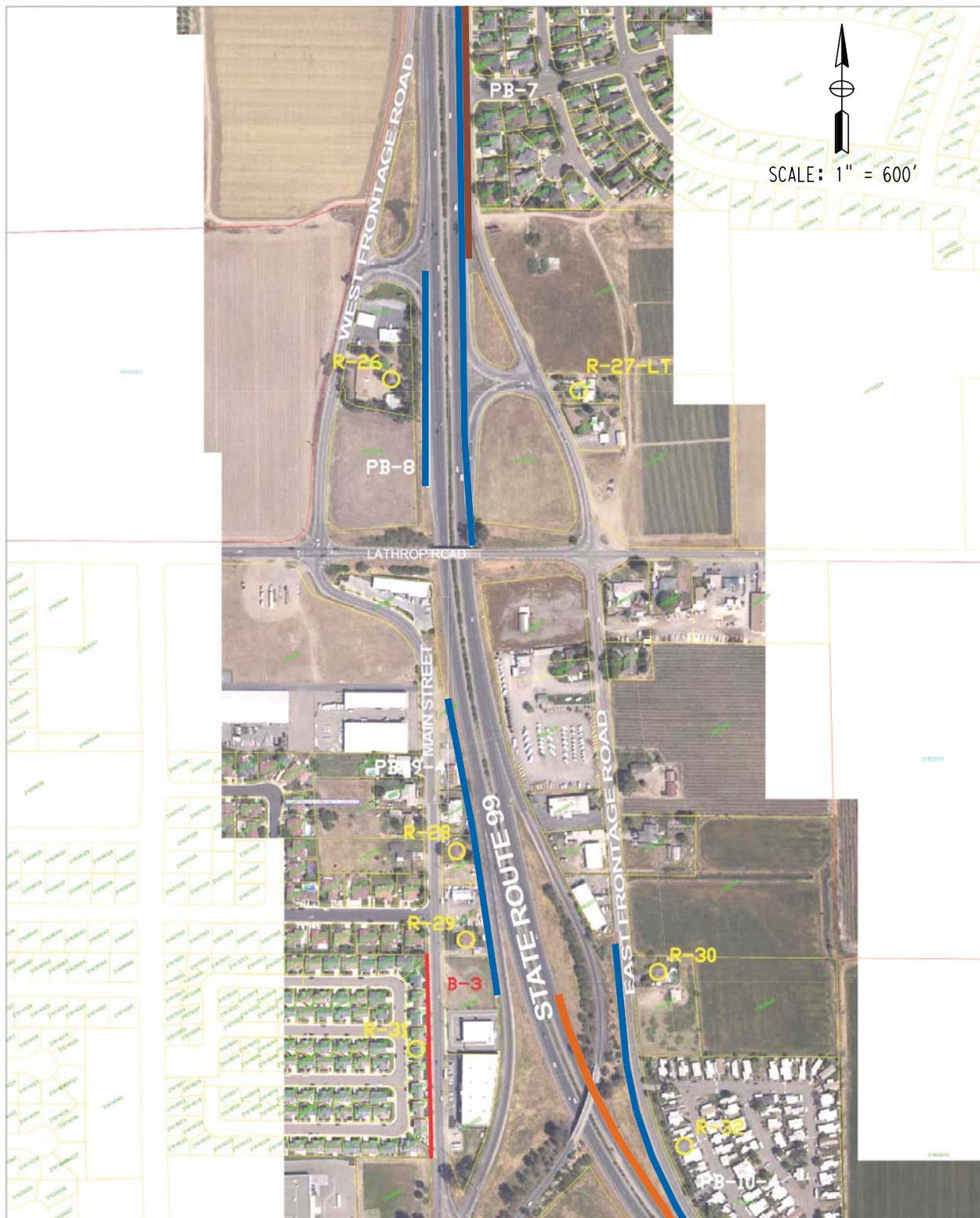
Figure 2-4H Noise Features for Alternatives A and B



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|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

Figure 2-4I Noise Features for Alternatives A and B



LEGEND

- | | |
|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

Figure 2-4J Noise Features for Alternatives A and B



LEGEND

- | | |
|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

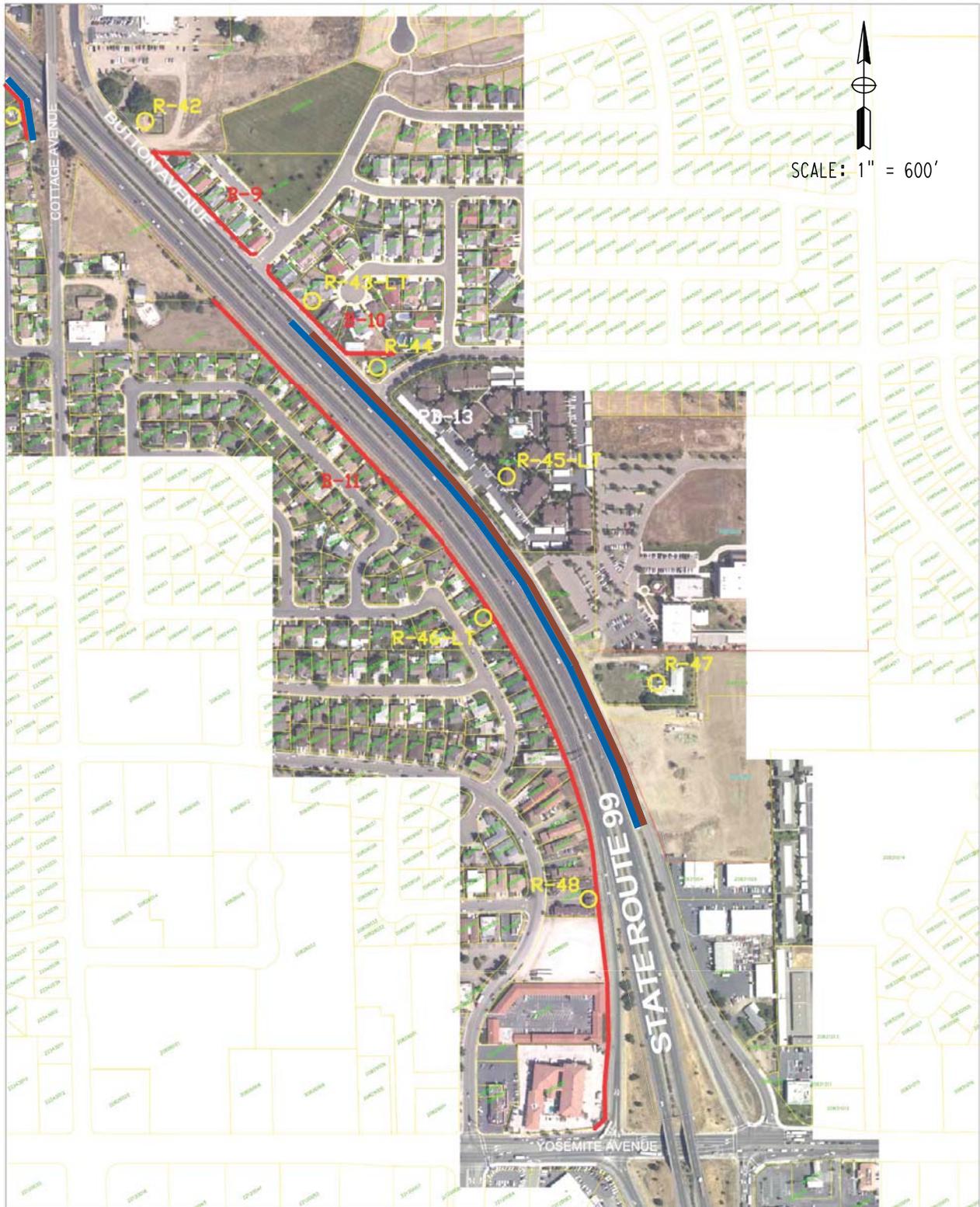
Figure 2-4K Noise Features for Alternatives A and B



LEGEND

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|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

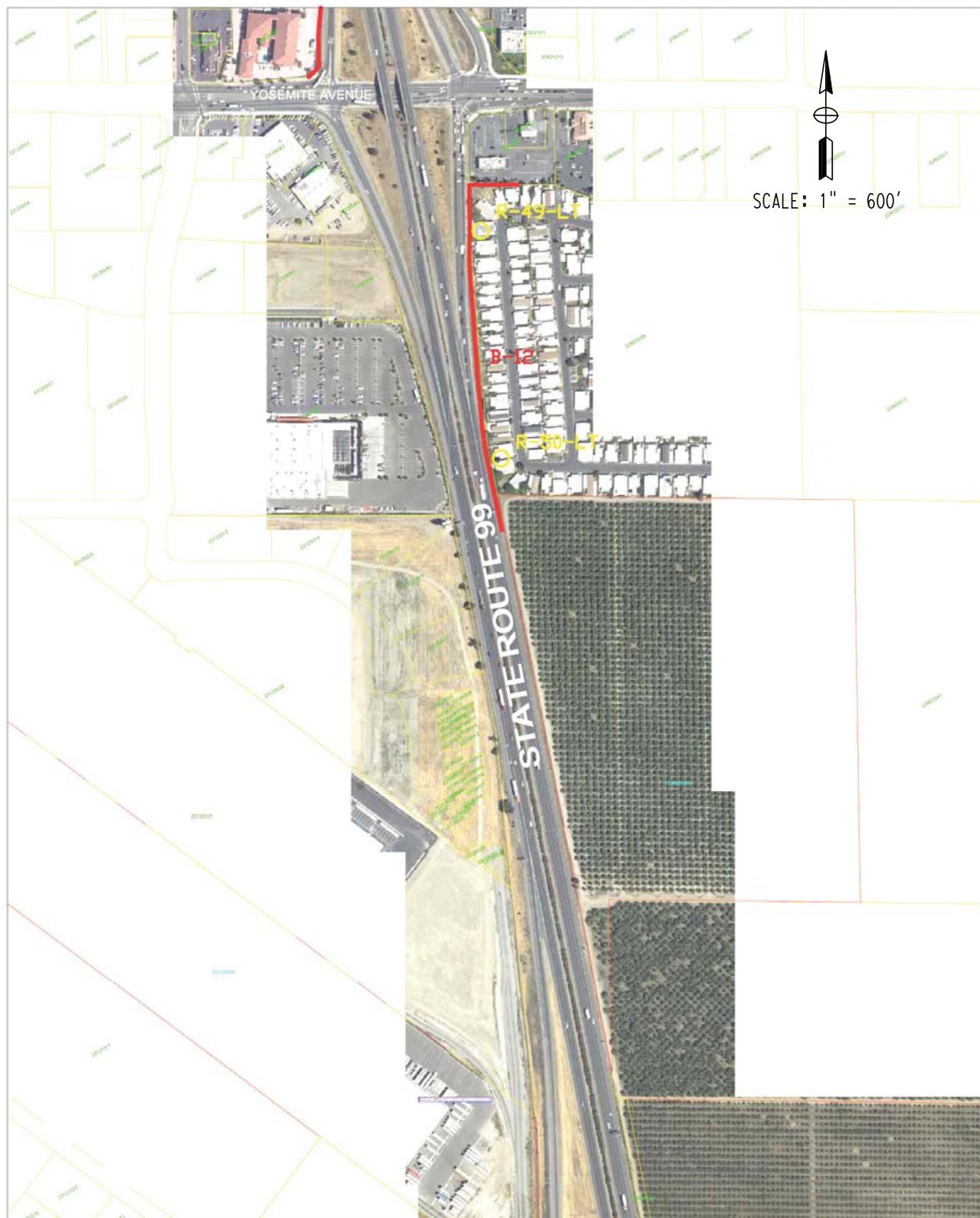
Figure 2-4L Noise Features for Alternatives A and B



LEGEND

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|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

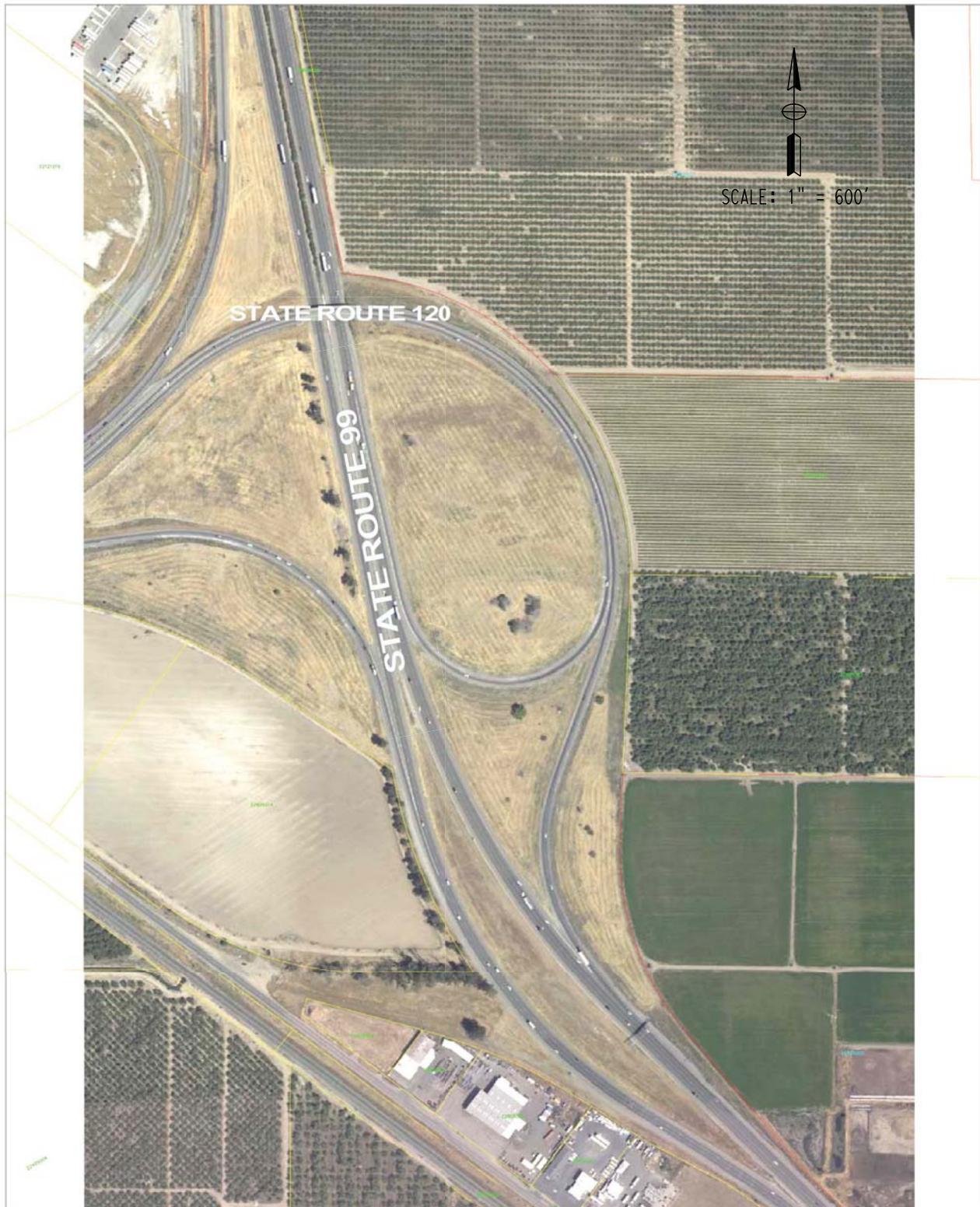
Figure 2-4M Noise Features for Alternatives A and B



LEGEND

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|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

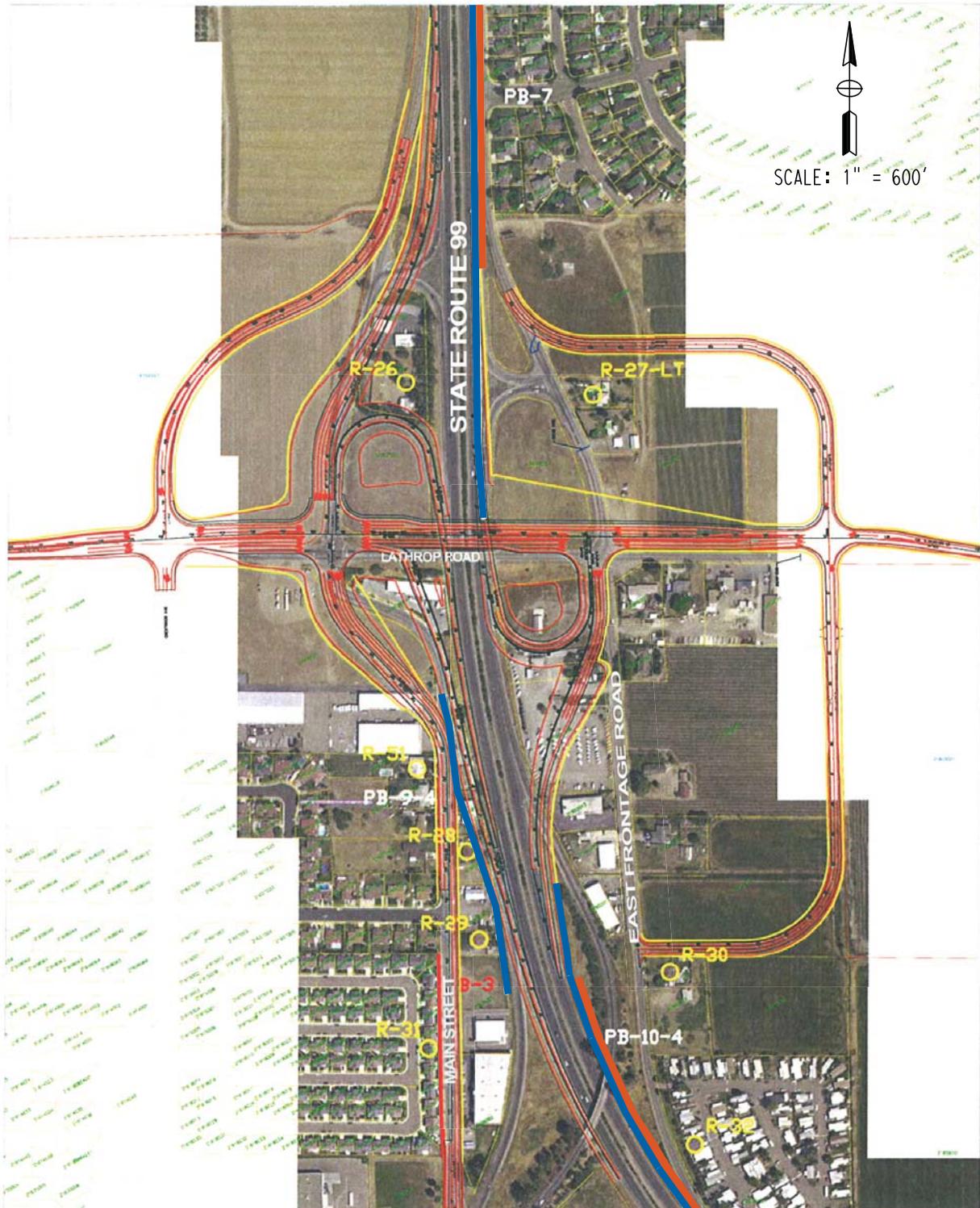
Figure 2-4N Noise Features for Alternatives A and B



LEGEND

- | | |
|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

Figure 2-5 Noise Features for Alternative B



LEGEND

- | | |
|--|--|
|  Existing Sound Wall |  Proposed Sound Wall Location |
|  Analyzed Sound Wall Location |  Receiver |

Environmental Consequences

The results of the noise study showing both existing and predicted traffic noise are presented in Tables 2.26 and 2.27 below. Tables 2.26 and 2.27 also show the potential noise impacts and predicted noise levels with abatement for Alternative A and Alternative B improvements respectively. Noise abatement is considered for areas of frequent human use that would benefit from a lowered noise level, or that are not protected by an existing and adequate barrier. Accordingly, not all noise sensitive receptors identified for the project are included in Tables 2.26 and 2.27. Noise sensitive receptors that are not listed in Tables 2.26 and 2.27 include receptors that would be relocated by the proposed project and would not require noise abatement, receptors that are already protected by an existing and adequate barrier, and receptors at individual residences where construction of a barrier sufficiently long and tall enough to shield the individual residence would be unreasonable from a cost consideration.

The predicted noise levels were calculated using an “A-weighted” sound level (expressed in units of dBA) for design-year (2035) conditions, which is a 20-year planning horizon required to show noise levels following construction of the project. Tables 2.26 and 2.27 also present a summary of the existing noise levels and noise levels predicted for the year 2035, with and without the project, thereby showing the direct effect of the project alternatives.

Long term noise measurements were conducted at 22 of the 51 Category B receptor locations. Long-term measurement locations were selected for each representative noise-sensitive receptor location, or groups of receptors, which share similar exposure to State Route 99. The purpose of the continuous noise measurements was to identify the highest hourly average noise level, Leq(h), at each representative location as well as to capture the diurnal traffic noise level pattern in the project area. Short-term measurements were not utilized. Several other non-measurement locations were selected as modeling locations.

Long-term monitoring was conducted to identify variations in sound levels throughout the day. The long-term sound level data was collected over a single 24-hour period at each location with monitoring conducted between March 5, 2008 and May 18, 2008. Atmospheric conditions present during the monitoring sessions were typical for the period, with no unusual conditions such as high winds or precipitation which would influence the monitoring results.

No land uses in Category C have been evaluated for noise abatement, since none of the land uses in this category have areas of “*frequent human use*” as defined in Caltrans’ *Traffic Noise Analysis Protocol*. Environmental Consequences under the National Environmental Policy Act

Tables 2.26 and 2.27 above indicate that predicted traffic noise levels for the 2035 design year with Alternative A and Alternative B improvements respectively approach or exceed the noise abatement criteria of 67 dBA $L_{eq}(h)$ for Activity Category B land uses at the majority of the identified sensitive receptors along the project corridor. The results of the traffic noise monitoring surveys indicate that the existing traffic noise environment along the project corridor is elevated, with most Category B sensitive receptors exposed to traffic noise levels between 70 and 80 dBA.

Future traffic noise levels for 2035 were modeled for the No-Build Alternative (No Project), the Alternative A and Alternative B improvements respectively with the differences between the alternatives being negligible. As a result, the proposed project alternatives are not predicted to result in significant increases in traffic noise levels at the existing sensitive receptors located along the project corridor. However, existing and future traffic noise levels, both with and without the proposed project alternatives, are predicted to exceed the State and Federal noise abatement criteria at the majority of the identified sensitive receptor locations; therefore, consideration of noise abatement measures is required.

According to Caltrans’ *Traffic Noise Analysis Protocol*, abatement measures that are predicted to produce a noise reduction of 5dB at affected receivers are considered acoustically feasible. In addition, barriers must be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receivers. A total of 14 new noise abatement barriers were modeled for the project, with barriers typically 12 feet high necessary to intercept line-of-sight to heavy truck stacks, with greater heights often required to reduce traffic noise levels enough to comply with the noise abatement criteria. Noise barriers were generally found to be feasible. Below is a description of all of the noise sensitive receptors that are listed in Tables 2.26 and 2.27.

Table 2.26 Summary of Noise Impacts for Alternative A

Receptor #/ Noise Monitoring Location	Existing Noise Level (dBA)	Year 2035 Noise Level without Project (dBA)	Year 2035 Noise Level with the project (dBA)	Predicted Noise Level with Abatement (dBA)			Reasonable and Feasible
				12-foot Wall*	14-foot Wall*	16-foot Wall*	
R-2/ East Frontage Road at Sunny Road	63	67	67(+4)	66	65	64	No
R-3-LT/ East Frontage Road at Sunny Road	69	73	73(+4)	72	71	70	No
R-4/ East Frontage Road, north of the Little John Hook Ramps	73	76	76(+3)	68	67	67	No
R-8-LT/ East Frontage Road, south of French Camp Road	72	76	76(+4)	70	69	69	No
R-9-LT/ West Frontage Road, south of French Camp Road	71	75	75(+4)	68	67	67	No
R-12-LT/ West Frontage Road, south of French Camp Road	75	78	78(+3)	70	70	70	No
R-17-LT/ East Frontage Road, south of French Camp Road	75	79	79(+4)	70	70	70	No
R-18-LT/ West Frontage Road, south of French Camp Road	74	77	77(+3)	70	70	70	No
R-19/ East Frontage Road, north of Lathrop Road	76	80	80(+4)	70	69	69	No
R-21-LT/ East Frontage Road at Verigan Road	73	77	78(+5)	67	66	66	No
R-23/ East Frontage Road, north of Lathrop Road	75	79	79(+4)	70	69	69	No
R-24/ East Frontage Road at Northland Road	74	78	78(+4)	69	69	68	Yes
R-25-LT/ East Frontage Road, north of Lathrop Road	74	78	78(+4)	67	66	65	Yes
R-26/ West Frontage Road, north of Lathrop Road	74	77	78(+4)	69	69	68	No
R-27-LT/ East Frontage Road, north of Lathrop Road	66	70	70(+4)	60	59	59	Yes
R-28/ North Main Street, south of Lathrop Road	74	77	77(+3)	67	66	65	No
R-29/ North Main Street, south of Lathrop Road	73	76	74(+1)	66	65	64	No
R-34/ Aksland Drive, adjacent to State Route 99 and north of Louise Avenue	68	71	70(+2)	65	64	63	Yes

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Receptor #/ Noise Monitoring Location	Existing Noise Level (dBA)	Year 2035 Noise Level without Project (dBA)	Year 2035 Noise Level with the project (dBA)	Predicted Noise Level with Abatement (dBA)			Reasonable and Feasible
				12-foot Wall*	14-foot Wall*	16-foot Wall*	
R-35/ Aksland Drive and Andrew Lane, north of Louise Avenue	66	69	67(+1)	65	65	65	Yes
R-36-LT/ April Way and Ward Way, adjacent to State Route 99 and north of Louise Avenue	69	72	72(+3)	66	64	63	Yes
R-37-LT/ Ward Way, adjacent to State Route 99 and north of Louise Avenue	67	70	70(+3)	63	62	61	Yes
R-38/ Louise Avenue, adjacent to State Route 99	66	69	69(+3)	66	64	63	Yes
R-40-LT/ Alpine Avenue, adjacent to State Route 99 and south of Louise Avenue	69	72	72(+3)	66	65	63	Yes
R-41/ Alpine Avenue, adjacent to State Route 99 and the Cottage Avenue Overcrossing	69	72	72(+3)	66	64	63	Yes
R-44/ Button Avenue at Nehemiah Drive, north of Yosemite Avenue	75	79	79(+4)	68	67	66	Yes
R-45-LT/ Button Avenue, south of Nehemiah Drive and north of Yosemite Avenue	68	71	71(+3)	61	60	59	Yes
R-47/ Button Avenue, north of Yosemite Avenue	71	75	75(+4)	67	66	66	Yes
R-49-LT/ El Rancho Mobile Home Park, south of Yosemite Avenue	65	68	68(+3)	66	66	65	No
R-50-LT/ El Rancho Mobile Home Park, south of Yosemite Avenue	67	71	71(+4)	69	69	68	No

All noise levels are in dBA.

All receptors considered for abatement have land uses identified in Activity Category B of the Noise Abatement Criteria.

Note: the parentheses following the Year 2035 Noise Level with the project represents the difference between the 2035 Noise Level and the Existing Noise Level at each receptor.

Table 2.27 Summary of Noise Impacts for Alternative B

Receptor #/ Noise Monitoring Location	Existing Noise Level (dBA)	Year 2035 Noise Level without Project (dBA)	Year 2035 Noise Level with the project (dBA)	Predicted Noise Level with Abatement (dBA)			Reasonable and Feasible
				12-foot Wall	14-foot Wall	16-foot Wall	
R-2/ East Frontage Road at Sunny Road	63	67	67(+4)	66	65	64	No
R-3-LT/ East Frontage Road at Sunny Road	69	73	73(+4)	72	71	70	No
R-4/ East Frontage Road, north of the Little John Hook Ramps	73	76	76(+3)	68	67	67	No
R-8-LT/ East Frontage Road, south of French Camp Road	72	76	76(+4)	70	69	69	No
R-9-LT/ West Frontage Road, south of French Camp Road	71	75	75(+4)	68	67	67	No
R-12-LT/ West Frontage Road, south of French Camp Road	75	78	78(+3)	70	70	70	No
R-17-LT/ East Frontage Road, south of French Camp Road	75	79	79(+4)	70	70	70	No
R-18-LT/ West Frontage Road, south of French Camp Road	74	77	77(+3)	70	70	70	No
R-19/ East Frontage Road, north of Lathrop Road	76	80	80(+4)	70	69	69	No
R-21-LT/ East Frontage Road at Verigan Road	73	77	78(+5)	67	66	66	No
R-23/ East Frontage Road, north of Lathrop Road	75	79	79(+4)	70	69	69	No
R-24/ East Frontage Road at Northland Road	74	78	78(+4)	69	69	68	Yes
R-25-LT/ East Frontage Road, north of Lathrop Road	74	78	78(+4)	67	66	65	Yes
R-27-LT/ East Frontage Road, north of Lathrop Road	66	70	70(+4)	60	59	59	Yes
R-29/ North Main Street, south of Lathrop Road	73	76	75(+2)	68	68	67	No
R-30/ East Frontage Road, south of Lathrop Road	67	71	74(+7)	68	67	67	Yes
R-32/ East Frontage Road, south of Lathrop Road	69	73	73(+4)	63	63	62	Yes
R-33-LT/ East Frontage Road, south of Lathrop Road	71	75	75(+4)	63	63	62	Yes
R-34/ Aksland Drive, adjacent to State Route 99 and north of Louise Avenue	68	71	70(+2)	65	64	63	Yes

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Receptor #/ Noise Monitoring Location	Existing Noise Level (dBA)	Year 2035 Noise Level without Project (dBA)	Year 2035 Noise Level with the project (dBA)	Predicted Noise Level with Abatement (dBA)			Reasonable and Feasible
				12-foot Wall	14-foot Wall	16-foot Wall	
R-35/ Aksland Drive and Andrew Lane, north of Louise Avenue	66	69	67(+1)	65	65	65	Yes
R-36-LT/ April Way and Ward Way, adjacent to State Route 99 and north of Louise Avenue	69	72	72(+3)	66	64	63	Yes
R-37-LT/ Ward Way, adjacent to State Route 99 and north of Louise Avenue	67	70	70(+3)	63	62	61	Yes
R-38/ Louise Avenue, adjacent to State Route 99	66	69	69(+3)	66	64	63	Yes
R-40-LT/ Alpine Avenue, adjacent to State Route 99 and south of Louise Avenue	69	72	72(+3)	66	65	63	Yes
R-41/ Alpine Avenue, adjacent to State Route 99 and the Cottage Avenue Overcrossing	69	72	72(+3)	66	64	63	Yes
R-44/ Button Avenue at Nehemiah Drive, north of Yosemite Avenue	75	79	79(+4)	68	67	66	Yes
R-45-LT/ Button Avenue, south of Nehemiah Drive and north of Yosemite Avenue	68	71	71(+3)	61	60	59	Yes
R-47/ Button Avenue, north of Yosemite Avenue	71	75	75(+4)	67	66	66	Yes
R-49-LT/ El Rancho Mobile Home Park, south of Yosemite Avenue	65	68	68(+3)	66	66	65	No
R-50-LT/ El Rancho Mobile Home Park, south of Yosemite Avenue	67	71	71(+4)	69	69	68	No
R-51/ North Main Street, south of Lathrop Road	69	72	73(+4)	69	69	69	No

All noise levels are in dBA.

All receptors considered for abatement have land uses identified in Activity Category B of the Noise Abatement Criteria.

Note: the parentheses following the Year 2035 Noise Level with the project represents the difference between the 2035 Noise Level and the Existing Noise Level at each receptor.

Receptor R-2 (Figure 2-4B) represents two homes on the east frontage road at Sunny Road in unincorporated San Joaquin County. Measurements taken at R-2 indicate that the existing noise level at that location is 63 decibels. The future noise level at R-2 with the project is predicted to be 67 decibels. Because the predicted future noise level meets the noise abatement criterion for residential uses (67 decibels), the two homes represented by R-2 would be adversely affected by noise. Barrier B-2 (Figure 2-4B) is an existing 10-foot tall barrier constructed as part of the Arch Road interchange improvement project which shields receptors R-2 and R-3 LT. Detailed modeling analysis was conducted for a barrier located at the same location as the existing barrier B-2, but with increased height. However, because the existing barrier B-2 is already 10 feet high relative to the roadway, and the maximum height of a barrier is 16 feet, it is not feasible to achieve a 5-decibel reduction in traffic noise with a barrier within the height limit. Because the 5-decibel noise-reduction criterion would not be met, this barrier is considered infeasible and no additional analysis of barrier reasonableness is required.

Receptor R-3 LT (Figure 2-4B) represents 10 homes located on the East Frontage Road at Sunny Road in unincorporated San Joaquin County. Measurements taken at R-3 LT indicate that the existing noise level at that location is 69 decibels. The future noise level at R-3 LT with the project is predicted to be 73 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the 10 homes represented by R-3 LT would be adversely affected by noise. Barrier B-2 (Figure 2-4B) is an existing 10-foot-tall barrier constructed as part of the Arch Road interchange improvement project which shields receptors R-2 and R-3 LT. Detailed modeling analysis was conducted for a barrier located at the same location as the existing barrier B-2, but with increased height. However, because the existing barrier B-2 is already 10 feet high relative to the roadway, and the maximum height of a barrier is 16 feet, it is not feasible to achieve a 5-decibel reduction in traffic noise with a barrier within the height limit. Because the 5-decibel noise-reduction criterion would not be met, this barrier is considered infeasible and no additional analysis of barrier reasonableness is required.

Receptor R-4 (Figure 2-4C) represents one home located on the East Frontage Road, north of the Little John Hook Ramps in unincorporated San Joaquin County. Measurements taken at R-4 indicate that the existing noise level at that location is 73 decibels. The future noise level at R-4 with the project is predicted to be 76 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-4 would be adversely

affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$56,000. The current estimated cost of the wall is \$240,000. The noise abatement measure for receptor R-4 is not reasonable and this sound wall would not be included in the project.

Receptor R-8 LT (Figure 2-4F) represents two homes located on the East Frontage Road, south of French Camp Road in unincorporated San Joaquin County. Measurements taken at R-8 LT indicate that the existing noise level at that location is 72 decibels. The future noise level at R-8 LT with the project is predicted to be 76 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the two homes represented by R-8 LT would be adversely affected by noise. To achieve a 5-decibel reduction, an 8-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$108,000. The current estimated cost of the wall is \$144,000. The noise abatement measure for receptor R-8 LT is not reasonable and this sound wall would not be included in the project.

Receptor R-9 LT (Figure 2-4F) represents two homes located on the West Frontage Road, south of French Camp Road in unincorporated San Joaquin County. Measurements taken at R-9 LT indicate that the existing noise level at that location is 71 decibels. The future noise level at R-9 LT with the project is predicted to be 75 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the two homes represented by R-9 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$112,000. The current estimated cost of the wall is \$360,000. The noise abatement measure for receptor R-9 LT is not reasonable and this sound wall would not be included in the project.

Receptor R-12 LT (Figure 2-4G) represents three homes located on the West Frontage Road, south of French Camp Road in unincorporated San Joaquin County.

Measurements taken at R-12 LT indicate that the existing noise level at that location is 75 decibels. The future noise level at R-12 LT with the project is predicted to be 78 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the three homes represented by R-12 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$174,000. The current estimated cost of the wall is \$396,000. The noise abatement measure for receptor R-12 LT is not reasonable and this sound wall would not be included in the project.

Receptor R-17 LT (Figure 2-4G) represents four homes located on the East Frontage Road, south of French Camp Road in unincorporated San Joaquin County. Measurements taken at R-17 LT indicate that the existing noise level at that location is 75 decibels. The future noise level at R-17 LT with the project is predicted to be 79 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the four homes represented by R-17 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$240,000. The current estimated cost of the wall is \$468,000. The noise abatement measure for receptor R-17 LT is not reasonable and this sound wall would not be included in the project.

Receptor R-18 LT (Figure 2-4G) represents four homes located on the West Frontage Road, south of French Camp Road in unincorporated San Joaquin County. Measurements taken at R-18 LT indicate that the existing noise level at that location is 74 decibels. The future noise level at R-18 LT with the project is predicted to be 77 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the four homes represented by R-18 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$224,000. The current estimated cost of the wall is \$504,000. The noise

abatement measure for receptor R-18 LT is not reasonable and this sound wall would not be included in the project.

Receptor R-19 (Figure 2-4H) represents four homes located on the East Frontage Road, north of Lathrop Road in unincorporated San Joaquin County. Measurements taken at R-19 indicate that the existing noise level at that location is 76 decibels. The future noise level at R-19 with the project is predicted to be 80 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the four homes represented by R-19 would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed, which would also shield R-21 LT and R-23. If the total cost of the wall to shield R-19, R-21 LT and R-23 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$420,000. The current estimated cost of the wall is \$780,000. The noise abatement measure for receptor R-19 is not reasonable and this sound wall would not be included in the project.

Receptor R-21 LT (Figure 2-4H) represents two homes located on the East Frontage Road at Verigan Road in unincorporated San Joaquin County. Measurements taken at R-21 LT indicate that the existing noise level at that location is 73 decibels. The future noise level at R-21 LT with the project is predicted to be 78 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the two homes represented by R-21 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed, which would also shield R-19 and R-23. If the total cost of the wall to shield R-19, R-21 LT and R-23 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$420,000. The current estimated cost of the wall is \$780,000. The noise abatement measure for receptor R-21 LT is not reasonable and this sound wall would not be included in the project.

Receptor R-23 (Figure 2-4H) represents one home located on the East Frontage Road, north of Lathrop Road in unincorporated San Joaquin County. Measurements taken at R-23 indicate that the existing noise level at that location is 75 decibels. The future noise level at R-23 with the project is predicted to be 79 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-23 would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed, which

would also shield R-19 and R-21. If the total cost of the wall to shield R-19, R-21 LT and R-23 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$420,000. The current estimated cost of the wall is \$780,000. The noise abatement measure for receptor R-23 is not reasonable and this sound wall would not be included in the project.

Receptor R-24 (Figure 2-4H) represents two homes located on the East Frontage Road at Northland Road in unincorporated San Joaquin County. Measurements taken at R-24 indicate that the existing noise level at that location is 74 decibels. The future noise level at R-24 with the project is predicted to be 78 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the two homes represented by R-24 would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$116,000. The current estimated cost of the wall is \$180,000. The noise abatement measure for receptor R-24 is not reasonable and this sound wall would not be included in the project.

Receptor R-25 LT (Figure 2-4H) represents 12 homes located on the East Frontage Road, north of Lathrop Road in unincorporated San Joaquin County. Measurements taken at R-25 LT indicate that the existing noise level at that location is 74 decibels. The future noise level at R-25 LT with the project is predicted to be 78 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the 12 homes represented by R-25 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$696,000. The current estimated cost of the wall is \$390,000. The noise abatement measure for receptor R-25 LT is reasonable and this sound wall would be included in the project.

Receptor R-26 – Alternative A (Figure 2-4I) represents two homes located on the West Frontage Road, north of Lathrop Road in unincorporated San Joaquin County. Measurements taken at R-26 indicate that the existing noise level at that location is 74 decibels. The future noise level at R-26 with Alternative A is predicted to be 78

decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the two homes represented by R-26 would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$112,000. The current estimated cost of the wall is \$288,000. The noise abatement measure for receptor R-26 is not reasonable and this sound wall would not be included in the project.

Receptor R-27 LT (Figure 2-4I) represents two homes located on the East Frontage Road, north of Lathrop Road in unincorporated San Joaquin County. Measurements taken at R-27 LT indicate that the existing noise level at that location is 66 decibels. The future noise level at R-27 LT with the project is predicted to be 70 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the two homes represented by R-27 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$116,000. The current estimated cost of the wall is \$180,000. The noise abatement measure for receptor R-27 LT is not reasonable and this sound wall would not be included in the project.

Receptor R-28 – Alternative A (Figure 2-4I) represents one home located on North Main Street, south of Lathrop Road in the City of Manteca. Measurements taken at R-28 indicate that the existing noise level at that location is 74 decibels. The future noise level at R-28 with Alternative A is predicted to be 77 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-28 would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-29. If the total cost of the wall to shield R-28 and R-29 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$108,000. The current estimated cost of the wall is \$360,000. The noise abatement measure for receptor R-28 is not reasonable and this sound wall would not be included in the project.

Receptor R-29 – Alternative A (Figure 2-4I) represents one home located on North Main Street, south of Lathrop Road in the City of Manteca. Measurements taken at R-29 indicate that the existing noise level at that location is 73 decibels. The future noise level at R-29 with Alternative A is predicted to be 74 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-29 would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-28. If the total cost of the wall to shield R-28 and R-29 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$108,000. The current estimated cost of the wall is \$360,000. The noise abatement measure for receptor R-29 is not reasonable and this sound wall would not be included in the project.

Receptor R-29 – Alternative B (Figure 2-5) represents one home located on North Main Street, south of Lathrop Road in the City of Manteca. Measurements taken at R-29 indicate that the existing noise level at that location is 73 decibels. The future noise level at R-29 with Alternative B is predicted to be 75 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-29 would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-51 from traffic noise on State Route 99 but not from traffic noise on the West Frontage Road. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$54,000. The current estimated cost of the wall is \$360,000. The noise abatement measure for receptor R-29 is not reasonable and this sound wall would not be included in the project.

Receptor R-30 – Alternative B (Figure 2-5) represents one home located on the East Frontage Road, south of Lathrop Road in unincorporated San Joaquin County. Measurements taken at R-30 indicate that the existing noise level at that location is 67 decibels. The future noise level at R-30 with Alternative B is predicted to be 74 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-30 would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed. If the total cost of the wall at this location is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost

allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$60,000. The current estimated cost of the wall is \$108,000. The noise abatement measure for receptor R-30 is not reasonable and this sound wall would not be included in the project.

Receptor R-32 – Alternative B (Figure 2-5) represents 10 mobile homes located along the East Frontage Road, south of Lathrop Road in the City of Manteca. Measurements taken at R-32 indicate that the existing noise level at that location is 69 decibels. The future noise level at R-32 with Alternative B is predicted to be 73 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the 10 homes represented by R-32 would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-33 LT. If the total cost of the wall to shield R-32 and R-33 LT is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$1,320,000. The current estimated cost of the wall is \$576,000. The noise abatement measure for receptor R-32 is reasonable and this sound wall would be included in the project.

Receptor R-33 LT – Alternative B (Figure 2-4J) represents 12 mobile homes located along the East Frontage Road, south of Lathrop Road in the City of Manteca. Measurements taken at R-33 LT indicate that the existing noise level at that location is 71 decibels. The future noise level at R-33 LT with Alternative B is predicted to be 75 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the 12 homes represented by R-33 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-32. If the total cost of the wall to shield R-32 and R-33 LT is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$1,320,000. The current estimated cost of the wall is \$576,000. The noise abatement measure for receptor R-33 LT is reasonable and this sound wall would be included in the project.

Receptor R-34 (Figure 2-4J) represents one home located on Aksland Drive, adjacent to State Route 99 and north of Louise Avenue in the City of Manteca. Measurements taken at R-34 indicate that the existing noise level at that location is 68 decibels. The future noise level at R-34 with the project is predicted to be 70 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses

(67 decibels), the one home represented by R-34 would be adversely affected by noise. Barrier B-5 (Figure 2-4J) is an existing 6+/- foot tall barrier which exists on the west side of State Route 99 between Louise Avenue and just south of Main Street. The existing barrier B-5 is dilapidated or missing in areas, and in moderately good condition in others. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-35, R-36 LT and R-37 LT. If the total cost of the wall to shield R-34, R-35, R-36 LT and R-37 LT is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$2,110,000. The current estimated cost of the wall is \$1,260,000. The noise abatement measure for receptor R-34 is reasonable and this sound wall would be included in the project.

Receptor R-35 (Figure 2-4J) represents three homes located at Aksland Drive and Andrew Lane, north of Louise Avenue in the City of Manteca. Measurements taken at R-35 indicate that the existing noise level at that location is 66 decibels. The future noise level at R-35 with the project is predicted to be 67 decibels. Because the predicted future noise level meets the noise abatement criterion for residential uses (67 decibels), the three homes represented by R-35 would be adversely affected by noise. Barrier B-5 (Figure 2-4J) is an existing 6+/- foot tall barrier which exists on the west side of State Route 99 between Louise Avenue and just south of Main Street. The existing barrier B-5 is dilapidated or missing in areas, and in moderately good condition in others. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-34, R-36 LT and R-37 LT. If the total cost of the wall to shield R-34, R-35, R-36 LT and R-37 LT is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$2,110,000. The current estimated cost of the wall is \$1,260,000. The noise abatement measure for receptor R-35 is reasonable and this sound wall would be included in the project.

Receptor R-36 LT (Figure 2-4J) represents 34 homes located along April Way and Ward Way, adjacent to State Route 99 and north of Louise Avenue in the City of Manteca. Measurements taken at R-36 LT indicate that the existing noise level at that location is 69 decibels. The future noise level at R-36 LT with the project is predicted to be 72 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the three homes represented by R-36 LT would be adversely affected by noise. Barrier B-5 (Figure 2-4J) is an

existing 6+/- foot tall barrier which exists on the west side of State Route 99 between Louise Avenue and just south of Main Street. The existing barrier B-5 is dilapidated or missing in areas, and in moderately good condition in others. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-34, R-35 and R-37 LT. If the total cost of the wall to shield R-34, R-35, R-36 LT and R-37 LT is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$2,110,000. The current estimated cost of the wall is \$1,260,000. The noise abatement measure for receptor R-36 LT is reasonable and this sound wall would be included in the project.

Receptor R-37 LT (Figure 2-4J) represents one home located on Ward Way, adjacent to State Route 99 and north of Louise Avenue in the City of Manteca. Measurements taken at R-37 LT indicate that the existing noise level at that location is 67 decibels. The future noise level at R-37 LT with the project is predicted to be 70 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-37 LT would be adversely affected by noise. Barrier B-5 (Figure 2-4J) is an existing 6+/- foot tall barrier which exists on the west side of State Route 99 between Louise Avenue and just south of Main Street. The existing barrier B-5 is dilapidated or missing in areas, and in moderately good condition in others. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-34, R-35 and R-36 LT. If the total cost of the wall to shield R-34, R-35, R-36 LT and R-37 LT is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$2,110,000. The current estimated cost of the wall is \$1,260,000. The noise abatement measure for receptor R-37 LT is reasonable and this sound wall would be included in the project.

Receptor R-38 (Figures 2-6J and 2-6K) represents one home located on Louise Avenue, adjacent to State Route 99 in the City of Manteca. Measurements taken at R-38 indicate that the existing noise level at that location is 66 decibels. The future noise level at R-38 with the project is predicted to be 69 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-38 would be adversely affected by noise. Barrier B-6 (Figures 2-6J and 2-6K) is an existing 6+/- foot tall barrier on the west side of State Route 99, which was built by the property owner at R-38 to shield the home from noise. The existing barrier B-6 is dilapidated or missing in areas, and

in moderately good condition in others. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-40 LT and R-41. If the total cost of the wall to shield R-38, R-40 LT and R-41 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$2,110,000. The current estimated cost of the wall is \$936,000. The noise abatement measure for receptor R-38 is reasonable and this sound wall would be included in the project.

Receptor R-40 LT (Figure 2-4K) represents 36 homes located along Alpine Avenue, adjacent to State Route 99 and south of Louise Avenue in the City of Manteca. Measurements taken at R-40 LT indicate that the existing noise level at that location is 69 decibels. The future noise level at R-40 LT with the project is predicted to be 72 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the 36 homes represented by R-40 LT would be adversely affected by noise. Barrier B-8 (Figure 2-4K) is an existing 6+/- foot tall barrier which exists on the west side of State Route 99 between Louise Avenue and Cottage Avenue. The existing barrier B-8 is dilapidated or missing in areas, and in moderately good condition in others. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-38 and R-41. If the total cost of the wall to shield R-38, R-40 LT and R-41 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$2,110,000. The current estimated cost of the wall is \$936,000. The noise abatement measure for receptor R-40 LT is reasonable and this sound wall would be included in the project.

Receptor R-41 (Figure 2-4K) represents two homes located on Alpine Avenue, adjacent to State Route 99 and the Cottage Avenue Overcrossing in the City of Manteca. Measurements taken at R-41 indicate that the existing noise level at that location is 69 decibels. The future noise level at R-41 with the project is predicted to be 72 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the two homes represented by R-41 would be adversely affected by noise. Barrier B-8 (Figure 2-4K) is an existing 6+/- foot tall barrier which exists on the west side of State Route 99 between Louise Avenue and Cottage Avenue. The existing barrier B-8 is dilapidated or missing in areas, and in moderately good condition in others. To achieve a 5-decibel reduction, a 12-foot noise wall would be needed, which would also shield R-38 and R-40 LT. If the total

cost of the wall to shield R-38, R-40 LT and R-41 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$2,110,000. The current estimated cost of the wall is \$936,000. The noise abatement measure for receptor R-41 is reasonable and this sound wall would be included in the project.

Receptor R-44 (Figure 2-4L) represents one home located on Button Avenue at Nehemiah Drive, north of Yosemite Avenue in the City of Manteca. Measurements taken at R-44 indicate that the existing noise level at that location is 75 decibels. The future noise level at R-44 with the project is predicted to be 79 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-44 would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed, which would also shield R-45 LT and R-47. If the total cost of the wall to shield R-44, R-45 LT and R-47 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$1,560,000. The current estimated cost of the wall is \$600,000. The noise abatement measure for receptor R-44 is reasonable and this sound wall would be included in the project.

Receptor R-45 LT (Figure 2-4L) represents 24 apartments located on Button Avenue, south of Nehemiah Drive and north of Yosemite Avenue in the City of Manteca. Measurements taken at R-45 LT indicate that the existing noise level at that location is 68 decibels. The future noise level at R-45 LT with the project is predicted to be 71 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the 24 apartments represented by R-45 LT would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed, which would also shield R-44 and R-47. If the total cost of the wall to shield R-44, R-45 LT and R-47 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$1,560,000. The current estimated cost of the wall is \$600,000. The noise abatement measure for receptor R-45 LT is reasonable and this sound wall would be included in the project.

Receptor R-47 (Figure 2-4L) represents one home located on Button Avenue, north of Yosemite Avenue in the City of Manteca. Measurements taken at R-47 indicate that

the existing noise level at that location is 71 decibels. The future noise level at R-47 with the project is predicted to be 75 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the one home represented by R-47 would be adversely affected by noise. To achieve a 5-decibel reduction, a 10-foot noise wall would be needed, which would also shield R-44 and R-45 LT. If the total cost of the wall to shield R-44, R-45 LT and R-47 is less than the total cost allowance, then the wall would likely be incorporated into the project. The total cost allowance, calculated in accordance with Caltrans' *Traffic Noise Analysis Protocol*, is \$1,560,000. The current estimated cost of the wall is \$600,000. The noise abatement measure for receptor R-47 is reasonable and this sound wall would be included in the project.

Receptor R-49 LT (Figure 2-4M) represents 11 mobile homes in the El Rancho Mobile Home Park located south of Yosemite Avenue in the City of Manteca. Measurements taken at R-49 LT indicate that the existing noise level at that location is 65 decibels. The future noise level at R-49 LT with the project is predicted to be 68 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the 11 homes represented by R-49 LT would be adversely affected by noise. Barrier B-12 (Figure 2-4M) is an existing 10-foot tall barrier recently constructed as part of the State Route 120 Interchange Improvement Project, which shields receptors R-49 and R-50. Detailed modeling analysis was conducted for a barrier located at the same location as the existing barrier B-12, but with increased height. However, because the existing barrier B-12 is already 10 feet in height relative to the roadway, it is not feasible to achieve a 5-decibel reduction in traffic noise through increased height of this barrier to a maximum height of 16-feet. Because the 5-decibel noise-reduction criterion would not be met, this barrier is considered infeasible and no additional analysis of barrier reasonableness is required.

Receptor R-50 LT (Figure 2-4M) represents 10 mobile homes in the El Rancho Mobile Home Park located south of Yosemite Avenue in the City of Manteca. Measurements taken at R-50 LT indicate that the existing noise level at that location is 67 decibels. The future noise level at R-50 LT with the project is predicted to be 71 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the 10 homes represented by R-50 LT would be adversely affected by noise. Barrier B-12 (Figure 2-4M) is an existing 10-foot tall barrier recently constructed as part of the State Route 120 Interchange Improvement Project, which shields receptors R-49 and R-50. Detailed modeling

analysis was conducted for a barrier located at the same location as the existing barrier B-12, but with increased height. However, because the existing barrier B-12 is already 10 feet in height relative to the roadway, it is not feasible to achieve a 5-decibel reduction in traffic noise through increased height of this barrier to a maximum height of 16-feet. Because the 5-decibel noise-reduction criterion would not be met, this barrier is considered infeasible and no additional analysis of barrier reasonableness is required.

Receptor R-51 – Alternative B (Figure 2-5) represents five homes located on North Main Street, south of Lathrop Road in the City of Manteca. Measurements taken at R-51 indicate that the existing noise level at that location is 69 decibels. The future noise level at R-51 with Alternative B is predicted to be 73 decibels. Because the predicted future noise level exceeds the noise abatement criterion for residential uses (67 decibels), the five homes represented by R-51 would be adversely affected by noise. Detailed modeling analysis indicated that it was possible to achieve a 5-decibel reduction in traffic noise from State Route 99 at R-51 with barrier heights ranging from 10-16 feet but that it was not feasible to achieve a 5-decibel reduction in traffic noise at R-51 from the increased frontage road traffic that would result from the removal of the existing Main Street. Because the 5-decibel noise-reduction criterion would not be met, this barrier is considered infeasible and no additional analysis of barrier reasonableness is required.

Once Caltrans selects the Preferred Alternative, further reasonableness and feasibility analysis is anticipated and meetings would be conducted with affected property owners. As such, proposed barriers would be implemented according to the Avoidance, Minimization and/or Noise Abatement Measures presented below to establish compliance with the noise abatement criteria and with the National Environmental Policy Act.

Environmental Consequences under the California Environmental Quality Act

The California Environmental Quality Act noise analysis is completely independent of the previously discussed National Environmental Policy Act, 23 Code of Federal Regulations 772 analysis, which is centered on noise abatement criteria. Under the California Environmental Quality Act, the assessment entails establishing the setting of the noise impact area and then identifying how large or perceptible any noise increase would be in the given area. Key considerations include the uniqueness of the setting, the sensitive nature of the noise receptors, the magnitude of the noise increase, the number of residences affected, and the absolute noise level.

As previously discussed under the National Environmental Policy Act analysis, Tables 2.26 and 2.27 show that differences between the existing noise levels and the 2035 design year with the proposed alternatives' noise levels at the identified sensitive receptor locations for the proposed project would be barely perceptible to the human ear. Therefore, under the California Environmental Quality Act, no significant noise impact would occur as a result of the proposed project alternatives and no mitigation is required. However, under the National Environmental Policy Act 23 Code of Federal Regulations 772, because the noise levels at these sensitive receptors already approach or exceed the noise abatement criteria of 67dBA, noise abatement was considered.

Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans Standard Specifications Section 7-1.01I, "Sound Control Requirements," which states that noise levels generated during construction would comply with applicable local, state, and federal regulations, and that all equipment would be fitted with adequate mufflers according to the manufacturers' specifications.

Table 2.28, Construction Equipment Noise, summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 2.28 Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration 1995.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 7-1.01I and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Implementing Avoidance, Minimization, and/or Noise Abatement under the National Environmental Policy Act

as described below would serve to minimize the temporary noise impacts from construction activities.

Avoidance, Minimization, and/or Noise Abatement under the National Environmental Policy Act

Based on studies completed to date, Caltrans and the Federal Highway Administration propose to incorporate noise abatement measures in the form of masonry block barriers (sound walls) at five separate locations. See Figures 2-4A through 2-4N and Figure 2-5 for the locations of all of the sound walls being considered for the proposed project alternatives. The barriers would be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receivers, as required by the Caltrans *Highway Design Manual*, Chapter 1100. The barriers would range from approximately 600 feet to 3,500 feet in length, with heights varying from 8 to 16 feet. Calculations based on preliminary design data indicate that proposed barriers PB-7, PB-10-4, PB-11, PB-12, and PB-13 would reduce noise levels by at least 5 decibels for 143 residences at an estimated cost of approximately \$54,000 to \$60,000 per residence. If during final design, conditions are found to have substantially changed, then noise abatement may not be necessary. The final decision on the noise abatement measures would be made on completion of the project design and the public involvement processes. Application of the recommended noise abatement measures is anticipated to attenuate potential project noise impacts

In addition, all construction 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 abatement 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.

Avoidance, Minimization, and/or Noise Abatement under the California Environmental Quality Act

No abatement or attenuation measures are required or recommended. The construction noise abatement methods described above are recommended to be included as a project best management practice during construction activities.

2.3 Biological Environment

2.3.1 Natural Communities

Regulatory Setting

This section discusses terrestrial habitat types, including natural communities of concern if they occur. The focus of this section is on biological communities, not individual plant or animal species, and also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Threatened and Endangered Species, Section 2.3.5. Wetlands and other waters are discussed in Section 2.3.2.

Affected Environment

A Natural Environment Study for the project was prepared for the project in January 2009. The project lies on the San Joaquin Valley floor on State Route 99 in San Joaquin County. The project study area extends from the Austin Road Interchange on State Route 99 in the City of Manteca north to the Arch Road Interchange in the City of Stockton. A 10-mile radius was established to evaluate the environmental setting and special-status species potentially occurring in the vicinity of the project.

Within the project study area, there are two areas identified for evaluation of impacts. The first is the area to be directly affected by construction-related activities, or the project impact area. The second is the area outside of the immediate construction area that would be indirectly affected.

The project study area is located in a mixed urban/ rural setting, stretching from the southern portion of the City of Stockton southward to the City of Manteca. Land use in the vicinity of the project study area consists primarily of developed land under a variety of residential and commercial uses as well as farmland under a variety of agricultural uses. Land uses in and adjacent to the project study area are characterized by a high level of human disturbance.

Terrestrial vegetation communities in the project impact area include scraped/paved areas, ruderal (weedy), urban/industrial/built, golf course/cultivated park, and agricultural. Habitat nomenclature follows the San Joaquin Multi-Species Habitat

Conservation and Open Space Plan (San Joaquin County, 2000). None of these habitat types are considered natural communities of concern.

Of these habitat types, only ruderal habitat and agricultural habitat provide habitat value for wildlife and are discussed below. Scraped and paved areas include paved portions of State Route 99 and the off-ramps and overpasses. Ruderal areas comprise the majority of the unpaved areas in the project impact area and include the shoulders of State Route 99, vegetated berms occurring in areas where the highway is elevated above ground level, and vegetated areas enclosed within ramps. Ruderal habitat also includes undeveloped fields adjacent to State Route 99 and the frontage roads that occur in the portions of the project impact area located outside of the State Route 99 right-of-way. Urban/industrial/built areas include commercial, retail, and residential development. Golf course/cultivated park habitat type includes the French Camp Golf Course located on the west side of State Route 99 along French Camp Slough. See Figures 2-6A through 2-6D for a habitat map of the project impact area and surrounding areas.

Agricultural

Agricultural fields occur in and adjacent to the project impact area along much of its length and consist primarily of row crops. Row crops have high habitat value for wildlife species such as Swainson's hawk and other foraging raptors.

Ruderal

Ruderal habitats occur in the project impact area along the shoulder of State Route 99, in non-landscaped areas in the median areas of on- and off-ramps, interchanges, and in berms where the highway is elevated. Ruderal areas in the project impact area are vegetated primarily with weedy grasses and forbs typical of disturbed areas. Dominant grass species observed in ruderal areas included ripgut brome (*Bromus diandrus*), wild oat (*Avena* sp.), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Lolium multiflorum*), vulpia (*Vulpia* sp.), Bermuda grass (*Cynodon dactylon*), and barley (*Hordeum murinum*). Dominant forb species included star thistle (*Centaurea solstitialis*), turkey mullein (*Eremocarpus setigerus*), prickly lettuce (*Lactuca serriola*), telegraph weed (*Heterotheca grandiflora*), common lambsquarters (*Chenopodium album*), Russian thistle (*Salsola tragus*), and alkali mallow (*Malvella leprosa*).

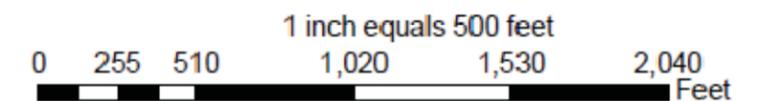
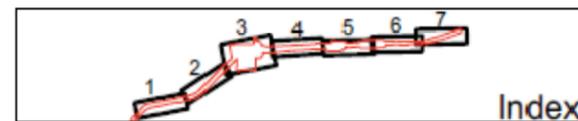
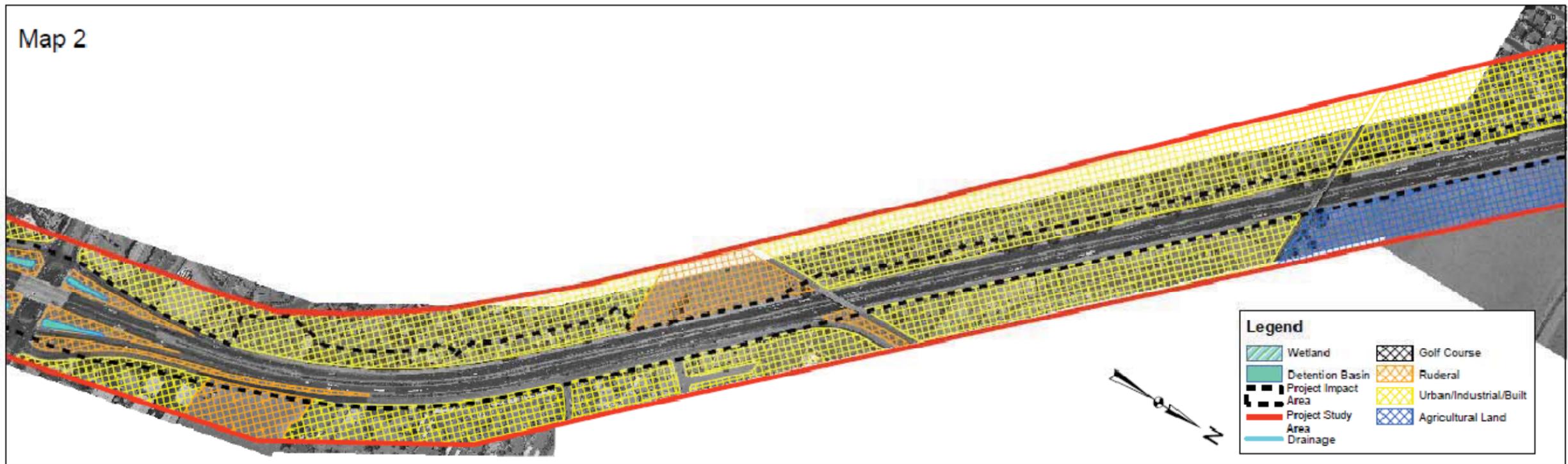
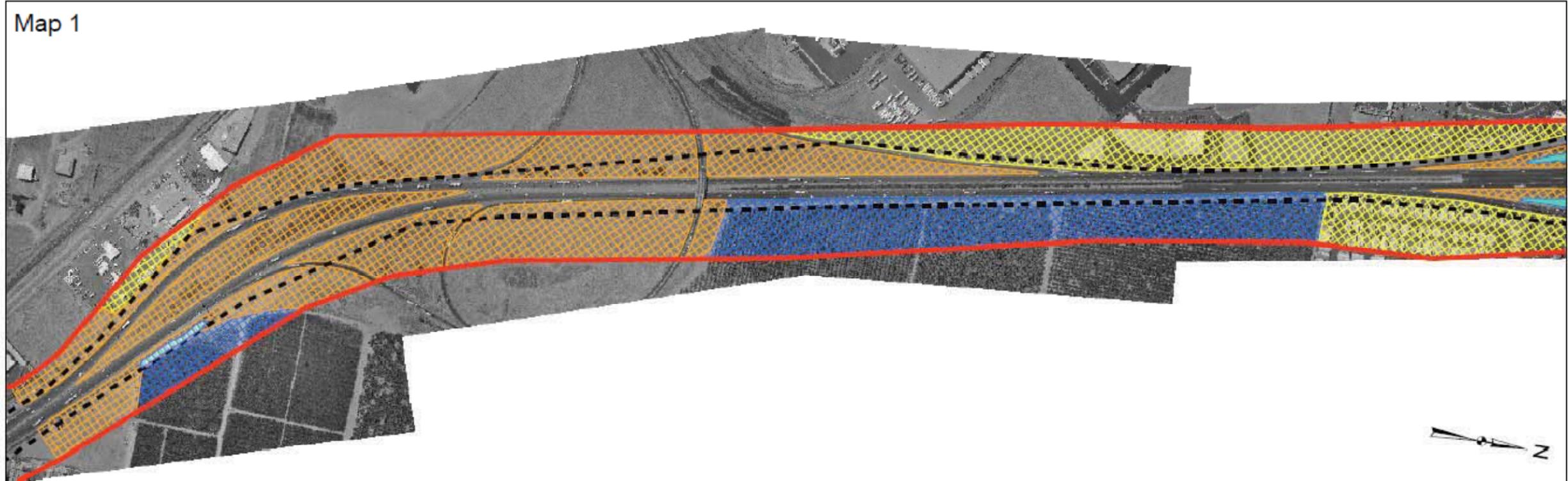


Figure 2-6A Habitat Map

Map 3

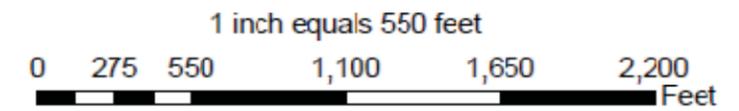
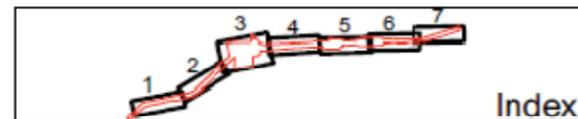
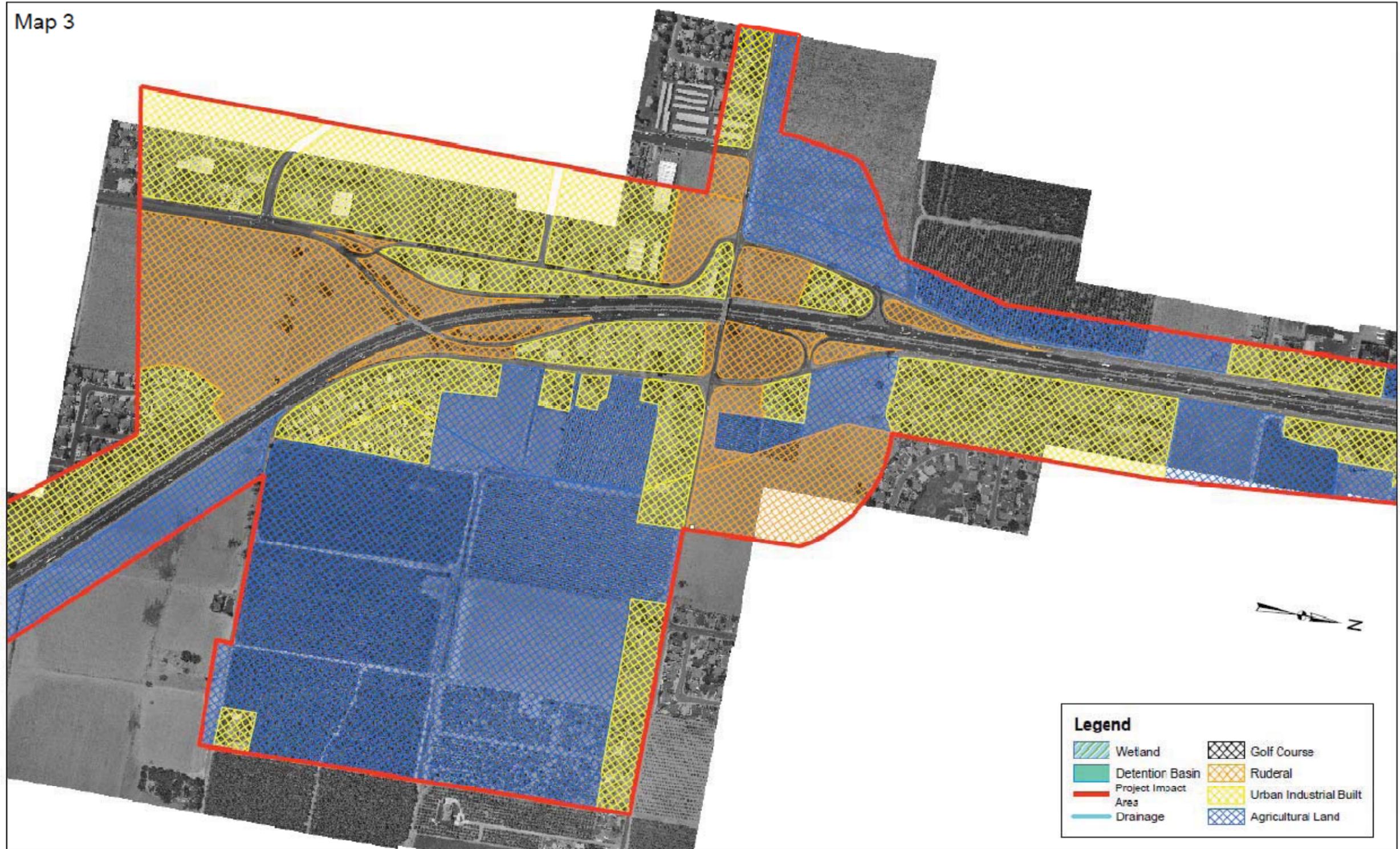
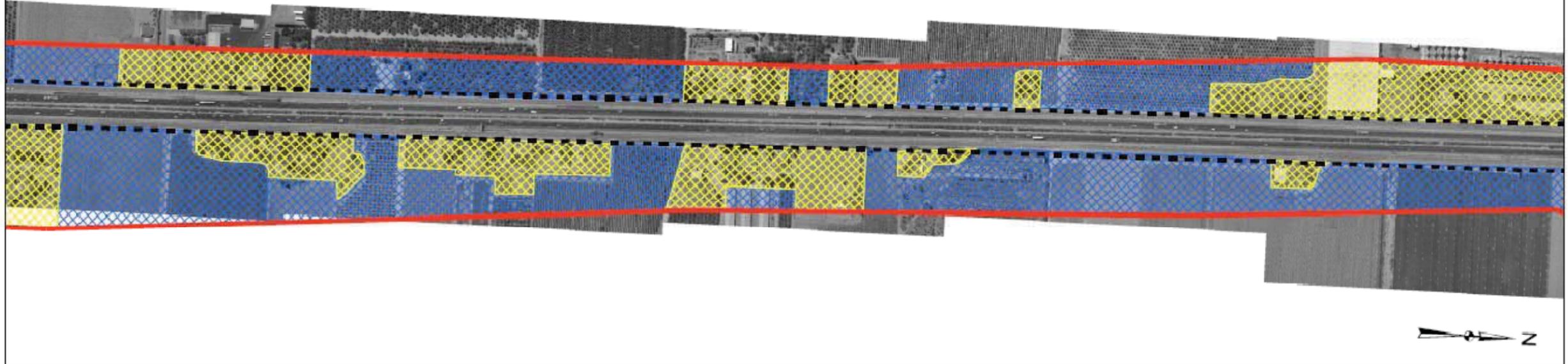


Figure 2-6B Habitat Map

Map 4



Map 5

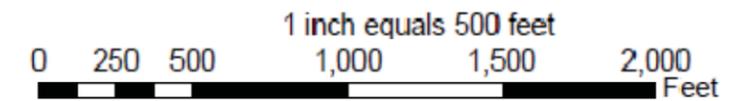
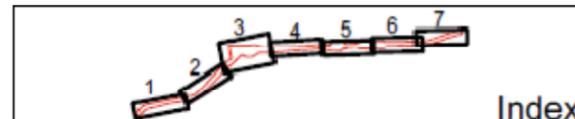
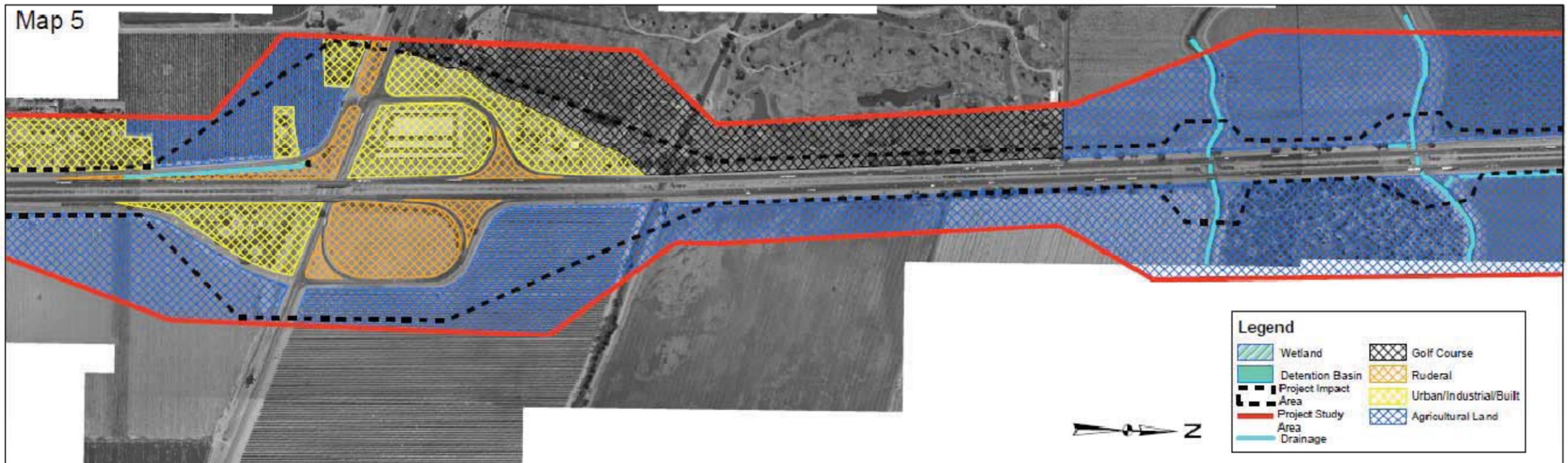
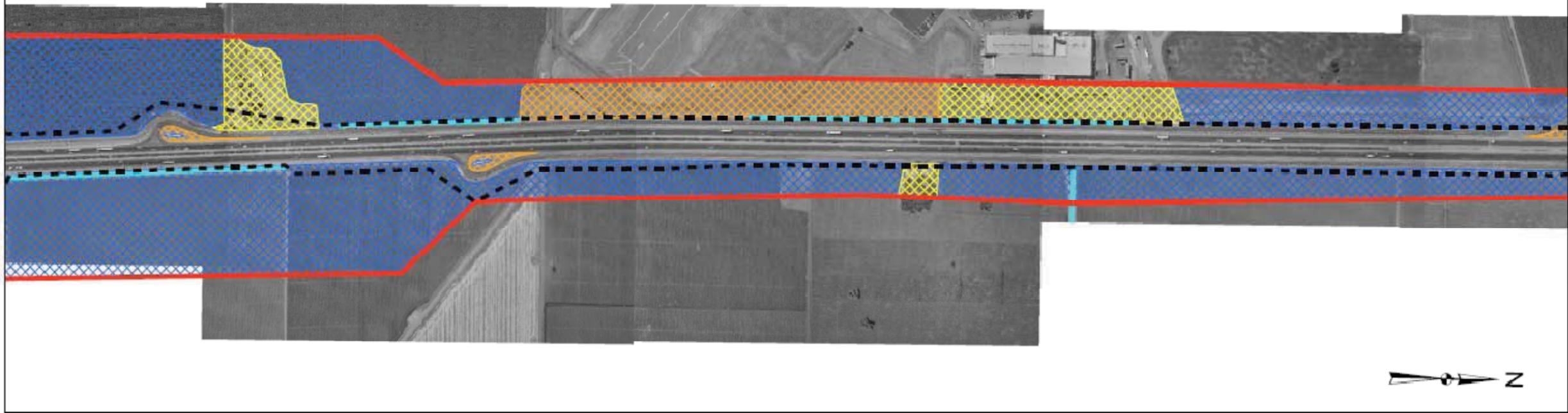


Figure 2-6C Habitat Map

Map 6



Map 7

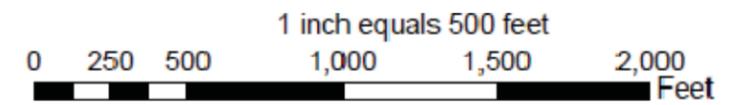
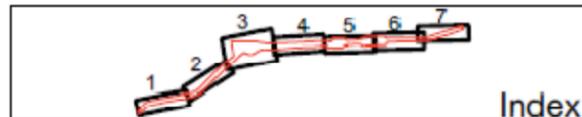
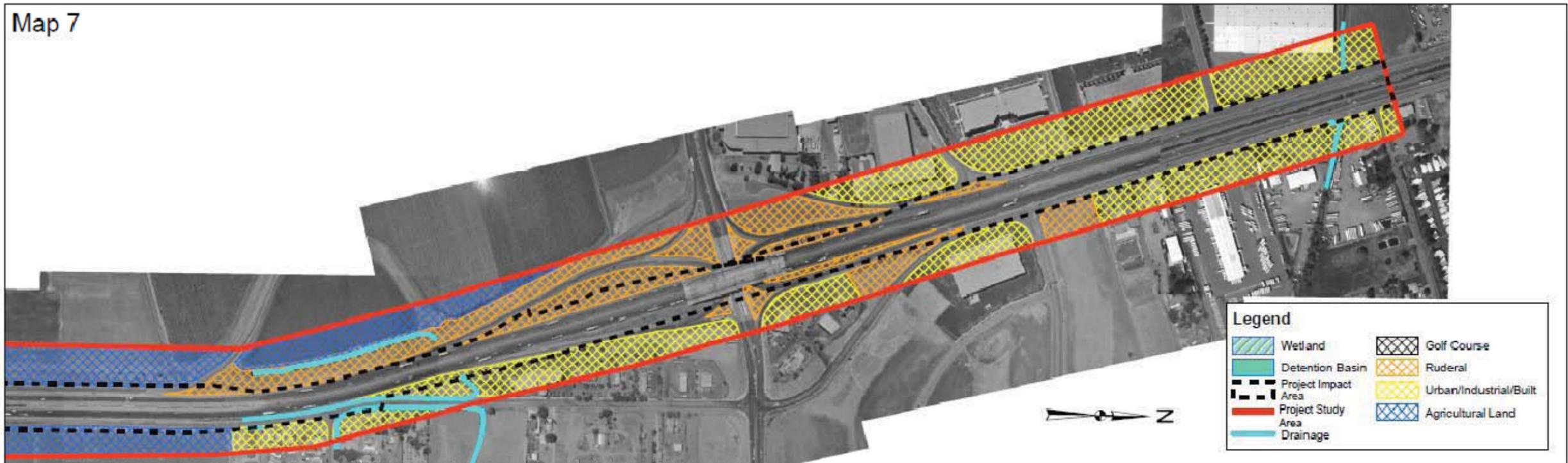


Figure 2-6D Habitat Map

Because areas with ruderal vegetation are typically disturbed regularly by human activity, they typically provide lower-quality habitat for wildlife. However, these disturbed habitats can provide important nesting and foraging for some wildlife species. The only animal species commonly encountered in the ruderal areas were the California ground squirrel (*Spermophilus beecheyi*) and western fence lizard (*Sceloporus occidentalis*).

Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or areas of human disturbance or urban development. Topography and other natural factors, in combination with urbanization, can fragment or separate large open-space areas. The fragmentation of natural habitat creates isolated “islands” that may not provide sufficient area to accommodate sustainable populations and can adversely impact genetic and species diversity. Movement corridors mitigate the effects of this fragmentation by allowing animals to move between remaining habitats, which in turn allows depleted populations to be replenished and promotes genetic exchange between separate populations.

Littlejohns Creek, Lone Tree Creek, and French Camp Slough provide movement corridors under State Route 99. These movement corridors allow common land- and water-based wildlife species to safely move back and forth between suitable habitats to the east and west. Large highways present an impassable or nearly impassable barrier to many wildlife species and are hazardous for wildlife to cross. Relatively unimpeded drainages such as those in the project impact area provide important movement corridors, which allow dispersal and subsequent gene flow between wildlife populations separated by the highway.

Littlejohns Creek, Lone Tree Creek, and French Camp Slough also provide potential habitat for federally-listed threatened Central Valley steelhead, an anadromous (migrating between salt and fresh water for spawning) fish species that migrates up freshwater streams to breed and then returns to the ocean. Passage under State Route 99 is necessary for these fish to access potential spawning grounds upstream.

Protected Trees

San Joaquin County and the City of Stockton have tree ordinances that protect native oak trees, heritage trees, and historical trees. Trees potentially protected by County and City Ordinance occur in the project impact area.

Environmental Consequences

Acreages of terrestrial habitat types in the project impact area that would potentially be impacted by the proposed project are included in Table 2.29 below. Habitat types that would not be impacted are not included in the table.

Table 2.29 Terrestrial Habitat Impacts

	Habitat Loss (acres)		
	Urban/ Industrial/Built	Ruderal Habitat	Agricultural Land
Curve Correction Near Austin Road	--	1.76	--
Turner Station Overhead/ French Camp Road	4.18	0.30	4.60
Main Street Interchange	6.76	10.45	8.09

The proposed project would not remove, degrade or otherwise interfere substantially with the structure or function of wildlife movement corridors or fish passage in the project impact area at Littlejohns Creek, Lone Tree Creek, and French Camp Slough. The existing bridges and piling configurations are not expected to significantly impede fish passage under State Route 99 due to their small size with respect to the width of the channels. Installation of additional bridge pilings in a similar alignment to the existing pilings is not expected to significantly reduce the potential for fish passage under State Route 99 compared to existing conditions.

Native oak trees would potentially be removed during construction of the proposed project. The trees identified within the project impact area were originally planted for landscaping purposes by Caltrans and are not considered to be oak woodlands by definition.

Avoidance, Minimization, and/or Mitigation Measures

Prior to construction, an International Society of Arboriculture Certified Arborist or a Registered Professional Forester would survey the project corridor and all areas within 50 feet for oak trees. Information would be recorded identifying the location, species, size (diameter at 24 inches above grade), approximate dripline, and overall vigor of the tree. The Contractor would use this information to apply for an approved Improvement Plan application from the San Joaquin County Review Authority for development within the county’s jurisdiction that could potentially affect native oak trees, heritage trees, or historical trees. The Contractor would also apply for a separate

tree removal permit from the City of Stockton Parks and Recreation Department for development of property containing heritage oak trees on or within 50 feet of the property.

A landscape plan would be completed for the project and would include replacement of the oaks removed (discussed in Section 2.1.7, Visual/ Aesthetics). Additionally, if the trees were to be removed during nesting season for migratory birds (discussed in Sections 2.3.4 and 2.3.5), a qualified biologist would conduct preconstruction surveys before tree removal to ensure no nesting birds are present.

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the Federal level, the Clean Water Act (33 United States Code 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of water-loving vegetation, wetland hydrology, and soils subject to saturation/inundation. All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

In accordance with the recently issued U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook (2007 Guidance) issued jointly by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency, “navigable waters” or “waters of the United States” subject to jurisdiction under the Clean Water Act include (1) traditional navigable waters, (2), wetlands adjacent to traditional navigable waters, (3) non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year around or have continuous flow at least seasonally (e.g., typically three months), and (4) wetlands that abut such tributaries. A “significant nexus” determination will be made for non-navigable tributaries that are not relatively permanent and their adjacent wetlands. Such features that are determined to have a “significant nexus” to traditional navigable waters will also be subject to Clean Water Act jurisdiction. A significant nexus requires that there be “more than an insubstantial or speculative

effect on the chemical, physical, and/or biological integrity of a traditional navigable waters” (U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 2007). The 2007 Guidance also states the following features will generally not be subject to Clean Water Act jurisdiction: swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation’s waters would be significantly degraded by the proposed discharge. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the U.S. Environmental Protection Agency.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of Federal agencies with regard to wetlands. Essentially, this executive order states that a Federal agency, such as the Federal Highway Administration, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction; and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game and the Regional Water Quality Control Boards. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement would be required. The California Department of Fish and Game’s jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the Department of Fish and Game.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Regional Water Quality Control Boards also issue water quality certifications in compliance with Section 401 of the Clean Water Act. Please refer to Section 2.2.2, Water Quality and Stormwater Runoff, for additional details.

Affected Environment

Biological reconnaissance surveys of the project study area were conducted on August 9, 2007; August 30, 2007; September 19, 2007; October 2, 2007; and July 8, 2008.

In the Jurisdictional Determination report prepared for the project in January 2009, several potentially jurisdictional drainage features as well as several drainage ditches and wetland features believed to be non-jurisdictional were identified in the project impact area. Potentially jurisdictional drainage features consist of creeks, sloughs, and agricultural ditches. Aquatic features believed to be non-jurisdictional consist of isolated wetlands, detention basins, roadside ditches, and agricultural ditches. All potentially jurisdictional features as well as features believed to be non-jurisdictional are shown on the habitat map (see Figures 2-6A through 2-6D). The results of the Jurisdictional Determination that are presented in this section are preliminary until verified by the U.S. Army Corps of Engineers.

Potentially Jurisdictional Waters of the U.S.

Four of the jurisdictional drainage features in the project impact area flow under bridges on State Route 99: Littlejohns Creek, Lone Tree Creek, French Camp Slough, and an unnamed tributary to French Camp Slough. All other potentially jurisdictional drainage features that cross under State Route 99 are carried completely under the highway in culverts. The drainage features discussed below are believed to be potentially jurisdictional waters of the U.S. because they are non-navigable tributaries of traditional navigable waters (the San Joaquin River) that are relatively permanent (U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 2007). Relatively permanent includes tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically three months).

Below are brief descriptions of the potentially jurisdictional drainage features within the project impact area. Acreages of potentially jurisdictional drainage features in the project impact area are included in Table 2.30 below.

Table 2.30 Acreages of Potentially Jurisdictional Waters of the U.S. in the Project Impact Area

Feature	Length (feet)	Average Width (feet)	*Area (acres)/ Square Feet
Unnamed tributary to French Camp Slough	637	19.5	0.285/ 12,422
Littlejohns Creek	1,387	29.3	0.934/ 40,639
Lone Tree Creek	869	34.7	0.692/ 30,154
French Camp Slough	1,212	36.4	1.013/ 44,117
Agricultural Ditch 1	6,038	8.0	1.114/ 48,304
Agricultural Ditch 2	2,228	5	0.261/ 11,140
Agricultural Ditch 3	319	10	0.072/ 3,190
Total*			4.371/ 189,966

* Totals may not add due to rounding to the nearest thousandth of an acre.

Unnamed Tributary to French Camp Slough

An unnamed tributary to French Camp Slough diverges from Littlejohns Creek approximately 10 miles east of the project study area. This tributary empties into French Camp Slough approximately 3 miles west of the project study area, which empties into the San Joaquin River approximately five to six miles downstream of the project study area. This tributary is mapped as an intermittent drainage on the United States Geological Survey Stockton East quadrangle map. It is a channelized agricultural drainage with a mud bottom and steep banks composed of soil and scattered patches of riprap. The tributary is carried under State Route 99 in an approximately 15 foot diameter box culvert and does not emerge above ground within the project impact area. Up and downstream of the project impact area, the tributary is approximately 20 feet wide at the ordinary high water mark. Vegetation in the segment of the drainage outside of the project impact area consists primarily of sparse water-loving vegetation in and along the perimeter of the channel and herbaceous grasses and forbs along the bank. The primary vegetation observed in the tributary consisted of nut sedge, Dallis grass (*Paspallum dilatatum*), willow (*Salix* sp.), and other water-loving grasses.

Littlejohns Creek

Littlejohns Creek flows out of Farmington Dam below the Farmington Flood Control Basin, which is about 14 miles east of the project study area. Littlejohns Creek converges with Lone Tree Creek and French Camp Slough roughly a mile west (downstream) of the project study area before emptying into the San Joaquin River five or six miles downstream of the project study area. Littlejohns Creek is mapped as a perennial drainage on the United States Geological Survey Stockton East

quadrangle map and contained water during all survey dates. Littlejohns Creek is a channelized agricultural drainage with a mud bottom and steep banks composed of soil and scattered patches of riprap. The width of Littlejohns Creek ranges between 20 and 30 feet at the ordinary high water mark. Vegetation in the segment of Littlejohns Creek in the project area is mostly emergent vegetation in and along the perimeter of the channel and herbaceous grasses and forbs along the bank. The primary emergent vegetation observed in Littlejohns Creek is water primrose (*Ludwigia peploides*) and knotweed (*Polygonum* sp.).

Lone Tree Creek

Lone Tree Creek is fed by several agricultural ditches that are fed by both the Farmington Flood Control Basin about 14 miles east of the project study area and Woodward Reservoir, which is roughly 16 miles east of the project study area. Lone Tree Creek converges with Littlejohns Creek and French Camp Slough around a mile west (downstream) of the project study area before emptying into the San Joaquin River five or six miles downstream of the project study area. Lone Tree Creek is mapped as a perennial drainage on the United States Geological Survey Stockton East quadrangle map and contained water during all survey dates. Lone Tree Creek is a channelized agricultural drainage with a mud bottom and steep banks and is approximately 30 feet wide at the ordinary high water mark. Vegetation in the segment of Lone Tree Creek in the project area is mostly emergent vegetation in and along the perimeter of the channel and herbaceous grasses and forbs along the bank. The primary vegetation seen in and along the banks of Lone Tree Creek is willow (*Salix* sp.), knotweed, tule (*Scirpus* sp.), hoary nettle (*Urtica dioica* ssp. *holosericia*), willow herb (*Epilobium ciliatum*), and fennel (*Foeniculum vulgare*).

French Camp Slough

French Camp Slough is fed by Littlejohns Creek and several agricultural ditches that originate about 8 miles east of the project study area. French Camp Slough converges with Lone Tree Creek and Littlejohns Creek roughly a mile west (downstream) of the project study area before emptying into the San Joaquin River 5 or 6 miles downstream of the project study area. French Camp Slough is mapped as an intermittent drainage on the United States Geological Survey Stockton East quadrangle map, but contained water during all survey dates. French Camp Slough is a channelized agricultural drainage with a mud bottom and steep banks. French Camp Slough is approximately 30 feet wide at the ordinary high water mark. Vegetation in the segment of French Camp Slough in the project study area is mostly emergent

vegetation in and along the perimeter of the channel and herbaceous grasses and forbs along the bank. The primary vegetation observed in and along the banks of French Camp Slough consisted of tule, knotweed, water primrose, tall flatsedge (*Cyperus eragrostis*), mugwort (*Artemisia douglasiana*), cocklebur (*Xanthium strumarium*), and willow.

Agricultural Ditches

Agricultural ditch 1 crosses under State Route 99 in the project study area approximately 1,200 feet south of the State Route 99/Arch Road interchange. Agricultural ditch 1, which is mapped as intermittent on the United States Geological Survey Stockton East quadrangle map, originates approximately 5 miles east of the project study area in an area of farmland and appears to be used to carry agricultural water. After exiting the project study area, agricultural ditch 1 flows through the Stockton Metropolitan Airport property and empties into French Camp Slough, which empties into the San Joaquin River 5 or 6 miles downstream of the project study area. Agricultural ditch 1 is carried under State Route 99 in an 8-foot-diameter box culvert and does not reach the surface within the project impact area. Agricultural ditch 1 was mostly dry on the September 19, 2007 survey, but contained small pools of water on the east side of State Route 99 outside of the project impact area. Vegetation observed in and along the banks of this ditch outside of the project impact area included cattail (*Typha* sp.), nut sedge, knotweed, and curly dock.

Agricultural ditch 2 crosses under State Route 99 approximately 1,000 feet south of the East Lathrop Road Overcrossing. Agricultural ditch 2, which is mapped as a perennial feature on the United States Geological Survey Manteca quadrangle map, originates approximately 1.5 miles to the southeast. Agricultural ditch 2 flows through the project impact area from the east, entering a drop inlet on the east side of the State Route 99 frontage road. The ditch then goes underground in a culvert and does not re-emerge on the west side of State Route 99 within the project impact area. The segment of agricultural ditch 2 in the project impact area is about 5 feet wide at the ordinary high water mark. Based on a review of United States Geological Survey maps and aerial photos, this ditch appears to flow through the storm drain system and empty into the South San Joaquin Irrigation District Canal a little more than two miles west of the project study area, which empties into the San Joaquin River. Agricultural ditch 2 contained several inches of water at the time of the survey on September 19, 2007. No vegetation was observed in the ditch, but Johnsongrass (*Sorghum halepense*) and other grass species were growing along the bank.

Agricultural ditch 3 crosses under State Route 99 approximately 1,200 feet north of East Louise Ave. Agricultural ditch 3, which is mapped as a perennial feature on the United States Geological Survey Manteca quadrangle map, originates about three miles to the southeast. Agricultural ditch 3 enters a drop inlet on the east side of State Route 99 at the eastern limit of the project impact area, goes underground in a culvert, and does not re-emerge on the west side of State Route 99 within the project impact area. Therefore, there is no open portion of Agricultural ditch 3 in the project impact area. Based on a review of United States Geological Survey maps and aerial photos, Agricultural ditch 3 appears to flow through the storm drain system and empty into the South San Joaquin Irrigation District Canal about three miles west of the project study area, which empties into the San Joaquin River. There was no water in Agricultural ditch 3 at the time of the survey on September 19, 2007. Vegetation observed in Agricultural ditch 3 included tule potato (*Sagittaria cuneata*), tall flatsedge, and knotweed (*Polygonum* sp.).

Non-Jurisdictional Features in the Project Impact Area

Below is a brief discussion of non-jurisdictional features in the project impact area. Acreages of non-jurisdictional wetlands and waters of the U.S. in the project impact area are included in Table 2.31 below.

Table 2.31 Acreages of Non-Jurisdictional Aquatic Features in the Project Study Area

Feature	Length (feet)	Average Width (feet)	*Area (acres)/ Square Feet
Wetland Features			
1	N/A	N/A	0.024/ 1,037
2	N/A	N/A	0.026/ 1,136
3	N/A	N/A	0.256/ 11,166
4			0.077/ 3,348
5	N/A	N/A	0.055/ 2,395
Wetland Features Subtotal			0.438/ 19,082
Detention Basins			
1	N/A	N/A	0.110/ 4,807
2	N/A	N/A	0.190/ 8,267
3	N/A	N/A	0.173/ 7,547
4	N/A	N/A	0.150/ 6,547
5	N/A	N/A	0.256/ 11,141

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Feature	Length (feet)	Average Width (feet)	*Area (acres)/ Square Feet
6	N/A	N/A	1.171/ 51,009
7	N/A	N/A	0.733/ 31,929
8	N/A	N/A	0.166/ 7,230
9	N/A	N/A	0.138/ 6,011
10	N/A	N/A	0.076/ 3,310
11	N/A	N/A	0.232/ 10,106
Detention Basins Subtotal			3.395/ 147,904
Golf Course Ponds			
1	N/A	N/A	0.400/ 17, 424
2	N/A	N/A	0.020/ 871
3	N/A	N/A	0.191/ 8,320
Golf Course Ponds Subtotal			0.611/ 26, 615
Roadside Ditches			
1	29	3	0.002/ 87
2	745	3	0.051/ 2,235
3	1,205	2	0.055/ 2,410
4	77	2	0.004/ 154
5	64	2.5	0.004/ 160
6	1,939	2	0.089/ 3,878
7	924	2	0.042/ 1,848
8	89	3	0.006/ 267
9	934	2	0.043/ 1,868
10	524	2	0.024/ 1,048
Roadside Ditches Subtotal			0.32/ 13,955
Agricultural Ditches			
4	181	3	0.010/ 543
5	1,598	2.5	0.090/ 3,995
Agricultural Ditches Subtotal			0.10/ 4,538
Total Non-Jurisdictional Features			4.865/ 212,094

* Totals may not add due to rounding to the nearest thousandth of an acre.

Wetland Features

Five features meeting the three-parameter test for wetlands (Environmental Laboratory, 1987; U.S. Army Corps of Engineers, 2006) were identified within the

project study area (Wetlands 1-5). All five of the wetland features occur in depressions that collect storm water runoff from the highway or adjacent impervious surfaces via either sheet flow or input from a culvert outfall. These wetland features are all artificial and lack a hydrologic connection to other waters of the U.S. All of the wetlands observed in the project study area are believed to be non-jurisdictional because they: 1) are not adjacent to a traditional navigable water or a non-navigable tributary of a traditional navigable water; and 2) they lack a “significant nexus” to other waters of the U.S (U.S. Army Corps of Engineers and U.S. Environmental Protection Agency, 2007).

Wetland 1

Wetland 1 is located within a hook ramp on the east side of State Route 99 to the north of Littlejohns Creek. This wetland occurs in a low point in the topography in the interior of the hook ramp that collects road runoff. The dominant vegetation identifiable in Wetland 1 was Italian ryegrass and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*). The soil was wet at the time of the survey but there was no standing water.

Wetland 2

Wetland 2 is located within a hook ramp on the west side of State Route 99 to the north of Littlejohns Creek. This wetland also occurs in a low point in the topography in the interior of the hook ramp that collects road runoff. The dominant vegetation identifiable in Wetland 2 was Italian ryegrass and Mediterranean barley. Other water-loving vegetation was present including curly dock and prickly lettuce (*Lactuca serriola*). Drift deposits, which consist of rafted debris that has been deposited on the ground surface or entangled in vegetation or other fixed objects, were visible at the time of the survey but no surface water was present.

Wetland 3

Wetland 3 is located on the east side of State Route 99 near the State Route 120 off-ramp. This wetland occurs in a low point in the topography next to the highway that collects road runoff and seepage from an adjacent agricultural field. The dominant vegetation identifiable in Wetland 3 included Italian ryegrass, common knotweed (*Polygonum arenastrum*), and annual bluegrass (*Poa annua*). Sediment deposits were visible at the time of the survey but no surface water was present.

Wetland 4

Wetland 4 is located on the west side of State Route 99 near the Austin Road off-ramp. This wetland occurs in a low point in the topography next to the highway that collects road runoff via a 24 inch culvert outfall. The dominant vegetation identifiable in Wetland 4 was Italian ryegrass. Other water-loving species observed in Wetland 4 included Bermuda grass (*Cynodon dactylon*), nut sedge (*Cyperus eragrostis*), and English plantain (*Plantago lanceolata*). Drift deposits were visible at the time of the survey but no surface water was present.

Wetland 5

Wetland 5 is located on the east side of State Route 99 north of Arch Road. This wetland occurs in a low point in the topography adjacent to the parking lot of a retail complex. The wetland collects runoff from the adjacent parking lot and landscaped area. No inlet or outlet was observed. The dominant vegetation identifiable in Wetland 5 was Bermuda grass, heliotrope (*Heliotropium curassavicum*), spike rush (*Eleocharis* sp.), and cattail (*Typha* sp.).

Detention Basins

There are 11 storm water detention basins in the project impact area. These detention basins were built to collect storm water runoff from the adjacent road. There are four detention basins (Detention basins 1-4) at the Yosemite Ave undercrossing which were dry on all survey dates and do not support much water-loving vegetation. These detention basins do not meet the criteria for a wetland. Another constructed detention basin (Detention basin 5) is to the north of the Austin Road overcrossing. This detention basin appears to support water-loving vegetation and may meet the criteria for a wetland. Five detention basins (Detention basins 6-10) occur at the Arch Road interchange that support water-loving vegetation and may meet the criteria for a wetland. One detention basin (Detention basin 11) is south of the Arch Road interchange on the west side of the east frontage road. All of the detention basins observed in the project impact area are man-made features excavated wholly in uplands that drain only uplands and do not carry a relatively permanent flow of water. The detention basins are used for water and sediment retention and as such are isolated from natural drainage features. The detention basins are believed to be non-jurisdictional because they: 1) are not adjacent to a traditional navigable water or a non-navigable tributary of a traditional navigable water; and 2) they lack a “significant nexus” to other waters of the U.S. (U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 2007).

Golf Course Ponds

Three golf course ponds occur in the project impact area. All of the golf course ponds observed in the project study area are man-made features excavated wholly in uplands that drain only uplands. The golf course ponds are believed to be non-jurisdictional because they: 1) are not adjacent to a traditional navigable water or a non-navigable tributary of a traditional navigable water; and 2) they lack a “significant nexus” to other waters of the U.S. (U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 2007).

Roadside Ditches

Several roadside ditches occur in or directly adjacent to the project impact area. The ditches have a mixture of wetland and upland characteristics. The ditches are believed to be non-jurisdictional because they are excavated wholly in and drain only uplands and do not carry a relatively permanent flow of water (U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 2007). In addition, they largely lack a defined bed and bank. Below are brief descriptions of roadside ditches that occur within the project impact area in order of occurrence from north to south.

Roadside ditch 1 flows along the east side of the State Route 99 east frontage road and empties into an unnamed tributary to French Camp Slough near Marfargoa Drive. The segment of roadside ditch 1 in the project impact area is about three feet wide. Roadside ditch 1 empties into the tributary via an 18-inch culvert under an existing driveway. Vegetation observed in this ditch included Italian ryegrass and Mediterranean barley.

Roadside ditch 2 flows along the east side of the State Route 99 east frontage road and empties into agricultural ditch 1 outside of the project impact area. The segment of roadside ditch 2 in the project impact area is about three feet wide. Roadside ditch 2 is vegetated primarily with upland ruderal species.

Roadside ditch 3 flows along the west side of the State Route 99 east frontage road and empties into agricultural ditch 1 outside of the project impact area. The segment of roadside ditch 3 in the project impact area is roughly two feet wide. Roadside ditch 3 is vegetated primarily with upland ruderal species.

Roadside ditch 4 flows along the east side of the State Route 99 east frontage road and empties into Agricultural ditch 4. The segment of roadside ditch 4 in the project

impact area is approximately 2 feet wide. Roadside ditch 4 is vegetated primarily with upland ruderal species.

Roadside ditch 5 flows along the east side of the west frontage road. The segment of roadside ditch 5 in the project impact area is about two and a half feet wide. Roadside ditch 5 is vegetated primarily with upland ruderal species.

Roadside ditch 6 flows along the west side of the State Route 99 west frontage road in front of the Farmington warehouse. The segment of roadside ditch 6 in the project impact area is around two feet wide. Roadside ditch 6 is vegetated primarily with upland ruderal species.

Roadside ditch 7 flows along the west side of the State Route 99 west frontage road north of Littlejohns Creek. The segment of roadside ditch 7 in the project impact area is about two feet wide. Roadside ditch 7 had been recently disked and contained no vegetation at the time of the survey.

Roadside ditch 8 empties into Littlejohns Creek on the west side of State Route 99. Roadside ditch 8 is roughly three feet wide. Vegetation observed in roadside ditch 8 included Italian ryegrass and Mediterranean barley.

Roadside ditch 9 runs on the east side of State Route 99 west frontage road. Roadside ditch 9 drains into a ruderal field south of French Camp Road. The segment of roadside ditch 9 in the project impact area is about two feet wide. Roadside ditch 9 is vegetated primarily with upland ruderal species.

Roadside ditch 10 occurs on the west side of State Route 99 on the west side of the west frontage road. Roadside ditch 10 is around two feet wide and collects road runoff from the frontage road. Vegetation observed in this ditch included Italian ryegrass and Mediterranean barley.

Agricultural Ditches

Two agricultural ditches occur in the project impact area that are believed to be non-jurisdictional because they are excavated wholly in and drain only uplands and do not carry a relatively permanent flow of water (U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 2007).

Agricultural ditch 4 occurs on the east side of State Route 99 across from the Farmington warehouse. Agricultural ditch 4 is a three-foot-wide toe ditch between

two agricultural fields. No culvert was visible at the location where agricultural ditch 4 connects with the frontage road and this ditch is assumed to end at the eastern limit of the project impact area. The ditch was mostly barren of vegetation with the exception of scattered patches of Bermuda grass.

Agricultural ditch 5 flows along the east side of the State Route 99 east frontage road and empties into Littlejohns Creek in the project impact area. The segment of agricultural ditch 5 in the project impact area is roughly two and half feet wide. Vegetation observed in this ditch included cocklebur (*Xanthium strumarium*), fennel (*Foeniculum vulgare*), and grasses.

Environmental Consequences

No impact is anticipated to wetlands since no jurisdictional wetlands were identified in the project impact area. Therefore, this section discusses impacts to potential waters of the U.S. as a result of either Alternative A or B. Table 2.32 shows the summary of temporary and permanent impacts to Potentially Jurisdictional Waters of the U.S.

Widening of the existing bridges at Littlejohns Creek, Lone Tree Creek, and French Camp Slough would result in the permanent loss of waters of the U.S. within the channel due to the construction of new bridge piers. The bridge piers are expected to be approximately 18 inches in diameter and therefore would occupy approximately 1.77 square feet of aquatic surface each. These new bridge piers would require approximately eight additional piles for Littlejohns Creek; approximately 12 additional piles for French Camp Slough; and, approximately 14 additional piles for Lone Tree Creek. Based on preliminary bridge design, the new bridge piers from all three drainages combined are expected to occupy less than 0.002 acres (81 square feet) of aquatic surface: approximately 28 square feet in Lone Tree Creek; approximately 32 square feet in French Camp Slough; and approximately 21 square feet in Littlejohns Creek. Widening of the existing bridge abutments would result in an additional 342 square feet of impacts to Lone Tree Creek and an additional 270 square feet of impacts to French Camp Slough. Widening of the abutments at Littlejohns Creek is not expected to result in additional impacts because the banks of the creek are already concrete lined. In addition, permanent impacts would occur in French Camp Slough due to the placement of rock slope protection to address scour problems. Rock slope protection would be placed on the north channel bank of French Camp Slough from 20 feet upstream of the bridge to 20 feet downstream of the bridge. It is estimated that the amount of rock slope protection would be 150

cubic yards covering 0.054 acre. Temporary impacts are expected to occur within the channels of Lone Tree Creek and French Camp Slough during construction due to access by construction equipment and personnel. No temporary impacts are anticipated at Littlejohns Creek because all work would occur from the median where concrete lining currently occurs.

The estimated area of temporary disturbance to the segment of French Camp Slough within the project study area is approximately 0.24 acres. The estimated area of temporary disturbance to the segment of Lone Tree Creek within the project study area is approximately 0.30 acres.

Although agricultural ditch 2 may be a potential jurisdictional water of the U.S., it is not considered a natural community of concern. The Main Street interchange would cross agricultural ditch 2 at the relocated East Frontage Road and would likely place agricultural ditch 2 in a culvert for approximately 50 feet. The placement of agricultural ditch 2 in a culvert for the Main Street interchange would result in approximately 0.005 acres (50 linear feet of ditch with an average width of 5 feet) of disturbance. Avoidance, minimization, and mitigation measures discussed below would be implemented to reduce any impacts to agricultural ditch 2 to less than significant.

Table 2.32 Summary of Impacts to Potentially Jurisdictional Waters of the U.S.

Feature	Temporary Impacts (Acres/ Square feet)	Permanent Impacts (Acres/ Square Feet)
Unnamed tributary to French Camp Slough	None	None
Littlejohns Creek	(0.0/ 0.0)	(0.0004/ 21)
Lone Tree Creek	(0.30/ 13,068)	(0.008/ 370)
French Camp Slough	(0.24/ 10,454)	(0.061/ 2,654)
Agricultural Ditch 2 (Alternative B only)	(0.005/ 250)	(0.005/ 250)
Total*	(0.545/ 23,772)	(0.074/ 3,295)

* Totals may not add due to rounding to the nearest thousandth of an acre.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project may result in a discharge of fill material to waters of the U.S. and therefore require a Section 404 permit from the Army Corps of Engineers. The surface waters in the project area are considered waters of the State by the Central Valley Regional Water Quality Control Board and are subject to State regulation. The

California Department of Fish and Game may also require a Section 1602 Streambed Alteration Agreement if it determines potentially affected streams with defined beds, banks, and channels support wildlife resources that may be at risk from project activities. The project would conform to all Federal and State permit requirements to minimize and mitigate for impacts to waters of the U.S.

Construction activities would be required to follow standard engineering practices that reduce impacts to water quality, especially where the watercourses are affected. These practices include reduction of sediment loading and sediment disturbance, as well as other standard best management practices for maintaining water quality in the project area. With best management practices incorporated into construction activities, no impacts to water quality are anticipated during or post-construction.

The following avoidance and minimization efforts would be incorporated into the proposed project to reduce impacts to watercourses:

- Clearing would be confined to the minimal area necessary within 200 feet of aquatic habitat to facilitate construction activities. To ensure that construction equipment and personnel do not affect sensitive aquatic habitat outside of the project area, orange barrier fencing would be erected to clearly define the habitat to be avoided and to delineate the environmentally sensitive areas of the project.
- Standard construction best management practices would be implemented throughout construction, in order to avoid and minimize adverse effects to the water quality within the project impact area. Appropriate erosion control measures would be used (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from construction sites.
- Emergent (rising out of water) and submergent (covered by water) vegetation would be retained where feasible. Rapidly sprouting plants, such as willows, would be cut off at ground level and root systems left intact, when removal is necessary.

Upon completion of construction, temporarily disturbed sections of watercourses would be revegetated with native grasses and forbs.

2.3.4 Animal Species

Regulatory Setting

Many State and Federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanographic and Atmospheric Administration's National Marine Fisheries Service, 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 2.3.5, Threatened and Endangered Species. All other special-status animal species are discussed here, including California Department of Fish and Game fully protected species and species of special concern, and the U.S. Fish and Wildlife Service or National Marine Fisheries Service 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
- Marine Mammal Protection Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1601 – 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

Affected Environment

The California Department of Fish and Game's California Natural Diversity Database was consulted in 2007 to obtain a list of special-status species recognized by the State of California as State species of special concern or designated as fully protected. An updated list was obtained in 2008 (See Appendix G for each species list).

Field studies were subsequently conducted to evaluate the presence or absence of all special-status animal species that could potentially be found within the project impact

area. As indicated in Table 2.33, biological surveys conducted of the project study area determined presence/absence of these target species.

Western Burrowing Owl

The western burrowing owl is a Species of Special Concern in California. Western burrowing owl is found throughout much of California in annual and perennial grassland, desert, and arid scrubland. It can also be found in vacant lots in residential areas, along railroad ballast, along dirt roads, and on canal levees.

**Table 2.33 Special-Status Animal Species Potentially
in the Project Impact Area.**

Scientific Name/ Common Name	Federal/ State/ CNPS Status	Specific Habitat Present/ Absent	Species Present/ Absent	Rationale
Birds				
Burrowing owl <i>Athene cunicularia</i>	--/SSC/--	P	Unknown	Potential nesting and foraging habitat occurs in and adjacent to the project impact area.
White-tailed kite <i>Elanus leucurus</i>	--/SFP/--	P	Unknown	Potential nesting and foraging habitat occurs in and adjacent to the project impact area
Other raptors, migratory birds, and nesting birds	1	P	P	Black phoebe and swallow nests were observed under the French Camp Slough, Littlejohns Creek, and Lone Tree Creek bridges.
Mammals				
Pale big-eared bat <i>Corynorhinus townsendii pallescens</i>	--/SSC/--	P	Unknown	Potential roosting habitat occurs on the undersides of the bridges at French Camp Slough, Littlejohns Creek, and Lone Tree Creek.
Yuma myotis bat ² <i>Myotis yumanensis</i>	--/--/--	P	Unknown	Potential roosting habitat occurs on the undersides of the bridges at French Camp Slough, Littlejohns Creek, and Lone Tree Creek.

¹ Raptors, migratory birds, and nesting birds are protected by a variety of Federal and State laws.

² Yuma myotis bat was added due to its known presence in the county and aptitude for roosting under bridges. Yuma myotis bat was formerly listed by the U.S. Fish and Wildlife Service as a Species of Concern – a listing category that is no longer maintained. Although U.S. Fish and Wildlife Service no longer maintains a list of Species of Concern, an evaluation of project impacts to these species is prudent under the California Environmental Quality Act due to their diminishing status. Absent [A] means no further work needed. Present [P] means general habitat is present and species may be present. Status: State Fully Protected (SFP); State Species of Special Concern (SSC).

Suitable nesting and foraging habitat for burrowing owl occurs in and adjacent to the project impact area. Many mammal burrows occur in the project impact area, but no burrowing owls or active dens were observed in the project impact area during any of the biological surveys. However, the majority of the surveys were conducted outside

of the ideal time periods to observed burrowing owl (peak nesting season – April 15 to July 15; wintering – December 1 to January 31).

White-tailed Kite

White-tailed kite has fully protected status in the State of California under California Fish and Game Code Section 3511. White-tailed kite is generally associated with lowland grasslands, agricultural fields, oak woodland, and wetlands. Riparian areas adjacent to open areas are often used for nesting habitat; isolated trees and shrubs in open areas are also used.

During breeding season, nests are made of loosely piled sticks and twigs and lined with grass, straw, or rootlets and placed near the top of a dense oak, willow, or other tree stand; usually 20 to 100 feet above ground. Suitable nesting and foraging habitat for white-tailed kite occurs in and adjacent to the project impact area. No white-tailed kite or potential nests were observed in or adjacent to the project impact area during any of the biological surveys. Surveys were conducted during the breeding season for white-tailed kite (February to October, with peak from May to August).

Other Raptors and Migratory Birds

Raptors, migratory birds, and nesting birds are protected by a variety of Federal and State laws, including the Migratory Bird Treaty Act (50 CFR 10 and 21). Several raptor species have the potential to utilize trees in and adjacent to the project impact area for nesting and adjacent areas for foraging. Red-tailed hawk and red-shouldered hawk were observed flying over and/or perching in the project impact area. The existing bridges over Littlejohns Creek, Lone Tree Creek, and French Camp Slough provide suitable nesting and foraging habitat for swallow and black phoebe. Swallow nests or their remains were observed on the underside of all three bridges. Black phoebe was observed foraging over French Camp Slough in the vicinity of the bridge and a partial nest was observed on the underside of the bridge. Swallows and black phoebes are expected to begin nesting on the undersides of the bridges prior to the commencement of construction.

Pale Big-eared Bat

The Pale big-eared bat, also known as the Pacific western big-eared bat and Townsend's big-eared bat, is a California Species of Special Concern. The existing bridges over Littlejohns Creek, Lone Tree Creek, and French Camp Slough provide potential bat roosting habitat. No bats were observed under the bridges in the project impact area. However, this bat species and other bat species commonly use the

undersides of bridges for roosting habitat and could occupy the bridges prior to construction.

Yuma Myotis

Yuma myotis bat was added due to its known presence in the county and aptitude for roosting under bridges. Yuma myotis bat was formerly listed by the U.S. Fish and Wildlife Service as a Species of Concern – a listing category that is no longer maintained. Although the U.S. Fish and Wildlife Service no longer maintain a list of Species of Concern, an evaluation of project impacts to these species is prudent under the California Environmental Quality Act due to their diminishing status.

Environmental Consequences

Western Burrowing Owl

Potential impacts to burrowing owl include disturbance of nests and loss of foraging habitat. Median and shoulder widening is not expected to result in the loss of burrowing owl foraging habitat. Depending on the chosen design option for the Main Street interchange, some medium to low quality foraging habitat for burrowing may be lost at this interchange as well as at the Turner Station Overhead/French Camp Road.

With the implementation of the avoidance and minimization efforts discussed below, the project is not expected to impact burrowing owl nesting. Burrowing owl foraging habitat is abundant in the vicinity of the project impact area. The conversion of potential burrowing owl foraging habitat to non-suitable uses is not expected to adversely affect the species.

White-Tailed Kite

Potential impacts to white-tailed kite include disturbance of nests and loss of foraging habitat. The roadway improvements in the median are not expected to result in the loss of white-tailed kite foraging habitat. Depending on the chosen design option for the Main Street interchange, some medium to low quality foraging habitat for this species may be lost at this interchange as well as at the Turner Station Overhead/French Camp Road. Shoulder widening may also result in the loss of some medium to low quality foraging habitat.

With the implementation of the avoidance and minimization efforts discussed below, the project is not expected to impact white-tailed kite nesting. White-tailed kite foraging habitat is abundant in the vicinity of the project impact area. The conversion

of potential white-tailed kite foraging habitat to non-suitable uses is not expected to adversely affect the species.

Other Raptors and Migratory Birds

Several non-special-status migratory birds, including raptors, could potentially nest in the project impact area. These birds' occupied nests and eggs are protected by Federal and State laws and provisions, including the Migratory Bird Treaty Act (50 Code of Federal Regulations 10 and 21) and California Fish and Game Code Sections 3503 and 3503.5. California Department of Fish and Game is responsible for overseeing compliance with the codes and makes recommendations on nesting bird and raptor protection.

Potential impacts to raptors include disturbance of nests and loss of foraging habitat. Potential impacts to other migratory birds such as swallows and black phoebes include disruption of nesting activities and potential loss of nest success for a season. The roadway improvements in the median are not expected to result in the loss of raptor foraging habitat. Depending on the chosen design option for the Main Street interchange, some medium to low quality foraging habitat for raptors may be lost at this interchange as well as at the Turner Station Overhead/French Camp Road. Shoulder widening may also result in the loss of some medium to low quality foraging habitat.

With the implementation of the avoidance and minimization efforts discussed below, the project is not expected to impact raptor or migratory bird nesting. Raptor foraging habitat is abundant in the vicinity of the project impact area. The conversion of potential raptor foraging habitat to non-suitable uses is not expected to adversely affect these species. Nesting productivity for the season may be lost for some swallows due to construction activities. However, widening of the bridges would result in a net increase of potential swallow nesting habitat.

Pale Big-eared Bat (Pacific Western Big-eared Bat, Townsend's Big-eared Bat) and Yuma Myotis

The existing bridges over Littlejohns Creek, Lone Tree Creek, and French Camp Slough provide potential bat roosting habitat. No bats were observed under the bridges in the project impact area. However, these bat species and other bat species commonly use the undersides of bridges for roosting habitat and could occupy the bridges prior to construction. Impacts to Pale big-eared bat and Yuma myotis bat are

not anticipated for the improvements associated with the Main Street interchange or Turner Station overhead/French Camp Road interchange.

Potential impacts such as roost disturbance or harm to individual bats could occur if these species were roosting under the bridges at the time of construction. With the implementation of the avoidance and minimization efforts discussed below, the project is not expected to impact roosting bats.

Avoidance, Minimization, and/or Mitigation Measures

Western Burrowing Owl

In the year prior to construction, surveys would be conducted by a qualified biologist to determine presence/absence of burrowing owls and/or occupied burrows in and within 500 feet of the project impact area according to the California Department of Fish and Game's 1995 Staff Report on Burrowing Owls. A winter survey would be conducted between December 1 and January 31 and a nesting survey would be conducted between April 15 and July 15. Preconstruction surveys would also be conducted within 30 days prior to construction to ensure that no additional burrowing owls have established territories since the initial surveys. If no burrowing owls are found during any of the surveys, no further mitigation would be necessary. If burrowing owls are found, then the following measures would be implemented prior to the commencement of construction:

- During the non-breeding season (September 1 through January 31) burrowing owls occupying areas intended for construction would be evicted by passive relocation as described in the California Department of Fish and Game's 1995 Staff Report on Burrowing Owls.
- During the breeding season (February 1 through August 31) occupied burrows would not be disturbed and would be provided with an approximately 245 foot protective buffer unless a qualified biologist approved by California Department of Fish and Game verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) 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.

White-Tailed Kite

The following incidental take minimization measures were taken from the San Joaquin Multi-Species Habitat Conservation and Open Space Plan Section 5.2.4.19. The incidental take measures consist of preconstruction surveys and maintenance of a buffer around active nests if found.

If construction begins during the nesting season for white-tailed kite (February 15 to September 15), a preconstruction survey would be conducted to survey all potential nest trees on or adjacent to the areas intended for construction (e.g., especially tree tops 15-59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees). If no white-tailed kite nests are found, then no further mitigation is necessary. If an occupied white-tailed kite nest is found, a setback of 100 feet would be established around the nest tree. The setback would be maintained during the nesting season for the period encompassing nest building and continuing until the fledglings leave the nests. Setbacks would be marked by brightly colored temporary fencing. No construction would occur within the setback area.

Other Raptors and Migratory Birds

The following avoidance and minimization measures are to be used when work occurs on or in the vicinity of structures or natural areas that may be subject to nesting by migratory birds that may be adversely affected, injured, or killed during construction activities. This is a general Migratory Bird Treaty Act provision. Additional provisions for specific species including Swainson's hawk, white-tailed kite, and burrowing owl are discussed separately.

- The contractor would protect migratory birds, their occupied nests, and their eggs as specified in these special provisions. Nesting is typically February 15 to September 1, or as determined appropriate in consultation with the district biologist.
- When evidence of migratory bird nesting that may be adversely affected by construction activities is discovered, or when birds are injured or killed as a result of construction activities, the contractor would immediately stop work within 0.25 mile of the nests and notify the engineer. Work would not resume until the engineer provides written notification that work may begin in this location.

The following avoidance and minimization measures would be incorporated for nesting swallows and black phoebes. Since evidence of nests was observed, there is the potential that swallows would attempt to establish nests under the bridges before the work window for construction. Exclusionary netting would be installed around the undersides of the bridge before February 15 of the construction year to prevent new nests from being formed, and/or prevent the reoccupation of existing nests. The construction contractor would do the following:

- Adhere to all State and Federal laws and regulations pertaining to the protection of migratory birds, their nests, and young birds.
- Remove all existing unoccupied swallow nests on listed structures when assigned a structure.
- Keep all structures on the assigned list free of swallow nests until notified by the Caltrans contract manager to cease swallow nest prevention activities.
- Inspect all listed structures for swallow activity a minimum of three days per week; no two days of inspection would be consecutive. A weekly log would be submitted to the Caltrans responsible biologist. The contractor would continue inspections until notified by the Caltrans contract manager to stop inspections. If an exclusion device were found to be ineffective or defective, the contractor would complete repairs to the device within 24 hours. If birds were found trapped in an exclusion device, the contractor would immediately remove the birds in accordance with the U.S. Fish and Wildlife guidelines.
- Submit for approval working drawings or written proposals of any exclusion devices, procedures, or methods to the Caltrans biologist before installing them.
- The method of installing exclusion devices would not damage permanent features of the structure. Approval by the Caltrans biologist of the working drawings or inspection performed by the authorized Caltrans responsible biologist would in no way relieve the contractor of full responsibility for deterring nesting.

Pale Big-eared Bat and Yuma Myotis

Preconstruction bat surveys would be conducted to inspect the undersides of the bridges at Littlejohns Creek, Lone Tree Creek, and French Camp Slough for roosting bats. If no roosting bats are found, no further measures would be necessary. If bats are

detected within the roost at the time of construction, excluding any bats from roosts would be accomplished by a bat specialist prior to the onset of any construction activities. Exclusionary devices, such as plastic sheeting, plastic or wire mesh, can be used to allow for bats to exit but not re-enter any occupied roosts. Expanding foam and plywood sheets can be used to prevent bats from entering unoccupied roosts. Prior to installation of exclusionary devices, the Caltrans biologist would have to approve working drawings or written proposals of the exclusion devices, procedures, or methods.

2.3.5 Threatened and Endangered Species

This section discusses species formally listed as threatened or endangered under the California Endangered Species Act and/or the Federal Endangered Species Act.

Regulatory Setting

The primary Federal law protecting threatened and endangered species is the Federal Endangered Species Act: 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 threatened and endangered species and the ecosystems on which they depend. Under Section 7 of this act, Federal agencies are required to consult with the U.S. Fish and Wildlife Service and the National Oceanographic and Atmospheric Administration's 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 statement. 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

The California Department of Fish and Game’s California Natural Diversity Database and the U.S. Fish and Wildlife Service online database were consulted in 2007 to obtain a list of Federal and State listed threatened and endangered animal species with the potential to occur in, or be affected by projects in, the project impact area. Updated lists were obtained in 2008 (See Appendix G for each species list).

Field studies were subsequently conducted to evaluate the presence or absence of all special-status animal species that could potentially be found within the project impact area. As indicated in Table 2.34, all species except for the San Joaquin kit fox were found to potentially be present or have habitat in the project study area.

**Table 2.34 Threatened and Endangered Species Potentially
in the Project Impact Area**

Scientific Name/ Common Name	Federal/ State/ CNPS Status	Specific Habitat Present/ Absent	Species Present/ Absent	Rationale
Fish				
Central Valley Steelhead Distinct Population Segment <i>Oncorhynchus mykiss</i>	FT/--/--	P	Present (Assumed)	According to National Marine Fisheries Service, this species has the potential to occur in French Camp Slough, Littlejohns Creek, and Lone Tree Creek.
Reptiles				
Giant Garter Snake <i>Thamnophis gigas</i>	FT/ST/--	P	Present (Assumed)	French Camp Slough, Littlejohns Creek, and Lone Tree Creek provide potential dispersal habitat and this species could be present.
Birds				
Swainson’s hawk <i>Buteo swainsoni</i>	--/ST/--	P	Unknown	Potential nesting and foraging habitat occurs in and adjacent to the project impact area.

Scientific Name/ Common Name	Federal/ State/ CNPS Status	Specific Habitat Present/ Absent	Species Present/ Absent	Rationale
Invertebrates				
Vernal pool fairy shrimp ³ <i>Branchinecta lynchi</i>	FT/--/--	A	A	There is no habitat for this species in the project impact area. However, it is known to occur in the vicinity and habitat occurs adjacent to the project impact area.
Vernal pool tadpole shrimp ³ <i>Lepidurus packardi</i>	FE/--/--	A	A	There is no habitat for this species in the project impact area. However, it is known to occur in the vicinity and habitat occurs adjacent to the project impact area.

Absent [A] means no further work needed. Present [P] means general habitat is present and species may be present. Status: Federal Endangered (FE); Federal Threatened (FT); State Threatened (ST).

³Vernal pool branchiopods were added due to their known presence in the vicinity and potential habitat adjacent to the project area, although no habitat is present in the project area. Discussion is provided in this section.

Central Valley Steelhead

The Central Valley steelhead Distinct Population Segment is a federally threatened species. The species is restricted to the Sacramento River downstream of Keswick Reservoir, as well as its large tributaries downstream of impassable dams; small, perennial tributaries of the Sacramento River mainstem and its large tributaries; the San Joaquin River downstream of the Merced River, as well as large tributaries; and the Bay-Delta system. The San Joaquin River and waterways accessible to steelhead from the San Joaquin River, including French Camp Slough, are included as designated critical habitat for the species (65 FR 7764, February 16, 2000).

Although there is no known spawning habitat for steelhead within the project area, there is a possibility that some juvenile steelhead could utilize the project area for winter rearing. Warm water temperatures likely preclude steelhead use of the habitat during the summer months. Additionally, the San Joaquin River (approximately six miles downstream of the project area) is a known migratory corridor for steelhead allowing access to upstream tributaries. A Biological Assessment for Central Valley steelhead was prepared for the project.

Giant Garter Snake

Giant garter snake is a Federal and State-listed *threatened* species and as such is protected by the Federal Endangered Species Act and the California Endangered Species Act respectively. Historically, giant garter snake was found in the Sacramento and San Joaquin Valleys from Butte County in the north to Buena Vista Lake in Kern County in the south. Presently, populations are found only in the

Sacramento Valley and isolated portions of the San Joaquin Valley as far south as Fresno County. Giant garter snake is still presumed to occur in 11 counties: Butte, Colusa, Fresno, Glenn, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo (U.S. Fish and Wildlife Service, 1999).

Giant garter snakes inhabit wetlands, irrigation and drainage canals, rice fields, marshes, sloughs, ponds, low-gradient streams, and adjacent uplands in the Central Valley. The snake requires adequate water during its active season (early spring through fall); emergent, herbaceous wetland vegetation for foraging habitat and escape cover; open areas for basking; and upland habitat, high above the high-water line, with rodent burrows for hibernating during winter.

No giant garter snakes were observed in the project impact area during surveys. However, giant garter snakes are very difficult to observe and negative survey results are not conclusive to determine absence of the snake. No habitat for giant garter snake is present in Littlejohns Creek. Giant garter snake could potentially travel along and forage in French Camp Slough and Lone Tree Creek, but it is unlikely that giant garter snake would reside in these creeks for a significant period of time. This is due to relatively sparse cover (i.e., sparse emergent vegetation in the channels) and lack of suitable upland habitat. A Biological Assessment for giant garter snake was prepared for the project.

Swainson's Hawk

The Swainson's hawk is listed by the State of California as threatened and is protected by the California Endangered Species Act, and by the Migratory Bird Treaty Act (50 CFR 10 and 21). Swainson's hawk migrates annually from wintering areas in South America to breeding locations in northwestern Canada, western United States, and Mexico. In California, Swainson's hawk nests throughout the Central Valley in large trees in waterside corridors, and in isolated trees in or adjacent to agricultural fields.

Suitable nesting and foraging habitat for Swainson's hawk occurs in and adjacent to the project impact area. No Swainson's hawks or potential Swainson's hawk nests were observed in the project impact area during any of the biological surveys. However, the majority of the surveys were conducted outside of the ideal time periods to survey for Swainson's hawk and their nests (January 1 through July 30). There are trees in and adjacent to the project impact area that could currently contain

Swainson's hawk nests and/or become occupied by Swainson's hawk prior to the commencement of construction.

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

These species inhabit a variety of vernal pool and seasonal wetland habitats in the Central Valley that pond water for long enough to allow for lifecycle completion (U.S. Fish and Wildlife Service, 2005). There are no records in the California Natural Diversity Database for fairy shrimp on the Stockton west or Manteca quadrangles. In San Joaquin County, these species primarily occur in the Vernal Pool Zone designated by the San Joaquin Multi-Species Habitat Conservation and Open Space Plan, which is located in the far eastern and northern portions of the county.

Wet and dry season surveys were conducted according to the U.S. Fish and Wildlife Service protocol for the previous Arch Road/ State Route 99 Interchange Reconstruction Project in 1998. No fairy shrimp or tadpole shrimp were observed during wet season surveys. However, fairy shrimps cysts identified as the genus *Branchinecta* were found in soil samples obtained in areas associated with the project that typically support seasonal ponds during dry season soil sampling. Cysts can only be identified to genus, so it is unknown if the cysts were a federally-listed species of *Branchinecta* or another species. The areas containing the cysts were filled during construction of that project and the habitat no longer exists. New detention basins were constructed for the project at the existing Arch Road/ State Route 99 interchange. These detention basins provide potential marginal habitat for vernal pool fairy shrimp. No modifications to these detention basins are proposed for the current project. The detention basins would continue to perform their current function of collecting stormwater runoff and providing groundwater recharge. The functions and values of these detention basins are not expected to change as a result of the proposed project and their habitat suitability for vernal pool fairy shrimp is not expected to change.

U.S. Fish and Wildlife Service wet and dry season protocol surveys were conducted in detention basins in the location of the State Route 99/120 East (Yosemite Avenue) interchange in 2000. No federally-listed branchiopods were identified during these surveys.

Several man-made detention basins occur in the project impact area. These detention basins were constructed to collect storm water runoff from the adjacent road surfaces. There are four detention basins at the Yosemite Avenue undercrossing, one detention

basin to the north of the Austin Road overcrossing, five detention basins at the Arch Road interchange, and one detention basin south of the Arch Road interchange on the west side of the east frontage road. None of these detention basins are expected to provide suitable habitat for vernal pool fairy shrimp or vernal pool tadpole shrimp. No modifications to the existing detention basins are proposed. The project is not expected to impact these species.

Environmental Consequences

Central Valley Steelhead

Construction-related adverse effects associated with the project could potentially occur within the immediate vicinity of the Lone Tree Creek, French Camp Slough and Littlejohns Creek bridge crossings on State Route 99 and areas adjacent to (both upstream and downstream) of these waterways. Potential impacts caused by direct contact of construction personnel, equipment, and/or debris with individual fish would be limited to the areas in the immediate vicinity of the construction footprints. The types of impacts that could be observed as a result of project implementation include: increased erosion, sedimentation and turbidity; loss of shaded riverine aquatic habitat; decreased water quality due to a potential for hazardous materials and chemical spills; and physiological effects associated with hydraulic pressure waves and noise produced by in-river pile driving.

Erosion, Sedimentation and Turbidity

Increased sediment, primarily in the form of fine sediment, has been reported to lead to changes in spawning bed composition, decreased benthic vertebrate abundance, increased stress responses in fish, and increased fish mortality (Burns, 1970; Cordone and Kelly, 1961; Moyle, 2002; Redding et al., 1987; Reid and Anderson, 1999). At moderate levels, turbidity (cloudy water) reportedly has the potential to adversely affect primary and secondary productivity, and at high levels, has the potential to injure and kill adult and juvenile fish (National Marine Fisheries Service, 2003).

The sediment plume created as a result of any in-stream construction activities would stem from sediment disturbed from the stream bed and would rapidly settle out of suspension. Depending on the exact composition of the substrate in the stream channel and along the stream bank, there is a potential to mobilize an unknown but potentially substantial amount of fine sediments which could enter the water column.

The construction window at the bridge crossings on State Route 99 for Lone Tree Creek, French Camp Slough and Littlejohns Creek occur during the summer months

when warm water temperatures likely preclude the presence of steelhead. Nevertheless, appropriate erosion control measures would be implemented during construction (e.g., hay bales, filter fences, vegetative buffer strips) to reduce siltation and contaminated runoff from the construction site. Additionally, construction activities would comply with Federal and State water quality standards (e.g., Sections 401 and 404 of the Clean Water Act). Although in-stream construction activities would likely increase sedimentation and turbidity in the affected streams, the localized and temporary nature of the increased sediment input would limit exposure of the fish that are in the pathway of the turbidity event, and likely not affect fish or the suitability of habitat downstream from the construction area.

Loss of Shaded Riverine Aquatic Habitat/Streamside Vegetation

Construction of the bridge crossings on State Route 99 for Lone Tree Creek, French Camp Slough and Littlejohns Creek would result in the loss of some shaded riverine aquatic habitat and streamside vegetation. Currently, State Route 99 is a divided highway at the bridge crossing locations and has a narrow corridor of vegetation between the bridges for the north and southbound lanes. Implementation of the proposed project would result in the permanent loss of these habitat strips at the bridge crossing locations. It is currently estimated that approximately 70 linear feet (35 feet per side) of existing exposed shoreline between the north and south bound bridges would be covered by the expansion of the bridges into the median at each site. This loss of habitat is not expected to adversely affect steelhead potentially dispersing through the project impact area.

Hazardous Material and Chemical Spills

Hazardous materials and chemicals in the form of gasoline, engine oil, lubricants, or other fluids used during construction activities could potentially enter the affected streams as a result of seepage or accidental spills, which could potentially affect fish that may be present in the immediate vicinity and downstream of the construction area. Based on expected construction techniques, the potential for a hazardous material or chemical spill to occur is unlikely. Adherence to stipulated criteria identified during the permitting process is expected to prevent potential adverse effects on fish or habitat. Additionally, the construction window would occur during the summer months when warm water temperatures likely preclude the presence of steelhead in the construction area.

Hydraulic Pressure Waves and Noise

Construction activities associated with the stream crossings may include the use of

equipment (for example, pile drivers) that would produce hydrostatic pressure waves and increase underwater noise and vibration. Excessive noise levels caused by activities that disturb the stream and shoreline potentially could affect fish behavior by disrupting or startling fish, forcing them out of their preferred environment and increasing their exposure to predators. Piles would be pounded or driven into the channel; the resulting vibrations could lead to concussion effects on fish in close proximity. Shock waves from pile driving can cause the swim bladder inside some fish to explode, causing internal bleeding in other organs. Fish that are far enough away from the impact would survive but may be stunned and disoriented; increasing the chances they'll succumb to predators. The concussion effects on the listed fish species would be avoided by implementing minimization measures identified below.

National Marine Fisheries Service reports that noise levels less than 150 decibels are not likely to result in temporary abnormal behavior indicative of stress or cause a startle response, nor would they result in permanent harm or injury (National Marine Fisheries Service, 2007). Currently available information indicates peak underwater sound pressure levels greater than 180 decibels may physically injure small fish (National Marine Fisheries Service, 2007).

Noise levels associated with the common construction practices of ground clearing, excavation, and foundation laying typically range from 84 to 89 decibels (U.S. Environmental Protection Agency, 1971). Pile driving activities can cause noise levels in excess of 180 decibels; however, pile driving would only occur during the summer months when warm water temperatures preclude the presence of steelhead.

Informal consultation with the National Marine Fisheries Service for Central Valley Steelhead and essential fish habitat was initiated by Caltrans on January 22, 2009 and was completed on April 15, 2009. The consultation concurrence is included in Appendix G.

Giant Garter Snake

Widening the bridges would result in permanent impacts to Lone Tree Creek, and French Camp Slough due to the widening of existing abutments and/or the construction of new bridge piers. The bridge piers are expected to be approximately 18 inches in diameter and therefore would occupy approximately 1.77 square feet of aquatic surface each. These new bridge piers would require approximately 12 additional piles for French Camp Slough and, approximately 14 additional piles for Lone Tree Creek. Based on preliminary bridge design, the new bridge piers from both drainages combined are

expected to occupy less than 0.002 acres (60 square feet) of aquatic surface: approximately 28 square feet in Lone Tree Creek and approximately 32 square feet in French Camp Slough. Widening of the existing bridge abutments would result in an additional 342 square feet of impacts to Lone Tree Creek for a total of 370 square feet (0.008 acres) of impact. Widening of the existing bridge abutments would result in an additional 270 square feet of impacts to French Camp Slough. The total permanent impacts anticipated to French Camp Slough total 0.061 acre, including bridge piers, abutments, and scour repairs (discussed in impacts to waters of the U.S.).

Temporary impacts are expected to occur within the channels of Lone Tree Creek and French Camp Slough during construction due to access by construction equipment and personnel. No temporary impacts are anticipated at Littlejohns Creek because all work would occur in the median, which is lined with concrete. The potential area of temporary disturbance to the segment of French Camp Slough within the project study area is approximately 0.024 acres. The potential area of temporary disturbance to the segment of Lone Tree Creek within the project study area is approximately 0.30 acres. Table 2.35 shows the summary of temporary and permanent impacts to giant garter snake habitat.

Table 2.35 Summary of Impacts to Giant Garter Snake Habitat*

Water body	Temporary Impacts (Acres/ Square feet)	Permanent Impacts
French Camp Slough	(0.24/ 10,454)	(0.061/ 2,654
Lone Tree Creek	(0.30/ 13,068)	(0.008/ 370)
Total	37,370 feet²/0.86acre	672 feet²/0.015 acre

* The acreage of impacts may vary once design is finalized.

The permanent loss of 693 square feet (0.016) acres of habitat due to widening of the abutments and bridge pier construction is not expected to disturb giant garter snakes potentially dispersing through the area. Construction activities could potentially temporarily inhibit the movement of giant garter snakes through the project drainages. However, avoidance and minimization measures would be in place during construction to avoid harming any giant garter snakes that potentially entered the construction area. In addition, portions of the channel that are temporarily disturbed during construction would be revegetated with native grasses and forbs after construction is completed. Due to the extreme level of disturbance, including vegetation/ rodent abatement and existing concrete and riprap, no suitable upland habitat for giant garter snake was identified within the area of potential impact. Therefore no compensatory mitigation for upland habitat is required. Disturbance or

mortality from construction activities (including movement of equipment) that are conducted in and around potential areas of movement during the active period for this species (May 1 through October 1) would be eliminated through avoidance and minimization measures.

In order to avoid direct effects to giant garter snakes, construction activities would occur during the active period of the giant garter snake (May to October) when direct mortality can be lessened as the giant garter snake can actively move and avoid danger. In addition, avoidance and minimization measures would be implemented.

Informal consultation with the U.S. Fish and Wildlife Service for Giant Garter Snake was initiated by Caltrans on January 16, 2009. Formal consultation for Giant Garter Snake was initiated on April 30, 2009 and was completed when a biological opinion was received from the U.S. Fish and Wildlife Service on October 7, 2009. The biological opinion is included in Appendix G.

Swainson's Hawk

Based on the work windows that would be required for giant garter snake and Central Valley steelhead, construction of the project would not be able to avoid the typical Swainson's hawk nesting season of March 1 through August 15. Potential impacts to Swainson's hawk include disturbance of nests and loss of foraging habitat. Nest disturbance could result in "take" of Swainson's hawk, which would be a violation of Fish and Game Code Section 2081 and the Migratory Bird Treaty Act (50 CFR 10 and 21). The roadway improvements in the median are not expected to result in the loss of Swainson's hawk foraging habitat. Depending on the chosen design option for the Main Street interchange, some medium to low quality foraging habitat for this species may be lost at this interchange as well as at the Turner Station Overhead/French Camp Road. Shoulder widening may also result in the loss of some medium to low quality foraging habitat.

With the implementation of the avoidance and minimization efforts discussed below, the project is not expected to impact Swainson's hawk nesting. Swainson's hawk foraging habitat is abundant in the vicinity of the project impact area. The conversion of potential Swainson's hawk foraging habitat to non-suitable uses is not expected to adversely affect the species. Table 2.36 below lists the acreage of Swainson's hawk habitat impacted.

Table 2.36 Loss of Swainson’s Hawk Habitat

	Habitat Loss (acres)	
	Ruderal Habitat	Agricultural Land
Curve Correction Near Austin Road	1.76	--
Turner Station Overhead/French Camp Road	0.30	4.60
Main Street Interchange	10.45	8.09

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

No construction activities or modifications to potential habitats for these species are proposed. The project is not expected to impact vernal pool fairy shrimp or vernal pool tadpole shrimp.

Avoidance, Minimization, and/or Mitigation Measures

Central Valley Steelhead

Construction activities would be required to follow standard engineering practices that reduce impacts to water quality, especially where the three water courses are affected. These practices include reduction of sediment loading and sediment disturbance as well as other standard best management practices for maintaining water quality in the project area. With best management practices incorporated into construction activities, no impacts to water quality are anticipated during or post-construction.

The following specific avoidance and minimization efforts would be incorporated into the project to reduce potential negative impacts to Lone Tree Creek, French Camp Slough and Littlejohns Creek.

- All proposed in-channel work would be conducted from June 15 through October 15.
- Best Management Practices (BMPs) would be implemented during construction activities. All disturbed soils would undergo erosion treatment (*i.e.* hay bales, filter fences, vegetative buffer strips) prior to October 15th and/or immediately after construction is terminated to reduce siltation and contaminated runoff from the construction sites.
- Environmentally sensitive areas would be fenced off to avoid unnecessary habitat disturbance. If any riparian vegetation would be disturbed, native trees, shrubs,

native grasses, and/or forbs would be replanted at the end of construction. Appropriate irrigation, care and monitoring would be conducted to ensure that healthy riparian and shaded riverine aquatic habitat is successfully established.

- Equipment would be refueled and serviced at designated construction staging areas 100 feet from the wetted width of any stream. All construction materials and fill would be stored and contained in a designated area that is located away from the channels to prevent transport of foreign materials into adjacent streams.
- A silt fence would be installed to collect potential discharge, and adequate materials for spill clean-up would be maintained at the construction sites at all times.
- Hazardous or potentially toxic materials such as herbicides and petroleum products would be located outside of the 100 year flood zone and would be bermed to prevent the discharge of pollutants to ground water and runoff water.

Giant Garter Snake

The following avoidance and minimization efforts would be implemented in order to reduce project effects to giant garter snakes. These measures would only be implemented for Littlejohns Creek, Lone Tree Creek, and French Camp Slough as these are the only drainages that would be impacted by construction that provide potential habitat for the snake.

- In-water and bank-side construction activities would be conducted between June 15th and October 15th as necessary to ensure that construction occurs during the active period of the giant garter snake.
- Between April 15th and September 30th, any dewatered habitat would remain dry, with no puddle water, for at least 15 consecutive days before workers excavate or fill dewatered habitat. Efforts would be made to ensure that the dewatered habitat does not continue to support giant garter snake prey (e.g., fish, tadpoles, and aquatic insects), which could detain or attract snakes into the area. This measure would encourage giant garter snakes to leave the site.
- Temporary fencing (or similar devices without openings that might cause the giant garter snake to become stranded or otherwise become entangled) would be installed at the upstream and downstream limits of the construction area, to deter giant garter snakes from entering the project area and be harmed by construction activities.

- The fencing would be installed regardless of whether there is aquatic habitat present during the time of construction to ensure that giant garter snakes do not enter the construction zone.
- Construction personnel would participate in a U.S. Fish and Wildlife Service-approved worker environmental awareness program. A qualified biologist would inform all construction personnel about the life history of the giant garter snake; how to identify species and their habitats; what to do if a giant garter snake is encountered during construction activities; and explain the State and Federal laws pertaining to the giant garter snake.
- A qualified biologist would conduct a pre-construction survey for giant garter snakes, no more than 24 hours prior to the start of construction activities (site preparation and grading). If construction activities stop for a period of two or more weeks, a new giant garter snake survey would be completed no more than 24 hours prior to the reinitiating of construction activities.
- Clearing would be confined to the minimal area necessary within 200 feet of aquatic habitat to facilitate construction activities. To ensure that construction equipment and personnel do not affect upland and aquatic habitat for the giant garter snake outside of the project area, orange barrier fencing would be erected to clearly define the habitat to be avoided and to delineate the environmentally sensitive areas on the project.
- Upon completion of construction, disturbed sections of Littlejohns Creek, Lone Tree Creek, and French Camp Slough would be revegetated with native grasses and forbs.
- If a live giant garter snake is encountered during construction activities, the project's biological monitor and the U.S. Fish and Wildlife Service would be immediately notified. The biological monitor would do the following:
 - Stop construction activity in the vicinity of the giant garter snake. Monitor the giant garter snake and allow the giant garter snake to leave on its own. The monitor would remain in the area for the remainder of the workday to make sure the giant garter snake is not harmed or if it leaves the site and does not return. Escape routes for giant garter snakes would be determined in advance of construction. If the giant

garter snake does not leave on its own within one working day, further consultation with the U.S. Fish and Wildlife Service would be conducted.

- Only personnel with a U.S. Fish and Wildlife Service recovery permit pursuant to Section 10(a)(1)(A) of the Endangered Species Act would have the authority to capture and/or relocate giant garter snakes encountered in the project area.
- Upon locating dead, injured or sick giant garter snakes, Caltrans would notify the U.S. Fish and Wildlife Service Division of Law Enforcement or the Sacramento Fish and Wildlife Office within one working day. Written notification to both offices would be made within three (3) calendar days and would include the date, time, and location of the finding of a specimen and any other pertinent information.
- No plastic, monofilament, jute, or similar erosion control matting that could entangle giant garter snakes would be used. Possible substitutions include coconut coir matting, tactified hydro seeding compounds, or other material approved by the U.S. Fish and Wildlife Service.
- Standard construction best management practices would be implemented throughout construction, in order to avoid and minimize adverse effects to the water quality within the project impact area.

Bridge widening has been designed to minimize impacts to giant garter snake habitat in Lone Tree Creek and French Camp Slough. The above-mentioned avoidance and minimization measures would be implemented. Upon completion of construction, disturbed sections of Lone Tree Creek and French Camp Slough would be revegetated with native grasses and forbs. This would result in higher habitat quality than that of the pre-project conditions.

Compensatory mitigation for permanent impacts to giant garter snake aquatic habitat in Lone Tree Creek and French Camp Slough would be implemented. Giant garter snake aquatic habitat credits would be purchased at a 3:1 ratio from a U.S. Fish and Wildlife Service approved mitigation bank to offset the loss of giant garter snake aquatic habitat in these two water bodies.

Swainson's Hawk

The following incidental take minimization measures taken from Section 5.2.4.11. of the San Joaquin Multi-Species Habitat Conservation and Open Space Plan would be implemented. The incidental take measures consist of either retaining known or potential nest trees and subsequent protection of nests during the nesting season or removing nest trees during the non-nesting season.

The project proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees. If the project proponent elects to retain a nest tree, and in order to encourage tree retention, the following avoidance and minimization measures would be implemented during construction activities:

- If a nest tree becomes occupied during construction activities, then all construction activities would remain a distance of two times the dripline of the tree, measured from the nest.
- If the project proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

In the calendar year prior to construction, surveys would be conducted by a qualified biologist to determine the presence/absence of nesting Swainson's hawk in the project impact area and immediate vicinity according to the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* established by the Swainson's Hawk Technical Advisory Committee in May 31, 2000. If no nesting Swainson's hawks are found, no further mitigation would be necessary. If nesting Swainson's hawks are found, California Department of Fish and Game would be consulted to determine the appropriate mitigation measures for preventing nest disturbance during construction.

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Vernal pool fairy shrimp and vernal pool tadpole shrimp are not expected to occur in the project impact area. However, in order to avoid impacts to detention basins and other aquatic habitats in the project impact area, construction activities would be required to follow standard best management practices that reduce impacts to water quality. These practices include reduction of sediment loading and sediment

disturbance as well as other standard best management practices for maintaining water quality in the project area (refer to section 2.2.2. Water Quality and Stormwater Runoff). With best management practices incorporated into construction activities, no impacts to water quality or aquatic resources are anticipated during or post-construction.

2.3.6 Invasive Species

Regulatory Setting

On February 3, 1999, President Bill 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 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 National Environmental Policy Act analysis for a proposed project.

Affected Environment

Roads, highways, and related construction projects are some of the principal dispersal vectors for exotic pest plants. The introduction and spread of exotic pest plants adversely affects natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. The following invasive species are present in the project impact area:

Fennel

Fennel (*Foeniculum vulgare*) is an exotic, invasive species widely distributed in fields and ditches throughout the Central Valley. It usually colonizes disturbed areas, especially weedy sites adjacent to fresh or brackish water, and pastures, abandoned lots, and roadsides. Fennel is common in open habitats such as grasslands, coastal scrub, savannas, and the banks of creeks, estuaries, and bays. It is particularly aggressive in areas subjected to plowing or medium-heavy grazing and recently abandoned. This species is present throughout the project study area within the Caltrans right-of-way.

Yellow star-thistle

Yellow star-thistle (*Centaurea solstitialis*) is an exotic, invasive species widely distributed in the Central Valley and adjacent foothills of California, and is currently spreading into the mountainous regions of the Sierra Nevada and Coastal Ranges. The California Department of Food and Agriculture estimated this weed covers over 12 million acres in California. It is toxic to horses and is avoided by most grazers. Yellow star-thistle is a serious nuisance on recreational lands and poses a major threat to biodiversity in native ecosystems. This species is present throughout the project study area within the Caltrans right-of-way.

Black Mustard

Black mustard (*Brassica nigra*) is an exotic, invasive species widely distributed in the Central Valley. Black mustard grows profusely and produces allelopathic chemicals that prevent germination of native plants. The spread of black mustard can increase the frequency of fires in chaparral and coastal sage scrub, changing these habitats to annual grassland. This species is present throughout the project study area within the Caltrans right-of-way.

Perennial Pepperweed

Perennial pepperweed (*Lepidium latifolium*) is an exotic, invasive species common in the Sacramento and San Joaquin Valleys. It invades brackish to saline or alkaline wetlands throughout California. It is also found in native (unplanted) hay meadows and as a weed in agricultural fields where the soil is slightly alkaline or saline. According to observations, within the last fifteen years perennial pepperweed populations in California have expanded and the plant has significantly increased its overall range. This species is present throughout the project study area within the Caltrans right-of-way.

Russian thistle

Russian thistle (*Salsola tragus*), also known as tumbleweed, is an exotic, invasive species common to the Central Valley. It is particularly well adapted to California's climate of winter rainfall and summer drought. It is commonly found in sites where the soil has been disturbed, such as along highways and fencelines. It is also prevalent in vacant lots and other noncrop areas, in field and vegetable crops, and in poorly tended landscapes. Large plants can reduce highway safety by obstructing views along right-of-ways and causing drivers to swerve their cars in an attempt to avoid colliding with windblown plants. In many areas, plants accumulate along tree rows and fencelines, posing a serious fire hazard that necessitates hours of manual labor for

cleanup and disposal. It has been reported that prairie wildfires can spread rapidly when ignited balls of burning Russian thistle blow through grasslands. This species is present throughout the project study area within the Caltrans right-of-way.

Field bindweed

Field bindweed (*Convolvulus arvensis*) is an exotic, invasive species common to the Central Valley. It is an aggressive weed in agricultural systems as well as a threat to native communities because of its great capacity for regeneration. This species is present throughout the project study area within the Caltrans right-of-way.

Alkali mallow

Alkali mallow (*Malvella leprosa*) is an exotic, invasive species common to the Central Valley. It is commonly found in formed colonies in semi-arid to arid regions, but also orchards, vineyards, agronomic crops, especially disturbed places such as roadsides, and landscaped areas. It often grows on moist, alkaline to saline soils. It can be toxic to sheep (and possibly other livestock), however animals usually avoid grazing it. This species is present throughout the project study area within the Caltrans right-of-way.

Tree of heaven

Tree of heaven (*Ailanthus altissima*) is an exotic, invasive species, widely but discontinuously distributed in California. It is most abundant along the coast and in the Sierra foothills, primarily in wastelands and disturbed, semi-natural habitats. It withstands harsh urban environments better than most plants and is used as a street tree in many cities. By producing abundant root sprouts, ailanthus creates thickets of considerable area, displacing native vegetation. Its high degree of shade tolerance gives it a competitive edge over other plant species. The species is present in the project study area within the Caltrans right-of-way.

Puncture-vine

Puncture-vine (*Tribulus terrestris*) is an exotic, invasive species found throughout California to 1,000 meters in elevation. The puncture-vine produces many stout-spined burrs that can injure people and animals and puncture bicycle tires. Foliage is toxic to livestock, especially sheep, when consumed in quantity. It is commonly found growing in disturbed places, roadsides, railways, cultivated fields, yards, waste places, and walkways. It grows best on dry sandy soils, but tolerates most soil types. The species is present in the project study area within the Caltrans right-of-way.

Ripgut brome

Ripgut brome (*Bromus diandrus*) is an exotic, invasive species found throughout California, interfering with the establishment and survival of native vegetation. It often establishes dense stands and hosts various plant diseases. Although it spreads locally, it spreads slowly, occupying gaps and disturbed areas. The species is present in the project study area within the Caltrans right-of-way.

Italian ryegrass

Italian ryegrass (*Lolium multiflorum*) is an exotic, invasive species found throughout California. Generally found in disturbed sites, it can spread into relatively undisturbed grasslands and increases the fire risk. The species was present in the project study area within the Caltrans right-of-way.

Medusa head

Medusa head (*Taeniatherum caput-medusa*) is an exotic, invasive species found throughout California. As recently as 1950 this species was reported in only six counties in northwestern California. It has since spread rapidly throughout the entire state, especially the Central Valley. This species invades grasslands, oak savannah, oak woodland, and chaparral communities. It out-competes native grasses and forbs, and once established can reach very dense patches, preventing germination and survival of native species by tying up nutrients. This species also contributes to increased fire risk in dry summer months.

Environmental Consequences

Project activities have the potential to cause or promote the introduction or spread of invasive species through spread of seed or other plant parts on vehicles, construction equipment, and on the boots of construction personnel.

Avoidance, Minimization, and/or Mitigation Measures

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 plantings included in the project would not use species listed as noxious weeds. In area of particular sensitivity, extra precautions would be taken if invasive species were found in or adjacent to the construction area. These included the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

To control the spread of invasive species either to or from the project area, the following measures would be included in the construction contract special provisions:

- All equipment and vehicles would be thoroughly cleaned to remove dirt and weed seeds prior to being transported or driven to or from the construction site.
- The borrow site or stockpile would be inspected for the presence of noxious weeds or invasive plants.
- If noxious weeds or invasive plants were present, the contractor would remove approximately five inches of the surface of the material from the site before transporting to the project.
- Before removal, this material would be chemically or mechanically treated to kill the existing noxious weeds and invasive plants, and would not be used for the project without approval.
- Invasive species would not be used in any landscaping needed for the project.

2.4 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of a specific project. 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.

Section 15130 of the California Environmental Quality Act Guidelines 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.

This discussion is based on regional land use forecasts and transportation improvements programmed within the same time frame. Effects evaluated for the proposed project include the cumulative effects of development within the region. If two or more projects in the same transportation corridor are under construction at the same time, there could be temporary traffic delays and detours. To minimize these effects, a traffic management plan is typically implemented for transportation projects.

The proposed project is the last in a series of three major roadway improvements planned to widen State Route 99. The first project in the series is almost fully constructed and consists of widening State Route 99 from a four-lane freeway to a six-lane freeway in the City of Stockton between State Route 4 and Hammer Lane, and adding auxiliary lanes between Wilson Way and Hammer Lane. The second project in the series is in the Plans, Specifications, and Estimates phase, with environmental analysis completed and a preferred alternative selected. It consists of widening State Route 99 from a four-lane freeway to a six-lane freeway in the City of Stockton between Arch Road and State Route 4.

Construction of the proposed project between State Route 4 and Hammer Lane is anticipated to be under construction between 2009 and 2012. Construction of the proposed project between Austin Road and Arch Road could begin as early as 2012. Properties could be directly affected depending on the alternative constructed. Assuming a construction period of three years for each project, the construction of all of the State Route 99 projects would overlap at least from 2009 through 2015. The proposed project and these related cumulative projects would help alleviate some of the future traffic congestion and improve operations on State Route 99.

Because the Caltrans Relocation Assistance Program would be implemented to minimize impacts associated with relocation for all three projects, cumulative impacts due to housing and business relocation are not considered to be substantial. Permanent cumulative effects of State Route 99 widening would be beneficial, as future traffic demand would be better accommodated by increased capacity with the added lanes. Though the proposed widening project and the other directly related

cumulative projects would help relieve future traffic congestion, they would not fully address future traffic congestion for the following reasons: 1) the rate of planned future growth (without the proposed project and the other related cumulative projects) is already high; 2) higher wage jobs exist in the surrounding urban employment centers, thereby necessitating travel for employment; and 3) the demand for affordable housing is ongoing.

There are foreseeable regional growth and land use changes without the proposed project and the other related cumulative projects due to the future planned growth for the region. The proposed widening project and the other related cumulative projects would help relieve future traffic congestion, but would not eliminate it. Additional future widening would be needed on State Route 99 to accommodate the full magnitude of the anticipated growth. Projections for growth in the area already exceed the capacity of the proposed roadways.

Sections in this document have discussed how certain aspects of the proposed project would not lead to adverse impacts. Section 2.1 Human Environment, which addresses potential impacts related to land use, growth, farmlands, communities, utilities, transportation, aesthetics and cultural resources, identifies how Caltrans would mitigate for potential impacts associated with the proposed project. This section also describes the net effects that benefit both residents and businesses in the community by providing better and safer access to the freeway and improving conditions for traffic traveling through the project area. Section 2.2 Physical Environment, which addresses potential impacts to floodplains, water quality, geology, hazardous waste, air quality, and noise, identifies how Caltrans would mitigate for potential impacts associated with the proposed project through project design features. Section 2.3 Biological Environment, which addresses potential impacts to natural communities, wetlands, plant and animal species, and threatened and endangered species, identifies how Caltrans would mitigate for potential impacts to these resources as a result of the proposed project. Therefore, the incremental effects of the proposed project, combined with the effects of present, past, and probable future projects are not cumulatively considerable.

2.5 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 related to human activity that include carbon dioxide (CO₂), 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 U.S. Environmental Protection Agency. The waiver was denied by the U.S. Environmental Protection Agency in December 2007. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. However, on January 26, 2009, it was announced that the U.S. 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 mpg fuel economy standard for automobiles and light duty trucks which will take effect in 2012. On June 30, 2009 EPA 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 would 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 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.

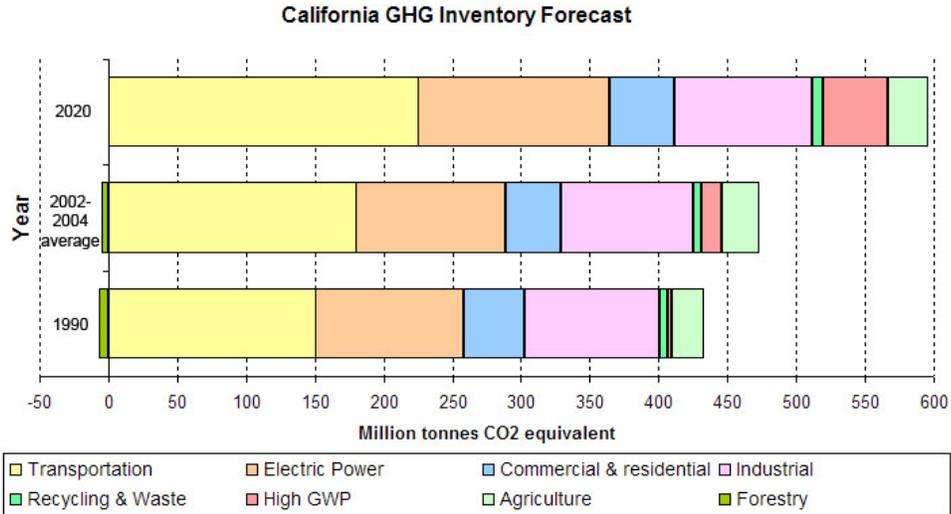
With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California’s transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and greenhouse gas 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 U.S. 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 U.S. Environmental Protection Agency does have the authority to regulate greenhouse gas. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

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. 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, California Air Resources Board recently released an updated version of the greenhouse gas 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.

Figure 2-7 California Greenhouse Gas Inventory Forecast



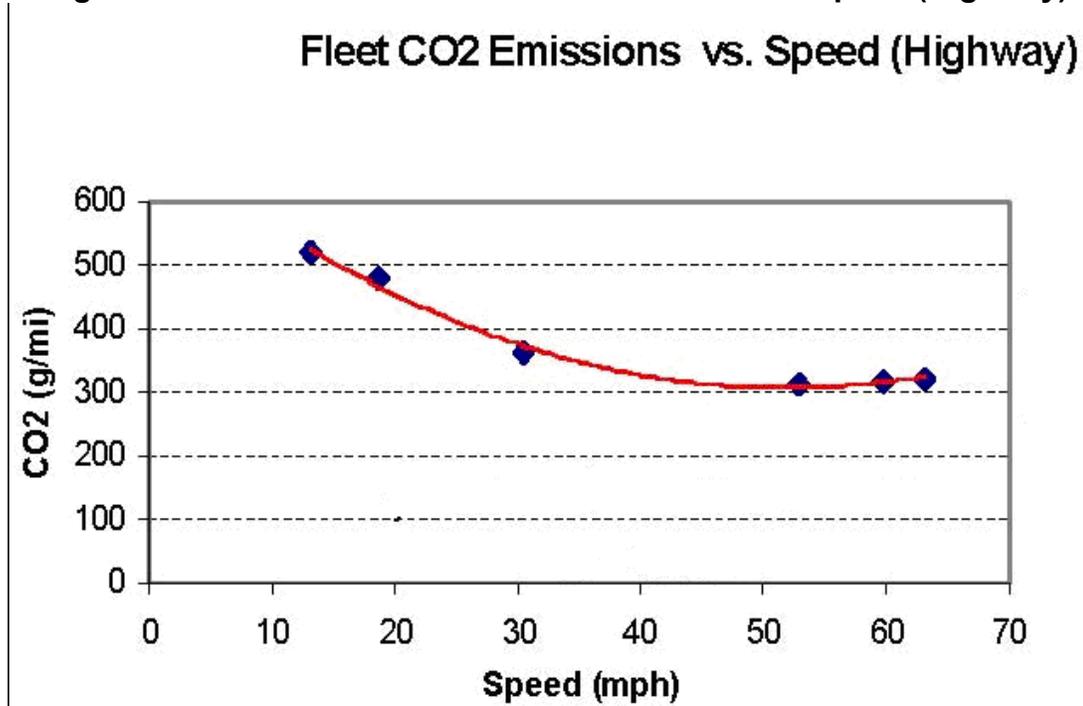
Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California’s greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human made greenhouse gas emissions are from transportation (see Climate Action Program at Caltrans (December 2006), Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006. This document can be found at: <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

Project Analysis

One of the main strategies in the Department’s Climate Action Program to reduce greenhouse gas emissions is to make California’s transportation system more efficient. 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; the most severe emissions occur from 0-25 miles per hour (see Figure 2-8 below). To the extent that a project relieves congestion by enhancing operations

and improving travel times in high congestion travel corridors greenhouse gas emissions, particularly carbon dioxide, may be reduced.

Figure 2-8 Fleet Carbon Dioxide Emissions versus Speed (Highway)



Source: Center for Clean Air Policy— [http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20\(1-13-04\).pdf](http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20(1-13-04).pdf)

The proposed project is needed to provide increased capacity for State Route 99, address congestion concerns for local and through traffic, and accommodate future planned growth. The addition of one travel lane for each direction of travel is anticipated to provide increased capacity and improved traffic flow. Table 2.37 below represents a comparison on project versus no project carbon dioxide emissions. In the future years, all alternatives including the No Project are predicted to have an increase in carbon dioxide emissions over the existing (2008) condition. The increases over existing are largely due to population growth, land use planning, and other factors that are outside the Department's direct control. However, as modeled, the Plus Project alternatives are predicted to have higher carbon dioxide emissions than the No Project.

With the current science, project-level analysis of greenhouse gas emissions is limited. There are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected carbon dioxide emissions.

Table 2.37 Comparison of Project/No Project Carbon Dioxide Emissions

Scenario (For Alternative A or B)	Yearly Vehicle Miles Traveled	Carbon Dioxide Emissions per Year (in Metric Tons)
Existing (2008)	971,376,296	438,369.9
2015 No Project	1,143,920,819	572,004.3
2015 Plus Project	1,192,992,111	604,655.5
2035 No Project	1,510,073,323	762,838.4
2035 Plus Project	1,518,102,810	778,743.3
Scenario Differences		
2015 No Project versus 2015 Plus Project	49,071,292	32,651.2
2035 No Project versus 2035 Plus Project	8,029,486	15,905.0

Limitations and Uncertainties with Modeling

EMFAC

Although EMFAC can calculate carbon dioxide emissions from mobile sources, the model does have limitations when it comes to accurately reflecting carbon dioxide emissions. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008), studies have revealed that brief but rapid accelerations can contribute significantly to a vehicle's carbon monoxide and hydrocarbon emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idle) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by the U.S. Environmental Protection Agency and the California Air Resources Board is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling. In addition, EMFAC does not include speed corrections for most vehicle classes for carbon dioxide – for most vehicle classes emission factors are held constant which

means that EMFAC is not sensitive to the decreased emissions associated with improved traffic flows for most vehicle classes. Therefore, unless a project involves a large number of heavy-duty vehicles, the difference in modeled carbon dioxide emissions due to speed change will be slight.

It is interesting to note that California Air Resources Board is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the California Air Resources Board has made this decision. Their website only states:

REVISION: Both the EMFAC and OFFROAD Models develop carbon dioxide and CH₄ [methane] emission estimates; however, they are not currently used as the basis for [California Air Resources Board's] official [greenhouse gas] inventory which is based on fuel usage information. . . . However, California Air Resources Board is working towards reconciling the emission estimates from the fuel usage approach and the models.

Other Variables

With the current science, project-level analysis of greenhouse gas emissions is limited. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected carbon dioxide emissions.

First, vehicle fuel economy is increasing. The Environmental Protection Agency's annual report, Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008 (<http://www.epa.gov/oms/fetrends.htm>), which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy, has improved each year beginning in 2005, and is now the highest since 1993.

Most of the increase since 2004 is due to higher fuel economy for light trucks, following a long-term trend of slightly declining overall fuel economy that peaked in 1987. These vehicles also have a slightly lower market share, peaking at 52 percent in 2004, with projections at 48 percent in 2008.

Table 2.38 shows the alternatives for vehicle fuel economy increases currently being studied by the National Highway Traffic Safety Administration in its Draft

Environmental Impact Statement for New Corporate Average Fuel Economy
Standards (June 2008).

Table 2.38 Required Miles Per Gallon by Alternative

2015 Required Miles per Gallon by Alternative							
No-Build		25 Percent below Optimized	Optimized (Preferred)	25 Percent above Optimized	50 Percent above Optimized	Total Costs Equal Total Benefits	Technology Exhaustion
Cars	27.5	33.9	35.7	37.5	39.5	43.3	52.6
Trucks	23.5	27.5	28.6	29.8	30.9	33.1	34.7

Second, near zero carbon vehicles will come into the market during the design life of this project. According to a March 2008 report released by University of California at Davis, Institute of Transportation Studies:

Large advancements have occurred in fuel cell vehicle and hydrogen infrastructure technology over the past 15 years. Fuel cell technology has progressed substantially resulting in power density, efficiency, range, cost, and durability all improving each year. In another sign of progress, automotive developers are now demonstrating over 100 fuel cell vehicles in California – several in the hands of the general public – with configurations designed to be attractive to buyers. Cold-weather operation and vehicle range challenges are close to being solved, although vehicle cost and durability improvements are required before a commercial vehicle can be successful without incentives. The pace of development is on track to approach pre-commercialization within the next decade.

A number of the U.S. Department of Energy 2010 milestones for fuel cell vehicles development and commercialization are expected to be met by 2010. Accounting for a five to six year production development cycle, the scenarios developed by the U.S. Department of Energy suggest that 10,000s of vehicles per year from 2015 to 2017 would be possible in a federal demonstration program, assuming large cost share grants by the government and industry are available to reduce the cost of production vehicles.¹

¹ Cunningham, Joshua, Sig Cronich, Michael A. Nicholas. March 2008. *Why Hydrogen and Fuel Cells are Needed to Support California Climate Policy*, UC Davis, Institute of Transportation Studies, pp. 9-10.

Third and as previously stated, California has recently adopted a low-carbon transportation fuel standard. The California Air Resources Board is scheduled to come out with draft regulations for low-carbon fuels in late 2008 with implementation of the standard to begin in 2010.

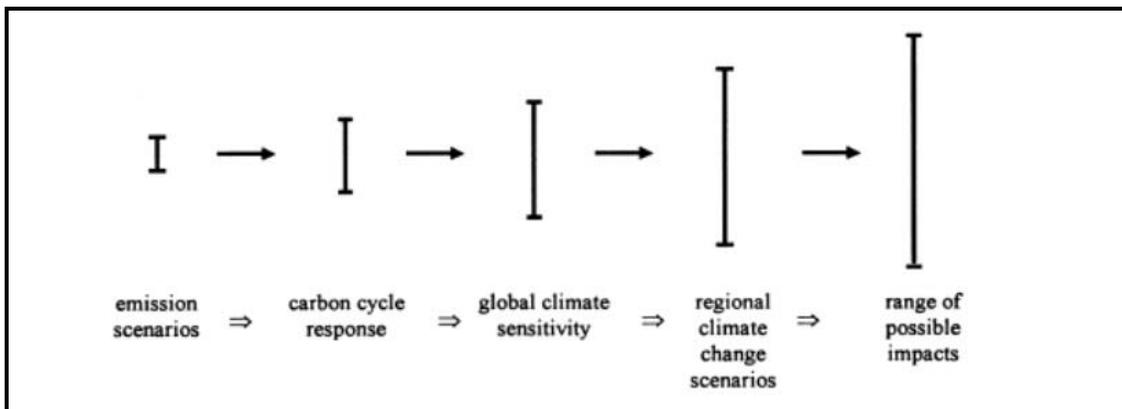
Fourth, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, *Effects of Gasoline Prices on Driving Behavior and Vehicle Market*, <http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf>, the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists have adjusted to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient models have declined over the past five years as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel-efficient vehicles.

Limitations and Uncertainties with Impact Assessment

Taken from p. 3-70 of the National Highway Traffic Safety Administration Final EIS for New CAFE Standards (October 2008), Figure 2-9 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

Cascade of uncertainties typical in impact assessments showing the “uncertainty explosion” as these ranges are multiplied to encompass a comprehensive range of future consequences, including physical, economic, social, and political impacts and policy responses.

Figure 2-9 Cascade of Uncertainties



Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in carbon dioxide emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of CO₂ equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons carbon dioxide from 2000 to 2030, which represents an increase of between 25 and 90 percent.²

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing "new" greenhouse gas emissions. It is difficult to assess the extent to which any project level increase in carbon dioxide emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

The complexities and uncertainties associated with project level impact analysis are further borne out in the recently released Final EIS completed by the National Highway Traffic Safety Administration CAFE standards, October 2008. As the text quoted below shows, even when dealing with greenhouse gas emission scenarios on a national scale for the entire passenger car and light truck fleet, the numerical differences among alternatives is very small and well within the error sensitivity of the model.

"In analyzing across the CAFE 30 alternatives, the mean change in the global mean surface temperature, as a ratio of the increase in warming between the B1 (low) to A1B (medium) scenarios, ranges from 0.5 percent to 1.1 percent. The resulting change in sea level rise (compared to the No Action Alternative)

² Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. <http://www.ipcc.ch/SPM2feb07.pdf>.

ranges, across the alternatives, from 0.04 centimeter to 0.07 centimeter. In summary, the impacts of the MY 2011-2015 CAFE alternatives on global mean surface temperature, sea level rise, and precipitation are relatively small in the context of the expected changes associated with the emission trajectories. This is due primarily to the global and multi-sectoral nature of the climate problem. Emissions of carbon dioxide, the primary gas driving the climate effects, from the United States automobile and light truck fleet represented about 2.5 percent of total global emissions of all greenhouse gases in the year 2000 (EPA, 2008; CAIT, 2008). While a significant source, this is a still small percentage of global emissions, and the relative contribution of carbon dioxide emissions from the United States light vehicle fleet is expected to decline in the future, due primarily to rapid growth of emissions from developing economies (which are due in part to growth in global transportation sector emissions).” [NHTSA Draft EIS for New CAFE Standards, June 2008, pp.3-77 to 3-78]

California Environmental Quality Act Conclusion

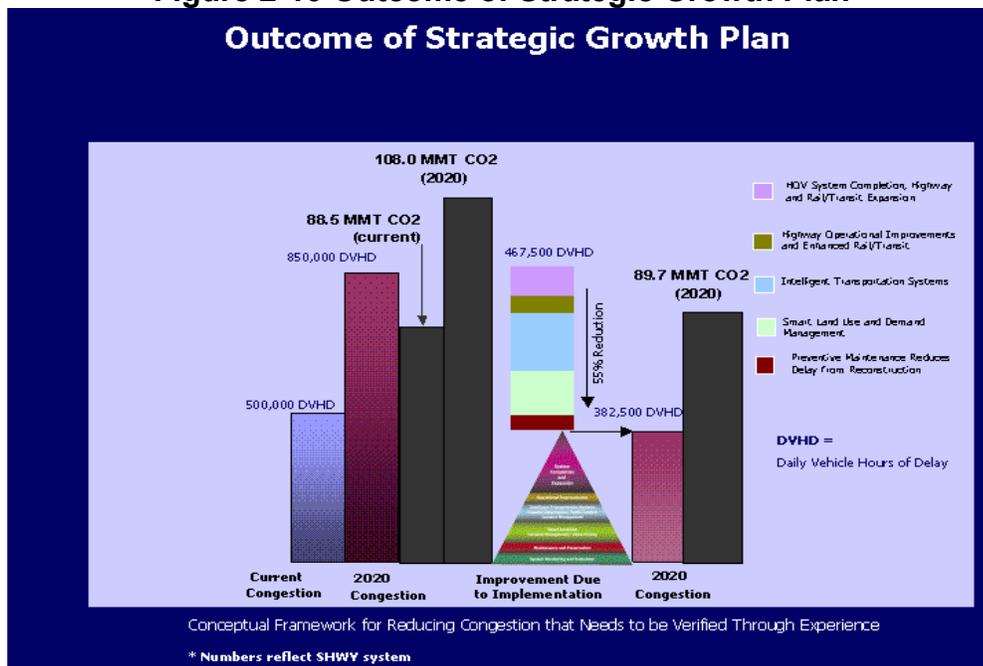
Based on the EMFAC models runs for the project, carbon dioxide emissions are predicted to increase over the existing baseline conditions with either the Plus Project or No Project alternative. As discussed above, there are limitations with EMFAC and with assessing what a given carbon dioxide emissions increase means for climate change. Given the above, 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. Caltrans is taking further measures to help reduce energy consumption and greenhouse gas emissions. These measures are outlined in the following section.

Assembly Bill 32 Compliance

Caltrans continues to be actively involved on the Governor’s Climate Action Team as California Air Resources Board works to implement the Governor’s Executive Orders 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 \$238.6 billion infrastructure improvement program to fortify the state’s transportation system, education, housing,

and waterways, including \$100.7 billion in transportation funding through 2016.³ As shown on the figure below, the Strategic Growth Plan targets a significant decrease in traffic congestion below today’s level and a corresponding reduction in greenhouse gas emissions. The 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 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.

Figure 2-10 Outcome of Strategic Growth Plan



As part of the Climate Action Program at Caltrans (December 2006, <http://www.dot.ca.gov/docs/ClimateReport.pdf>), 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; Caltrans is doing this by supporting on-going

³ Governor’s Strategic Growth Plan, Fig. 2-10 (<http://gov.ca.gov/pdf/gov/CSGP.pdf>)

research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by the U.S. Environmental Protection Agency and California Air Resources Board. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the University of California, Davis.

Table 2.39 summarizes the Department and statewide efforts that Caltrans is implementing in order to reduce greenhouse gas emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006); it is available at <http://www.dot.ca.gov/docs/ClimateReport.pdf>.

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:

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. Intelligent Transportation Systems are 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.

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, (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, 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;
- the range of uncertainty in selected sea level rise projections;
- a 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; and
- a discussion of future research needs regarding sea level rise for California.

Table 2.39 Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated Carbon Dioxide Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System Deployment	Strategic Growth Plan	Caltrans	Regions	State Intelligent Transportation System; Congestion Management Plan	.007	2.17
Mainstream Energy & Greenhouse gas into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, California Air Resources Board, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & 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

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

Strategy	Program	Partnership	Method/Process	Estimated Carbon Dioxide Savings (MMT)	
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	Cal EPA, California Air Resources Board, BT&H, MPOs	Goods Movement Action Plan	Not Estimated	Not Estimated
Total				2.72	18.67

Furthermore 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. The Department 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. (Executive Order S-13-08 allows some exceptions to this planning requirement.)

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. The Department 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, the Department 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, the Department 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, the Department will be able review its current design standards to determine what changes, if any, may be warranted in order 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 regulatory 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, and informal communication with the public, businesses, and interested parties as studies were being conducted. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

3.1 Public Agencies

San Joaquin Council of Governments—Coordination on project planning and consistency with regional plans is ongoing. Representatives of the San Joaquin Council of Governments participate in regularly scheduled (monthly) Project Development Team meetings. Interagency consultation for conformity and air quality planning in the project area is managed by the San Joaquin Council of Governments. Interagency consultation for the proposed project was initiated with the San Joaquin Council of Governments in September 2009.

Concurrence with the assumptions and analyses from the Federal Highway Administration and the United States Environmental Protection Agency is still pending.

San Joaquin County—Coordination on project planning, consistency with local plans, and efforts to ensure there are minimal impacts to residents and business owners is ongoing. Representatives of San Joaquin County participate in regularly scheduled (monthly) Project Development Team meetings.

City of Stockton—Coordination on project planning, consistency with local plans, and efforts to ensure there are minimal impacts to residents and business owners is ongoing. Representatives of the City of Stockton participate in regularly scheduled (monthly) Project Development Team meetings.

City of Manteca—Coordination on project planning, consistency with local plans, and efforts to ensure there are minimal impacts to residents and business owners is ongoing. Representatives of the City of Manteca participate in regularly scheduled (monthly) Project Development Team meetings.

California State Water Resources Control Board—Consultation for Clean Water Act, Section 401 Water Quality Certification. Consultation has not yet been initiated;

consultation and permitting activities are pending, with completion in the Project Specifications and Estimates phase of the project. Consultation is anticipated to be completed by 2012 or before.

Central Valley Regional Water Quality Control Board—Consultation for Clean Water Act Section 402, National Pollutant Discharge Elimination System, Construction Stormwater Permit and General Order for Dewatering and other Low Threat Discharge to Surface Waters. Consultation has not yet been initiated; consultation and permitting activities are pending, with completion in the Project Specifications and Estimates phase of the project. Consultation is anticipated to be completed by 2012 or before.

Central Valley Flood Protection Board—Consultation for an Encroachment Permit. Every proposal or plan of work, including the placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill embankment, building, structure, obstruction, encroachment or works of any kind including the planting, excavation, or removal of vegetation, and any repair or maintenance that involves cutting into the levee, wholly or in part within any area for which there is an adopted plan of flood control, must be approved by the Central Valley Flood Protection Board prior to commencement of work.

U.S. Army Corps of Engineers—Consultation for Clean Water Act, Section 404 Permit for filling or dredging waters of the United States. Consultation has not yet been initiated; consultation and permitting activities are pending, with completion in the Project Specifications and Estimates phase of the project. Consultation is anticipated to be completed by 2012 or before.

U.S. Fish and Wildlife Service—Consultation for Federal Endangered Species Act, Section 7 Consultation for Threatened and Endangered Species. Informal consultation for Giant Garter Snake was initiated by Caltrans on January 16, 2009. Formal consultation for Giant Garter Snake was initiated on April 30, 2009 and was completed when a biological opinion was received from the U.S. Fish and Wildlife Service on October 7, 2009.

California Department of Fish and Game—Consultation for Section 1600, Agreement for Streambed Alteration, and California Endangered Species Act, Section 2080 Agreement for Threatened and Endangered Species. Informal consultation has not yet been initiated.

National Marine Fisheries Service—Consultation for potential impacts to special-status species. Informal consultation for Central Valley Steelhead and essential fish habitat was initiated by Caltrans on January 22, 2009 and was completed on April 15, 2009.

Natural Resources Conservation Service—Consultation for activities that may irreversibly convert farmland to nonagricultural uses. In order to evaluate the impacts of the proposed project on farmland, a Farmland Conversion Impact Rating form (Form AD-1006) was completed in conjunction with the Stockton Office of the United States Natural Resources Conservation Service in June 2008. Written communication was received from the Natural Resources Conservation Service on July 7, 2008 to confirm completion of Form AD-1006.

State Historic Preservation Office—Consultation for concurrence on a finding of “no historic properties affected.” Consultation with the State Historic Preservation Office was initiated in September 2009 and is still pending.

San Joaquin Area Flood Control Agency—Consultation with San Joaquin Area Flood Control Agency for approval of construction that affects levees along French Camp Slough. San Joaquin Area Flood Control Agency is a joint Powers authority created in May 1995 between the City of Stockton, San Joaquin County and the San Joaquin County Flood Control and Water Conservation District.

San Joaquin Valley Air Pollution Control District—Consultation with the San Joaquin Valley Air Pollution Control District for an Authority to Construct and Permit to Operate. San Joaquin Valley Air Pollution Control District has jurisdiction over certain categories of air quality matters in the San Joaquin Valley Air Basin, which includes San Joaquin County.

California Public Utilities Commission—Consultation for authority to construct pursuant to the Public Utility Code, Sections 1201-1205 an at-grade crossing of a railroad track or an overpass or underpass of a railroad track.

Union Pacific Railroad Company—Consultation with the Union Pacific Railroad Company prior to receiving authority to construct by the California Public Utilities Commission for a construction and maintenance agreement.

3.2 Public Information Meetings

Caltrans, the lead agency for California Environmental Quality Act, in cooperation with San Joaquin Council of Governments, the project sponsor, San Joaquin County, and the

City of Manteca held a public information meeting for the State Route 99 Manteca Widening project on Tuesday, June 17, 2008 from 6:30 pm to 8:30 pm. The meeting was held in the Golden West Elementary School Multipurpose Room, located at 1031 North Main Street, Manteca, California. The purpose of the public information meeting was to provide members of the public and interested parties with an opportunity to learn about the project and provide comments or concerns that will become part of the public record and be considered in preparation of environmental compliance documents.

Caltrans, San Joaquin Council of Governments San Joaquin County, and the City of Manteca gave notice of the public information meeting by sending an announcement to property owners, residents, elected officials, public agencies, transit agencies, civic and community groups, and other interested parties. Display advertisements noticing the public information meeting were also placed in the following regional newspapers: The Record on May 29 and June 17, 2008; the Manteca Bulletin on May 29 and June 17, 2008; and the Sun-Post on May 30 and June 17, 2008.

The meeting format included two open house periods, one before and one after a brief 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 were added to the project mailing list. Approximately 270 people were in attendance. Each attendee received a program with an agenda, project background and purpose, project limits, alternative maps, and information on how to comment on the project, including a comment card. Attendees were encouraged to visit the information stations around the room and view the maps, graphics, and display boards. Project development team members were available at the stations to explain the displays, answer questions, and receive public input.

The predominant concern was the potential for impacts on property owners and residents near the proposed interchange improvements, primarily direct impacts on property owners and quality of life issues for residents. A total of 146 comment sheets, letters, and dictation were received as a result of this public information meeting. Listed below is a brief summary of the concerns expressed on the comment sheets, letters, and dictation received at the public information meeting.

- Quality of life issues
- Support for or opposition to State Route 99 widening and/or Main Street interchange alternatives

- Safety for pedestrians, children, etc.
- Reduction in property values/relocation and property access issues
- Traffic impacts
- Need for sound walls

As a result of input received as part of the project's community participation program, the California Environmental Quality Act lead agency and other project sponsors determined the need to evaluate an additional design alternative. The State Route 99/French Camp Road/Main Street-Lathrop Road Alternative (Alternative B) was developed in an effort to minimize several potential community impacts associated with the other Main Street interchange alternatives.

A second public information meeting was held on Wednesday, October 1, 2008, from 6:30 p.m. to 8:00 p.m. at the Community Gym, next to Golden West Elementary School, 1031 North Main Street, Manteca, California. The purpose of the public information meeting was to provide members of the public and all interested parties with information regarding the status of the project and to gain public input on the project before Caltrans prepared the Draft Initial Study.

Caltrans announced the Public Information Meeting by public notice, published in the following newspapers: the Record on Thursday, September 25, 2008, the Sun-Post on Friday, September 26, 2008, and the Manteca Bulletin on Friday, September 26, and Wednesday, October 1, 2008.

Caltrans sent letters of invitation to federal, state, and local officials. Jumbo invitation postcards for the Public Information Meeting were sent to 7,468 residents. The Public Information Coordinator sent a similar first-class letter to 430 property owners, civic and community organizations, transit providers, the school district, emergency responders, people who had attended the first public meeting or had contacted the Caltrans Environmental Specialist or the Project Manager, and people who had otherwise demonstrated an interest in the project. Flyers with information about the Public Information Meeting were distributed to residents of the Southland Mobile Home Park.

A total of 144 residents and interested parties signed in and attended the second public information meeting. Informational display boards with maps, an aerial map display, and graphics were located around the large community room used for the meeting. Project Development Team staff members were available throughout the room to explain the

displays, answer questions, and receive public input. A presentation was made by the Project Manager explaining the recent development of an additional alternative to be considered, based on comments received by members of the public at the first public meeting. Attendees were encouraged to submit written comments either on forms provided at the public comment station, by e-mail or U.S. mail at a later date, or by dictating comments to a stenographer at the public comment station. A total of 26 comment sheets, letters, and dictation were received as a result of this public information meeting. Listed below is a brief summary of the concerns expressed on the comment sheets, letters, and dictation received at the public information meeting.

- Support for or opposition to Main Street interchange alternatives
- Need for sound walls
- Impacts to private property; relocation and access issues

Chapter 4 List of Preparers

This document was prepared by the following staff from Caltrans:

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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 Initial Study/Environmental Assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
AESTHETICS - Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

AGRICULTURE 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. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially				

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentration?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CULTURAL RESOURCES - Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Archaeological resources are considered “historical resources” and are covered under (a).				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or				

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
that would become unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site that 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HYDROLOGY AND WATER QUALITY - Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 that would result in substantial erosion or siltation on or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 that would result in flooding on or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Result in inundation by a seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TRANSPORTATION/TRAFFIC - Would the project:				
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patters, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
UTILITY AND SERVICE SYSTEMS - Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in determination by the wastewater treatment provider that 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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, 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY (916) 653-4086



*Flex your power!
Be energy efficient!*

August 25, 2009

TITLE VI POLICY STATEMENT

The California State 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, 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.


RANDELL H. IWASAKI
Director

"Caltrans improves mobility across California"

Appendix C Summary of Relocation Benefits

California Dept. of Transportation Relocation Assistance Program

Relocation Assistance Advisory Services

The California Department of Transportation (Caltrans) would provide relocation advisory assistance to any person, business, farm, or non-profit organization displaced as a result of Caltrans' acquisition of real property for public use. Caltrans would assist residential displacees in obtaining comparable decent, safe, and sanitary replacement housing by providing current and continuing information on sales prices and rental rates of available housing. Non-residential displacees would receive information on comparable properties for lease or purchase.

Residential replacement dwellings would be in equal or better neighborhoods, at prices within the financial means of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, displacees would be offered comparable replacement dwellings that are open to all persons regardless of race, color, religion, sex, or national origin, and are consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance would also include supplying information concerning federal- and state-assisted housing programs, and any other known services being offered by public and private agencies in the area.

Residential Relocation Payments Program

For more information or a brochure on the residential relocation program, please contact Dennis Kong at dennis_kong@dot.ca.gov, (559) 243-8266, or 2015 East Shields Avenue, Suite100, Fresno CA 93726.

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

If you own or rent a mobile home that may be moved or acquired by Caltrans, a relocation brochure is available in English at http://www.dot.ca.gov/hq/row/pubs/mobile_eng.pdf and in Spanish at http://www.dot.ca.gov/hq/row/pubs/mobile_sp.pdf.

The Business and Farm Relocation Assistance Program

The brochure on the business relocation program is 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 the 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: State of California, Department of Transportation, District #10, 1976 East Charter Way/East Dr. Martin Luther King Jr. Blvd., Stockton, CA 95205.

Appendix D Minimization and/or Mitigation Summary

Minimization and/or Mitigation Summary Resource	Mitigation Measure
Land Use	No specific measures would be required. However, to ensure consistency with the existing and future land uses, and with state, regional, and local plans, proposed project construction activities would be coordinated under the cooperation of San Joaquin County, the Cities of Stockton and Manteca, the San Joaquin Council of Governments.
Community Impacts	Relocations Potential avoidance, minimization, and mitigation measures to address both permanent relocation and temporary construction-related impacts include the following: <ul style="list-style-type: none"> • Provide standard relocation assistance in compliance with Caltrans Relocation Assistance Program and the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. • All efforts would be made to identify relocation opportunities for affected businesses which would reduce the loss of goodwill and historic patronage. Wherever feasible, assistance would be made available in identifying suitable relocation sites within the service area of existing businesses.
Utilities/ Emergency Services	By following the established process, Caltrans would minimize impacts due to utility relocation. Potential minimization measures include the following: <ul style="list-style-type: none"> • Before construction starts, underground utility alert services would identify the location of all underground service as to avoid the unplanned disruption of utilities during roadway excavation and other activities.

	<ul style="list-style-type: none"> • Through construction management and project scheduling, all available measures shall be taken to minimize the duration of any utility or service shutdowns. • Before construction starts, Caltrans would coordinate with local law enforcement, fire protection, and emergency response providers in the study area to prepare an Emergency Access Plan, which will identify phases of the project and construction scheduling, and would identify appropriate alternative emergency access routes where necessary.
<p>Traffic and Transportation/Pedestrian and Bicycle Facilities</p>	<p>No specific measures would be required. Any potential temporary construction impacts to the project area would be minimized and avoided with implementation of guidelines in the Caltrans Best Management Practices Manual, as well as implementation of a Traffic Management Plan. The Traffic Management Plan is a detailed plan that describes exactly where and when vehicle, bicycle, and pedestrian traffic would be detoured during the different phases of construction to minimize construction impacts. This plan would be developed during the Project Specifications and Estimates Phase, following conclusion of the environmental process. Caltrans would also coordinate with the Union Pacific Railroad to minimize any short term, temporary construction impacts to operations during implementation of the French Camp Road interchange improvements.</p>
<p>Visual/Aesthetics</p>	<p>The design of avoidance and minimization measures is undertaken with the understanding that the State Route 99 corridor is a preexisting facility and would therefore not impose a completely new impact to the adjacent area. Nevertheless, visual impacts would occur and avoidance and minimization measures would be required to lessen the effects of construction.</p> <p>The proposed avoidance and minimization measures incorporate design features and methods to avoid permanent adverse visual impacts and include the following:</p> <ul style="list-style-type: none"> • Architectural detailing and/or surface treatments consistent with the surrounding community would be incorporated into new bridge designs. • Landscape planting, where possible, would be implemented in an effort to help lessen the visual impacts caused by construction.

- Highway and retaining wall planting would be provided, where possible, to screen and/or soften undesirable views both to and from the project area.
- Every effort would be made to avoid the removal of existing plant material.
- Areas impacted or disturbed by construction would be revegetated in the form of new landscape planting and irrigation systems. Replacement planting areas would be available within the ramps of the two proposed interchange areas.
- Vegetation for highway or replacement planting would be plant species adapted to the specific zone or region of the project area.
- Areas of vegetation disturbance around Littlejohns Creek, Lone Tree Creek, and French Camp Slough would be restored with plantings.
- Trees potentially protected by City and County ordinances may exist within the proposed project limits. Prior to construction, a tree survey would be conducted for the project area. As needed, the results of the survey would be used for consultation and permit application with San Joaquin County and the Cities of Manteca and Stockton.
- Graded slopes would be maintained at 1:4 or flatter wherever possible to help in the revegetation process.
- Where feasible, slope contouring would be implemented in such a way as to match existing adjacent contours.
- Where possible, slopes would not exceed 1:2 (Vertical: L Horizontal) in gradient.
- Pedestrian and bicycle accessibility would be incorporated to meet mandated access requirements.

Additionally, if determined to be feasible, one or more of the following avoidance and minimization measures would be implemented:

- Highway Art may also be incorporated to break up the built environment and enhance the quality of the driving

	<p>experience. Artistic design elements must be consistent with community goals.</p> <ul style="list-style-type: none"> • Every effort would be made to implement anti-graffiti products and introduce landscape designs to reduce and prevent graffiti on proposed project structures (e.g. vines plantings on walls, possible design materials and textures, etc.). • Replacement planting areas would be available within the ramps of the two proposed interchange areas.
Hydrology and Floodplain	<p>Measures to minimize floodplain impacts are included in the project design and are incorporated in the Caltrans Statewide Storm Water Permit, with which the project would comply. Multiple infiltration basins are being considered as part of the design of the project that would effectively accommodate proposed runoff from the project. As a result, no additional avoidance, minimization and/or mitigation measures are proposed for project related hydrology and floodplain effects.</p>
Water Quality and Stormwater Runoff	<p>The project would include construction of up to 14 infiltration basins. The proposed infiltration basins would collect and treat all runoff from the highway, including the proposed lane additions, to ensure there would be no impact to surface or ground water. Surface flows would continue to move from east to west across the highway through the proposed median barrier in six inch tall curved openings spaced appropriately for anticipated flows.</p> <p>The design and construction of the proposed project must adhere to the requirements of the National Pollutant Discharge Elimination System, Caltrans Storm Water Management Plan, the Caltrans Project Planning and Design Guide, and include best management practices.</p> <p>To minimize water quality impacts within the project area, waterways would be diverted before any construction within the channel to keep silt from entering the waterway. Temporary falsework would be used where possible and would be removed immediately upon the conclusion of all work within the channel. After construction is completed, all disturbed soils would be hydroseeded and covered with erosion control fabric to prevent erosion of the channel banks. Seeds used for revegetation would consist of native plants typical in this region of the Central Valley.</p> <p>The Caltrans National Pollutant Discharge Elimination System – Statewide Storm Water Pollution Prevention Plan would</p>

be implemented to address all requirements for pollution prevention, and erosion and sediment control. A Storm Water Pollution Prevention Plan would be prepared for the project and implemented during construction. Avoidance and minimization measures for storm water would be accomplished through implementation of approved best management practices, which are generally broken down into four categories: pollution prevention, treatment, construction, and maintenance. Caltrans' Storm Water Program provides guidance for implementation of each of these best management practices. Selection and design of permanent project best management practices would be refined as the project progresses into final design.

In the construction phase, the contractor would have the responsibility, as stated in Caltrans' Standard Specifications Section 7-1.01G, to take the necessary steps to eliminate potential water quality impacts during construction. These steps include but are not limited to the following:

- Soil stabilization
- Sediment control
- Wind erosion control
- Tracking control
- Non-storm water control
- Waste management and material pollution control

A Notification of Construction would be submitted to the Central Valley Regional Water Quality Control Board at least 30 days before the start of construction. A Notice of Construction Completion would be submitted to the Central Valley Regional Water Quality Control Board upon completion of construction.

With the incorporation of accepted engineering practices; avoidance and/or minimization measures; and, coordination with the State Water Resources Control Board, the Central Valley Regional Water Quality Control Board, and other local agencies with jurisdiction over water quality and storm water in the project area the proposed project would not produce

	substantial or lasting impacts to water quality or storm water runoff during construction or its operation.
Paleontology	<p>Due to planned excavation for the project, the Paleontological Identification/Evaluation Report recommended that monitoring take place, as outlined below, where excavation would disturb in-place sedimentary strata below the upper soil layers (upper three feet). The project area would also require monitoring if excavation were performed below the uppermost three feet of sediment.</p> <ul style="list-style-type: none"> • A nonstandard special provision for paleontology mitigation would be included in the construction contract special provisions section to advise the construction contractor of the requirement to cooperate with the paleontological salvage. • A qualified principal paleontologist (M.S. or PhD in paleontology or geology familiar with paleontological procedures and techniques) would be retained to prepare a detailed Paleontological Mitigation Plan prior to the start of construction. All geologic work would be performed under the supervision of a California Professional Geologist. • A qualified principal paleontologist would be retained to be present at pre-grading meetings to consult with grading and excavation contractors. • Near the beginning of excavations, the principal paleontologist would conduct an employee environmental awareness training session for all persons involved in earth moving for the project. • A paleontological monitor, under the direction of the qualified principal paleontologist, would be onsite to inspect cuts for fossils at all times during original grading involving sensitive geologic formations. • The paleontologist (or paleontological monitor) would recover any fossils that were discovered. Construction work in these areas would be halted or diverted to allow recovery of fossil remains in a timely manner. • Bulk sediment samples would be recovered from fossiliferous horizons and processed for microvertebrate remains as determined necessary by the principal paleontologist.

	<ul style="list-style-type: none"> • Fossil remains collected during the monitoring and salvage portion of the mitigation program would be cleaned, repaired, sorted, and cataloged. • Prepared fossils, along with copies of all pertinent field notes, photos, and maps, would then be deposited in a scientific institution with paleontological collections. • A final report would be completed that outlines the results of the mitigation program.
<p>Hazardous Waste or Materials</p>	<p>A Preliminary Site Investigation was recommended and is currently being prepared for properties affected by the proposed project, as described above. The investigation will focus on assessing potential and/or documented soil and groundwater impacts associated with the identified potential hazardous waste facilities proposed for partial or complete parcel acquisitions or used as construction easements. Soil sampling was also recommended within Caltrans existing rights-of-way where soil excavation is planned in the vicinity of identified potential hazardous waste facilities; the sampling would provide data for evaluating the management and disposal of potentially contaminated soils and identifying construction worker health and safety requirements.</p> <p>The Preliminary Site Investigation will also determine if lead-based paint or asbestos-containing material exists within structures to be acquired and/or demolished. The contractor would use proper health and safety measures to minimize the exposure of workers to potential asbestos or lead-based paint from affected structures. Asbestos-containing materials may also be identified on bridges within the proposed project area. Where determined by the Preliminary Site Investigation to be present, asbestos-containing materials would be removed and disposed of by a licensed contractor registered with the California Occupational Safety and Health Administration for asbestos-related work or by a licensed and certified asbestos abatement contractor before renovation, demolition, or other activities that would disturb the material. In accordance with San Joaquin Valley Air Pollution District Regulation IV, Rule 4002, written notification to the San Joaquin Valley Air Pollution District is required 10 working days before beginning of any demolition activity, whether asbestos is present or not.</p> <p>The Preliminary Site Investigation will also survey for aerially deposited lead. Subsequent to the Preliminary Site Investigation and before construction, a project-specific Lead Compliance Plan must be developed and implemented for</p>

	<p>earthwork as part of Caltrans non-standard special provisions.</p> <p>Based on the initial results of the Preliminary Site Investigation, it was determined that a more detailed evaluation of aerially deposited lead was necessary for the proposed project. Therefore, an Aerially Deposited Lead Assessment was recommended and is currently being prepared for the proposed project, as described above. The purpose of this assessment is to evaluate whether impacts due to aerially deposited lead are sufficient to require additional testing and/or mitigation recommendations for construction.</p> <p>A Pesticide Assessment was recommended and is currently being prepared for the proposed project, as described above. The purpose of this assessment is to evaluate portions of the project located in areas of historic agricultural fields and orchards for residues of persistent pesticides.</p> <p>In accordance with Title 8, California Occupational Safety and Health Administration, Section 1532.1(p), written notification to the nearest California Occupational Safety and Health Administration district office is required at least 24 hours before commencing certain types of lead-related work.</p>
<p>Air Quality</p>	<p>Caltrans Standard Specifications pertaining to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emissions impacts during construction. The provisions of Caltrans Standard Specifications, Section 14-1.01 “Air Pollution Control” and Section 14-1.02 “Dust Control” require the contractor to comply with the San Joaquin Valley Air Pollution Control District’s rules, ordinances, and regulations.</p> <p>To control the generation of construction-related PM₁₀ emissions, Caltrans shall require construction contractors to prepare and submit a Dust Control Plan to the San Joaquin Valley Air Pollution Control District for their approval at least 30 days prior to any earthmoving or construction activities.</p> <p>San Joaquin Valley Air Pollution Control District Rule 9510, Indirect Source Review, requires implementation of control measures and/or purchasing of emissions offsets to mitigate construction-related NOx and PM10 emissions from roadway projects in excess of 2.0 tons. Off-Site Emission Reduction Fees shall be calculated, as dictated by Rule 9510, to reduce construction-related NOx emissions by 20 percent and PM10 emissions by 45 percent, compared to the statewide fleet average.</p>

	<p>Climate change is analyzed in Chapter 2 under “Climate Change (CEQA)”. Neither EPA nor FHWA has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA’s climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations would be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.</p> <p>Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the CEQA chapter of this environmental document and may be used to inform the NEPA decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.</p>
<p>Noise and Vibration</p>	<p>Based on studies completed to date, Caltrans and the Federal Highway Administration propose to incorporate noise abatement measures in the form of masonry block barriers (sound walls) at five separate locations. See Figures 2-4A through 2-4N and Figure 2-5 for the locations of all of the sound walls being considered for the proposed project alternatives. The barriers would be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receivers, as required by the Caltrans <i>Highway Design Manual</i>, Chapter 1100. The barriers would range from approximately 600 feet to 3,500 feet in length, with heights varying from 8 to 16 feet. Calculations based on preliminary design data indicate that proposed barriers PB-7, PB-10-4, PB-11, PB-12, and PB-13 would reduce noise levels by at least 5 decibels for 143 residences at an estimated cost of approximately \$54,000 to \$60,000 per residence. If during final design, conditions are found to have substantially changed, then noise abatement may not be necessary. The final decision on the noise abatement measures would be made on completion of the project design and the public involvement processes. Application of the recommended noise abatement measures is anticipated to attenuate potential project noise impacts</p> <p>In addition, all construction 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</p>

	<p>implement appropriate additional noise abatement 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.</p>
<p>Biological Environment</p>	<p>Natural Communities</p> <p>Prior to construction, an International Society of Arboriculture Certified Arborist or a Registered Professional Forester would survey the project corridor and all areas within 50 feet for oak trees. Information would be recorded identifying the location, species, size (diameter at 24 inches above grade), approximate dripline, and overall vigor of the tree. The Contractor would use this information to apply for an approved Improvement Plan application from the San Joaquin County Review Authority for development within the county’s jurisdiction that could potentially affect native oak trees, heritage trees, or historical trees. The Contractor would also apply for a separate tree removal permit from the City of Stockton Parks and Recreation Department for development of property containing heritage oak trees on or within 50 feet of the property.</p> <p>A landscape plan would be completed for the project and would include replacement of the oaks removed (discussed in Section 2.1.7, Visual/ Aesthetics). Additionally, if the trees were to be removed during nesting season for migratory birds (discussed in Sections 2.3.4 and 2.3.5), a qualified biologist would conduct preconstruction surveys before tree removal to ensure no nesting birds are present.</p> <p>Wetlands and Other Waters</p> <p>The proposed project may result in a discharge of fill material to waters of the U.S. and therefore require a Section 404 permit from the Army Corps of Engineers. The surface waters in the project area are considered waters of the State by the Central Valley Regional Water Quality Control Board and are subject to State regulation. The California Department of Fish and Game may also require a Section 1602 Streambed Alteration Agreement if it determines potentially affected streams with defined beds, banks, and channels support wildlife resources that may be at risk from project activities. The project would conform to all Federal and State permit requirements to minimize and mitigate for impacts to waters of the U.S.</p> <p>Construction activities would be required to follow standard engineering practices that reduce impacts to water quality, especially where the watercourses are affected. These practices include reduction of sediment loading and sediment</p>

disturbance, as well as other standard best management practices for maintaining water quality in the project area. With best management practices incorporated into construction activities, no impacts to water quality are anticipated during or post-construction.

The following avoidance and minimization efforts would be incorporated into the proposed project to reduce impacts to watercourses:

- Clearing would be confined to the minimal area necessary within 200 feet of aquatic habitat to facilitate construction activities. To ensure that construction equipment and personnel do not affect sensitive aquatic habitat outside of the project area, orange barrier fencing would be erected to clearly define the habitat to be avoided and to delineate the environmentally sensitive areas of the project.
- Standard construction best management practices would be implemented throughout construction, in order to avoid and minimize adverse effects to the water quality within the project impact area. Appropriate erosion control measures would be used (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from construction sites.
- Emergent (rising out of water) and submergent (covered by water) vegetation would be retained where feasible. Rapidly sprouting plants, such as willows, would be cut off at ground level and root systems left intact, when removal is necessary.

Upon completion of construction, temporarily disturbed sections of watercourses would be revegetated with native grasses and forbs.

Animal Species

Western Burrowing Owl

In the year prior to construction, surveys would be conducted by a qualified biologist to determine presence/absence of burrowing owls and/or occupied burrows in and within 500 feet of the project impact area according to the California Department of Fish and Game's 1995 Staff Report on Burrowing Owls. A winter survey would be conducted between December 1 and January 31 and a nesting survey would be conducted between April 15 and July 15. Preconstruction

surveys would also be conducted within 30 days prior to construction to ensure that no additional burrowing owls have established territories since the initial surveys. If no burrowing owls are found during any of the surveys, no further mitigation would be necessary. If burrowing owls are found, then the following measures would be implemented prior to the commencement of construction:

- During the non-breeding season (September 1 through January 31) burrowing owls occupying areas intended for construction would be evicted by passive relocation as described in the California Department of Fish and Game's 1995 Staff Report on Burrowing Owls.
- During the breeding season (February 1 through August 31) occupied burrows would not be disturbed and would be provided with an approximately 245 foot protective buffer unless a qualified biologist approved by California Department of Fish and Game verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) 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.

White-Tailed Kite

The following incidental take minimization measures were taken from the San Joaquin Multi-Species Habitat Conservation and Open Space Plan Section 5.2.4.19. The incidental take measures consist of preconstruction surveys and maintenance of a buffer around active nests if found.

If construction begins during the nesting season for white-tailed kite (February 15 to September 15), a preconstruction survey would be conducted to survey all potential nest trees on or adjacent to the areas intended for construction (e.g., especially tree tops 15-59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees). If no white-tailed kite nests are found, then no further mitigation is necessary. If an occupied white-tailed kite nest is found, a setback of 100 feet would be established around the nest tree. The setback would be maintained during the nesting season for the period encompassing nest building and continuing until the fledglings leave the nests. Setbacks would be marked by brightly colored temporary fencing. No construction would occur within the setback area.

Other Raptors and Migratory Birds

The following avoidance and minimization measures are to be used when work occurs on or in the vicinity of structures or

natural areas that may be subject to nesting by migratory birds that may be adversely affected, injured, or killed during construction activities. This is a general Migratory Bird Treaty Act provision. Additional provisions for specific species including Swainson's hawk, white-tailed kite, and burrowing owl are discussed separately.

- The contractor would protect migratory birds, their occupied nests, and their eggs as specified in these special provisions. Nesting is typically February 15 to September 1, or as determined appropriate in consultation with the district biologist.
- When evidence of migratory bird nesting that may be adversely affected by construction activities is discovered, or when birds are injured or killed as a result of construction activities, the contractor would immediately stop work within 0.25 mile of the nests and notify the engineer. Work would not resume until the engineer provides written notification that work may begin in this location.

The following avoidance and minimization measures would be incorporated for nesting swallows and black phoebes. Since evidence of nests was observed, there is the potential that swallows would attempt to establish nests under the bridges before the work window for construction. Exclusionary netting would be installed around the undersides of the bridge before February 15 of the construction year to prevent new nests from being formed, and/or prevent the reoccupation of existing nests. The construction contractor would do the following:

- Adhere to all State and Federal laws and regulations pertaining to the protection of migratory birds, their nests, and young birds.
- Remove all existing unoccupied swallow nests on listed structures when assigned a structure.
- Keep all structures on the assigned list free of swallow nests until notified by the Caltrans contract manager to cease swallow nest prevention activities.
- Inspect all listed structures for swallow activity a minimum of three days per week; no two days of inspection would be consecutive. A weekly log would be submitted to the Caltrans responsible biologist. The contractor would continue inspections until notified by the Caltrans contract manager to stop inspections. If an exclusion devise were

found to be ineffective or defective, the contractor would complete repairs to the device within 24 hours. If birds were found trapped in an exclusion device, the contractor would immediately remove the birds in accordance with the U.S. Fish and Wildlife guidelines.

- Submit for approval working drawings or written proposals of any exclusion devices, procedures, or methods to the Caltrans biologist before installing them.
- The method of installing exclusion devices would not damage permanent features of the structure. Approval by the Caltrans biologist of the working drawings or inspection performed by the authorized Caltrans responsible biologist would in no way relieve the contractor of full responsibility for deterring nesting.

Pale big-eared bat and Yuma myotis bat

Preconstruction bat surveys would be conducted to inspect the undersides of the bridges at Littlejohns Creek, Lone Tree Creek, and French Camp Slough for roosting bats. If no roosting bats are found, no further measures would be necessary. If bats are detected within the roost at the time of construction, excluding any bats from roosts would be accomplished by a bat specialist prior to the onset of any construction activities. Exclusionary devices, such as plastic sheeting, plastic or wire mesh, can be used to allow for bats to exit but not re-enter any occupied roosts. Expanding foam and plywood sheets can be used to prevent bats from entering unoccupied roosts. Prior to installation of exclusionary devices, the Caltrans biologist would have to approve working drawings or written proposals of the exclusion devices, procedures, or methods.

Threatened and Endangered Species

Central Valley Steelhead

Construction activities would be required to follow standard engineering practices that reduce impacts to water quality, especially where the three water courses are affected. These practices include reduction of sediment loading and sediment disturbance as well as other standard best management practices for maintaining water quality in the project area. With best management practices incorporated into construction activities, no impacts to water quality are anticipated during or post-construction.

The following specific avoidance and minimization efforts would be incorporated into the project to reduce potential negative impacts to Lone Tree Creek, French Camp Slough and Littlejohns Creek.

- All proposed in-channel work would be conducted from June 15 through October 15.
- Best Management Practices (BMPs) would be implemented during construction activities. All disturbed soils would undergo erosion treatment (*i.e.* hay bales, filter fences, vegetative buffer strips) prior to October 15th and/or immediately after construction is terminated to reduce siltation and contaminated runoff from the construction sites.
- Environmentally sensitive areas would be fenced off to avoid unnecessary habitat disturbance. If any riparian vegetation would be disturbed, native trees, shrubs, native grasses, and/or forbs would be replanted at the end of construction. Appropriate irrigation, care and monitoring would be conducted to ensure that healthy riparian and shaded riverine aquatic habitat is successfully established.
- Equipment would be refueled and serviced at designated construction staging areas 100 feet from the wetted width of any stream. All construction materials and fill would be stored and contained in a designated area that is located away from the channels to prevent transport of foreign materials into adjacent streams.
- A silt fence would be installed to collect potential discharge, and adequate materials for spill clean-up would be maintained at the construction sites at all times.
- Hazardous or potentially toxic materials such as herbicides and petroleum products would be located outside of the 100 year flood zone and would be bermed to prevent the discharge of pollutants to ground water and runoff water.

Giant Garter Snake

The following avoidance and minimization efforts would be implemented in order to reduce project effects to giant garter snakes. These measures would only be implemented for Littlejohns Creek, Lone Tree Creek, and French Camp Slough as these are the only drainages that would be impacted by construction that provide potential habitat for the snake.

- In-water and bank-side construction activities would be conducted between June 15th and October 15th as

necessary to ensure that construction occurs during the active period of the giant garter snake.

- Between April 15th and September 30th, any dewatered habitat would remain dry, with no puddle water, for at least 15 consecutive days before workers excavate or fill dewatered habitat. Efforts would be made to ensure that the dewatered habitat does not continue to support giant garter snake prey (e.g., fish, tadpoles, and aquatic insects), which could detain or attract snakes into the area. This measure would encourage giant garter snakes to leave the site.
- Temporary fencing (or similar devices without openings that might cause the giant garter snake to become stranded or otherwise become entangled) would be installed at the upstream and downstream limits of the construction area, to deter giant garter snakes from entering the project area and be harmed by construction activities.
- The fencing would be installed regardless of whether there is aquatic habitat present during the time of construction to ensure that giant garter snakes do not enter the construction zone.
- Construction personnel would participate in a U.S. Fish and Wildlife Service-approved worker environmental awareness program. A qualified biologist would inform all construction personnel about the life history of the giant garter snake; how to identify species and their habitats; what to do if a giant garter snake is encountered during construction activities; and explain the State and Federal laws pertaining to the giant garter snake.
- A qualified biologist would conduct a pre-construction survey for giant garter snakes, no more than 24 hours prior to the start of construction activities (site preparation and grading). If construction activities stop for a period of two or more weeks, a new giant garter snake survey would be completed no more than 24 hours prior to the reinitiating of construction activities.
- Clearing would be confined to the minimal area necessary within 200 feet of aquatic habitat to facilitate construction activities. To ensure that construction equipment and personnel do not affect upland and aquatic habitat for the giant garter snake outside of the project area, orange barrier fencing would be erected to clearly

define the habitat to be avoided and to delineate the environmentally sensitive areas on the project.

- Upon completion of construction, disturbed sections of Littlejohns Creek, Lone Tree Creek, and French Camp Slough would be revegetated with native grasses and forbs.
- If a live giant garter snake is encountered during construction activities, the project's biological monitor and the U.S. Fish and Wildlife Service would be immediately notified. The biological monitor would do the following:
 - Stop construction activity in the vicinity of the giant garter snake. Monitor the giant garter snake and allow the giant garter snake to leave on its own. The monitor would remain in the area for the remainder of the workday to make sure the giant garter snake is not harmed or if it leaves the site and does not return. Escape routes for giant garter snakes would be determined in advance of construction. If the giant garter snake does not leave on its own within one working day, further consultation with the U.S. Fish and Wildlife Service would be conducted.
 - Only personnel with a U.S. Fish and Wildlife Service recovery permit pursuant to Section 10(a)(1)(A) of the Endangered Species Act would have the authority to capture and/or relocate giant garter snakes encountered in the project area.
 - Upon locating dead, injured or sick giant garter snakes, Caltrans would notify the U.S. Fish and Wildlife Service Division of Law Enforcement or the Sacramento Fish and Wildlife Office within one working day. Written notification to both offices would be made within three (3) calendar days and would include the date, time, and location of the finding of a specimen and any other pertinent information.
- No plastic, monofilament, jute, or similar erosion control matting that could entangle giant garter snakes would be used. Possible substitutions include coconut coir matting, tactified hydro seeding compounds, or other material approved by the U.S. Fish and Wildlife Service.
- Standard construction best management practices would be implemented throughout construction, in order to avoid and minimize adverse effects to the water quality within the project impact area.

Bridge widening has been designed to minimize impacts to giant garter snake habitat in Lone Tree Creek and French Camp Slough. The above-mentioned avoidance and minimization measures would be implemented. Upon completion of construction, disturbed sections of Lone Tree Creek and French Camp Slough would be revegetated with native grasses and forbs. This would result in higher habitat quality than that of the pre-project conditions.

Compensatory mitigation for permanent impacts to giant garter snake aquatic habitat in Lone Tree Creek and French Camp Slough would be implemented. Giant garter snake aquatic habitat credits would be purchased at a 3:1 ratio from a U.S. Fish and Wildlife Service approved mitigation bank to offset the loss of giant garter snake aquatic habitat in these two water bodies.

Swainson's Hawk

The following incidental take minimization measures taken from Section 5.2.4.11. of the San Joaquin Multi-Species Habitat Conservation and Open Space Plan would be implemented. The incidental take measures consist of either retaining known or potential nest trees and subsequent protection of nests during the nesting season or removing nest trees during the non-nesting season.

The project proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past three years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees. If the project proponent elects to retain a nest tree, and in order to encourage tree retention, the following avoidance and minimization measures would be implemented during construction activities:

- If a nest tree becomes occupied during construction activities, then all construction activities would remain a distance of two times the dripline of the tree, measured from the nest.
- If the project proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.

In the calendar year prior to construction, surveys would be conducted by a qualified biologist to determine the presence/absence of nesting Swainson's hawk in the project impact area and immediate vicinity according to the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* established

by the Swainson's Hawk Technical Advisory Committee in May 31, 2000. If no nesting Swainson's hawks are found, no further mitigation would be necessary. If nesting Swainson's hawks are found, California Department of Fish and Game would be consulted to determine the appropriate mitigation measures for preventing nest disturbance during construction.

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

Vernal pool fairy shrimp and vernal pool tadpole shrimp are not expected to occur in the project impact area. However, in order to avoid impacts to detention basins and other aquatic habitats in the project impact area, construction activities would be required to follow standard best management practices that reduce impacts to water quality. These practices include reduction of sediment loading and sediment disturbance as well as other standard best management practices for maintaining water quality in the project area (refer to section 2.2.2. Water Quality and Stormwater Runoff). With best management practices incorporated into construction activities, no impacts to water quality or aquatic resources are anticipated during or post-construction.

Biological Environment, Invasive Species

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 plantings included in the project would not use species listed as noxious weeds. In area of particular sensitivity, extra precautions would be taken if invasive species were found in or adjacent to the construction area. These included the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

To control the spread of invasive species either to or from the project area, the following measures would be included in the construction contract special provisions:

- All equipment and vehicles would be thoroughly cleaned to remove dirt and weed seeds prior to being transported or driven to or from the construction site.
- The borrow site or stockpile would be inspected for the presence of noxious weeds or invasive plants.
- If noxious weeds or invasive plants were present, the contractor would remove approximately five inches of the surface of the material from the site before transporting to the project.

	<ul style="list-style-type: none">• Before removal, this material would be chemically or mechanically treated to kill the existing noxious weeds and invasive plants, and would not be used for the project without approval.• Invasive species would not be used in any landscaping needed for the project.
--	---

Appendix E Form AD-1006

For the purposes of evaluation, Site A on the Farmland Conversion Impact Rating form (Form AD-1006) refers to Alternative A and Site B refers to Alternative B. Written communication was received from the Natural Resources Conservation Service on July 7, 2008 to confirm completion of Form AD-1006. Form AD-1006 was updated in August 2009 to reflect the current proposed alternatives.

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

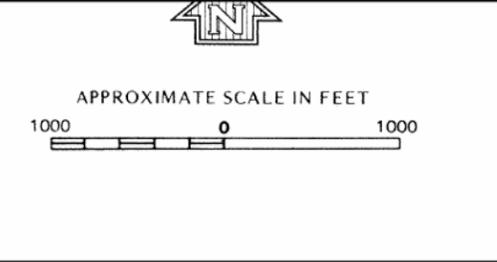
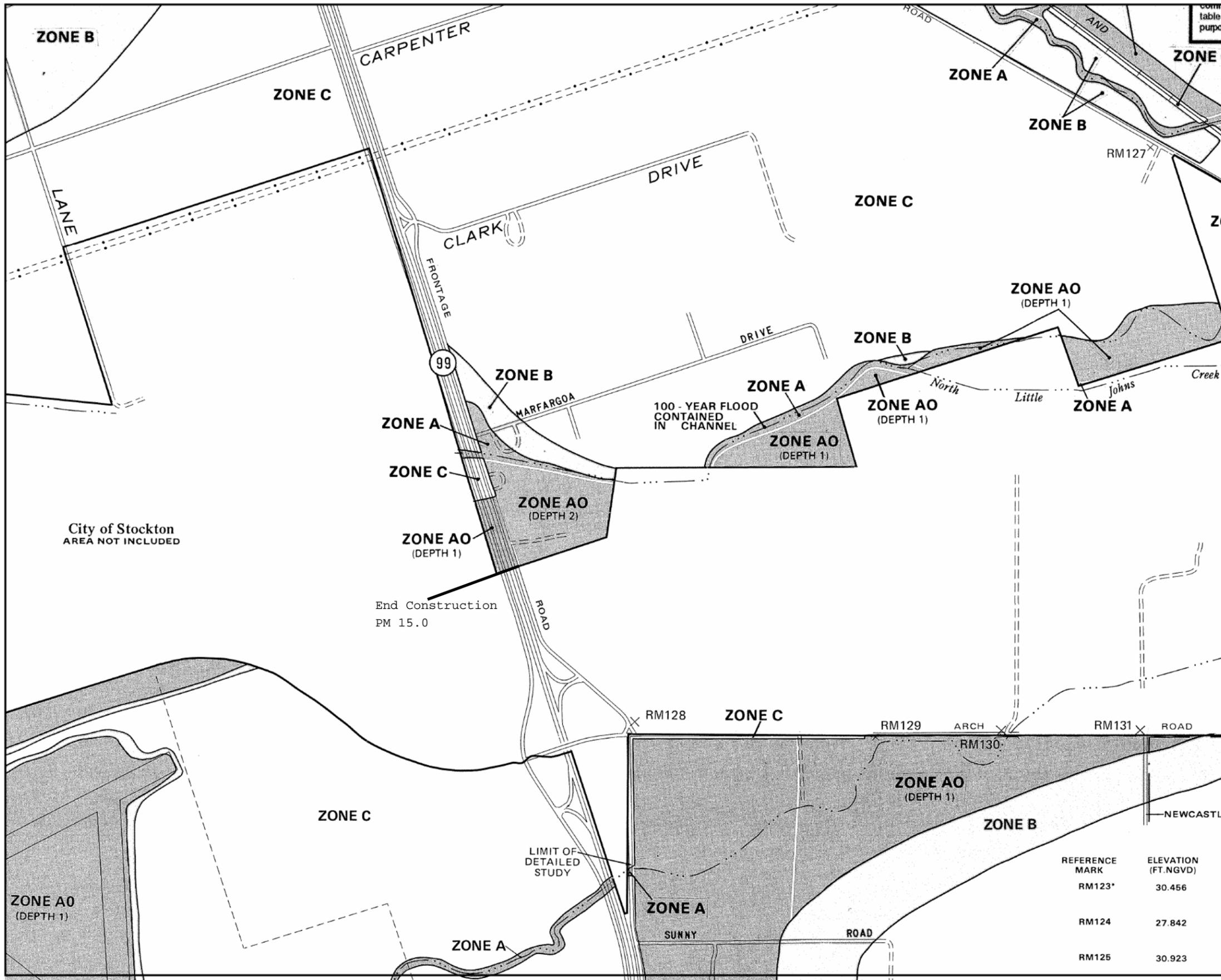
PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request 8/27/09			
Name Of Project 10-SJ-99, SR 99 Manteca Widening		Federal Agency Involved Federal Highway Administration			
Proposed Land Use residential, agriculture		County And State San Joaquin County, Ca			
PART II (To be completed by NRCS)		Date Request Received By NRCS			
Does the site contain prime, unique, statewide or local important farmland? <i>(If no, the FPPA does not apply -- do not complete additional parts of this form).</i>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated 467,987	Average Farm Size 191
Major Crop(s) Grapes, Corn, Asparagus, Wheat	Farmable Land In Govt. Jurisdiction Acres: 555,819	% 61		Amount Of Farmland As Defined in FPPA Acres: 633,533 % 69	
Name Of Land Evaluation System Used CA - Storie Index	Name Of Local Site Assessment System None		Date Land Evaluation Returned By NRCS		
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		47.0	114.0		
B. Total Acres To Be Converted Indirectly			30.0		
C. Total Acres In Site		47.0	144.0	0.0	0.0
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		6.0	8.0		
B. Total Acres Statewide And Local Important Farmland		3.0	15.0		
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)		40	48	0	0
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		14	12		
2. Perimeter In Nonurban Use		9	7		
3. Percent Of Site Being Farmed		15	14		
4. Protection Provided By State And Local Government		20	20		
5. Distance From Urban Builtup Area		0	0		
6. Distance To Urban Support Services		0	0		
7. Size Of Present Farm Unit Compared To Average		0	0		
8. Creation Of Nonfarmable Farmland		7	7		
9. Availability Of Farm Support Services		5	5		
10. On-Farm Investments		20	20		
11. Effects Of Conversion On Farm Support Services		2	4		
12. Compatibility With Existing Agricultural Use		5	5		
TOTAL SITE ASSESSMENT POINTS		160	97	94	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	40	48	0
Total Site Assessment (From Part VI above or a local site assessment)		160	97	94	0
TOTAL POINTS (Total of above 2 lines)		260	137	142	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Reason For Selection:					

(See Instructions on reverse side)

Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff

Appendix F Federal Emergency
Management Agency Flood
Insurance Rate Maps



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

SAN JOAQUIN COUNTY,
CALIFORNIA
(UNINCORPORATED AREAS)

PANEL 465 OF 925
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
0602990465 C

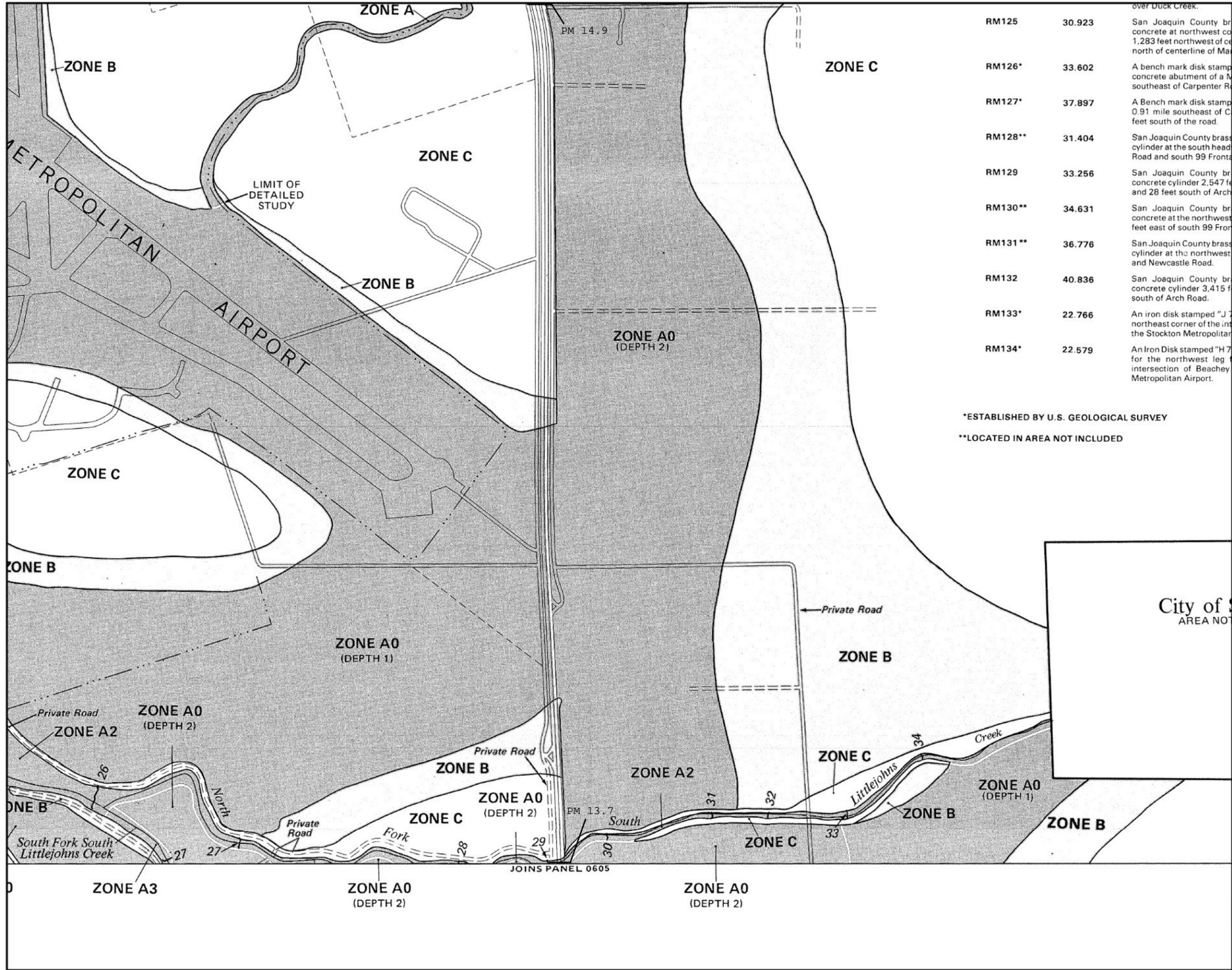
MAP REVISED:
APRIL 2, 2002



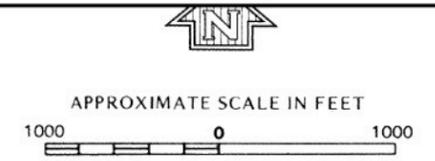
Federal Emergency Management Agency

REFERENCE MARK	ELEVATION (FT. NGVD)
RM123*	30.456
RM124	27.842
RM125	30.923

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



RM125	30.923	San Joaquin County brass concrete at northwest corner of 1,283 feet northwest of centerline of Manteca Road.
RM126*	33.602	A bench mark disk stamp concrete abutment of a bridge southeast of Carpenter Road.
RM127*	37.897	A Bench mark disk stamp 0.91 mile southeast of Manteca Road and south 99 Front Street.
RM128**	31.404	San Joaquin County brass cylinder at the south head of Manteca Road and south 99 Front Street.
RM129	33.256	San Joaquin County brass concrete cylinder 2,547 feet and 28 feet south of Arch Road.
RM130**	34.631	San Joaquin County brass concrete at the northwest corner of the intersection of south 99 Front Street and Arch Road.
RM131**	36.776	San Joaquin County brass cylinder at the northwest corner of the intersection of Arch Road and Newcastle Road.
RM132	40.836	San Joaquin County brass concrete cylinder 3,415 feet south of Arch Road.
RM133*	22.766	An iron disk stamped "J 7" at the northeast corner of the intersection of the Stockton Metropolitan Airport.
RM134*	22.579	An Iron Disk stamped "H 7" at the northwest leg of the intersection of Beachey Road and the Stockton Metropolitan Airport.



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP**

**SAN JOAQUIN COUNTY,
CALIFORNIA
(UNINCORPORATED AREAS)**

**PANEL 465 OF 925
(SEE MAP INDEX FOR PANELS NOT PRINTED)**

**COMMUNITY-PANEL NUMBER
0602990465 C**

**MAP REVISED:
APRIL 2, 2002**



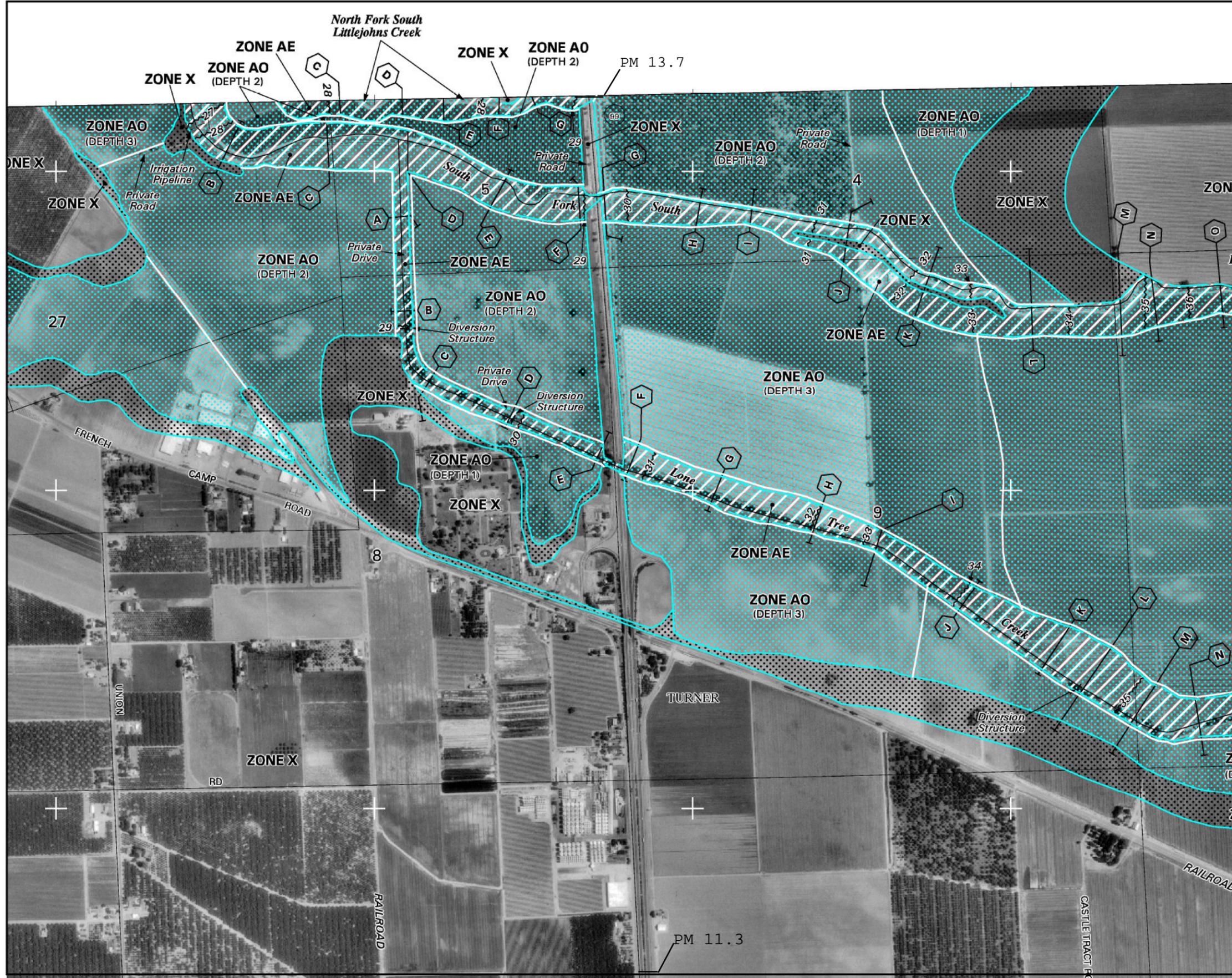
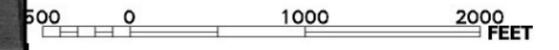
Federal Emergency Management Agency

*ESTABLISHED BY U.S. GEOLOGICAL SURVEY
**LOCATED IN AREA NOT INCLUDED

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



MAP SCALE 1" = 1000'



PANEL 0605A

FIRM
FLOOD INSURANCE RATE MAP
 CITY OF
 MANTECA,
 CALIFORNIA
 SAN JOAQUIN COUNTY
PANEL 605 OF 925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MANTECA, CITY OF	060706	0605	A

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
 0607060605A
EFFECTIVE DATE:
 DECEMBER 16, 2005



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

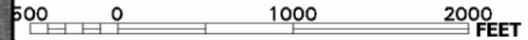
FLOOD INSURANCE RATE MAP FOR
FLOODED AREAS OF SAN JOAQUIN COUNTY.

RANGE 7 EAST.

Flood insurance is available in this community, contact your
National Flood Insurance Program at (800) 638-6620.



MAP SCALE 1" = 1000'



PANEL 0605A

FIRM
FLOOD INSURANCE RATE MAP
CITY OF
MANTECA,
CALIFORNIA
SAN JOAQUIN COUNTY
PANEL 605 OF 925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MANTECA, CITY OF	0605A	0605	A

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
0607060605A
EFFECTIVE DATE:
DECEMBER 16, 2005



Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

656000 M

JOINS PANEL 0615

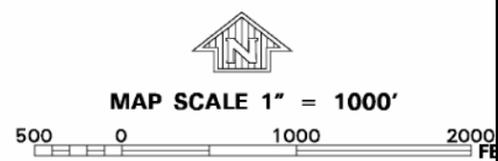
658000 M

659000 M

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



If flood insurance is available in this community, contact the National Flood Insurance Program at (800) 638-6620.



PANEL 0615A

FIRM
FLOOD INSURANCE RATE MAP
 CITY OF
 MANTECA,
 CALIFORNIA
 SAN JOAQUIN COUNTY
PANEL 615 OF 925
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MANTECA, CITY OF	060705	0615	A

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
0607060615A

EFFECTIVE DATE:
DECEMBER 16, 2005

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix G Biological Consultation and Species List



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846



IN REPLY REFER TO:
81420-2009-F-0366-3

OCT 07 2009

Mr. Walter C. Waidelich, Jr.
Division Administrator
Federal Highway Administration
U.S. Department of Transportation
650 Capitol Mall, Suite 4-100
Sacramento, California 95814

Subject: Appendage of the State Route 99 Manteca Widening Project, San Joaquin County, California (Caltrans EA 10-0E610, 10-SJ-99-PM 5.1/15.0), to the *Programmatic Biological Opinion on the Effects of Small Highway Projects on the Threatened Giant Garter Snake in Butte, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, Yolo, and Yuba Counties, California* (Service File number 1-1-03-F-0154)

Dear Mr. Waidelich, Jr.:

This is the U.S. Fish and Wildlife Service's (Service) response to the Federal Highway Administration's (FHWA) request for formal consultation on the proposed State Route 99 Manteca Widening Project (project) in San Joaquin County, California. Your original request for concurrence, dated January 16, 2009, and subsequent request for formal consultation, dated April 30, 2009, was received in this office on January 21, 2009, and on May 4, 2009, respectively. FHWA requests that this project be considered for inclusion within the Service's January 24, 2005, *Programmatic Biological Opinion on the Effects of Small Highway Projects on the Threatened Giant Garter Snake in Butte, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, Yolo, and Yuba Counties, California* (Programmatic). At issue are the effects of this proposed project on the federally-threatened giant garter snake (*Thamnophis gigas*; GGS). This response was prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

The findings and recommendations in this formal consultation are based on: (1) your letter, dated April 30, 2009, requesting initiation of section 7 consultation, (2) the *Biological Assessment for the State Route 99 Manteca Widening Project*, dated December 2008, and revised April, 2009 (BA), (3) site visits made by Rocky Montgomery, Ellen McBride, Susan Jones (Service) and Steven Stringer (HDR, Inc.), (4) electronic-mail (e-mail) and telephone correspondence between



the Service and the California Department of Transportation (Caltrans), and (5) other information available to the Service.

Consultation History

August 30, 2007: A preliminary site visit was made by Rocky Montgomery (Service) and Steven Stringer (HDR, Inc.) for the purpose of an informal review of the future project site. No formal recommendations were made as the visit was conducted prior to the development of the biological assessment.

January 21, 2009: The Service received a request from Caltrans asking for concurrence with the determination that the project was not likely to adversely affect the giant garter snake. The BA, dated December 2008, was also included in the initiation package.

February 11, 2009: Ellen McBride and Susan Jones (both of the Service) conducted a site visit of the project area to examine GGS habitat conditions and to observe the presence of potential habitat for other listed species at the site.

February 18, 2009: A 30-day response letter sent by the Service to Caltrans stated that the Service did not concur with Caltrans' determination that the project was not likely to adversely affect the GGS.

March 3, 2009: A general quarterly meeting was held in which Christine Cox and Jennifer Taylor (Caltrans), and Kenneth Sanchez, Peter Cross, Susan Jones, and Ellen McBride (all of the Service), met to discuss the status of Caltrans projects; Caltrans specifically expressed concerns with the Service's 30-day response letter regarding the Manteca project. Confirmation from the Service asserted that GGS impacts were likely to occur and section 7 consultation under the Act would be prudent.

May 5, 2009: The Service received a letter from FHWA requesting initiation of formal consultation for the GGS and a further request to append the project to the Programmatic. A revised April 2009 BA was also included in the initiation package.

May 12, 2009: Jen Schofield (Service) received an e-mail from Charles Walbridge (Caltrans) requesting a two week extension to the work window for the GGS.

May 20, 2009: Ms. Schofield e-mailed Mr. Walbridge providing some recommended guidelines for the allowance of construction activity outside of the Service-recommended GGS work window periods.

June 5, 2009: Ms. Schofield e-mailed Mr. Walbridge with an insufficient information request for further clarification concerning the revised BA.

June 24-25, 2009: Ms. Schofield and Mr. Walbridge continued to exchange e-mail correspondence regarding the issue of extending the project's work period.

June 29, 2009: Zach Parker (Caltrans) telephoned Ms. Schofield, who confirmed that the Service would require additional minimization to offset the effects of the proposed work window extension beyond the October 1 deadline.

July 7, 2009: Ms. Schofield spoke with Mr. Parker via telephone to discuss the specifics of the extra minimization measures for the GGS and the responses to Ms. Schofield's previous inquiries concerning information in the BA.

July 16, 2009: Mr. Walbridge sent an e-mail forwarded from the consultant, HDR, Inc., recommending a design change in French Camp Slough in order to fix scour and erosion problems and involving the addition of Rock Slope Protection (RSP) on the north bank.

July 22, 2009: Mr. Parker e-mailed responses from the consultant, HDR, Inc., answering Ms. Schofield's queries on the disparate calculations for permanent and temporary effects to habitat provided at different times during the consultation process.

July 27, 2009: Mr. Walbridge forwarded an e-mail from the consultant, restating the revised calculations for permanent and temporary effects to GGS habitat. He also sent responses, made in conjunction with HDR, Inc., to Ms. Schofield's questions and comments from the June 5, 2009 electronic mail.

Project Description

FHWA and Caltrans, in cooperation with the City of Manteca, San Joaquin County, and the San Joaquin Council of Governments (SJCOG), propose to widen and upgrade a portion of State Route (SR) 99 highway from four lanes to six lanes using the existing median and State right-of-way (ROW). This is the principal north/south highway through California's Central Valley which also acts as a major link to all east/west routes in the region. The 9.9 mile (mi) segment extends from the Austin Road interchange (post mile (PM) 5.1) in Manteca to Arch Road (PM 15.0) in Stockton, San Joaquin County, California.

The overall purpose of the project is to provide increased traffic capacity on SR 99 and to alleviate congestion for the benefit of local and through traffic. The addition of one extra 12 foot (ft) lane in each direction plus a new concrete barrier along with the planned supplementary improvements would help create a safer, more effective highway corridor, and more closely

conform to current Caltrans design standards. The project proposes to undertake several additional roadway activities to address these concerns, including:

- Upgrade bridge rails at Lone Tree Creek, French Camp Slough, and Littlejohns Creek.
- Widen shoulders to accommodate minor shoulder improvements at Lone Tree Creek, French Camp Slough, and Littlejohns Creek.
- Construct the Turner Station overhead replacement at French Camp Road, including ramp realignments with new acceleration and deceleration lanes, mainline SR 99 profile grade correction, frontage road realignment to accommodate the increased road width, and the addition of RSP on the north bank of the slough extending 20 ft and parallel to the waterway from each bridge exterior, to combat scour and erosion problems.
- Acquire new state ROW: 15.2 acres (ac) at French Camp Road, 28.5 ac at Main Street/Lathrop Interchange, and 2.8 ac at various spots on mainline SR 99.
- Refine existing hook ramp connections at Littlejohns Creek, located south of Stockton Airport, by implementing acceleration and deceleration lanes.
- Evaluate traffic operation and make potential modifications at the Main Street/North Manteca and French Camp Road interchanges, including frontage road relocations. Note, these improvements are not discussed in additional detail in the biological assessment and therefore not included in the current consultation. Although the biological assessment states that these modifications have no bearing on the species involved, the Service has determined that this is inaccurate and thus more appropriately concludes that these modifications are not likely to adversely affect the species at issue.

FHWA and Caltrans anticipate that construction will begin in July, 2012 and will be completed in July, 2015.

Action Area

The action area is defined in 50 CFR § 402.02, as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” The action area for the proposed project spans approximately 1,050 ac, including the 9.9 mi north-south linear segment of highway encompassing those portions within the ROW (the north and southbound lanes, the medians and shoulders), segments of the three waterways and associated bank habitat within the ROW in which suitable GGS habitat is present and which will be directly affected by construction activities, and new ROW acquisition of a total of 46.5 ac at French Camp Road, at Main Street/Lathrop Interchange, and at several locales along mainline SR 99, as ascertained by

further discussion with the Caltrans biologist and the consultant. It also includes indirectly affected segments of the three waterway channels in which work will occur, upstream and downstream of the ROW, and portions of mixed urban/ruderal/agricultural lands, also outside of the Caltrans ROW but contained within the construction footprint. The action area is located within the Stockton East and Manteca United States Geological Survey (USGS) 7.5- minute quadrangles. The UTM coordinates marking the approximate center of the linear project area are 10S, 656766.94m E and 4189328.47m N, WGS 84.

Appending to the Programmatic Biological Opinion

The Service has determined that this project is consistent with the criteria of the Programmatic. This letter is an agreement by the Service to append the project to the Programmatic and represents the Service's biological opinion on the effects of the proposed action. The FHWA proposed to append up to 18 projects per year to the Programmatic, each of which may permanently affect up to three acres (=54 ac/year) and temporarily affect up to 20 ac (=360 ac/year) throughout the action area of the Programmatic over its five year term. Thus far, according to the Service file, 22 projects have been appended to the Programmatic and two additional projects are proposed for appendage during 2009-2010, inclusive of the project in this biological opinion and the Interstate-5 North Stockton Corridor Improvements Project in San Joaquin County, California.

According to the BA and further discussion with Caltrans biologists and the consultant, a total of 0.069 ac of GGS habitat will be permanently lost through the current project while 0.540 ac will be temporarily affected due to proposed construction activities.

Conservation measures for projects appended to the Programmatic involve following the *FHWA Giant Garter Snake Programmatic Biological Opinion Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat* (Guidelines), the *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat* (Avoidance Measures), and all the *Terms and Conditions* of the Programmatic, except as approved by request to the Service. It is the Service's intent that following these Guidelines and Avoidance Measures will reduce habitat degradation while increasing the protected habitat areas across the species' range. It is anticipated that these protected areas may serve as the foundation upon which local communities can develop future habitat conservation plans. A copy of the Guidelines and Avoidance Measures are found as appendices to the Programmatic and are available from the Service upon request.

The Service is tracking losses of habitat within the range of the GGS permitted under the Programmatic, and minimization for those losses, in each County under the jurisdiction of the Sacramento Fish and Wildlife Service Field Office. The Service reevaluates the effectiveness of this Programmatic annually to ensure that continued implementation will not result in

unacceptable impacts to GGS populations or to the quality and quantity of habitats upon which they depend.

Conservation Measures

Conservation measures for projects appended to the Programmatic shall be in accordance with the Guidelines and Avoidance Measures unless otherwise provided by the Service. The Programmatic identifies three levels of seasonal project duration, the maximum extent of affected acreage allowed, and the appropriate conservation measure response (pp. 3-9). These measures include the following:

1. Avoidance of take and disturbance of habitat (Levels 1, 2, and 3);
2. Minimization of disturbance and habitat loss (Levels 1, 2, and 3);
3. Restoration of temporary habitat disturbance and associated impacts to GGS habitat (Levels 1 and 2);
4. Replacement of permanent and temporary habitat loss (Levels 2 and 3);
5. Management and monitoring of restored and replacement habitat (Levels 1, 2, and 3);
6. A management plan for the long-term protection of the restored and replaced habitat area(s) to protect the area(s) in perpetuity as habitat for the GGS (Levels 2 and 3)

Effects of the Proposed Action

The project area features hydrological connectivity through which GGS may disperse, suitable aquatic habitat providing water during the snake's active period as well as associated bank habitat for basking and cover. According to the California Natural Diversity Database (CNDDDB), there are two documented occurrences of GGS, one within five miles and one within 10 miles of the northern boundary of the project site. Considering that GGS have been reported to move approximately five miles within several days (Wylie et al., 1997), in addition to the proximity of the CNDDDB observation records, the presence of suitable habitat in and/or around the waterways of French Camp Slough, Lone Tree Creek, and Littlejohns Creek, and the biology and ecology of the species, the Service has determined that the GGS is reasonably certain to occur within the action area. Therefore, implementation of the proposed project is likely to adversely affect the GGS through permanent loss and temporary disturbance to habitat.

Construction activities associated with the proposed project that are likely to adversely affect the GGS through permanent loss of habitat and the disturbance of aquatic and bank habitat in the slough and creek locations include: pile driving, the assembly of new bridge piers at all three creek/slough locations, bridge extension and abutment widening at all three waterway locations, and the addition of RSP and a new cutoff wall (at French Camp Slough only). Such activities are likely to remove vegetative cover in the waterways and on the banks, habitat features that GGS require for cover and basking. Temporary effects are expected to occur in the median and along the upstream and downstream sides of the existing bridges at Lone Tree Creek and French Camp Slough due to construction of both new bridge decks and on- and off-ramps (at Lone Tree Creek), equipment and vehicle access and movement, increased worker foot- traffic, and pile driving vibration and noise disruption. These activities could have the direct effect of potentially harassing the GGS and causing individuals to flee from the protective waterways or bank habitat, thereby increasing the likelihood of strikes by vehicles and equipment in the project area and/or exposure to predation. Some project activities, such as pile driving, in which specialized driving and boring equipment are used in-water could temporarily inhibit usual GGS dispersal and movement through the channels by temporarily altering GGS behaviors. If equipment fully or partially physically blocks the waterways and/or creates vibratory noise disturbance, GGS could be harassed enough by these construction effects to fail to disperse to their up- or downstream destinations. Lastly, implementation of the project will result in the permanent loss of 0.069 ac of GGS habitat (Level 3), and the temporary loss of 0.540 ac of GGS habitat (Level 1) for one season (the calendar year period between May 1 and October 1). Note, with the proposed work window extension, the season will be defined as June 15 to October 15 for this project.

In cooperation with the City of Manteca, San Joaquin County, and the San Joaquin Council of Governments (SJCOG), FHWA and Caltrans agreed upon the following:

1. FHWA and Caltrans, in cooperation with the City of Manteca, San Joaquin County, and the SJCOG, shall implement all *Conservation Measures, Reasonable and Prudent Measures*, and *Terms and Conditions* as found in the Programmatic.
2. FHWA and Caltrans, in cooperation with the City of Manteca, San Joaquin County, and the SJCOG, shall implement the proposed conservation measures for Level 1 and Level 3 effects.
 - a. **Level 1 effects:** No replacement minimization is proposed for temporary effects to 0.540 ac of habitat, as it is expected that all work potentially affecting GGS will only take one season to complete. Thus, Level 1 restoration measures to re-vegetate the areas with native grasses and forbs shall be undertaken to create higher habitat quality than that of pre-project conditions. The waterways shall also be restored to pre-construction conditions after project completion.

- b. **Level 3 effects:** The proposed project will result in the permanent loss of a total of 0.069 ac of giant garter snake aquatic and bank habitat. Prior to groundbreaking, Caltrans shall minimize for permanent habitat loss and adverse effects to the GGS by using a 3:1 ratio to purchase a total of 0.207 credits at the closest Service-approved conservation bank. The Service generally requires that the conservation bank's service area appropriately covers the project area, but since no GGS banks currently exist within San Joaquin County or the wider valley, in this instance, the Service is making an exception to allow Caltrans to use the closest approved bank for its minimization efforts (Service, 2009).

As described in the Guidelines (p.1), if there are plans for construction activity to proceed outside of the GGS active season, the Service will be contacted as soon as possible to determine if additional measures may be necessary to minimize take of GGS. On May 12, 2009, Caltrans requested a two week work period extension beyond October 1, the approximate end date of the GGS active period, in order to complete construction in one season, rather than extend work into multiple seasons. This will result in an extra two weeks of project activities and encroach upon the GGS inactive period. Following discussion with Caltrans biologists, the Service grants this request, provided Caltrans adheres to the following measures:

1. Caltrans assumes that work will be distributed evenly throughout the four month work window, thus leaving one eighth of the work remaining during the two week extension period. The Service shall require extra minimization measures applied at a 3:1 ratio (three acres of habitat replaced for every one acre disturbed after October 1 through October 15) and Level 1 temporary effects shall be treated as Level 3 permanent effects. This ratio shall be applied to one eighth of the total acreage of both permanently and temporarily affected habitat ($= (0.069 \text{ ac permanent} \times 0.125) + (0.540 \text{ ac temporary} \times 0.125)$). Additional effects to 0.077 ac of habitat shall be minimized through the purchase of 0.231 credits at the closest Service-approved conservation bank, which shall be finalized before construction activities continue into the extended work window.
 - a. Caltrans shall provide the Service with written assurance that the project will be completed prior to expiration of the requested extension period. A letter, specifically outlining the activities occurring during this period, along with any encountered problems and/or instances of take, shall be sent to the Service within 30 days of project completion.
 - b. A Service-approved biologist shall be on-site to monitor all ground or habitat disturbing activities between October 1 and October 15.

INCIDENTAL TAKE STATEMENT

Section 9 of the Endangered Species Act and Federal regulations pursuant to section 4(d) of the Act, prohibit take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. The Service defines harassment as an intentional or negligent act or omission that creates the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. The Service defines harm to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), take that is incidental to and not intended as part of the agency action is not considered to be prohibited, provided such taking is in compliance with this Incidental Take Statement.

Amount or Extent of Take

The Service anticipates that incidental take of the GGS will be difficult to detect because they are cryptically colored, secretive, and aversive to human activities, and often retreat into burrows, soil crevices, or vegetative cover. Thus, it is not possible to quantify an exact number of GGS individuals that are anticipated to be taken as a result of the proposed action. In instances when take calculations are infeasible to accurately calculate, the Service may estimate take in numbers of individuals per acre of permanently lost or degraded habitat as a result of the project action, as these effects reflect a significant biological effect to the species. Therefore, the Service anticipates take incidental to this project as all GGS inhabiting, using, or moving through the 0.069 ac of suitable aquatic and bank habitat. Upon implementation of the Programmatic's *Reasonable and Prudent Measures* and *Terms and Conditions*, and the *Conservation Measures* considered herein, incidental take for this project within this acreage in the forms of harm and/or harassment to GGS from habitat modification and loss due to bridge pier assembly and abutment extension activities, and the addition of bank rip-rap, are hereby exempt from the prohibitions described under section 9 of the Act. Direct injury to or mortality of two GGS individuals over the course of the Programmatic's term, stemming from vehicle/project equipment strikes and increased predation in this project's case, are also hereby exempt from the prohibitions described under section 9 of the Act.

Effect of Take

As the effects of this project fall within the parameters established within the Programmatic, the Service has determined that this level of anticipated take is not likely to jeopardize the continued existence of the GGS.

RE-INITIATION--CONCLUSION

This concludes the Service's review of the proposed State Route 99 Manteca Widening Project as submitted in your January 16, 2009 and April 30, 2009 letters. As provided in 50 CFR § 402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or an extant not considered in this biological opinion, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please contact Jen Schofield or Susan P. Jones at the letterhead address or at (916) 414-6600 if you have any questions regarding this letter on the State Route 99 Manteca Widening Project. The Service wishes to thank you for your continued efforts and dedication to the conservation of America's wildlife resources.

Sincerely,



 Susan K. Moore
Field Supervisor

cc:

Mr. Zachary Parker, Caltrans District 6, Fresno, California
Mr. Dan Gifford, California Department of Fish and Game, Rancho Cordova, California



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

APR 15 2009 In response refer to:
2009/00370

Zachary K. Parker
Chief, Central Region Biology Branch
California Department of Transportation
2015 East Shields Avenue, Suite A-100
Fresno, California 93726-5428

Dear Mr. Parker:

This letter is in response to your January 22, 2009, request for initiation of section 7 consultation with NOAA's National Marine Fisheries Service (NMFS), pursuant to the Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act (MSA), concerning the State Route (SR) 99 Manteca 6-Lane project located in San Joaquin County, California. You have determined that the proposed project may affect, but is not likely to adversely affect Central Valley (CV) Steelhead (*Oncorhynchus mykiss*). In addition, the proposed project area has been designated as Essential Fish Habitat (EFH) of Pacific salmon pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). This letter also serves as consultation under the authority of, and in accordance with, the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. NMFS recognizes that the California Department of Transportation (Caltrans) is acting in conjunction with the Federal Highway Administration (FHWA) for this project and has assumed FHWA's responsibilities under Federal environmental laws as allowed by the Memorandum of Understanding between FHWA and Caltrans, which became effective on July 1, 2007.

Caltrans proposes to upgrade bridge rails and minor shoulder widening on SR 99 bridges over Lone Tree Slough, French Camp Slough, and Little John Creek. New bridge decks will be constructed between the existing north and south bound bridges in order to accommodate the addition of two new travel lanes and associated shoulders in the median. New bridge decks will also be constructed to the east of the existing north bound bridges and to the west of the existing south bound bridges. New bridge piers will be constructed within the channels to support the additional bridge decks. The bridge piers are expected to be round concrete columns approximately 18 inches in diameter. Concrete lining that currently exists on the banks of the channels under the existing bridge decks may need to be removed and replaced to accommodate the widening. The bridge abutments will also be widened and new footings will be constructed under the abutments to accommodate the new bridge structures. There will be 16 new bridge piers constructed at Lone Tree Creek, 12 new bridge piers at Little Johns Creek, and 18 at French Camp Slough.



All proposed in-channel work will be conducted from June 15 through October 15. Best Management Practices (BMPs) will be implemented during construction activities. All disturbed soils will undergo erosion treatment (*i.e.* hay bales, filter fences, vegetative buffer strips) prior to October 15th and/or immediately after construction is terminated to reduce siltation and contaminated runoff from the project sites. Environmentally sensitive areas will be fenced off to avoid unnecessary habitat disturbance. If any riparian vegetation should be disturbed, native trees, shrubs, native grasses, and/or forbs will be replanted at the end of construction. Appropriate irrigation, care and monitoring will be conducted to ensure that healthy riparian and shaded riverine aquatic habitat is successfully established. Equipment will be refueled and serviced at designated construction staging areas 100 feet from the wetted width of any stream. All construction materials and fill will be stored and contained in a designated area that is located away from the channels to prevent transport of foreign materials into adjacent streams. In addition, a silt fence will be installed to collect potential discharge, and adequate materials for spill clean-up will be maintained at the project sites at all times. Hazardous or potentially toxic materials such as herbicides and petroleum products will be located outside of the 100 year flood zone and will be bermed to prevent the discharge of pollutants to ground water and runoff water.

ESA Section 7 Consultation

Based on our review of the material provided with your request and the best scientific and commercial information currently available, NMFS concurs that the SR 99 Manteca 6-lane project is not likely to adversely affect CV steelhead. NMFS has reached this determination based on the following reasons:

1. All in-channel work will be conducted during June 15-October 15, when salmonids are not expected to be present in the action area and thus would not be exposed to the effects of the proposed construction activities. During this in-channel work window, water temperatures are generally too warm and other habitat conditions (*i.e.* high turbidity, silty substrates, and high nutrient load) make the action area generally unsuitable for anadromous listed fish to be present during this period.
2. Protective fencing will be placed to keep construction activities and vehicles from impacting riparian vegetation adjacent to the project site. Thus, any vegetation not planned for removal/disturbance will be fenced to provide appropriate protection from construction impacts. If any riparian vegetation needs to be disturbed during construction, native trees, shrubs, native grasses, and/or forbs will be replanted at the completion of construction. Appropriate irrigation, care and monitoring will be conducted to ensure that healthy riparian and shaded riverine aquatic habitat is successfully established. The re-planting and establishment of new riparian vegetation will improve fish habitat and minimized erosion and siltation that could potentially cause harm to anadromous listed fish.
3. The following mitigation measures will be incorporated into the proposed project to minimize the potential for water quality impacts that could potentially harm anadromous listed fish and their habitat:

- BMPs will be implemented throughout the duration of the proposed project activities.
- Equipment will be refueled and serviced at designated construction staging areas 100 feet from the wetted width of the streams. In addition, all construction materials and fill will be stored and contained in a designated area that is located away from the channels to prevent transport of foreign materials into adjacent streams.
- A silt fence will be installed to collect potential discharge, and adequate materials for spill clean-up will be maintained at the project sites at all times..
- Hazardous or potentially toxic materials such as herbicides and petroleum products will be located outside of the 100 year flood zone. An impermeable membrane will be placed between the ground and the hazardous material and the area will be bermed to prevent the discharge of pollutants to ground water or runoff water.
- All disturbed soils will undergo erosion treatment (*i.e.* hay bales, filter fences, vegetative buffer strips) prior to October 15th and/or immediately after construction is terminated to reduce siltation and contaminated runoff from project sites.

This concludes ESA consultation for the SR 99 Manteca 6-lane project. This concurrence does not provide incidental take authorization pursuant to section 7(b)(4) and section 7(o)(2) of the ESA. Re-initiation of the consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law), and if: (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered; (2) the action is subsequently modified in a manner that causes adverse effects to listed species or critical habitat; or (3) a new species is listed or critical habitat designated that may be affected by this action.

Essential Fish Habitat (EFH) Consultation

With regards to EFH consultation, the proposed project area has been identified as EFH for Chinook salmon in Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the Magnuson Stevens Act (MSA). Federal action agencies are mandated by the MSA (section 305(b)(2)) to consult with NMFS on all actions that may adversely affect EFH and NMFS must provide EFH conservation recommendations to those agencies (section 305(b)(4)(A)). Because the proposed action has incorporated specific measures (described above) to minimize impacts to the habitat of salmonids, NMFS has determined that the proposed project will not adversely affect EFH, and additional EFH Conservation Recommendations are not being provided at this time; however, if there is substantial revision to the action, the lead Federal agency will need to re-initiate EFH consultation.

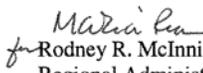
Fish and Wildlife Coordination Act (FWCA)

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development (16 U.S.C. 661). The FWCA establishes a consultation requirement for Federal departments and agencies that

undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage (16 U.S.C 662(a)). Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA allows the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA and MSA. Because the proposed project is designed to avoid environmental impacts to aquatic habitat within the action area, NMFS has no additional FWCA comments to provide.

Please contact Monica Gutierrez at (916) 930-3657, or via e-mail at Monica.Gutierrez@noaa.gov if you have any questions or require additional information concerning this project.

Sincerely,


for Rodney R. McInnis
Regional Administrator

cc: Copy to File ARN # 151422SWR2009SA00410
NMFS-PRD, Long Beach, CA
Bryant Chesney, Long Beach, CA

Salicaceae	<i>Salix lasiolepis</i>	Arroyo willow	
	<i>Salix lucida</i>	Shining willow	
Simaroubaceae	<i>Ailanthus altissima</i>	Tree of heaven	CalEPPC
Solanaceae	<i>Datura wrightii</i>	Sacred thornapple	
Urticaceae	<i>Urtica dioica</i> ssp. <i>holoserica</i>	Hoary nettle	
Verbenaceae	<i>Phyla nodiflora</i>	Common lippia	
	<i>Verbena</i> sp.	Verbena	
Zygophyllaceae	<i>Tribulus terrestris</i>	Puncture-vine	CDFA List C
MONOCOTS			
Alismataceae	<i>Sagittaria cuneata</i>	Tule potato	
Cyperaceae	<i>Cyperus eragrostis</i>	Tall flatsedge	
	<i>Scirpus</i> sp.	Tule	
Poaceae	<i>Avena</i> sp.	Wild oat	
	<i>Bromus diandrus</i>	Ripgut brome	CalEPPC
	<i>Bromus hordeaceus</i>	Soft chess	
	<i>Cynodon dactylon</i>	Bermuda grass	
	<i>Hordeum murinum</i>	Barley	
	<i>Lolium multiflorum</i>	Italian ryegrass	CalEPPC
	<i>Paspalum dilatatum</i>	Dallis grass	
	<i>Polypogon</i> sp.	Beard grass	
	<i>Sorghum halepense</i>	Johnsongrass	
	<i>Taeniatherum caput-medusa</i>	Medusa head	CalEPPC, CDFA List C
	<i>Vulpia</i> sp.	Vulpia	
Typhaceae	<i>Typha angustifolia</i>	Narrow-leaf cattail	

* Listed as an invasive or noxious weed by the California Exotic Pest Plant Council.

** Listed as a noxious weed by the California Dept. of Food and Agriculture. List B – Eradication, containment, control or other holding action at the discretion of the commissioner. List C – State endorsed holding action and eradication only when found in a nursery; action to retard spread outside of nurseries at the discretion of the commissioner; reject only when found in a cropseed for planting or at the discretion of the commissioner.

ANIMAL SPECIES OBSERVED	
Scientific Name	Common Name
AMPHIBIANS	
<i>Rana catesbeiana</i>	Bullfrog (tadpoles)
REPTILES	
<i>Sceloporus occidentalis</i>	Western fence lizard
MAMMALS	
<i>Procyon lotor</i>	Raccoon*
<i>Spermophilus beecheyi</i>	California ground squirrel
BIRDS	
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Ardea herodias</i>	Great blue heron
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo lineatus</i>	Red-shouldered hawk
<i>Charadrius vociferus</i>	Killdeer

<i>Columba livia</i>	Rock dove
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Falco sparverius</i>	American kestrel
<i>Melanerpes formicivorus</i>	Acorn woodpecker
<i>Melospiza melodia</i>	Song sparrow
<i>Sayornis nigricans</i>	Black phoebe
<i>Zenaida macroura</i>	Mourning dove
FISH	
<i>Gambusia affinis</i>	Mosquitofish

* = Tracks and scat

These buttons will not appear on your list.

<- Revise Selection

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Make Official Letter ->

**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 080619011357

Database Last Updated: January 31, 2008

Quad Lists

Listed Species

Invertebrates

- Branchinecta conservatio
 - Conservancy fairy shrimp (E)
 - Critical habitat, Conservancy fairy shrimp (X)
- Branchinecta lynchi
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
 - valley elderberry longhorn beetle (T)
- Lepidurus packardi
 - vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris
 - green sturgeon (T) (NMFS)
- Hypomesus transpacificus
 - Critical habitat, delta smelt (X)
 - delta smelt (T)
- Oncorhynchus mykiss
 - Central Valley steelhead (T) (NMFS)
 - Critical habitat, Central Valley steelhead (X) (NMFS)

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- *Oncorhynchus tshawytscha*
 - Central Valley spring-run chinook salmon (T) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Ambystoma californiense*
 - California tiger salamander, central population (T)
- *Rana aurora draytonii*
 - California red-legged frog (T)

Reptiles

- *Thamnophis gigas*
 - giant garter snake (T)

Mammals

- *Neotoma fuscipes riparia*
 - riparian (San Joaquin Valley) woodrat (E)
- *Sylvilagus bachmani riparius*
 - riparian brush rabbit (E)
- *Vulpes macrotis mutica*
 - San Joaquin kit fox (E)

Candidate Species

Birds

- *Coccyzus americanus occidentalis*
 - Western yellow-billed cuckoo (C)

Quads Containing Listed, Proposed or Candidate Species:

SALIDA (443A)

RIPON (443B)

VERNALIS (444A)

PETERS (461A)

STOCKTON EAST (461B)

MANTECA (461C)

AVENA (461D)

STOCKTON WEST (462A)

LATHROP (462D)

County Lists

San Joaquin County

Listed Species

Invertebrates

- *Branchinecta conservatio*
 - Conservancy fairy shrimp (E)

- *Branchinecta longiantenna*
 - longhorn fairy shrimp (E)

- *Branchinecta lynchi*
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)

- *Desmocerus californicus dimorphus*
 - valley elderberry longhorn beetle (T)

- *Lepidurus packardii*
 - vernal pool tadpole shrimp (E)

Fish

- *Acipenser medirostris*
 - green sturgeon (T) (NMFS)

- *Hypomesus transpacificus*
 - Critical habitat, delta smelt (X)
 - delta smelt (T)

- *Oncorhynchus mykiss*
 - Central Valley steelhead (T) (NMFS)
 - Critical habitat, Central Valley steelhead (X) (NMFS)

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- *Oncorhynchus tshawytscha*
 - Critical habitat, winter-run chinook salmon (X) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Ambystoma californiense*
 - California tiger salamander, central population (T)
 - Critical habitat, CA tiger salamander, central population (X)

- *Rana aurora draytonii*
 - California red-legged frog (T)

Reptiles

- *Masticophis lateralis euryxanthus*
 - Alameda whipsnake [=striped racer] (T)
 - Critical habitat, Alameda whipsnake (X)

- *Thamnophis gigas*
 - giant garter snake (T)

Mammals

- *Neotoma fuscipes riparia*
 - riparian (San Joaquin Valley) woodrat (E)

- *Sylvilagus bachmani riparius*
 - riparian brush rabbit (E)

- *Vulpes macrotis mutica*
 - San Joaquin kit fox (E)

Plants

- *Amsinckia grandiflora*
 - Critical habitat, large-flowered fiddleneck (X)
 - large-flowered fiddleneck (E)

- *Castilleja campestris* ssp. *succulenta*
 - Critical habitat, succulent (=fleshy) owl's-clover (X)

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- succulent (=fleshy) owl's-clover (T)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

California Department of Fish and Game
Natural Diversity Database

Selected Elements by Scientific Name - Landscape

CNDDDB Summary Report for Salida, Ripon, Vernalis, Peters, Stockton East, Stockton West, Manteca, Avena, and Lathrop quads

Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
1 <i>Agelaius tricolor</i>	tricolored blackbird	ABPBXB0020			G2G3	S2		SC
2 <i>Ambystoma californiense</i>	California tiger salamander	AAAAA01180	Threatened		G2G3	S2S3		SC
3 <i>Anthicus sacramento</i>	Sacramento anthicid beetle	IICOL49010			G1	S1		
4 <i>Antrozous pallidus</i>	pallid bat	AMACC10010			G5	S3		SC
5 <i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch	PDFAB0F8R1			G1T1	S1.1	1B.2	
6 <i>Athene cunicularia</i>	burrowing owl	ABNSB10010			G4	S2		SC
7 <i>Atriplex joaquiniana</i>	San Joaquin spearscale	PDCEH041F3			G2	S2.1	1B.2	
8 <i>Atriplex minuscula</i>	lesser saltscale	PDCEH042M0			G1	S1.1	1B.1	
9 <i>Blepharizonia plumosa</i>	big tarplant	PDAST1C011			G1	S1.1	1B.1	
10 <i>Branchinecta conservatio</i>	Conservancy fairy shrimp	ICBRA03010	Endangered		G1	S1		
11 <i>Branchinecta lynchi</i>	vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3		
12 <i>Branta hutchinsii leucopareia</i>	cackling (=Aleutian Canada) goose	ABNJB05035	Delisted		G5T4	S2		
13 <i>Buteo swainsoni</i>	Swainson's hawk	ABNKC19070		Threatened	G5	S2		
14 <i>California macrophylla</i>	round-leaved filaree	PDGER01070			G3	S3.1	1B.1	
15 <i>Cirsium crassicaule</i>	slough thistle	PDAST2E0U0			G2	S2.2	1B.1	
16 <i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1		
17 <i>Cordylanthus palmatus</i>	palmate-bracted bird's-beak	PDSCR0J0J0	Endangered	Endangered	G1	S1.1	1B.1	
18 <i>Delphinium recurvatum</i>	recurved larkspur	PDRA0B1J0			G2	S2.2	1B.2	
19 <i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2		
20 <i>Elanus leucurus</i>	white-tailed kite	ABNKC06010			G5	S3		
21 <i>Elderberry Savanna</i>	Elderberry Savanna	CTT63440CA			G2	S2.1		
22 <i>Eremophila alpestris actia</i>	California horned lark	ABPAT02011			G5T3Q	S3		
23 <i>Eryngium racemosum</i>	Delta button-celery	PDAP10Z0S0		Endangered	G2Q	S2.1	1B.1	
24 <i>Great Valley Cottonwood Riparian Forest</i>	Great Valley Cottonwood Riparian Forest	CTT61410CA			G2	S2.1		
25 <i>Great Valley Mixed Riparian Forest</i>	Great Valley Mixed Riparian Forest	CTT61420CA			G2	S2.2		
26 <i>Great Valley Valley Oak Riparian Forest</i>	Great Valley Valley Oak Riparian Forest	CTT61430CA			G1	S1.1		
27 <i>Hibiscus lasiocarpus</i>	woolly rose-mallow	PDMAL0H0Q0			G4	S2.2	2.2	
28 <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	PDFAB250D2			G5T2	S2.2	1B.2	
29 <i>Lindleriella occidentalis</i>	California linderiella	ICBRA06010			G3	S2S3		
30 <i>Lytta moesta</i>	moestan blister beetle	IICOL4C020			G2	S2		
31 <i>Melospiza melodia maxillaris</i>	Suisun song sparrow	ABPBXA301K			G5T2	S2		SC
32 <i>Neotoma fuscipes riparia</i>	riparian (=San Joaquin Valley) woodrat	AMAFF08081	Endangered		G5T1Q	S1		SC
33 <i>Sagittaria sanfordii</i>	Sanford's arrowhead	PMALI040Q0			G3	S3.2	1B.2	
34 <i>Sylvilagus bachmani riparius</i>	riparian brush rabbit	AMAE01021	Endangered	Endangered	G5T1	S1		
35 <i>Symphyotrichum lentum</i>	Suisun Marsh aster	PDASTE8470			G2	S2.2	1B.2	

California Department of Fish and Game
 Natural Diversity Database
 Selected Elements by Scientific Name - Landscape
 CNDDDB Summary Report for Salida, Ripon, Vernalis, Peters, Stockton East, Stockton West, Manteca, Avena, and Lathrop quads

Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
36 <i>Thamnophis gigas</i>	giant garter snake	ARADB36150	Threatened	Threatened	G2G3	S2S3		
37 <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	PDAST9F031			G4T3	S1.1	2.1	
38 <i>Tuctoria greenei</i>	Greene's tuctoria	PMPOA6N010	Endangered	Rare	G2	S2.2	1B.1	
39 <i>Xanthocephalus xanthocephalus</i>	yellow-headed blackbird	ABPBXB3010			G5	S3S4		SC

List of Technical Studies that are Bound Separately

Traffic Operations Report

Air Quality Technical Report

Noise Study Report

Noise Abatement Decision Report

Water Quality Assessment

Natural Environment Study

Hydrology and Hydraulics Report

Location Hydraulic Study

Cultural Resources Reports

- Historic Resource Evaluation Report
- Historic Property Survey Report
- Archaeological Survey Report

Hazardous Waste Reports

- Initial Site Assessment and Initial Site Assessment Addendum

Visual Impact Assessment

Paleontological Identification/Evaluation Report

Community Impact Assessment

- Relocation Impact Report