

Los Osos Valley Road/ US 101 Interchange Improvements Project

San Luis Obispo County, California
05-SLO-101-PM 25.5-26.3
05-0H7300

Initial Study with Proposed Mitigated Negative Declaration



Photo simulation of proposed roadway

Prepared by the
State of California Department of Transportation

June 2008



General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project located in San Luis Obispo 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, potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this Initial Study. Additional copies of this document as well as the technical studies are available for review at the following locations: the Caltrans district office at 50 Higuera Street in San Luis Obispo, CA 93401; the City of San Luis Obispo Public Works Department at 919 Palm Street in San Luis Obispo, CA 93401; and the San Luis Obispo Public Library at 995 Palm Street in San Luis Obispo, CA 93403.
- Attend the public information meeting.
- We welcome your comments. If you have any concerns regarding the proposed project, please attend the public information meeting, or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to Caltrans at the following address:

Michael H. Thomas
Environmental Planning
California Department of Transportation, District 5
50 Higuera Street
San Luis Obispo, CA 93401

- Submit comments via email to: Michael_H_Thomas@dot.ca.gov.
- Submit comments by the deadline: _____.

What happens next?

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

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 call or write to Caltrans, Attn: Michael H. Thomas, 50 Higuera Street, San Luis Obispo, CA 93401; (805) 549-3023 Voice, or use the California Relay Service TTY number, (805) 549-3259.

05-SLO-101-PM 25.5-26.3
05-OH7300

Improve the Los Osos Valley Road/US 101 Interchange
in the City and County of San Luis Obispo

INITIAL STUDY
with Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

6/9/08
Date of Approval

Jennifer H. Taylor
Jennifer H. Taylor
Office Chief
Central Region Environmental Division
California Department of Transportation

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to improve the Los Osos Valley Road/US 101 Interchange in the City and County of San Luis Obispo. The project would correct operational deficiencies and improve safety. The project would widen the Los Osos Valley Road overcrossing and widen the adjacent bridge crossing San Luis Obispo Creek. The project would also potentially relocate and reconfigure the freeway ramps, depending on the alternative chosen.

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 change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons: The proposed project would have no effect on land use and planning, mineral resources, population and housing, or recreation. In addition, the proposed project would have no significant effect on agricultural resources, utilities, or service systems.

In addition, the proposed project would have no significantly adverse effect on aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, public services, transportation/traffic, or mandatory findings of significance because the following mitigation and minimization measures would reduce potential effects to insignificance:

- Impacts on aesthetics would be mitigated by Mitigation Measures V-1 through V-3.
- Air quality impacts would be mitigated by Minimization Measures AQ-1 through AQ-3.
- Impacts to biological resources would be mitigated by Mitigation Measures BIO-1 through BIO-26.
- Impacts to cultural resources would be mitigated by Mitigation Measures CR-1 through CR-3.
- Impacts to paleontological resources would be mitigated by Mitigation Measure PALEO-1.
- The potential for hazardous waste impacts would be minimized by Minimization Measures HW-1 through HW-8.
- Water quality impacts would be mitigated and minimized by Mitigation/Minimization Measures BIO-5, BIO-18, BIO-23, BIO-24 and WQ-1 through WQ-3.
- Noise impacts would be minimized by Minimization Measures NOI-1 through NOI-3.
- Traffic impacts would be minimized by Minimization Measures TRA-1.

Jennifer H. Taylor, Office Chief
Office of Environmental Management, South
Central Region Environmental Division
California Department of Transportation

Date

Summary

The California Department of Transportation (Caltrans) proposes to improve the Los Osos Valley Road/US 101 interchange in the City and County of San Luis Obispo. The project would correct operational deficiencies and improve safety by widening the Los Osos Valley Road overcrossing and an adjacent bridge crossing San Luis Obispo Creek. The project could also potentially relocate and reconfigure the freeway ramps, depending on the alternative chosen.

Two build alternatives—Alternative 3 and Alternative 6—and a No-Build Alternative are being considered. The estimated construction cost of the build alternatives ranges from \$20 million to \$29 million.

The build alternatives differ in the method used to provide additional travel lanes on Los Osos Valley Road at the US 101 overcrossing. Alternative 3 would use the existing structure to carry the westbound lanes and would construct a separate but adjacent overcrossing structure to carry the eastbound lanes. Alternative 6 would replace the existing structure with a new, wider structure that would accommodate both the westbound and eastbound lanes. Other differences include type and location of the southbound on- and off-ramps and the configuration of the northbound on- and off-ramp intersection with Los Osos Valley Road.

Below is a summary of the major potential environmental impacts, both beneficial and adverse, for the project. At the end is a table showing the impacts for each alternative.

Impacts to Biological Resources

Sensitive biological resources within the project area include anadromous fish and the California red-legged frog. Both Prefumo and San Luis Obispo creeks contain habitat suitable for the southwestern pond turtle, southern steelhead trout, the California red-legged frog, and the two-striped garter snake. Froom Creek may also provide habitat for sensitive aquatic species during the wet season. The vegetation existing within both riparian (streamside) corridors provides habitat for nesting birds, including Cooper's hawk, the northern harrier, the white-tailed kite, the western burrowing owl, and other migratory birds and raptors. The existing rangeland extending into the hillsides west of US 101 presents suitable habitat for the burrowing owl. Implementation of the proposed project may result in potentially substantial impacts to these species during the construction phase of the project, including temporary loss of habitat, degradation from increased creek turbidity and the potential for fuel or oil spills, and increased human activity within habitat areas.

Rectifying existing hydrologic conditions is intended to improve the in-stream channel conditions. To avoid sediment discharge into the channel during removal of piles and from construction of bridge abutments and piles, temporary sedimentation and erosion control mitigation measures would be required during construction.

Impacts to Visual Quality

Visual impacts from the project are considered generally positive based on construction or replacement of existing structures using enhanced engineering architecture and aesthetic treatment and more distinctive and modern features that would improve the gateway nature of the project setting. Loss of mature vegetation within the project site and along the approaches is likely considered a substantial change, but would be mitigated by the replacement of vegetation and trees conforming to the City’s policy.

Summary of Major Potential Impacts from Alternatives

Potential Impact		Alternative 3	Alternative 6	No-Build Alternative
Land Use	Consistency with the City of San Luis Obispo General Plan	Yes: The project is consistent with the City's Land Use Element, and requires minor right-of-way sliver takes.	Yes: The project is consistent with the City's Land Use Element, and requires minor right-of-way sliver takes.	Projected roadway level of service is inconsistent with City's Circulation Element.
	Consistency with the San Luis Obispo County General Plan	Yes: The project is consistent with the County's Land Use Element and General Plan	Yes: The project is consistent with the County's Land Use Element and General Plan	Projected roadway level of service is inconsistent with County Circulation Element.
Growth		No adverse impact. The project would not affect the location, distribution, density, or growth rate of the population within the area of the proposed project.	No adverse impact. The project would not affect the location, distribution, density, or growth rate of the population within the area of the proposed project.	Projected roadway level of service is inconsistent with City's Circulation Element.
Utilities/Emergency Services		Alternative 3 will require utility coordination and relocation of MCI, AT&T, PG&E, SBC, Southern California Gas, City of San Luis Obispo, Carter Communications, and TOSCO.	Alternative 6 will require utility coordination and relocation of PG&E, SBC, Southern California Gas, City of San Luis Obispo, and Charter Communications.	No impact.
Traffic and Transportation/ Pedestrian and Bicycle Facilities		No Impact	No Impact	Congestion under the no-build would increase.
Visual/Aesthetics		Long-term impact considered neutral. Some short-term impacts from loss of mature vegetation.	Long-term impact considered neutral. Some short-term impacts from loss of mature vegetation.	No change from current views.
Hydrology and Floodplain		No Impact	No Impact	Existing culvert capacity is deficient and occasionally overtops US 101. No-Build Alternative will maintain existing deficient conditions unable to pass the 25-year design flow.

Summary

Potential Impact	Alternative 3	Alternative 6	No-Build Alternative
Water Quality and Stormwater Runoff	Alternative 3 would result in a small increase in surface runoff from the proposed project, but would not result in flows exceeding the capacity of existing or planned storm drainage facilities.	Alternative 6 would result in a small increase in surface runoff from the proposed project, but would not result in flows exceeding the capacity of existing or planned storm drainage facilities.	No impact.
Geology/Soils/ Seismic/Topography	Portions of the project site are situated on soils with moderate expansion potential, and the proposed project is located within, or in close proximity to, the Los Osos fault zone.	Portions of the project site are situated on soils with moderate expansion potential, and the proposed project is located within, or in close proximity to, the Los Osos fault zone.	No impact.
Paleontology	Alternative 3 would not likely result in the discovery or degradation of paleontological resources.	Construction of Alternative 6 could have potential impacts to unique paleontological resources.	No impact.
Hazardous Waste/Materials	There are several areas of concern for hazardous waste during construction, including potential lead paint, aerial deposited lead, and potential asbestos-containing materials associated with construction of this alternative. Soil and/or groundwater contamination may exist at 3 properties in the project area.	There are several areas of concern for hazardous waste during construction, including potential lead paint, aerial deposited lead, and potential asbestos-containing materials associated with construction of this alternative. Soil and/or groundwater contamination may exist at 3 properties in the project area.	No impact.
Natural Communities	No Impacts.	No Impacts.	No impact.
Wetlands and other Waters	<p>The study area supports seasonal wetland, freshwater marsh, seasonal drainage, and perennial drainage. These would receive minor temporary and permanent impacts. Alternative 3 has a smaller footprint than the other build alternative with forecast impacts (temporary plus permanent) listed below.</p> <p><i>Alternative 3 Impacts</i></p> <ol style="list-style-type: none"> 1. Seasonal wetland/ freshwater marsh (0.20 acre) 2. Seasonal drainage (0.04 acre) 3. Perennial drainage (0.26 acre) 	<p>The study area supports seasonal wetland, freshwater marsh, seasonal drainage, and perennial drainage. These would receive minor temporary and permanent impacts. Alternative 6 has a larger footprint than the other build alternative with forecast impacts (temporary plus permanent) listed below.</p> <p><i>Alternative 6 Impacts</i></p> <ol style="list-style-type: none"> 1. Seasonal wetland/ freshwater marsh (0.19 acre) 2. Seasonal drainage (0.07 acre) 3. Perennial drainage (0.26 acre) 	No impact.

Summary

Potential Impact	Alternative 3	Alternative 6	No-Build Alternative
Biological Resources	Field investigations found that 57 sensitive plant species and 17 sensitive wildlife (and fish) species have the potential to occur in the project region.	Field investigations found that 57 sensitive plant species and 17 sensitive wildlife (and fish) species have the potential to occur in the project region.	No impact.
Cumulative Impacts	No impact	No Impact	No impact.

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List of Abbreviated Terms

Caltrans
CEQA
PM

California Department of Transportation
California Environmental Quality Act
post mile

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to improve the Los Osos Valley Road/US 101 interchange in the City and County of San Luis Obispo. The project lies in the City of San Luis Obispo at the edge of the Los Osos Valley, against the Irish Hills (Figure 1.1).

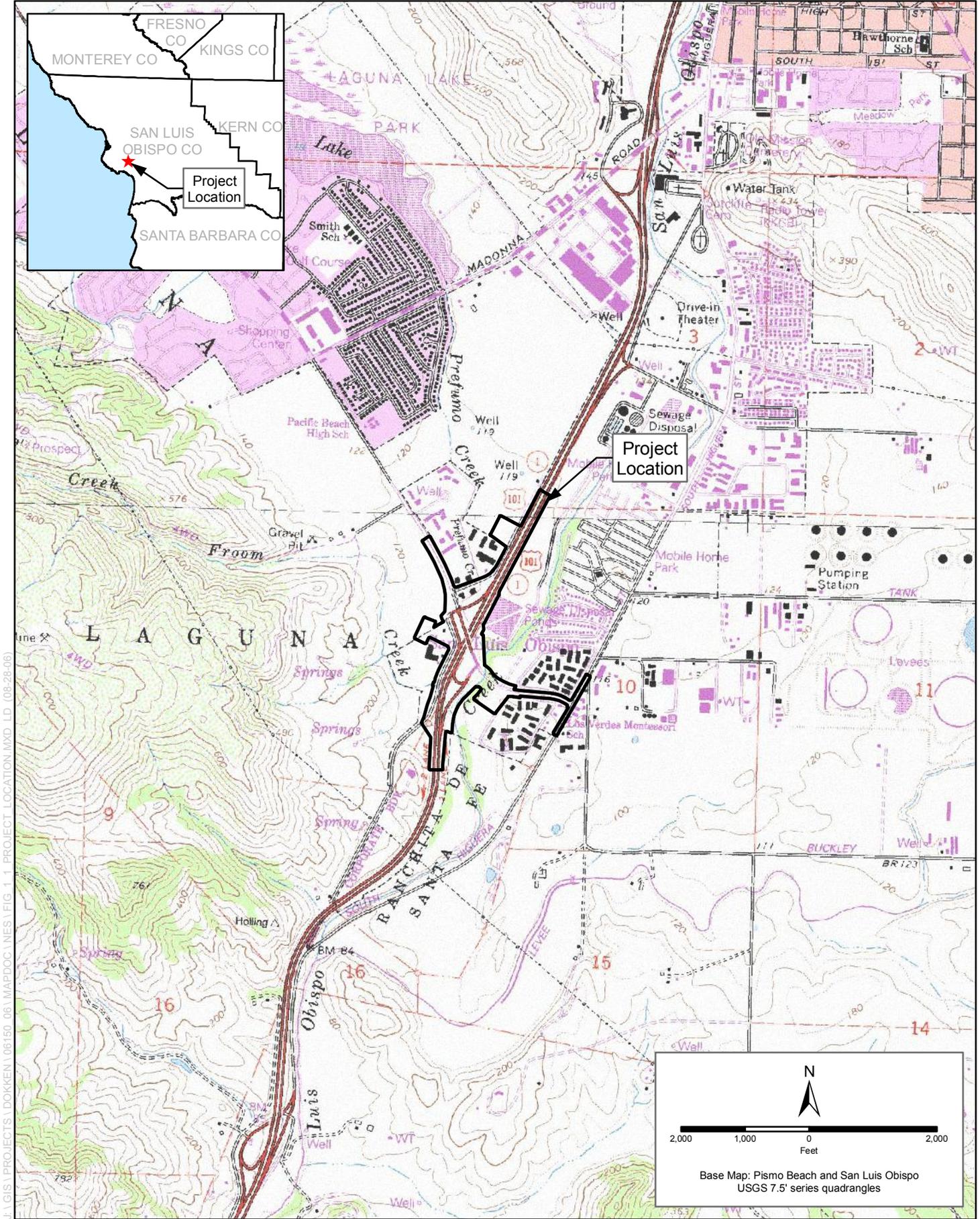
The existing Los Osos Valley Road/US 101 interchange is a diamond interchange, except for a loop ramp in the southeast quadrant. The Los Osos Valley Road overcrossing was constructed in 1962 to carry two lanes of traffic. It was widened in 1987 to carry three lanes of traffic. The two-lane US 101 alignment was constructed in 1933 and was widened to four lanes in 1954. This portion of US 101 is used mostly by local commuters, although interregional traffic also uses it.

The project setting includes both natural resource features and a developed, urban environment. The interchange vicinity also has San Luis Obispo Creek, Prefumo Creek, and Froom Creek stream crossings within the project area. Riparian vegetation, sycamore, and annual grasslands comprise the primary vegetation resources within the interchange area and host several species and habitats of special concern. Land uses in the area include vacant, residential, commercial, light industrial, and agricultural activity.

The existing Los Osos Valley Road Bridge (Bridge No. 49 0185) is a four-span structure about 300.5 feet long and 55 feet wide. The on-ramp to southbound US 101 is accessed from Calle Joaquin south and not directly from Los Osos Valley Road. The southbound US 101 off-ramp intersects Los Osos Valley Road at the Los Osos Valley Road/Calle Joaquin south intersection. Calle Joaquin north intersects Los Osos Valley Road approximately 300 feet west of the southbound US 101 off-ramp/Calle Joaquin south intersection. This portion of US 101 is a four-lane freeway with 12-foot lanes, 8-foot right shoulders, and a median width of 40 feet.

The project would correct operational deficiencies and improve safety; it would widen the Los Osos Valley Road overcrossing and an adjacent bridge crossing San Luis Obispo Creek. The project could also potentially relocate and reconfigure the freeway ramps, depending on the alternative chosen.

Both build alternatives are compatible with the design concept and are included in the adopted Regional Transportation Plan, Vision 2025—a Regional Transportation Plan and adopted Transportation Improvement Program, 2007 Transportation Improvement Program. The proposed project is identified in Appendix 1 from the Regional Transportation Plan as Metropolitan Planning Organization ID: 222300000081, Los Osos Valley Road Interchange Project. San Luis Obispo Council of Government's Transportation Improvement Program identifies the proposed project as Transportation Improvement Program ID: Metropolitan Planning Organization ID: 222300000081, Los Osos Valley Road Interchange Project.



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Figure 1.1
Project Location

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to improve traffic operations and safety on Los Osos Valley Road and the Los Osos Valley Road/US 101 interchange.

1.2.2 Need

The project is needed to respond to projected increases in regional and local traffic demand on the state and local roadway systems at the Los Osos Valley Road/US 101 interchange. The area’s current lack of alternative routes and presence of non-standard existing roadway design combine with increased traffic to escalate congestion and reduce traffic safety for vehicle, bicycle, and pedestrian travel.

Table 1.2-1 summarizes the current and projected Level of Service.

Table 1.2-1: Existing and Projected Level of Service (LOS)

Intersection	Existing (2005)		2035 Projected (No Build)	
	AM LOS	PM LOS	AM LOS	PM LOS
Los Osos Valley Road US 101 Southbound Off-ramp/Calle Joaquin	E	D	F	F
Calle Joaquin/Southbound On-ramp	A	A	F	F
Los Osos Valley Road /US 101 Northbound Ramps	E	F	F	F

The traffic demand on the Los Osos Valley Road corridor will increase as the area continues to develop. New commercial uses have recently been built on Los Osos Valley Road west of the interchange at US 101. Home Depot and Costco stores have recently opened west of the interchange. Two new hotels have been proposed for development on Calle Joaquin (south). The traffic from these developments as well as other potential new development in the area has increased and will continue to increase traffic volumes at the Los Osos Valley Road/US 101 interchange. The current interchange design is not adequate to serve the increased traffic demand.

Projected Travel Demand (No Project) – As Table 1.2-2 indicates, three of the four study intersections associated with the Los Osos Valley Road/US 101 interchange will experience Level of Service E or F conditions during both peak hours. Without the proposed improvements, the capacity of the existing interchange will be exceeded, resulting in severe congestion.

Table 1.2-2: Design Year (2035) Intersection Level of Service Summary - No-Build Alternative

Location	Traffic Control	Level of Service and Average Delay (seconds per vehicle)	
		AM	PM
Los Osos Valley Road/Auto Park Way	Signal	F (163)	E (77)
Los Osos Valley Road/Calle Joaquin	Signal	F (134)	F (84)
Los Osos Valley Road/US 101 Southbound Ramps	Signal	F (>200)	F (>200)
Los Osos Valley Road/US 101 Northbound Ramps	Signal	F (>200)	F (>200)
Los Osos Valley Road/Los Verdes Drive	Side Street Stop Control	F (182)	F (>200)
Los Osos Valley Road/South Higuera Street	Signal	C (30)	F (>200)
South Higuera Street/Vachell Lane	Side Street Stop Control	F (58)	F (>200)

Notes: (1) Average delay reported in seconds per vehicle for intersections with traffic signals. For side-street stop-controlled intersections, the work movement delay is reported in seconds per vehicle; bold font indicates deficient study locations based on analysis criteria. (Traffic Analysis. 2006)

An additional analysis was conducted to show operational condition of the Los Osos Valley Road interchange if the Prado Road interchange is not completed by design year 2035. Peak hour traffic volumes are summarized below in Table 1.2-3. While the US 101 mainline volumes would not be significantly affected, an analysis of the US 101/Los Osos Valley Road ramp intersections indicates that these are projected to operate at unacceptable levels (LOS E or F) if a full Prado Road interchange is not built under design year conditions.

Table 1.2-3: Design Year (2035) Peak-Hour Level of Service for Alternative 3 and Alternative 6 with and without Prado Interchange

Intersection	2035 Projected Alt 3		2035 Projected Alt 6		2035 Projected Alt 3 No Prado		2035 Projected Alt 6 No Prado	
	AM LOS	PM LOS	AM LOS	PM LOS	AM LOS	PM LOS	AM LOS	PM LOS
Los Osos Valley Road and Calle Joaquin (Southbound Ramps Alternative 6)	A	A	C	C	C	C	E	F
US 101 Los Osos Valley Road Southbound Ramps	B	C	N/A	N/A	D	E	N/A	N/A
Los Osos Valley Road /US 101 Northbound Ramps	C	C	B	B	F	D	D	C

The additional traffic results in a decreased Level of Service at the northbound on- and off-ramps, though that Level of Service remains within required levels. However, the higher traffic count also decreases the Level of Service at the intersection of Los Osos Valley Road and Calle Joaquin, which exceeds capacity with Level of Service E in the morning and Level of Service F in the afternoon.

Future planned development and general regional growth will increase traffic volumes to the degree that all intersections in the vicinity of the Los Osos Valley Road/US 101 interchange would operate with severe congestion during both the morning and afternoon peak hours. This would result in congestion on US 101 from backups at the off-ramp intersections. This congestion would affect both local traffic on Los Osos Valley Road and regional traffic on US 101.

Collision Rates

Data for freeway collisions near the Los Osos Valley Road/US 101 interchange were studied for the three-year period from January 2003 to December 2005. The data indicated that a total of 75 collisions occurred on the US 101 mainline, and 48 collisions occurred near the ramp merge and diverge locations. For both sets of data, nearly 60 percent of the collisions occurred in the southbound direction near the interchange.

Freeway Mainline Collisions

These incidents occurred throughout the day. The highest total during any one-hour was 14 collisions, occurring between 5:00 p.m. and 6:00 p.m. Approximately 60 percent of the collisions occurred on Tuesday, Friday, or Saturday. June, November, and December were the months with the highest proportion of collisions; the remaining months had fewer than 10 percent each of the collision total. Over the 36-month period, a total of two fatalities and 30 injured persons were reported from mainline collisions.

Speeding and improper lane changes were the factors representing the highest proportion of mainline collisions at roughly 31 percent and 24 percent, respectively. Approximately 45 percent of vehicles hit an object, and 31 percent of the accidents involved a rear-end collision. Of those that hit an object, 20 hit a barrier or guardrail, while others hit dikes or curbs, cut slope or embankments, and fences. Factors such as the weather, roadway conditions, or lighting did not appear to contribute substantially to the reported collisions.

Ramp Junction Collisions

Collisions at the ramp junctions occurred throughout most of the day; however, no incidents were reported between 11:00 p.m. and 1:00 a.m. during the three-year period. Of the 48 reported collisions, 63 percent occurred in May, September, October, and December, with May and October having the highest proportion. The highest percentage of collisions occurred on Tuesdays and Fridays, with approximately 17 percent and 29 percent of the total, respectively.

Speeding and failure to yield were the main collision factors, representing 59 percent of the total, and rear-end collisions were the most frequent type of collision at nearly 52 percent. Most of the collisions occurred on clear days during daylight with dry pavement conditions. Of note is the number of collisions (37 or nearly 77 percent) that occurred on the ramp near the adjacent local intersection. No other factors such as weather, roadway conditions, or lighting appeared to contribute substantially to the reported ramp junction collisions.

Collision Rates and Total Collisions are shown in Table 1.2-4. Collision data came from the Caltrans Traffic Accident Surveillance and Analysis System for the 36-month period from January 1, 2003 to December 31, 2005.

Table 1.2-4: Summary of Collision Rate Data

Ramp/US 101 Segment	Post Mile	Actual Accident Rates				Average Accident Rates		
		Total Accidents	Fatal	Fatal +Injury	Total Rates	Fatal	Fatal +Injury	Total Rates
US 101 Mainline	25.0-26.6	75	0.019	0.23	0.70	0.011	0.37	1.02
Northbound Off-Ramp to Los Osos Valley Road	25.6	10	0.000	0.29	1.43	0.006	0.33	0.90
Northbound On-ramp from Los Osos Valley Road	25.8	15	0.000	1.29	3.86	0.001	0.24	0.70
Southbound On-ramp to Los Osos Valley Road	25.9	6	0.000	0.00	0.86	0.002	0.32	0.80
Southbound Off-ramp from Los Osos Valley Road	26.1	17	0.000	1.23	2.99	0.005	0.61	1.50

The data show two fatalities at the mainline segments and no fatalities at the ramps during the three-year analysis period. While the mainline rate is below the statewide average, all of the ramp locations have higher than average rates. The actual rate for the northbound on-ramp from Los Osos Valley Road is about five times the statewide average, and the rate for the southbound off-ramp to Los Osos Valley Road is about twice the statewide average. Based on the summary data, no specific cause of collisions at any of the study locations could be identified.

1.3 Alternatives

This section describes the proposed action and the design alternatives that were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. Two build alternatives—Alternative 3 and Alternative 6—and a No-Build Alternative are under consideration. Major features used for comparison of project alternatives include project cost, level of service and other traffic data, and specific environmental impacts. This section discusses the build alternatives, the No-Build Alternative, and previously eliminated alternatives.

Caltrans proposes to improve the Los Osos Valley Road/US 101 interchange located in the City and County of San Luis Obispo. The project would correct operational deficiencies, relieve congestion, and improve safety.

1.3.1 Build Alternatives

Two build alternatives (Alternative 3 and Alternative 6) have been identified to satisfy the purpose and need for the project. Alternative 3 has been identified by the City of San Luis Obispo as the locally preferred alternative. Alternative 3 and Alternative 6 are described below.

Common Design Features of the Build Alternatives

This project is intended to accommodate current and future travel demands. Calle Joaquin Road south of Los Osos Valley Road has been realigned so that the existing “T” intersection of Los Osos Valley Road and Calle Joaquin Road north of Los Osos Valley Road has been converted to a four-way intersection. The Calle Joaquin Road realignment was developed and completed by the Costco Wholesale Corporation as a condition of approval and mitigation measure for traffic impacts.

The project limits extend along Los Osos Valley Road between Auto Park Way to the west and South Higuera Street to the east covering a distance of 0.52 mile and along US 101 for about 2,500 feet south and 4,300 feet north of the Los Osos Valley Road overcrossing.

Under both build alternatives, the San Luis Obispo Creek arch culvert would be changed. Built in 1986, the existing three-barrel structural steel-plate arch culvert is a large structure, carrying Los Osos Valley Road over San Luis Obispo Creek. This project would widen and raise the roadway. These roadway changes require lengthening the culvert with a new structural steel arch (matching what exists) and increasing the loading on the existing culvert that would remain. To determine the feasibility of this increased loading, a structural analysis was conducted. The analysis showed that the existing culvert can easily carry the additional loading, making this a viable option.

Each build alternative would provide Class II bike lanes throughout the project on both sides of Los Osos Valley Road. Included in the project, along both sides of all project-related local streets, are sidewalks with grades and curb ramps at intersections, in compliance with Americans with Disabilities Act requirements. A portion of the Bob Jones City-to-Sea bikeway passes through the project. The project would be constructed to provide bikeway access to connect to Los Osos Valley Road at the northbound on- and off-ramp intersection.

Both alternatives would:

1. Widen Los Osos Valley Road to four lanes from South Higuera Street to 600 feet west of Calle Joaquin to meet the existing four-lane section west of Calle Joaquin.
2. Extend the existing San Luis Obispo Creek culvert crossing to accommodate widened Los Osos Valley Road.

3. Construct retaining walls to avoid Prefumo Creek and business impacts at Los Osos Valley Road and the US 101 southbound ramps.
4. Construct sidewalks and Class II bike lanes along both sides of Los Osos Valley Road.
5. Change the existing signals at the Los Osos Valley Road and US 101 ramp intersections.
6. Increase the hydraulic capacity of San Luis Obispo Creek by removing deposited sediment from the outer two bays of the of the San Luis Obispo Creek bridge to a level three feet above the bottom of the active channel to prevent spreading flow. No change would be made to the active channel.
7. Widen and reconstruct the US 101 northbound off-ramp and construct a retaining wall to avoid creek impacts.
8. Construct additional box or natural-bottom culvert capacity under US 101 for Prefumo Creek.
9. Change the landscaping and sidewalks along Los Osos Valley Road at Los Verdes.
10. Change the striping, medians, and lane widths along Los Osos Valley Road at Los Verdes.
11. Restripe South Higuera Street to optimize the capacity of the South Higuera Street/Los Osos Valley Road intersection, given the widening of Los Osos Valley Road.
12. Construct a retention basin within the northbound loop on-ramp.
13. Plant native landscaping within the intersections and ramps where appropriate.

Access to the construction site would occur along existing paved roadways and would be limited to the designated permanent and temporary impact areas for Alternatives 3 and 6. Two staging areas are proposed (one for Alternative 3 and two for Alternative 6) and are included in the study area.

Staging

Handling traffic during construction entails constructing the new bridge embankment and eastbound Los Osos Valley Road lanes while traffic continues to operate on the existing roadway and with the existing signals. Work would be done in four stages:

Stage 1

- Construct eastbound Los Osos Valley Road widening
- Construct US 101 overcrossing for eastbound lanes
- Widen San Luis Obispo Creek bridge

Stage 2

- Reconstruct northbound on- and off-ramps
- Reconstruct southern half of northbound ramp intersection to new grade
- Shift traffic on overcrossing and San Luis Obispo Creek bridge to south side
- Remove falsework over US 101

Stage 3

- Reconstruct southbound on- and off-ramps
- Reconstruct southern half of southbound ramp intersection to new grade
- Shift traffic to south side of southbound ramp intersection
- Construct improvements to north side of San Luis Obispo Creek bridge

Stage 4

- Reconstruct northern half of southbound ramp intersection
- Complete final project paving and striping

Unique Features of Build Alternatives

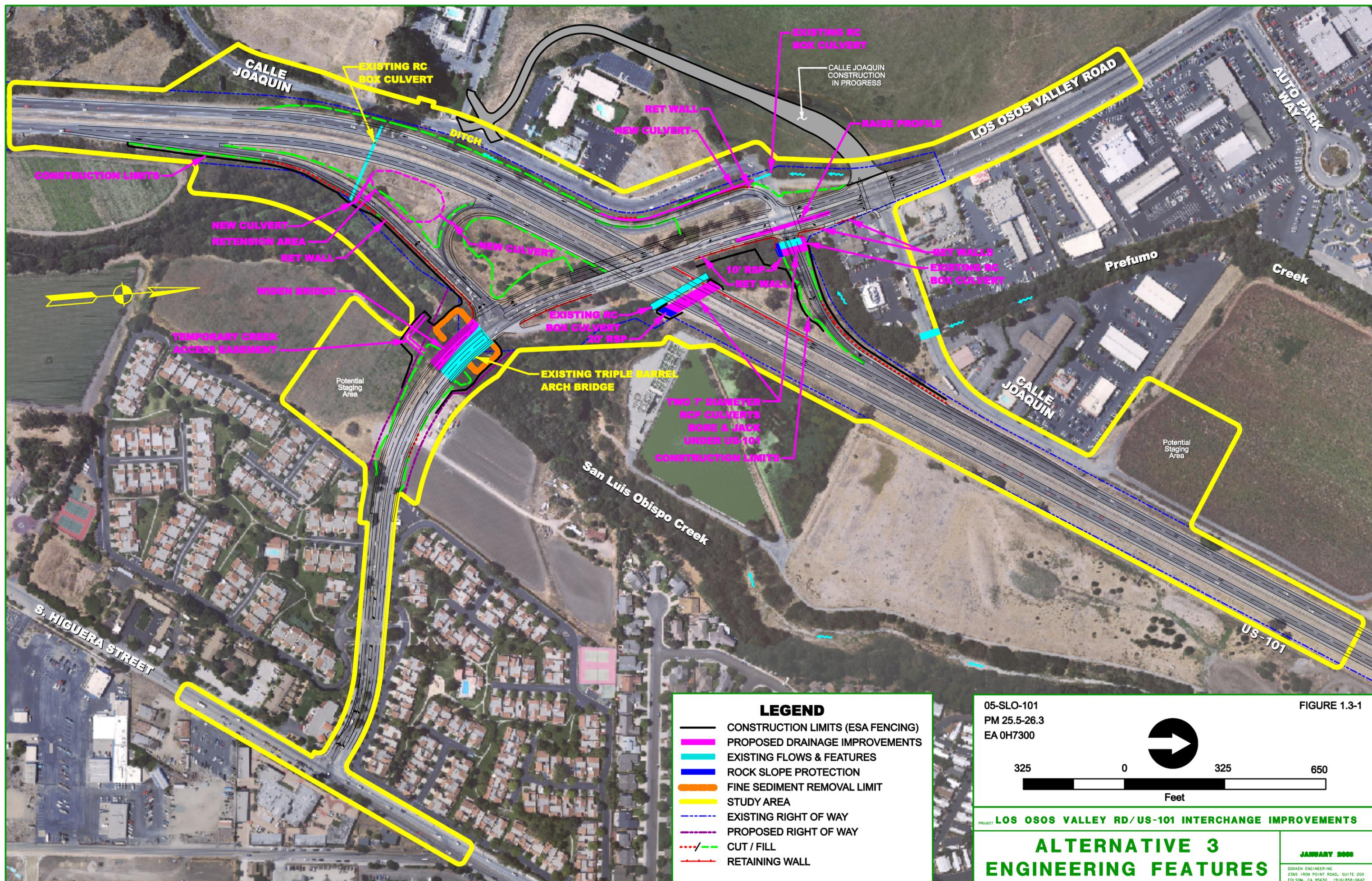
Alternative 3—Minimum Build

Alternative 3 is the minimum build alternative for this project and is the locally preferred alternative (see Figure 1.3-1 and Figure 1.3-2). This alternative would widen Los Osos Valley Road to four lanes between Calle Joaquin intersection with Los Osos Valley Road west of US 101 and the Los Verdes community east of US 101. The widening would include the existing Los Osos Valley Road overcrossing and San Luis Obispo Creek culvert crossing.

The widening would be accomplished by constructing a separate structure to carry the two eastbound lanes over US 101. Los Osos Valley Road would split over US 101 to accommodate the westbound lanes on the existing overcrossing. The project would lengthen the San Luis Obispo Creek culvert crossing on the south side and construct a cantilevered sidewalk on the north side. The widening would result in four 12-foot through-lanes, bike lanes, sidewalks (on both sides), and a median 5 feet to 16 feet wide, which would be used for left turns where needed. The northbound US 101 off-ramp would be widened from the intersection with Los Osos Valley Road to 500 feet south. The southbound on-ramp would be reconstructed near the current location opposite the southbound off-ramp.

This alternative would:

- Construct retaining walls to avoid San Luis Obispo Creek impacts.
- Construct a separate US 101 overcrossing to carry the two eastbound lanes with a split profile.
- Raise the intersection of Los Osos Valley Road at the US 101 southbound ramps.
- Construct new street lighting along Los Osos Valley Road.
- Raise headwalls on Prefumo Creek box culvert under the southbound off-ramp to accommodate ramp raising and widening.
- Widen the US 101 southbound off-ramp and construct retaining walls.
- Change the storm drain system along Los Osos Valley Road to accommodate widening and profile changes.
- Construct a standard acceleration lane from southbound on-ramp.

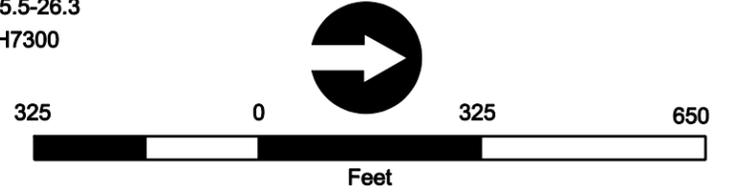


LEGEND

- CONSTRUCTION LIMITS (ESA FENCING)
- PROPOSED DRAINAGE IMPROVEMENTS
- EXISTING FLOWS & FEATURES
- ROCK SLOPE PROTECTION
- FINE SEDIMENT REMOVAL LIMIT
- STUDY AREA
- - - EXISTING RIGHT OF WAY
- - - PROPOSED RIGHT OF WAY
- · - · CUT / FILL
- RETAINING WALL

05-SLO-101
PM 25.5-26.3
EA 0H7300

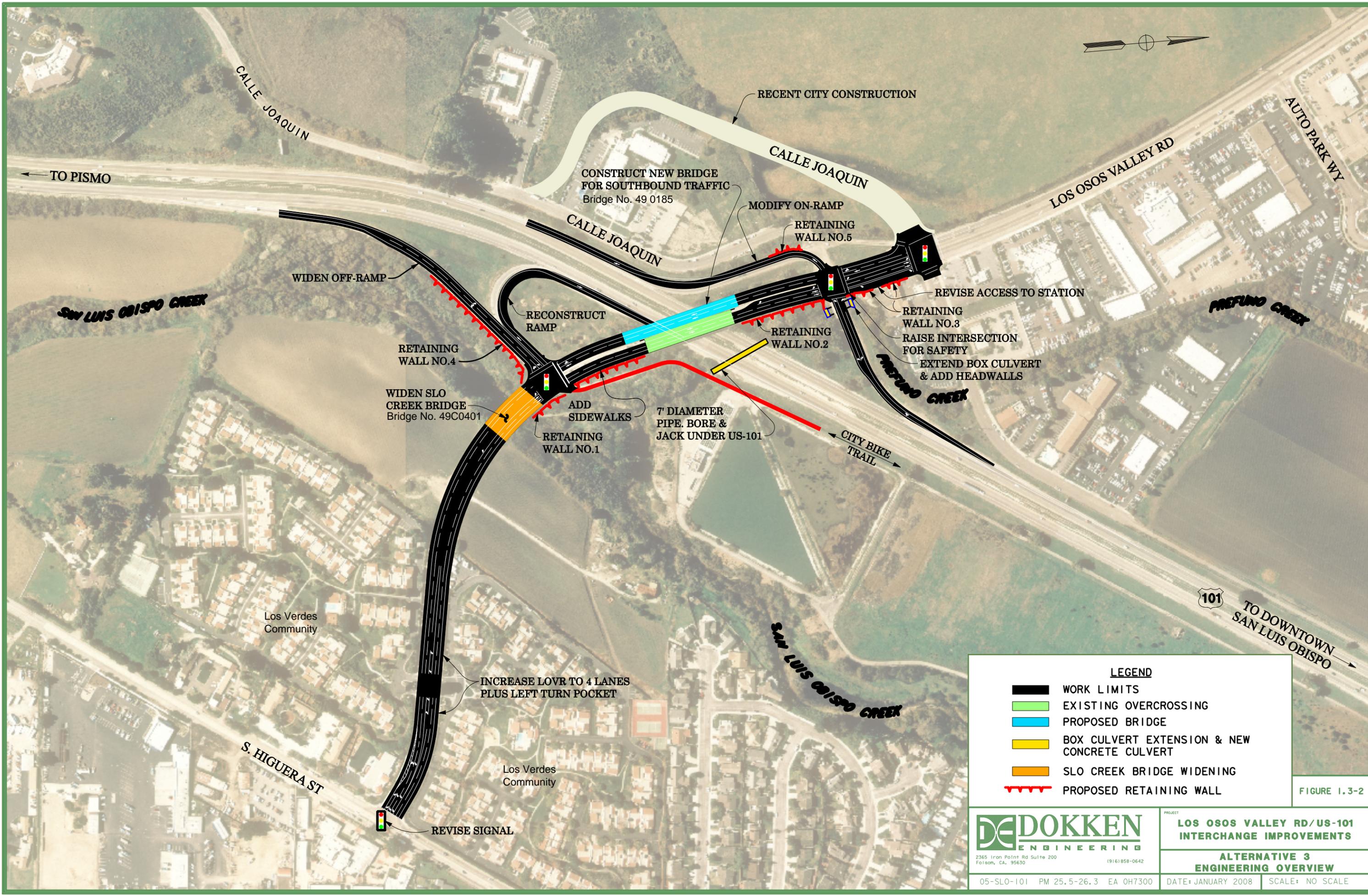
FIGURE 1.3-1



PROJECT **LOS OSOS VALLEY RD/US-101 INTERCHANGE IMPROVEMENTS**

**ALTERNATIVE 3
ENGINEERING FEATURES**

JANUARY 2008
DOKKEN ENGINEERING
2365 IRON POINT ROAD, SUITE 200
FOLSOM, CA 95630 (916) 858-0642



LEGEND	
	WORK LIMITS
	EXISTING OVERCROSSING
	PROPOSED BRIDGE
	BOX CULVERT EXTENSION & NEW CONCRETE CULVERT
	SLO CREEK BRIDGE WIDENING
	PROPOSED RETAINING WALL

FIGURE 1.3-2

 2365 Iron Point Rd Suite 200 Folsom, CA, 95630 (916) 858-0642	PROJECT: LOS OSOS VALLEY RD/US-101 INTERCHANGE IMPROVEMENTS	
	ALTERNATIVE 3 ENGINEERING OVERVIEW	
05-SLO-101 PM 25.5-26.3 EA 0H7300	DATE: JANUARY 2008	SCALE: NO SCALE

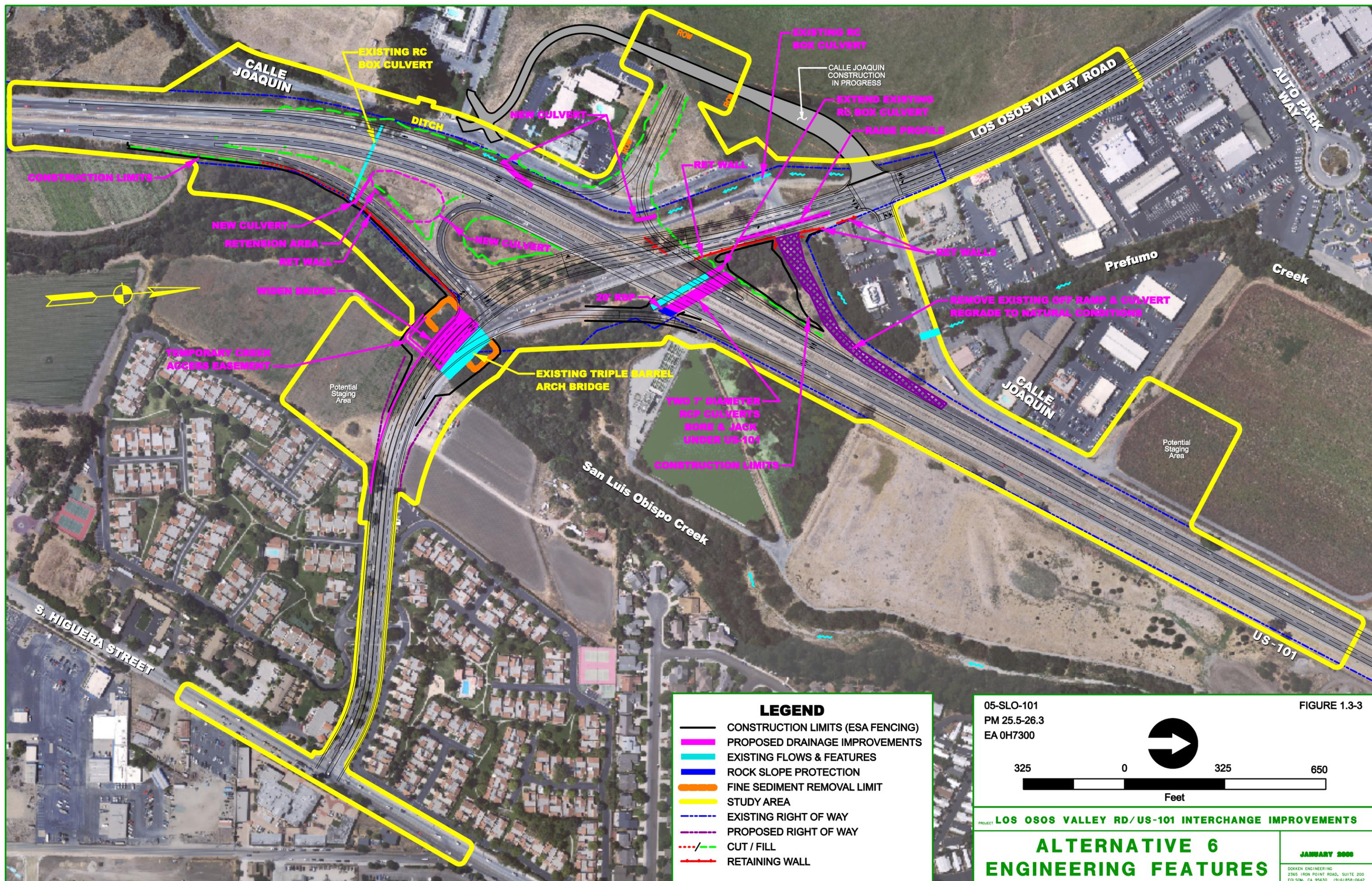
Alternative 6—Moderate Build, Near Full Standard

This alternative proposes to widen Los Osos Valley Road between Calle Joaquin west and the Los Verdes communities east of US 101 (see Figures 1.3-3 and 1.3-4). The existing Los Osos Valley Road overcrossing would be replaced to improve the profile, vertical clearance, and space required for the southbound hook off-ramp.

In addition, the existing northbound loop on-ramp to US 101 would be reconstructed, and the northbound off-ramp would be widened. A new northbound diagonal on-ramp to US 101 may be added in the northeast quadrant of the interchange as a phased improvement. An auxiliary lane would be added to northbound US 101 from the end of the northbound loop on-ramp to 1,000 feet beyond the end of the northbound diagonal on-ramp. The northbound diagonal on-ramp would be supported by retaining walls and an additional bridge over Prefumo Creek. The existing southbound on- and off-ramps from US 101 would be removed. South of Los Osos Valley Road, new/relocated southbound on- and off-ramps from US 101 would be constructed in a hook ramp configuration. Calle Joaquin south of Los Osos Valley Road is being realigned to accommodate the realigned southbound US 101 ramps and to create a four-way intersection with Calle Joaquin north of Los Osos Valley Road.

This alternative would:

- Replace the Los Osos Valley Road US 101 overcrossing with a new four-lane overcrossing.
- Relocate and reconstruct the southbound US 101 ramps.
- Reconstruct the northbound US 101 loop on-ramp.
- Construct the northbound US 101 diagonal on-ramp and merge lane to US 101.
- Construct the northbound US 101 on-ramp bridge and retaining walls at Prefumo Creek.
- Construct a stop-controlled intersection at US 101 southbound ramps and Calle Joaquin.
- Construct new street lighting along Los Osos Valley Road and Calle Joaquin.
- Remove the existing southbound US 101 ramps and Prefumo Creek box culvert.
- Extend the Prefumo Creek box culvert under US 101 for a new/relocated southbound off-ramp.
- Construct storm drain systems for Los Osos Valley Road and reconstruct the ramps.



CONSTRUCTION LIMITS

NEW CULVERT
RETENTION AREA
RET WALL

TEMPORARY CREEK
ACCESS EASEMENT

Potential
Staging
Area

EXISTING TRIPLE BARREL
ARCH BRIDGE

TWO 7' DIAMETER
RCP CULVERTS
BORE & JACK
UNDER US-101

CONSTRUCTION LIMITS

EXISTING RC
BOX CULVERT

CALLE JOAQUIN
CONSTRUCTION
IN PROGRESS

EXTEND EXISTING
RC BOX CULVERT

RAISE PROFILE

RET WALL

RET WALLS

REMOVE EXISTING OFF RAMP & CULVERT
REGRADE TO NATURAL CONDITIONS

Potential
Staging
Area

San Luis Obispo Creek

CALLE
JOAQUIN

US-101

S. HIGUERA STREET

CALLE
JOAQUIN

EXISTING RC
BOX CULVERT

DITCH

NEW CULVERT

NEW CULVERT

20' RSP

LOS OSOS VALLEY ROAD

AUTO PARK
WAY

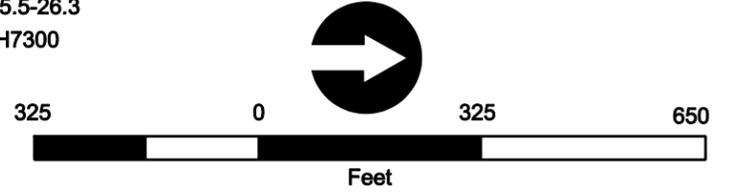
Prefumo
Creek

LEGEND

- CONSTRUCTION LIMITS (ESA FENCING)
- PROPOSED DRAINAGE IMPROVEMENTS
- EXISTING FLOWS & FEATURES
- ROCK SLOPE PROTECTION
- FINE SEDIMENT REMOVAL LIMIT
- STUDY AREA
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- CUT / FILL
- RETAINING WALL

05-SLO-101
PM 25.5-26.3
EA 0H7300

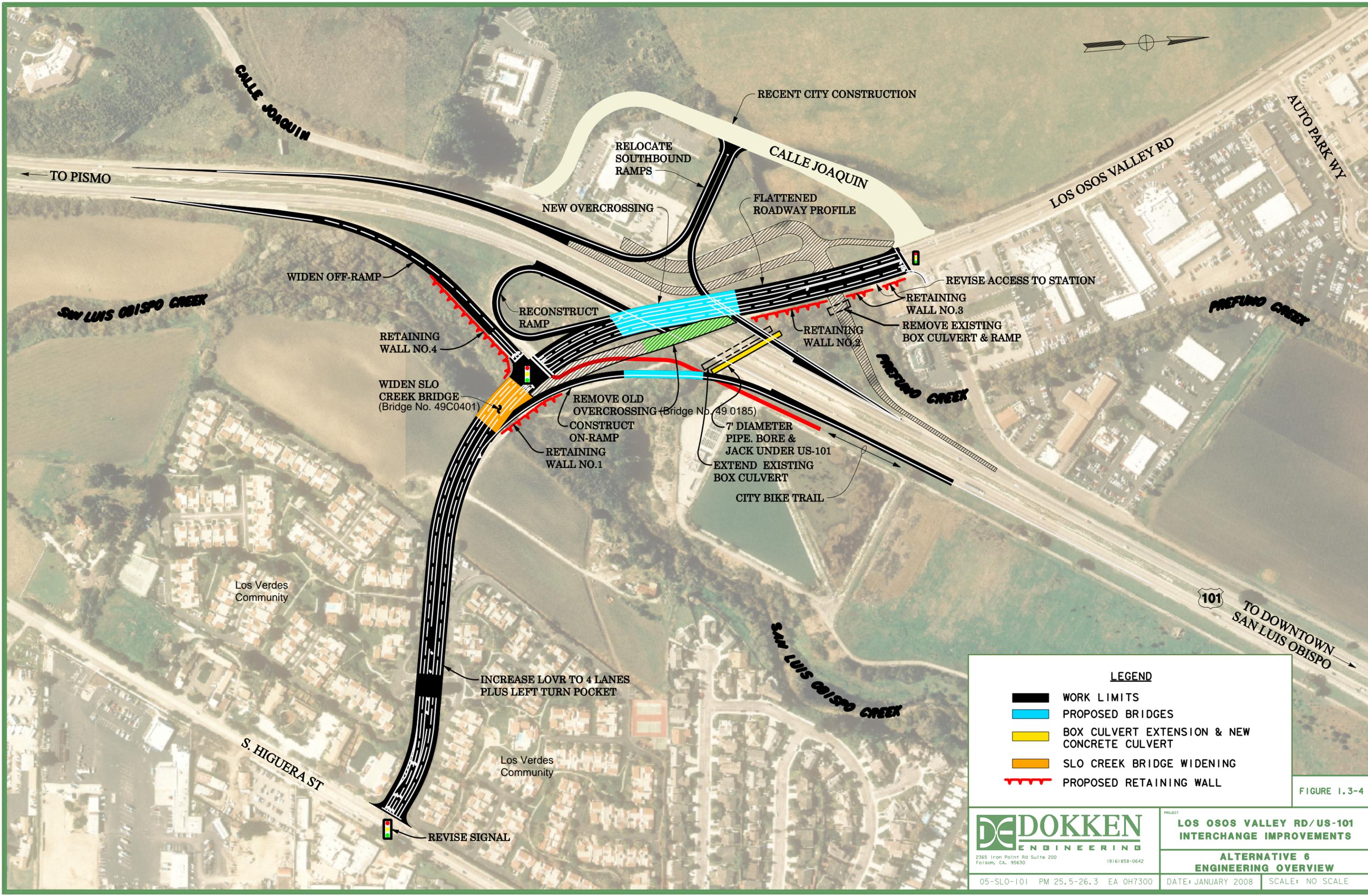
FIGURE 1.3-3



PROJECT **LOS OSOS VALLEY RD/US-101 INTERCHANGE IMPROVEMENTS**

**ALTERNATIVE 6
ENGINEERING FEATURES**

JANUARY 2008
DOKKEN ENGINEERING
2365 IRON POINT ROAD, SUITE 200
FOLSOM, CA 95630 (916) 858-0642



LEGEND

- WORK LIMITS
- PROPOSED BRIDGES
- BOX CULVERT EXTENSION & NEW CONCRETE CULVERT
- SLO CREEK BRIDGE WIDENING
- PROPOSED RETAINING WALL

FIGURE 1.3-4

 <p style="font-size: 8px;">2365 Iron Point Rd Suite 200 Folsom, CA, 95630 (916) 858-0642</p>	<p>PROJECT</p> <p>LOS OSOS VALLEY RD/US-101 INTERCHANGE IMPROVEMENTS</p>	
	<p>ALTERNATIVE 6 ENGINEERING OVERVIEW</p>	
05-SLO-101 PM 25.5-26.3 EA 0H7300	DATE: JANUARY 2008	SCALE: NO SCALE

Transportation Systems Management and Transportation Demand Management Alternatives

Transportation Systems Management, Transportation Demand Management, and modal alternatives might be seen as reasonable alternatives, but they are not being considered as viable alternatives for this project because they do not meet the safety component of the project's purpose and need.

Furthermore, ramp metering is not proposed for the northbound or southbound on-ramps as part of this project. The northbound on-ramp junction would operate at Level of Service C in 2015, similar to that of the mainline, also C. The southbound on-ramp would be metered in effect by the stop-controlled intersection at Calle Joaquin for Alternative 6. That intersection would remain stop-controlled through design year 2035. The southbound on-ramp junction would operate at Level of Service B/D, also similar to the mainline at Level of Service B/D. Ramp metering could be considered in the future as an option to widening US 101.

1.3.2 No-Build Alternative

Environmental review must consider the effects of not implementing the proposed project. The No-Build Alternative provides a baseline for comparing the impacts of all alternatives.

Effects of the No-Build Alternative include deteriorating level of service, impacts to air quality, and continuing safety conditions. Unless operational improvements are made, future planned development and general regional growth will increase traffic volumes to a degree that all intersections in the vicinity of the Los Osos Valley Road/US 101 interchange would operate with severe congestion during both the morning and afternoon peak hours. This would result in congestion on US 101 from backups at the off-ramp intersections. This congestion would affect both local traffic on Los Osos Valley Road and regional traffic on US 101. Decreasing operational efficiency may negatively affect air quality and would likely affect existing safety conditions, increasing accident rates.

1.3.3 Comparison of Alternatives

The difference between Alternative 3 and Alternative 6 is the method used to add travel lanes on Los Osos Valley Road at the US 101 overcrossing. Alternative 3 would use the existing structure to carry the westbound lanes and would construct a separate but adjacent structure to carry the eastbound lanes over US 101. Alternative 6 would replace the existing structure with a new, wider structure that would accommodate both the westbound and eastbound lanes. These alternatives also differ in the type and location of the southbound on- and off-ramps and the configuration of the northbound on- and off-ramp intersection with Los Osos Valley Road, which results in a larger ultimate project footprint for Alternative 6 (refer to Figures 1.3-1 through 1.3-4). The estimated construction cost of these alternatives is \$16 million for Alternative 3 and \$23.5 million for Alternative 6.

Environmental impacts for the build alternatives are very similar in magnitude although Alternative 3 would result in slightly less ground and creek disturbance than Alternative 6. Under Alternative 6,

therefore, the project will result in slightly more vegetation removal and impacts to biological resources (refer to Section 2.3). Alternative 6 would also construct deeper footings which have the potential to impact paleontological resources.

1.3.4 Identification of a Preferred Alternative

After public review and comment, the Project Development Team will recommend a Preferred Alternative that meets the purpose and need of the project. After a comparison of the benefits and impacts of the alternatives, Alternative 3 was preliminarily identified by the City of San Luis Obispo (the local project proponent) as the locally preferred alternative.

Alternative 3 currently:

- Meets the project's purpose and need to the greatest extent of the viable alternatives.
- Has the smallest environmental footprint of the viable alternatives.
- Fully accommodates future highway widening.
- Most feasible and attainable solution.

After the public circulation period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the project's effect on the environment. In accordance with the California Environmental Quality Act, if no immitigable significant adverse impacts are identified, Caltrans will prepare a Negative Declaration or Mitigated Negative Declaration.

1.3.5 Alternatives Considered but Eliminated From Further Discussion

This section explains why certain alternatives in the early development process were not considered further.

Alternative 1

Alternative 1 proposed to replace the Los Osos Valley Road overcrossing on the current alignment to achieve standard vertical clearance over US 101. The profile of Los Osos Valley Road approaching the overcrossing would be flattened to meet stopping-sight distance standards. The San Luis Obispo Creek culvert crossing would be replaced with a bridge. The southbound on- and off-ramps from US 101 would be realigned to move the intersection with Los Osos Valley Road west, toward US 101, to achieve standard intersection spacing. Calle Joaquin south of Los Osos Valley Road would be realigned so that the existing "T" intersection of Los Osos Valley Road and Calle Joaquin north of Los Osos Valley Road would be converted to a four-way intersection. This alternative was rejected because of its similarity to Alternative 3, which provides the same functionality while preserving existing infrastructure and minimizing cost.

Alternative 2

Alternative 2, known as the Los Verdes Bypass to South Higuera alternative, proposed to realign Los Osos Valley Road from Calle Joaquin west of US 101 to a new intersection with South Higuera Street, south of the Los Verdes neighborhood. The existing Los Osos Valley Road overcrossing and the San Luis Obispo Creek culvert crossing would be completely replaced. The severed portion of Los Osos Valley Road that provides access to Los Verdes would be either extended to intersect Los Osos Valley Road 410 feet west of the northbound ramps intersection or converted to a cul-de-sac. The northbound on- and off-ramps from US 101 would be realigned as hook ramps to cross San Luis Obispo Creek with a bridge and intersect Los Osos Valley Road. The southbound on- and off-ramps from US 101 could either intersect Los Osos Valley Road or Calle Joaquin.

This alternative had the greatest environmental impacts and highest cost of all the alternatives studied. Alternative 2 would cost approximately twice as much as Alternative 3. Operationally, the layout directed more traffic to the Higuera/US 101 interchange. While the alternative addressed some regional circulation issues, those are not a specific part of the project's defined need and purpose to increase capacity of the Los Osos Valley Road interchange. This alternative was rejected from further consideration because of its higher environmental impacts and high cost.

Alternative 4

This alternative proposed southbound ramps between Los Osos Valley Road and Prado Road. The drawbacks of this alternative were the adverse traffic operations associated with moving the southbound on-ramp a great distance north of Los Osos Valley Road and the conversion of prime farmland (land use) for the ramp relocations. This alternative would require southbound motorists to drive nearly a half mile from the interchange and would require the acquisition of a large piece of farmland for ramp runoffs and the Calle Joaquin extension. So, based on traffic evaluations, land use planning, and public input, this alternative was rejected from further consideration.

Alternative 5

Alternative 5, with a roundabout, proposed to widen Los Osos Valley Road between the southbound on- and off-ramps from US 101 and the Los Verdes neighborhood east of US 101. Calle Joaquin north and south of Los Osos Valley Road and the southbound US 101 ramps would be realigned to create one intersection with Los Osos Valley Road in the form of a roundabout with six access points. This alternative was rejected based on heavy public opposition, traffic operational concerns with six points of access, and severe business impacts.

Alternative 7

Alternative 7 was presented as a full standard alternative with respect to Caltrans design standards. It proposed to replace the Los Osos Valley Road overcrossing on the current alignment to achieve standard vertical clearance over US 101. The profile of Los Osos Valley Road approaching the overcrossing would be flattened to meet stopping-sight distance standards. Los Osos Valley Road would be widened between Calle Joaquin west of US 101 and the Los Verdes neighborhood east of US 101. The US 101 ramps

would be realigned in a standard diamond configuration to achieve standard design speeds, sight distance, and super-elevation transitions. Calle Joaquin would be moved west of its current connection to Los Osos Valley Road to achieve the standard intersection spacing. This alternative had high right-of-way costs for business relocation, purchase, and cleanup. It was rejected based on environmental concerns: greater negative impact to wetland, farmland, and riparian habitat; the relocation of Calle Joaquin onto delineated wetland; greater impact to migratory bird habitat; and the impact to open space and conservation areas. This alternative did not meet U.S. Army Corps of Engineers criteria for Least Environmentally Damaging Practicable Alternative and is not a viable alternative from a community impacts or cost standpoint.

1.4 Permits and Approvals Needed

Table 1.4-1: Permits, Reviews, and Approvals Required for Project Construction

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species Review and Comment on 404 Permit	Biological Opinion will be obtained from U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers	Section 404 Permit for filling or dredging Waters of the United States	Application for Section 404 permit anticipated after distribution of the final environmental document
California Department of Fish and Game	Section 1602 Agreement for Lake or Streambed Alteration	Application for 1602 permit anticipated after distribution of the final environmental document
California Department of Fish and Game	Section 2080.1 Agreement for Threatened and Endangered Species	Consistency determination will be obtained
Central Coast Regional Water Quality Control Board	Water Quality Certification	Application for Section 401 permit anticipated after distribution of the final environmental document
State Water Resources Control Board	Notice of Intent to comply with the National Pollution Discharge Elimination System Permit	Application for Section 402 permit anticipated after distribution of the final environmental document

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

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

- **Growth**—The improvements proposed for the existing interchange at Los Osos Valley Road and US 101 consist of only operational improvements to correct existing and projected deficiencies in the level of service for current traffic volumes (Traffic Study 2007).
- **Community Impacts**—The interchange is an existing feature. Because no residential relocations would occur, implementation of either build alternative would not divide or directly affect any identified neighborhood or community. Impacts relating to relocations would include only partial acquisition or temporary acquisitions for construction easements related to either build alternative or the No-Build Alternative. The three parcels that would be partially or temporarily affected by the two build alternatives are identified as Assessor Parcel Numbers (APN) 053-161-014, 053-141-013, and 053-151-016. APN 053-161-014 and 053-141-013 are identified as prime farmland in the City Conservation and Open Space Element and are discussed in the Section 2.1.2 Farmlands. APN 053-151-016 is owned by ARCO gas station, and a temporary construction easement would be required (to make modifications to its driveway). Temporary closure of this business could occur during construction for both alternatives. If closures occur, displacement assistance will take place. These would not cause disproportionately high and adverse effects on the health and environment of minority and low-income populations.
- **Cultural Resources**—No historic properties were identified within or immediately adjacent to the project area of potential effect. The project would not have an adverse effect on any cultural resources. However, if previously unidentified cultural materials were unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist could assess the significance of the find. An Historic Property Survey Report regarding cultural resources was completed in 2008. No cultural resources were identified.

- Noise and Vibration—A Noise Study Report was prepared that modeled sensitive land uses in the project vicinity. Based on results of the noise modeling for traffic conditions in the existing, future no-build, Alternative 3, and Alternative 6 scenarios, it is clear that no permanent impacts are present under the California Environmental Quality Act.

2.1 Human Environment

2.1.1 Land Use

2.1.1.1 Existing and Future Land Use

Affected Environment

The project area is an existing roadway corridor and is identified in the Land Use Element and Circulation Element of the San Luis Obispo General Plan (revised 2006). Adjacent to the Los Osos Valley Road corridor are two residential communities named Los Verdes on both sides of Los Osos Valley Road. These residences are between South Higuera and agricultural land before the San Luis Obispo Creek. North of the San Luis Obispo Creek is the interchange and US 101 followed by some commercial properties until the end of the project at Calle Joaquin. North of Calle Joaquin and the project area has been designated as a Vehicle Sales Area. The agricultural land between Los Verdes and the creek is planned to be developed in the near future, but is currently zoned as agriculture in the City's Land Use Element. Portions of the existing and widened Los Osos Valley Road are also located within the 100-year floodplains and within the urban reserve creeks of the City.

Environmental Consequences

Current or future land uses surrounding the interchange would not change as a result of the proposed project.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required because the project does not cause adverse impacts with respect to existing or future land use.

2.1.1.2 Consistency with State, Regional, and Local Plans

Affected Environment

The proposed project would improve an existing intersection in the City of San Luis Obispo and partially within the unincorporated county. The project is currently listed in both the City and County of San Luis Obispo's General Plan Circulation Elements.

Environmental Consequences

Because the proposed project does not change land use, but rather increases functionality of the existing interchange, the interchange improvements would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required. The project is consistent with state, regional, and local plans and does not cause adverse impacts with respect to this aspect of land use.

2.1.2 Farmlands

Regulatory Setting

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.

The San Luis Obispo General Plan states that it is the City's policy to encourage preservation of economically viable agricultural operations and land within the urban reserve and city limits and that the City should provide for the continuation of farming through provision of appropriate general plan designations and zoning.

Development of prime agricultural land may be permitted, if certain conditions are met. Typically, mitigation for prime farmland is required and consists of permanently protecting an equal area of equal quality, which does not already have permanent protection, within the San Luis Obispo Planning Area (Conservation and Open Space Element, Required Mitigation, page 6-53 2006). The Land Use Element (page 20:1994), however, notes that development of small parcels surrounded by urbanization may be excluded from this mitigation requirement and need not contribute to agricultural land protection (2006).

Affected Environment

Farmland

The vacant parcels east of San Luis Obispo Creek (Assessor Parcel Number 053-161-014 and 053-141-013) are identified as prime farmland in the City Conservation and Open Space Element (Figure 10: 2006). Based on information from the San Luis Obispo County Tax Assessor's Office, neither parcel is subject to a Williamson Act contract. The future plan for these parcels is currently unknown. These parcels are currently being farmed on an inconsistent basis.

Environmental Consequences

Impacts to prime farmland for Alternative 3 involve a 1.4-acre easement for channel silt removal southwest of the interchange and 0.23 acre of fill associated with the widened Los Osos Valley Road on a parcel (Assessor Parcel Number 053-161-014). Impacts to prime farmland for Alternative 6 include the 1.4-acre easement and 0.28 acre of fill associated with the widened Los Osos Valley Road on the same parcel south of Los Osos Valley Road (Assessor Parcel Number 053-161-014). None of this land is under a Williamson Act contract.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required. The project is consistent with state, regional, and local plans and does not cause adverse impacts with respect to farmland.

2.1.3 Utilities/Emergency Services

Affected Environment

The City of San Luis Obispo uses a multi-source water supply strategy, obtaining water from three sources: Salinas Reservoir (Santa Margarita Lake), Whale Rock Reservoir, and ground water.

The City of San Luis Obispo's wastewater collection system consists of 130 miles of sewer pipe (at an average depth of six feet), more than 2,500 manholes, and eight sewage pump stations. This system conveys about 4.5 million gallons of wastewater per day to the city's water reclamation facility, which is responsible for treating all of the wastewater (sewage) within the city, at Cal Poly, and at the county airport.

The artificial ponds upstream of the project area along San Luis Obispo Creek were part of an earlier city water treatment facility that is now closed. The ponds currently serve as informal natural habitat for wildlife and the City is considering various options for improvement in this capacity. Regional landfills in the area include Cold Canyon and the Chicago Grade Landfill.

The City of San Luis Obispo Fire Department provides fire protection and emergency services in the project area. The department has four fire stations in San Luis Obispo. The station that serves the project area is Fire Station Four at 1395 Madonna Road at the intersection of Madonna and Los Osos Valley roads. The City of San Luis Obispo Police Department provides police protection services in the project area. The department consists of 87 employees, 61 of which are sworn police officers.

Environmental Consequences

Implementation of the proposed project would not result in the need for additional water supply or sewer services, nor would it generate any wastewater or require new water supplies. The project would relocate electric, telephone, gas, or other public utilities with minimal disruption to service. Utility companies that are involved with the project influence area include: PG&E, SBC,

City of San Luis Obispo, County of San Luis Obispo, Southern California Gas Company (Distribution and Transmission), Charter Communications, AT&T, MCI, and TOSCO. Details regarding utility relocation may be modified and refined during the PS&E phase of design.

Proposed utility relocations at this time are as follows:

Table 2.1-1: Proposed Utility Relocations

Alternative 3		Alternative 6	
Utility Relocation	Utility Company	Utility Relocation	Utility Company
Relocate communication line	MCI and AT&T	Relocate communication line	MCI and AT&T
Relocate joint utility and electric facilities	PG&E	Relocate joint utility and electric facilities	PG&E
Relocate telephone facilities	SBC	Relocate telephone facilities	SBC
Relocate 16" high pressure gas line	Southern California Gas	Relocate 16" high pressure gas line	Southern California Gas
Adjust manhole cover and water valve cover	City of San Luis Obispo Sewer	Adjust manhole covers and water valve cover	City of San Luis Obispo Sewer
Relocate cable TV facilities	Charter Communications - Cable TV	Relocate cable TV facilities	Charter Communications - Cable TV
Relocate 6" gas line	TOSCO	Adjust water valve covers and relocate fire hydrants	City of San Luis Obispo Water

The project would also include minor changes to existing storm drainage facilities connecting with the existing drainage system. Implementation of the proposed project would minimally increase the amount of impermeable surfaces in the project area on the revised road alignment and widened overcrossing. This small increase in surface area would result in a minimal increase in storm water runoff, but would not require new storm water drainage infrastructure or facilities beyond that proposed to bring existing interchange drainage facilities closer to current design standards.

Project construction would generate a small amount of solid waste through the removal of earthen material from the channel bottom during construction of support infrastructure for the bridge, and general debris from project construction. Upon completion, the expanded bridge would not generate any solid waste. It is expected that the small amount of solid waste generated by project construction would be disposed of at an appropriate landfill that can easily accommodate the small volume of solid waste.

Construction could temporarily affect police and fire emergency access during lane closures needed to complete the improvements proposed under Alternatives 3 and 6. Completion of construction would increase operational efficiency of the roadway and would ultimately improve emergency access through the area.

Avoidance, Minimization, and/or Mitigation Measures

Utilities that are negatively disrupted due to construction of the proposed project would be relocated. Utility companies would be coordinated with to avoid any unnecessary disruption to utility services. Temporary interruption of service to utility customers during relocation for construction may occur; permanent interruptions would not occur. No interruption of emergency services is anticipated. Emergency service providers would be notified one month before construction begins and provided with a transportation coordination plan identifying road closures and construction schedules.

2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities

The traffic section discusses the project's impacts on traffic and circulation, both during construction (construction impacts) and after completion of the project (long-term impacts).

Regulatory Setting

Caltrans directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects. The special needs of the elderly and the disabled must be considered in all projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

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

Affected Environment

The US 101/Los Osos Valley Road interchange proposed for improvements is currently configured as a diamond interchange, except for a loop ramp in the southeast quadrant. The Los Osos Valley Road overcrossing was built in 1962 to carry two lanes of traffic. It was widened in 1987, maintaining two lanes, and restriped in 2007 to carry three lanes of traffic. The existing bridge is a four-span structure about 300.5 feet long and 55 feet wide. The on-ramp to southbound US 101 is accessed from Calle Joaquin South and not directly from Los Osos Valley Road. The southbound US 101 off-ramp intersects Los Osos Valley Road at the Los Osos Valley Road/Calle

Joaquin South intersection. Calle Joaquin North intersects Los Osos Valley Road about 300 feet west of the southbound US 101 off-ramp/Calle Joaquin-South intersection.

The following features do not meet current design standards: the current intersection spacing between Calle Joaquin and the southbound ramps, the vertical clearance provided by the Los Osos Valley Road overcrossing, the deceleration lane lengths for the northbound and southbound off-ramps, and the acceleration lane lengths for the northbound and southbound on-ramps. The Circulation Element (San Luis Obispo 1994) of the General Plan identifies this segment of Los Osos Valley Road as an arterial street. The Circulation Element states that outside the downtown core, arterial streets should include bicycle lanes and can include two to four travel lanes, a maximum Level of Service of D, and maximum speeds of 40 miles per hour.

This portion of US 101 is a four-lane freeway with 12-foot lanes, 8-foot right shoulders, and a median width of 40 feet. It was originally built as a two-lane roadway in 1933 and was replaced with a four-lane roadway in 1954. Commuter traffic is the primary user of this portion of US 101, but a large percentage of travel through the study area is interregional. The 2001 Transportation Concept Report recommends that US 101 be expanded to a six-lane freeway through this segment. Widening US 101 is not part of this project, but intersection improvements would not preclude future widening of US 101.

A Traffic Operations Report has been prepared to develop forecast traffic volumes and operational analysis in the project area (2007). The traffic volume forecasts were generated using the City of San Luis Obispo Citywide Traffic Model (SLOCTM); General Plan build-out conditions are reflected in the Design Year (2035) forecasts. Information from the Traffic Operations Report is summarized below. Current and forecast Level of Service and average delay for opening year 2015 and for the design year 2035 are shown in Tables 2.1-1 and 2.1-2 below.

Table 2.1-2: Opening Year (2015) Intersection Levels of Service

Intersection	Peak Hour ¹	No-Build Alternative		Alternative 3		Alternative 6	
		Delay ²	LOS ³	Delay ²	LOS ³	Delay ²	LOS ³
Los Osos Valley Road/Auto Park Way	AM	77.1	E	22.1	C	23.6	C
	PM	89.9	F	23.4	C	25.9	C
Los Osos Valley Road/Calle Joaquin	AM	126.6	F	15.3	B	28.5	C
	PM	144.3	F	29.2	C	32.7	C
Los Oso Valley Road/US 101 Southbound Off-Ramp-Calle Joaquin (South)	AM	> 200	F	19.1	B	Intersection eliminated with alternative	
	PM	> 200	F	18.2	B		
Calle Joaquin (South)/US 101 Southbound On-Ramp (unsignalized intersection)	AM	Intersection eliminated with alternative				26.2	D
	PM	Intersection eliminated with alternative				31.3	D
Los Osos Valley Road/US 101 Northbound Ramps	AM	> 200	F	23.9	C	19.6	B
	PM	> 200	F	25.2	C	14.7	B
Los Osos Valley Road/Los Verdes Drive (unsignalized intersection) ³	AM	> 200	F	67.4	F	55.7	F
	PM	26.7	D	16.1	C	17.4	C
Los Osos Valley Road/South Higuera Street	AM	29.7	C	26.8	C	27.3	C
	PM	35.3	D	28.5	C	29.3	C
South Higuera Street/Vachell Lane (unsignalized intersection)	AM	> 200	F	> 200	F	> 200	F
	PM	> 200	F	> 200	F	> 200	F

Notes: ¹ AM = Morning peak-hour, PM = Evening peak-hour.

² Average delay reported in seconds per vehicle for signalized intersections. The worst movement/approach delay is reported in seconds per vehicle for side-street, stop-controlled intersections.

³ LOS = Level of service

Bold font indicates unacceptable intersection operations (LOS E or worse).

Source: Traffic Operation Report, 2007.

Table 2.1-3: Design Year (2035) Intersection Level of Service Summary

Intersection	Peak Hour ¹	No-Build Alternative		Alternative 3		Alternative 6	
		Delay ²	LOS ³	Delay ²	LOS ³	Delay ²	LOS ³
Los Osos Valley Road/Auto Park Way	AM	162.7	F	26.0	C	28.2	C
	PM	77.1	E	31.2	C	50.3	D
Los Osos Valley Road/Calle Joaquin (North)	AM	134.3	F	15.1	B	27.9	C
	PM	83.6	F	34.9	C	39.6	D
Los Osos Valley Road/US 101 Southbound Off-Ramp-Calle Joaquin (South)	AM	> 200	F	15.9	B	Intersection does not exist with alternative	
	PM	> 200	F	23.7	C		
Calle Joaquin (South)/US 101 Southbound On-Ramp (unsignalized intersection)	AM	Intersection does not exist with alternative				19.3	C
	PM	Intersection does not exist with alternative				49.8⁴	E
Los Osos Valley Road/US 101 Northbound Ramps	AM	> 200	F	34.2	C	18.5	B
	PM	> 200	F	26.9	C	14.6	B
Los Osos Valley Road/Los Verdes Drive (unsignalized intersection)	AM	181.8	F	36.0	E	37.7	E
	PM	> 200	F	150.3	F	110.3	F
Los Osos Valley Road/South Higuera Street	AM	30.0	C	28.8	C	28.9	C
	PM	> 200	F	63.4	E	72.4	E
South Higuera Street/Vachell Lane (unsignalized intersection)	AM	58.2⁵	F	65.2⁵	F	79.6⁵	F
	PM	> 200⁵	F	74.5⁵	F	103.7⁵	F

Notes: ¹ AM = Morning peak-hour, PM = Evening peak-hour.

² Average delay reported in seconds per vehicle for signalized intersections. The worst movement/approach delay is reported in seconds per vehicle for side-street, stop-controlled intersections.

³ LOS = Level of service

⁴ Westbound left turn delay.

⁵ The uncontrolled southbound left-turn delay is greater than the side-street stop-controlled delay because the southbound queue extends north from Los Osos Valley Road and blocks the southbound left-turn pocket.

Bold font indicates unacceptable intersection operations (LOS E or worse).

Source: Traffic Operation Report, 2007.

These tables show that projected Level of Service and average stop delay times at each intersection (except South Higuera Street at Vachell Lane) for Alternatives 3 and 6 improve over future no-build conditions. Conditions improve for both morning and afternoon peak-hour traffic. Delays at South Higuera Street and Vachell Lane are similar to the No-Build Alternative in 2015. In 2035, the morning peak-hour traffic has a longer delay with Alternative 3 or 6 than with the No-Build Alternative, but the afternoon delay for either build alternative is less than for the No-Build Alternative at this intersection.

Environmental Consequences

The proposed project would not increase traffic, but would instead improve traffic operations and safety on Los Osos Valley Road and at the Los Osos Valley Road/US 101 interchange. Because completion of either build alternative improves rather than worsens traffic operations and brings

the City closer to General Plan operational efficiency goals, both build alternatives alleviate existing and project traffic congestion. The acceptable Level of Service for the proposed project is Level D on surface streets and Level of Service C/D cusp for US 101 at year 2035. The C/D cusp is the transition point between Level of Service C and D. Project alternatives provide additional travel lanes on Los Osos Valley Road over US 101 and through the ramp intersections that would better serve the needs of local and regional traffic (including bicycle and pedestrian traffic). The project is to be designed so that it would not preclude the planned future widening of US 101 or future interchange improvements.

During the demolition and construction phases of the proposed project, auto traffic, bicyclists and pedestrians would be diverted around construction areas, which would likely result in a temporary change in emergency access.

Avoidance, Minimization, and/or Mitigation Measures

See Section 2-4 Construction Impacts for measures to control traffic during construction

2.1.5 Visual/Aesthetics

Regulatory Setting

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 following descriptions of the affected visual environment, anticipated impacts, and proposed avoidance and minimization measures are summarized from the Scenic Resources Evaluation (2007).

Regionally, the project area lies within the Coast Ranges. This area has varied slopes on and next to the project site, including the Irish Hills and Los Osos Valley, and even greater variability beyond the project, specifically in the Cuesta Ridge of the Santa Lucia Mountains, within view of the interchange. The interchange sits at the edge of the Los Osos Valley, against the Irish Hills. Three creeks run through the project area: San Luis Obispo Creek, Prefumo Creek, and Froom Creek. The San Luis Obispo and Prefumo creeks are heavily vegetated, however, and are generally not visible even from the Irish Hills, except as bands of riparian vegetation.

The slopes and valley west of the interchange have historically been used for ranching by the Madonna family. East of the interchange, agricultural fields and industrial uses have dominated. Vegetation on the valley floor includes stands of native sycamore, cottonwood, Arroyo Willow, annual grassland, and also non-native ornamentals associated with the developed land within the project area (Natural Environment Study Report 2008). The adjacent hills remain largely unchanged, with open California annual grassland and oak woodland.

The project setting includes both natural resource features and a developed, urban environment. Natural resource features include the Irish Hills, Cuesta Ridge, and Los Osos Valley. Developed features include Froom Ranch, which was determined eligible for the National Register of Historic Places in connection with a local commercial development project, and a variety of recent construction, including hotels, large-scale shopping centers, and residential developments. Riparian vegetation, sycamore, and annual grasslands compose the primary vegetation resources within the interchange area.

US 101 within the project area is not a designated scenic roadway, but is an eligible scenic roadway by the California Department of Transportation. The City of San Luis Obispo 2006 Conservation and Open Space Element, however, identifies US 101 and the portion of Los Osos Valley Road north of the interchange in the Scenic Roadways section and gives these roadways a designation of high scenic value through the project area.

The City's scenic designation for the interchange location is based on the visual quality of the landscape in the project area. The high visual quality of the Los Osos Valley Road and US 101 corridors is generally defined by two factors: the unobstructed views of the adjacent hillsides and the rural character of the valley floor. This high visual quality rating for the project area is moderated in areas where views to the hillsides are reduced by the existing interchange or where the visual integrity of the rural open space has been compromised with existing transportation elements.

The Los Osos Valley Road interchange is also defined in the City of San Luis Obispo 1994 Circulation Element and the April 4, 2006 amendment (Resolution No. 9785) as an entryway to the community of San Luis Obispo. The Traffic Management section states that "segments of these routes leading into San Luis Obispo should include landscaped medians and roadside areas to better define them as community entryways." Additionally, the Scenic Roadways section establishes a policy to "preserve and improve views of important scenic resources from streets and roads."

The following policies from the 2006 Conservation and Open Space Element and 1994 Circulation Element address the scenic importance of designated local roads, such as Los Osos Valley Road:

- Policy 9.1.4.D – Streetscapes and major roadways. Encourage the use of water-conserving landscaping, street furniture, decorative lighting and paving, arcaded walkways, public art, and other pedestrian-oriented features to enhance the streetscape appearance, comfort, and safety. (Conservation and Open Space Element)
- Policy 9.2.1.B – Views to and from public places, including scenic roadways. Utilities, traffic signals, and public and private signs and lights shall not intrude on or clutter views, consistent with safety needs. (Conservation and Open Space Element)

- Policy 15.1 – The City will participate with Caltrans, the county and other cities to establish a program for enhancing the visual character of the Highway 101 corridor. (Circulation Element)

The existing visual quality of the project setting is moderate. Views of the project site from the main viewing corridors, Los Osos Valley Road and US 101, look mainly toward open space and the scenic backdrop of the Irish Hills and Cuesta Ridge. Views from the project site, however, are sometimes obstructed by the existing interchange, which blocks background views. The rural character of that location is also diminished somewhat by the presence of the development nearby and the auto dealerships, commercial, and residential areas to the southeast. In spite of the increasing development and changing foreground appearance, the Irish Hills and Cuesta Ridge continue to provide a visually dominant scenic backdrop as seen from the Los Osos Valley Road interchange.

Environmental Consequences

There are no scenic vistas in the project area, and the overall regional view would not change substantively because the project changes an existing interchange rather than builds a new facility where none previously existed.

The proposed build alternatives would not substantially degrade the existing visual character or quality of the site and its surroundings because an interchange already exists on the project site. Modification of the interchange would not create new obstructions of middle-ground or background views. Photos of existing and photo simulation of future conditions are included in Figure 2.1-1 through 2.1-3.

Figure 2.1-1: Photo Simulation 1, View South of Traveler on US 101
Existing Conditions Above, Alternative 3 Center, Alternative 6 Below



Figure 2.1-2: Photo Simulation 2, View North of Traveler on US 101
Existing Conditions Above, Alternative 3 Center, Alternative 6 Bottom



Figure 2.1-3: Photo Simulation 4. The Project Alternatives as Seen From Los Osos Valley Road, View West of Traveler on Los Osos Valley Road over US 101
Existing Conditions Above, Alternative 3 center, Alternative 6 Bottom



As seen from US 101, Alternative 3 would be as visible as the current interchange is from the north and the south. Views of the ramps under Alternative 6 are more visible from the southerly view with the addition of the northbound on-ramp, but remain largely unchanged from the northerly view. The minimal increase in structure height under both Alternatives 3 and 6 would not substantially increase or block current views of the Irish Hills or Cuesta Ridge backdrops. Lighting would be added to the bridge under both Alternatives 3 and 6; lighting would increase the visibility of the structure. Removal of overhead utility lines would take away the break in the tree line that currently exists from the southern view and would help to declutter the overall interchange appearance under both Alternatives 3 and 6. Removal of vegetation would temporarily increase visibility of concrete and retaining walls rather than natural vegetation.

Views for travelers on Los Osos Valley Road would remain largely unchanged under Alternatives 3 and 6. Broad background views of the Irish Hills and Cuesta Ridge may be slightly improved with removal of some large vegetation and increased height of the new bridge structures. The inclusion of lighting on the bridge would add a visual element to the setting.

Impacts are considered neutral because 1) similarities exist between the current structure and the proposed new/parallel structure, 2) views of the surrounding areas would be improved from some perspectives and remain unchanged in others, and 3) loss of mature vegetation would result in a short-term impact to viewer groups because more concrete would be visible than is currently visible. Temporary impacts include increased visibility of concrete due to vegetation removal during construction.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure V-1: Screening of increased concrete visibility. The landscape plan would include a planting screen along exposures of bridge abutments and at some proposed retaining wall locations, where appropriate. The planting would complement the naturally appearing form of the interchange and not look like a formal, manicured landscape. The design would avoid a linear planting along the wall locations. The landscape plan would be developed in coordination with Caltrans Landscape Architecture staff for areas within state right-of-way, as well as with the City's Architectural Review Committee and City staff. A Caltrans maintenance plan would be developed during the Plans, Specifications, and Estimate phase of the project to ensure that plantings within the state right-of-way establish to sufficiently reduce the identified impact.

Mitigation Measure V-2: Replace vegetation lost because of construction. This mitigation would result in a naturalized condition comparable to the density, spacing, and species variety of the existing conditions. The site would be replanted with similar species to those that were affected by the project. Replacement plants would be sized to reach the existing plant sizes within the minimal time feasible. Maintenance and monitoring would be required to assure plant survival so the existing conditions are closely replicated within the determined timeframe. The revegetation plan would be developed in coordination with Caltrans Landscape Architecture staff

for areas within state right-of-way, as well as with the City’s Architectural Review Committee and City staff.

Mitigation Measure V-3: Consideration of aesthetic features for the bridge structure and interchange setting. Implementation of architectural features, developed with Caltrans and City aesthetic standards, would be considered to meet the desired goals as defined in the Conservation and Open Space Element of the City’s General Plan. The aesthetic features would be developed in coordination with Caltrans Landscape Architecture staff for areas within state right-of-way as well as with the City’s Architectural Review Committee and City staff.

Mitigation Measure V-4: Develop Lighting Plan. A lighting plan would be developed that requires project lighting to be appropriately shielded. Project lighting design would be consistent with all Caltrans and City lighting guidelines and standards and would be developed with Caltrans and City aesthetic standards. The lighting plan would be developed in coordination with Caltrans Landscape Architecture staff for areas within state right-of-way, as well as with the City’s Architectural Review Committee and City staff.

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 it is the only practicable alternative. 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.

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

The bridges and culverts associated with the Los Osos Valley Road/US 101 Interchange Project lie in the San Luis Obispo Creek watershed and are described in the Location Hydraulic Study Report (2007). The total watershed is about 84 square miles, with the area of watershed influencing the project site equaling about 49 square miles.

San Luis Obispo Creek begins about nine miles upstream of the site. Prefumo Creek and Froom Creek are both tributaries to San Luis Obispo Creek. Prefumo Creek begins at Laguna Lake, one mile upstream of the project. Froom Creek begins 3.4 miles upstream of the project. Confluence of San Luis Obispo Creek and Prefumo Creek occurs about 390 feet upstream of where Los Osos Valley Road crosses San Luis Obispo Creek. The Froom Creek confluence occurs about 1,200 feet downstream of the Los Osos Valley Road crossing of San Luis Obispo Creek.

San Luis Obispo Creek flows north to south on the project site. It bends sharply upstream of the Los Osos Valley Road overcrossing. Except for the widening done immediately upstream of the Prefumo Creek confluence in 1978, San Luis Obispo Creek is natural through this section. Prefumo Creek also flows north to south in the project area. Froom Creek is a relatively small creek that flows west to east, with a drainage area of about 1.7 square miles.

Flooding within the San Luis Obispo Creek system is generally caused by intense Pacific storm systems from December to March. The San Luis Obispo Creek system responds quickly to short, high-intensity rainfall bursts, which tend to result in high-volume, brief floods. According to the 1981 Federal Emergency Management Agency Flood Insurance Study, seven damaging floods have occurred in the San Luis Obispo Creek drainage area between 1884 and 1973. The most serious of those floods were in January 1969 and February 1973, causing \$1.5 million and \$4.5 million damage, respectively.

The floodplain map from the Federal Emergency Management Agency Flood Insurance Rate Map for San Luis Obispo City and the County of San Luis Obispo, revised in 1981 and 1985, indicates that most of the project site is classified as Zone A (inundated by the 100-year flood); some areas are classified as Zone B (between Zone A and the limits of the 500-year floodplain), and Zone C (areas of minimal flooding).

Environmental Consequences

Implementation of the project would increase the area of impervious surface on the widened bridge and approach roadway segments by a small amount. This would result in a small increase in surface runoff from the proposed project, but would not result in substantially increased surface flows exceeding the capacity of existing or planned storm drainage facilities.

The improvements would not substantially increase the amount of flooding onsite or offsite or result in substantial alteration to the existing drainage pattern of the project area. The improvements would increase the capacity of culverts in the drainage system. A Location

Hydraulics Study (2008) was prepared for this project, as the widening would encroach on the 100-year floodplain of the San Luis Obispo Creek and Prefumo Creek. Existing Prefumo Creek culverts have insufficient capacity to pass design flows greater than a 25-year event. The US 101 mainline culvert has flow capacity less than the 10-year design flow rate for Prefumo Creek, and the US 101 southbound off-ramp culvert has a flow capacity between 10-year and 25-year design flow rates for Prefumo Creek. Even without the backwater effect from the San Luis Obispo Creek, the existing Prefumo Creek culverts have insufficient capacity to convey the 100-year flow downstream.

The proposed conditions of the hydraulic model indicate that the culverts would not be overtopped by the 25-year flood. The US 101 crossing with Prefumo Creek and the Los Osos Valley Road crossing with San Luis Obispo Creek would not be overtopped by the base flood. If sediment in the Los Osos Valley Road Bridge over San Luis Obispo Creek were not removed, backwater from the San Luis Obispo Creek would cause overtopping in US 101 crossing Prefumo Creek during a 100-year flood.

Natural and beneficial floodplain values include, but are not limited to: fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge. Identified short-term impacts to the natural and beneficial floodplain values include: 1) temporary loss of vegetation from sediment removal operations, 2) potential effects on endangered species or their habitats (within the project site) during maintenance and management activities, 3) the potential removal of bank aquatic habitats during the removal of accumulated debris. For this highway interchange improvement project there would be no substantial long-term impacts to the natural and beneficial floodplain values.

Existing structures within the 100-year flood hazard area now impede flows. These under-capacity culverts would be replaced by those with more flow capacity (at Prefumo Creek) and improved by removing accumulated sediments and debris (at San Luis Obispo Creek). The project would improve the base flood elevation with culvert capacity increased to accommodate at least a 25-year design storm. The functionality of the Los Osos Valley Road interchange would be increased without causing any greater risks to life or property.

Avoidance, Minimization, and/or Mitigation Measures

Construction must avoid fish migration season. Fine sediments and debris must be replaced with gravel, which would create a better environment for the fish. Typically, spawning gravel ranges from 10 to 50 millimeters. The proposed project would minimize impacts to the extent practicable.

To manage site drainage under proposed conditions, the project would include several drainage improvements that constitute minimization measures. These include increasing the capacity of the

US 101 mainline Prefumo Creek culvert to pass a 25-year design flow by adding two 84-inch culverts parallel to the existing 18-foot by 8-foot reinforced concrete box.

Although this option could improve the capacity to only a 25-year flood event, the culverts can be jacked under US 101 without interrupting traffic. This option maintains the existing fish passage and would improve fish passage during mid-flow events.

Also, transient sediment deposits and debris would be excavated upstream of the Los Osos Valley Road triple-steel-plate arch culvert crossing with San Luis Obispo Creek.

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 the project requires a Clean Water Act Section 404 permit. Section 404 of the Clean Water Act requires a permit from the U.S. Army Corps of Engineers to discharge dredged or fill material into waters of the United States.

Along with Section 401 of the Clean Water Act, Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System permit for the discharge of any pollutant into waters of the United States. The federal 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. The State Water Resources Control Board and Regional Water Quality Control Boards also regulate other waste discharges to land 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 over 1 acre require a Storm Water Pollution Prevention Plan to be prepared and implemented during construction. Caltrans activities of less than 1 acre require a Water Pollution Control Program.

Affected Environment

The project area is located in the San Luis Obispo Creek watershed, which is about 84 square miles. The area of watershed influencing the project site is about 49 square miles. San Luis Obispo Creek originates about 9 miles upstream of the project site. Prefumo Creek and Froom Creek are both tributaries to San Luis Obispo Creek. Prefumo Creek begins at Laguna Lake about

1 mile upstream of the project site. Froom Creek begins 3.4 miles upstream of the project site. The confluence of San Luis Obispo Creek and Prefumo Creek occurs about 390 feet upstream of the Los Osos Valley Road crossing with San Luis Obispo Creek. The Froom Creek confluence with San Luis Obispo Creek occurs about 1,200 feet downstream of the Los Osos Valley Road crossing with San Luis Obispo Creek. The bridges and culverts associated with the Los Osos Valley Road/US 101 Interchange Project lie in the San Luis Obispo Creek watershed and are described in the Location Hydraulic Study Report (2007). A Water Quality Assessment Report was prepared to analyze the difference between the existing conditions and the project build conditions with respect to water quality impacts and considered the following issues:

- Application of best management practices (number of best management practices, new technologies, effectiveness)
- Discharges into impaired waters (listed per Section 303[d] of the Clean Water Act or subject to a Total Maximum Daily Load)
- Pollutant levels (change in land use)
- Impervious area and relation to amount of runoff (increase or decrease)

Clean Water Act Section 303(d) establishes the total maximum daily load process to assist in guiding the application of state water quality standards; it requires states to identify streams whose water quality is “impaired” (affected by the presence of pollutants or contaminants) and to establish the total maximum daily load or the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects. San Luis Obispo Creek within the project area is listed on the 303(d) list for pathogens and total fecal coliform (State Water Resources Control Board 2006a). Other pollutants are also present in elevated amounts that are of concern for San Luis Obispo Creek (nitrates and nutrients) and Prefumo Creek (nitrates), but total maximum daily loads have yet to be established for these pollutants in these two streams (State Water Resources Control Board 2006b).

Beneficial Uses for Surface Waters

The designated beneficial uses for San Luis Obispo Creek, Froom Creek, and Prefumo Creek are as follows: Municipal and Domestic Supply, Water Contact Recreation, Non-Contact Water Recreation, Wildlife Habitat, and Commercial and Sport Fishing.

In addition to the beneficial uses listed above, San Luis Obispo Creek and Prefumo Creek have the following designated uses: Agricultural Supply, Ground Water Recharge, Cold Fresh Water Habitat, Migration of Aquatic Organisms, Spawning, Reproduction, and/or Early Development, and Freshwater Replenishment.

San Luis Obispo Creek is also designated for the following beneficial use: Warm Fresh Water Habitat.

Froom and Prefumo creeks' beneficial uses are also listed for the following: Rare, Threatened, or Endangered Species.

Environmental Consequences

No appreciable difference in long-term water quality impacts has been identified between either build alternative. However, construction of either alternative would increase runoff from hardscape areas and would require altering sections of Prefumo and San Luis Obispo creeks. The existing project creates 25.5 total acres of impervious surface.

The project would disturb 16 acres of state right-of-way for Alternative 3 and 18.2 acres of state right-of-way for Alternative 6. Alternative 3 improvements would produce an additional 0.8 acre of impervious surface within the state right-of-way (2 total acres of impervious surface). Alternative 6 would produce a larger footprint and would add 2.5 acres of impervious surface within the state right-of-way (3.4 total acres of impervious surface). During the design phase of this project the amount of disturbed soil area and impervious surface may change. Minimizing impervious surface and disturbed soil area is a design goal of this project.

Anticipated increase in pollutant levels would occur temporarily during the construction phase of the project. Because the project consists of a permanent increase in impervious surface under either build alternative, there remains potential for a permanent increase in runoff and pollutant levels without implementation of construction, design, and treatment best management practices.

The proposed project would not substantially deplete groundwater resources or interfere with groundwater recharge. While the increase in new impervious surface on the widened overcrossing would intercept some rainfall, which serves to recharge local aquifers, the runoff would be allowed to infiltrate into the soils through the retention basin and would discharge to the creeks during large storms; therefore, existing recharge functions would be minimally affected.

Construction activities would disturb soil. If the soil were not contained and were directly exposed to rain, soil erosion and sediment could flow into the creeks, potentially degrading water quality. Construction-related runoff could also contain other pollutants that could contribute to reduced water quality in San Luis Obispo Creek, Prefumo Creek, and Froom Creek. Construction equipment would use toxic chemicals (such as gasoline, oils, grease, lubricants, and other petroleum-based products) that could be released accidentally. Additionally, excavation activities could reach shallow groundwater levels, potentially requiring dewatering. During Departmental runoff characterization studies, nitrogen was found to be discharging with a load or concentration that commonly exceeds allowable standards; however, based on currently available Department-approved Treatment Best Management Practices, it is considered treatable. This determination classifies nitrogen as a Targeted Design Constituent within the project area (which is a statewide guidance criterion used by Caltrans for addressing "Primary Pollutants of Concern").

Avoidance, Minimization, and/or Mitigation Measures

Several treatment Best Management Practices (detention devices, media filters and multi-chambered treatment trains) are proposed to ensure that water quality impacts are not adverse. With incorporation of these measures, impacts to water quality would actually be improved over current conditions since at present no treatment Best Management Practices are installed. Water quality impacts overlap other impacts for the project because special-status species inhabit the stream and surrounding environs. So, while the following measures focus on Water Quality Minimization Measures, Biological Mitigation Measures 5, 18, 23, and 24 discussed in the biology section also pertain to water quality issues.

There are three temporary and/or construction-related restrictions that pertain to construction best management practices. These are accompanied by permanent measures consisting of design and treatment best management practices. Together, these measures ensure that there would be no adverse impacts to water quality under either build alternative.

Because the project would involve more than 1 acre of disturbance, the City would submit a Notice of Intent to the State Water Resources Control Board and comply with the terms of the Caltrans-specific National Pollutant Discharge Elimination System Permit (No. CAS000003).

Minimization Measure WQ-1: Implement Erosion-Control Measures During Project Construction. To minimize the movement of sediment to adjacent water bodies, the following erosion- and sediment-control measures would be included in the Storm Water Pollution Prevention Plan, to be included in the construction specifications, based on standard City measures and standard dust-reduction measures:

- Cover or apply nontoxic soil stabilizers to inactive construction areas that could contribute sediment to waterways within 48 hours of a predicted rainfall event.
- Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways.
- Contain soil and filter runoff from disturbed areas by using berms, vegetated filters, silt fencing, fiber rolls, plastic sheeting, catch basins, or other means necessary to prevent the escape of sediment from the disturbed area.
- Prohibit the placement of earth or organic material where it may be directly carried into a stream, marsh, slough, lagoon, or body of standing water.
- Prohibit the following types of materials from being rinsed or washed into streets, shoulder areas, or gutters: concrete, solvents and adhesives, fuels, dirt, gasoline, asphalt, and concrete saw slurry.
- Conduct dewatering activities according to the provisions of the Storm Water Pollution Prevention Plan. Prohibit placement of dewatered materials in local water bodies or in storm

drains leading to such bodies without implementation of proper construction water quality control measures.

Minimization Measure WQ-2: Implement Measures to Control Turbidity. If water is flowing in the streams during construction, the City of San Luis Obispo or its contractor(s) would control the release of sediment to the creeks during construction by installing a sheet-pile cofferdam or other method that would control turbidity (murky water) to the specifications given below. This would ensure that activities result in a minimal increase in turbidity or suspended solids in the channel.

During installation of the cofferdam, the City or its contractor would monitor turbidity and suspended solids during the installation of the cofferdam, construction, and removal of the cofferdam. If levels exceed the Central Coast Regional Water Quality Control Board Basin Plan standards, the City or its contractor would stop work until levels are within Basin Plan limits.

Basin plan standards for turbidity state that project activities would not cause an increase in ambient river turbidity by more than 20 percent above background turbidity where the natural turbidity is between 0 and 50 Jackson Turbidity Units, or an increase by more than 10 percent where natural turbidity is over 100 Jackson Turbidity Units (Central Coast Regional Water Quality Control Board 1998).

During the first week of construction, turbidity measurements would be taken upstream of the project construction area and at a distance of 200 feet downstream of the project construction area (or far enough downstream where applicable mixing has occurred) to provide baseline comparison conditions. During the construction period, measurements would be taken two times per day and would be taken where the water flow pattern is similar to the relative water flow pattern around the construction zone, so the sample represents the water quality affected by construction. If turbidity limits are exceeded above the applicable turbidity level, operations would stop and the Regional Water Quality Control Board would be notified. Investigation of the cause of the significant turbidity increase would be conducted and corrections made in construction operations where applicable.

This minimization may be modified in coordination with the Regional Water Quality Control Board and/or other regulatory entities, provided that in no case would turbidity levels be allowed to increase as a result of the project such that beneficial uses of the streams become substantially degraded or impaired.

Minimization Measure WQ-3: Implement a Spill Prevention and Control Program. The City of San Luis Obispo and/or its contractor(s) would develop and implement a spill prevention and control program to minimize the potential for and effects from spills of hazardous, toxic, or petroleum substances during project construction.

The federal reportable spill quantity for petroleum products, as defined by the Environmental Protection Agency (40 Code of Federal Regulations 110) is any oil spill that 1) violates applicable water quality standards, 2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or 3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines. If a spill were reportable, the contractor's superintendent would notify the relevant San Luis Obispo County officials, which have spill response and clean-up ordinances to govern emergency spill response.

A written description of reportable releases must be submitted to the Central Coast Regional Water Quality Control Board. This submittal must include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases must be documented on a spill report form.

If an appreciable spill occurs and results determine that project activities have adversely affected groundwater quality, a detailed analysis would be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis would conform to American Society for Testing and Materials standards and would include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the City and/or its contractors would select and implement measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures would be subject to City approval.

At least three permanent treatment best management practices would also be used to ensure that no adverse impacts occur to water quality due to future project operation:

Minimization Measure WQ-4: Design and Implement Detention Basin between the mainline US 101 and the northbound off-ramp or within northbound loop onramp. A detention basin would be constructed in between the mainline US 101 and the northbound off-ramp or within the interior of the northbound loop onramp. Storm water from the eastern portion of the overcrossing and from the reconstructed on-ramp would then be transported to the basin before ultimately draining into San Luis Obispo Creek. This treatment would allow pollutants to settle in the basin by slowing down the discharge rate of storm water flows.

Minimization Measure WQ-5: Where Possible Use San Luis Obispo Creek Waterway Management Plan Design Criteria. Although the project is a transportation project and best management practices must meet Caltrans standards, all treatment best management practices should also meet local standards, established in the San Luis Obispo Creek Waterway Management Plan, when these local specifications do not conflict with Caltrans guidance.

Minimization Measure WQ-6: Permanent Treatment Best Management Practices. Appropriate permanent treatment best management practices would be implemented during final

design. Proposed best management practices may include infiltration or detention devices, media filters, and multi-chambered treatment trains.

2.2.3 Geology/Soils/Seismic/Topography

Regulatory Setting

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

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

Affected Environment

The proposed project lies in the San Luis Range, in the Coast Ranges’ Physiographic Province of California. The San Luis Range sits between the Pacific Ocean to the west and the Sacramento-San Joaquin Valley to the east. The Coast Ranges trend northwesterly along the California coast for about 600 miles between Santa Maria and the Oregon border.

Based on published geologic literature, the project site is mostly underlain by Holocene (less than 11,000 years before present) alluvial deposits. These alluvial deposits typically consist of sands, gravels, silts, and clays. In addition to the Holocene alluvium, Terrace Deposits and Melange Franciscan Assemblage deposits may be present to the west approaching the Irish Hills.

The project sits within or close to the Los Osos fault zone, as defined in the Safety Element of the General Plan. This fault zone is separated into four segments: the Estero Bay segment, Irish Hills segment, Lopez Reservoir segment, and Newsom Ridge segment. Of the four segments, both the Estero Bay segment and the Irish Hills segment are considered active by state standards. The California Geological Survey and the State Geologist have established a Special Studies Zone (Alquist-Priolo Act, as amended) along the portion of the Irish Hills segment immediately west of San Luis Obispo city limits.

Data from the communities of Los Osos and Baywood Park, along the Irish Hills segment of this fault, indicate that strands of the Los Osos fault in these communities may be active and that Special Studies Zones may also be appropriate in these areas. The project site is near the southeasterly end of the Irish Hills segment near where the Los Osos fault zone transitions from

active to inactive by state standards (established for fault rupture hazards under the Alquist-Priolo Act, as amended).

The project lies within a “low liquefaction potential” area, with the confluence of San Luis Obispo and Prefumo creeks. Based on the nearly level topography in the immediate and surrounding area, the potential for a landslide in or near the project area is minimal. On moderately to steeply sloping areas within the Irish Hills southwest of the project area, the landslide risk is moderate.

The Natural Resources Conservation Service has defined the project area soils as Salinas silty clay loam, Cropley clay, Los Osos-Diablo complex, and Xerents-Xerolls Urban land complex. These soil types have a low to high shrink-swell potential, and are low to moderately erodible. The Caltrans Log of Test Borings for the existing Los Osos Valley Road/US 101 overcrossing constructed in 1962 and reported on in the Preliminary Geotechnical Report (2002) is consistent with this.

The subsoils in the general project area are expected to consist of alluvial deposits (silty clays, sandy silts, and silty sands above layers of sand and gravel) overlying bedrock, which was recorded as weathered shale or sandstone. Groundwater was encountered in the Log of Test Borings at depths ranging between about 6 feet to 10 feet below ground (about elevation 94 feet to 90 feet).

Environmental Consequences

There remains some varying potential in the project location for rupture of known faults, strong seismic ground shaking, seismic-related ground failure, and landslides.

The underlying soils have low to moderate erosion potential. Despite the low erosion characteristic, there is a potential for erosion to occur during all site-disturbing phases of the project, resulting in sedimentation entering the creek bed.

The project is not located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project.

Portions of the project site are situated on soils with moderate expansion potential. If improperly designed, the interchange improvements could be subject to damage related to shrink-swell movement.

Avoidance, Minimization, and/or Mitigation Measures

Design and construction of the proposed project would conform with all applicable stipulations of the most recent Caltrans standard specifications, the Caltrans Bridge Design standards, and the American Association of State Highway and Transportation Officials standards for bridge design.

Project design and construction would also conform with all applicable stipulations regarding the use of appropriate backfill materials in the most recent Caltrans standard specifications.

Construction activity would include standard construction best management practices, a Storm Water Pollution Prevention Plan, and applicable local erosion and sediment control plan, along with Mitigation Measure WQ-1 outlined in the water quality section.

2.2.4 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 United States Code 431-433], Federal-Aid Highway Act of 1935 [20 United States 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 fossil site search, using the University of California Museum of Paleontology online database, was performed in 2007. Based on the database search and field efforts, no fossils have been found in the project area. The central region of California, however, is considered to be a sensitive area for paleontological resources.

The geologic formations within the area of potential effects include Younger Alluvium, Terrace Deposits, and Melange Franciscan Assemblage. Younger Alluvium deposits are not likely to produce paleontological resources since these soils are more recent than the fossils.

An adjacent Preliminary Environmental Analysis Report (2003) noted that the Terrace Deposit formations have a high likelihood to produce paleontological material and have produced important fossils in San Luis Obispo County, including mastodons, mammoths, horse, elk, bison, American lion, short-faced bear, deer, and beaver.

The Melange Franciscan Assemblage in this area of San Luis Obispo County has unknown paleontological significance. This formation has produced significant fossils in parts of San Luis Obispo County, including a plesiosaur; however, most fossil finds have been deformed beyond recognition due to metamorphic activity.

Environmental Consequences

Construction of Alternative 3 would affect Young Alluvium deposits and is not likely to result in the discovery or degradation of paleontological resources. Construction of Alternative 6 would

affect Young Alluvium, Terrace Deposits, and the Melange Franciscan Assemblage. Potential impacts to unique paleontological resources could occur as a result of this alternative.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure PALEO-1: Stop Work if Buried Paleontological Materials Are Inadvertently Discovered. If paleontological materials were discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified paleontologist could assess the nature and significance of the find.

2.2.5 Hazardous Waste or Materials

Regulatory Setting

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

The main federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 and the Comprehensive Environmental Response, Compensation and Liability Act of 1980. The purpose of this latter act, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. The Resource Conservation and Recovery Act provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include 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 the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

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

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

Affected Environment

Field review, database searches, literature review, and interviews with various regulatory agency personnel were conducted and reported in the Hazardous Waste Initial Site Assessment (2007), as summarized below. The Initial Site Assessment or Preliminary Site Investigation conducted detailed the presence of suspected hazardous waste.

The case files of the closed leaky Underground Storage Tank (LUST) sites, (Chevron Station #94453, Kimball Motor Company, and Sunset Honda) will be reviewed for potential residual contamination remaining after site closure and documented within the phase II site assessment report. No incidences of spillage or illegal dumping of hazardous materials have been recorded within the project limits, but some areas of concern for hazardous waste remain:

As shown in Table 2.2-1, potential impacts due to soil and/or groundwater contamination may exist at the ARCO Station and former Texaco gas stations sites and the Perry Ford car dealership property due to leaking underground fuel tanks.

Table 2.2-1 Potential Hazardous Waste Sites

Location	Potential Hazardous Waste Sites
12424 Los Osos Valley Road	ARCO Station #6038 (aka Ed's ARCO Service)
12398 Los Osos Valley Road	Former Texaco Service Station
12200 Los Osos Valley Road	Perry Ford

A phase II site assessment within the city and state right of ways is recommended during the next phase of the project for the above active remediation sites. This assessment would verify possible soil and groundwater contamination within the footprint of the chosen project alternative, and documented it in a phase II site assessment report. It is recommended the phase II investigation takes place after environmental document approval and during the Plans, Specifications, and Estimate phase of the project.

Environmental Consequences

- There may be potential impacts due to groundwater contamination from the perchloroethylene/trichloroethylene plume emanating from historical up-gradient dry cleaning businesses in the City of San Luis Obispo.

- Elevated levels of aerially deposited lead may be encountered in areas of exposed soil within 50 feet of the roadway.
- Painted areas on the existing bridge structure may also be of concern due to the possible use of lead-based paint.
- Yellow traffic stripe and pavement marking materials might need to be removed and these materials may exceed hazardous waste criteria requiring disposal in a Class I disposal site.
- Asbestos-containing materials have also been documented in the rail shim sheet packing, bearing pads, support piers, and expansion joint material of bridges and could be present in the interchange structures.
- Naturally occurring asbestos has not been mapped as occurring within the project limits, nor was naturally occurring asbestos encountered during the preliminary geotechnical investigation. But there remains a possibility that serpentine parent material may be incorporated into the existing road base.
- Pole-mounted electrical transformers within the planned construction area may contain polychlorinated biphenyl.
- The use of materials considered hazardous would be limited to the fuels, oils, and solvents contained in construction vehicles.
- All materials stored or stockpiled in the staging area would be inert and are not considered hazardous.

Avoidance, Minimization, and/or Mitigation Measures

Minimization Measure HW-1: Determine the Current Status of Remediation. Perform a case file review and conduct interviews with owners/managers of the ARCO gas station, former Texaco gas station site, and Perry Ford car dealership to determine the current status of remediation at these sites. Further investigation should also be done to determine if the proposed project alignments would require acquisition of any or all of these properties and, if so, if remediation of these properties has been completed sufficiently so as not to affect the project.

Minimization Measure HW-2: Perform a Preliminary Aerially Deposited Lead Investigation. In areas of exposed soil within 50 feet of the paved surfaces of US 101, conduct a survey to determine the possible presence and levels of aerially deposited lead from motor vehicle exhaust emissions.

Minimization Measure HW-3: Conduct Lead-Based Paint Survey. Use a certified consultant to determine the absence or presence of lead-based paint before any modification or demolition of the existing Los Osos Valley Road bridges in the study area.

Minimization Measure HW-4: Test Yellow Stripe and Pavement Marking Materials.

Conduct tests and follow removal requirements for yellow striping and pavement marking materials in accordance with Caltrans Construction Program Procedure Bulletin 99-2 (CPB 99-2).

Minimization Measure HW-5: Conduct Asbestos Survey. Use a certified consultant to determine the absence or presence of asbestos before any modification or demolition of the Los Osos Valley Road bridges.

Minimization Measure HW-6: Conduct Naturally Occurring Asbestos Survey. Use a certified consultant to determine the absence or presence of naturally occurring asbestos in the existing road base materials in areas where the road base materials would be removed or disturbed.

Minimization Measure HW-7: Test Leaking Transformers for PCBs if Disturbed. Any leaking transformers observed during the course of the project should be considered a potential polychlorinated biphenyl hazard unless tested and should be handled accordingly.

Minimization Measure HW-8: Follow Caltrans Standards if Unknown Hazards are Inadvertently Discovered. For any previously unknown hazardous waste/material encountered during construction, the contractor would follow Unknown Hazards Procedures for Construction as outlined by Caltrans in the current Construction Manual.

2.2.6 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 in California is concerned with how well the region is meeting the standards set for carbon monoxide, nitrogen dioxide, ozone, and particulate matter. 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 Luis Obispo Council of Government for San Luis Obispo 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 “non-attainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter. A region is a “non-attainment” 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 “non-attainment” 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 (2007) examining project-related impacts to air quality was prepared for the project. Regional conditions, long-term impacts, and construction-related impacts, considered in that document, are summarized here.

The region generally has good air quality, as it is attainment or unclassified for all National Ambient Air Quality Standards. Also, air quality measurements indicate that San Luis Obispo County is in attainment for all State Air Quality Standards, with the exception of particulate matter (PM10) and 1-hour ozone. The San Luis Obispo County Air Pollution Control District is required to monitor air pollutant levels to assure that federal and state air quality standards are being met.

Table 2.2-2: Air Quality Standards

Criteria Pollutant	Federal Standard (National Ambient Air Quality Standards)	Federal Attainment Status	State Standard	State Attainment Status
Carbon Monoxide (CO)	35 ppm (1-hour average) 9 ppm (8-hour average)	Attainment	20 ppm (1-hour average) 9 ppm (8-hour average)	Attainment
Nitrogen Dioxide (NO ₂)	0.053 ppm (1-hour annual average)	Unclassified/Attainment	0.25 ppm (1-hour annual average)	Attainment
Ozone (O ₃)	0.08 ppm (8-hour average)	Unclassified/Attainment	0.07 ppm (8-hour average)	Nonattainment
Particulate Matter (PM ₁₀)	150 µg/m ³ (24-hour average)	Unclassified	50 µg/m ³ (24-hour average)	Nonattainment
Particulate Matter (PM _{2.5})	15 µg/m ³ (annual arithmetic mean)	Unclassified/Attainment	12 µg/m ³ (annual arithmetic mean)	Attainment

ppm=parts per million
µg/m³= micrograms per cubic meter

Ambient air quality is affected by climate conditions, topography, and airflow patterns. The climate of San Luis Obispo County consists of warm, dry summers and cooler, relatively damp winters. Along the coast, mild temperatures are the rule throughout the year due to the moderating influence of the Pacific Ocean. This moderation diminishes inland with distance from the ocean or by major intervening terrain features, such as the coastal mountain ranges.

Airflow plays an important role in the movement and dispersion of pollutants in the region. During much of the year, onshore winds from the northwest generally prevail during the day, flushing out pollutants. At night, the sea breeze weakens, and airflows reverse with cooler air draining from the mountains. Occasionally, this pattern breaks down and stagnant conditions form, with pollutants building up and raking back and forth across the region with weak onshore and offshore breezes.

Environmental Consequences

The project is located in an attainment/unclassified area for all current federal air quality standards (see Table 2.2-2 above), therefore, air quality **conformity** does not apply. The project is included in the 2005 Regional Transportation Plan (RTP) for the County of San Luis Obispo. The RTP has been determined to be consistent with the applicable State Implementation Plan (SIP-the 2001 Clean Air Plan-CAP), therefore the project is **consistent** with the state air quality attainment goals of the SBCAPCD.

The project will require a National Emissions Standards for Hazardous Air Pollutants (NESHAP) permit for work that affects the structural members of the Los Osos Valley Road bridge.

Avoidance, Minimization, and/or Mitigation Measures

Measures to control emissions and dust during construction are discussed in Section 2.4 Construction Air Quality.

2.3 Biological Environment

2.3.1 Natural Communities

Regulatory Setting

This section discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and fish passage 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 2.3.4. Wetlands and other waters are discussed in Section 2.3.2.

Affected Environment

The study area supports five natural communities of special concern: Central Coast arroyo willow riparian forest, seasonal wetland, freshwater marsh, seasonal drainage, and perennial drainage. Other parts of the study area are developed or support common natural communities (Natural Environment Study Report, 2008). The following sections discuss the Central Coast arroyo willow riparian forest found within the study area, the project's environmental consequences, and avoidance, minimization, and/or mitigation measures that would be associated with this community. Similar discussion for the remaining four natural communities of special concern can be found under wetlands and other waters in Section 2.3.2.

Central Coast Arroyo Willow Riparian Forest

Riparian forest communities are considered sensitive locally, regionally, and statewide because of their habitat value and decline in extent. The California Department of Fish and Game has adopted a no-net-loss policy for riparian forest habitat values, and the Streambed Alteration Agreement would include mitigation requirements for loss of riparian forest vegetation. U.S. Fish and Wildlife Service mitigation policy identifies California's riparian forest habitats in Resource Category 2, for which no net loss of existing habitat value is recommended (46 Code of Federal Regulations 7644). Central Coast arroyo willow riparian forest communities occur along Prefumo Creek and San Luis Obispo Creek west and east of Los Osos Valley Road. One small piece of riparian forest habitat occurs near the realignment of Calle Joaquin.

Dominant tree species in the Central Coast arroyo willow riparian forest community include arroyo willow (*Salix lasiolepis*), walnut (*Juglans sp.*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), and coast live oak (*Quercus agrifolia*). Common shrubs include coyote brush (*Baccharis pilularis*), California coffeeberry (*Rhamnus californica*), California blackberry (*Rubus ursinus*), and elderberry (*Sambucus mexicana*). Giant reed (*Arundo donax*), an invasive species common in riparian forest areas, occurs in isolated clumps. Common herbaceous species in riparian forest habitat include poison hemlock (*Conium maculatum*), common horsetail (*Equisetum arvense*), sweetclovers (*Melilotus albus* and *M. indica*), mugwort (*Artemisia douglasiana*), pearly everlasting (*Anaphalis margaritacea*), periwinkle (*Vinca major*), garden nasturtium (*Troaeolum majus*), cocklebur (*Xanthium strumarium*), manroot (*Marah fabaceus*), and chain speedwell (*Veronica catenata*).

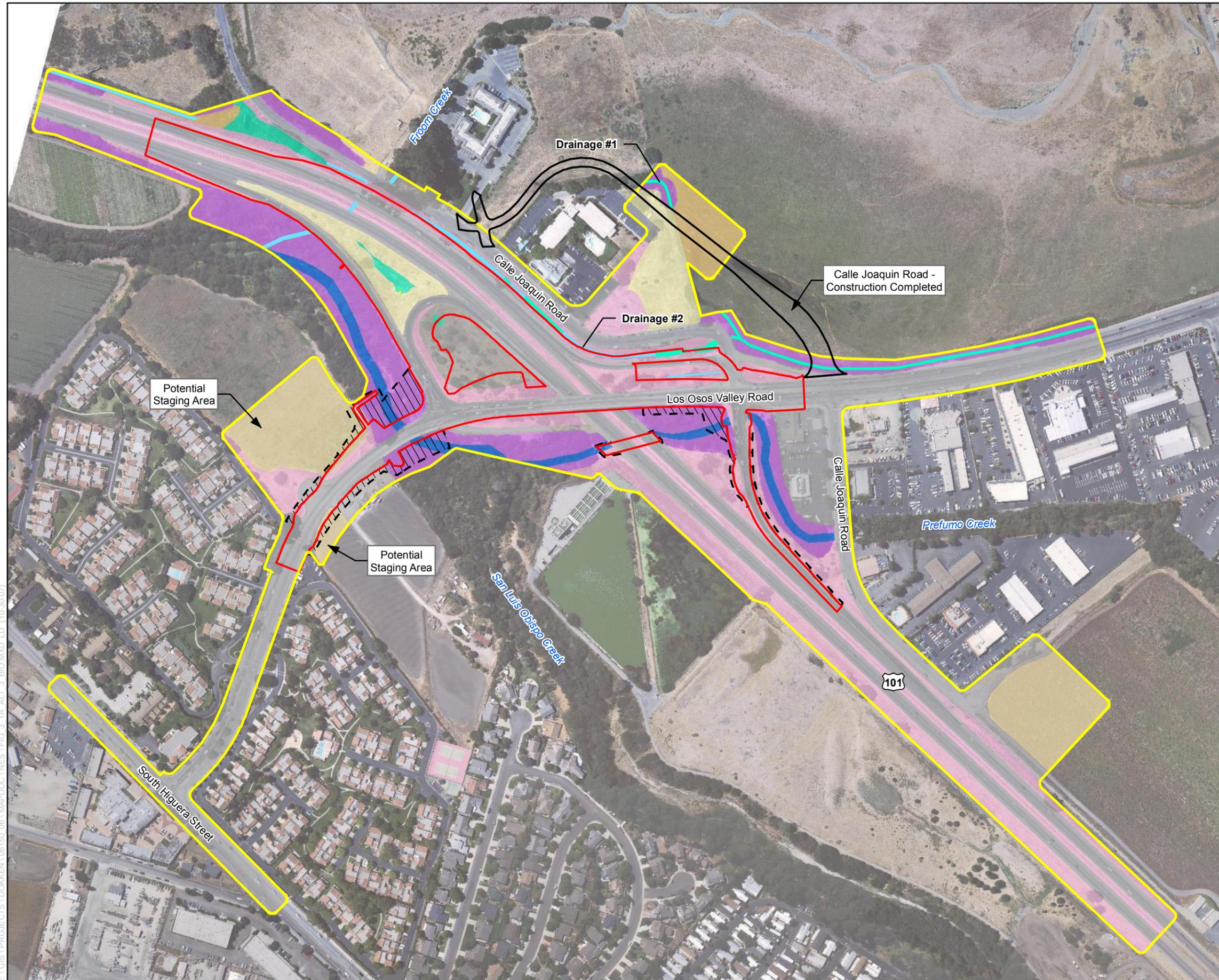
Riparian forest woodlands in the study area provide potential nesting and perching habitat for a number of migratory birds and raptors seen during the 2006 field surveys. These include lesser goldfinch (*Carduelis psaltria*), bushtit (*Psaltriparus minimus*), western scrub jay (*Aphelocoma californica*), song sparrow (*Melospiza melodia*), black phoebe (*Sayornis saya*), American kestrel (*Falco tinnunculus*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), and great-horned owl (*Bubo virginianus*). Riparian forest vegetation provides escape cover and foraging areas for wildlife that forage along the adjacent aquatic and grassland habitats. Mammals found near riparian forests include California vole (*Microtus californicus*), Virginia opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*). Common and terrestrial garter snakes (*Thamnophis sirtalis* and *elegans*) can be found foraging and resting within this habitat.

The Central Coast arroyo willow riparian forest communities located along the creeks provide shaded riverine aquatic cover. Shaded riverine aquatic cover vegetation is defined as streamside vegetation growing where the wetted channel meets the streambank and includes woody, terrestrial vegetation that extends over the wetted channel and associated tree roots and branches projecting into the water column. Shaded riverine aquatic cover typically is composed of riparian vegetation growing within 15 feet (horizontal distance) of the wetted channel.

Environmental Consequences

Impacts to the Central Coast arroyo willow riparian forest would include removal of trees during construction activities in and adjacent to the creeks. Alternative 3 would result in 0.40 acre of permanent impacts and 0.84 acre of temporary impacts. Alternative 6 would result in 1.01 acres of permanent impacts and 0.52 acre of temporary impacts. Figures 2.3-1 and 2.3-2 show the locations of these impacts. Construction of the project would result in the permanent loss of native trees within the riparian forest (Alternatives 3 and 6) community within the project footprint. Under both alternatives, trees within the riparian forest would also be temporarily disturbed during project construction. Trees adjacent to the construction area could sustain damage from equipment. Implementation of the avoidance and minimization measures would protect trees and avoid this potential impact.

Figure 2.3-1
Impacts to Biological Resources
Under Alternative 3 (Minimum Build)
 Los Osos Valley Road Interchange Project
 San Luis Obispo, California



Legend

- Agriculture
- Annual Grassland
- Developed/Landscaped
- Freshwater Marsh
- Perennial Drainage
- Central Coast Arroyo Willow Riparian
- Ruderal
- Seasonal Drainage
- Seasonal Wetland

- Permanent Impact Area Under Alternative 3 (Minimum Build)
- Limit of Temporary Impact
- Study Area

Aerial Photo Source: City of San Luis Obispo, 2005

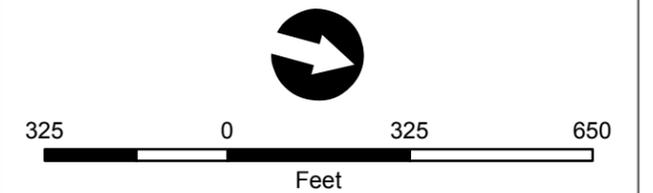


Figure 2.3-2
Impacts to Biological Resources
Under Alternative 6 (Near Full Standard)

Los Osos Valley Road Interchange Project
 San Luis Obispo, California

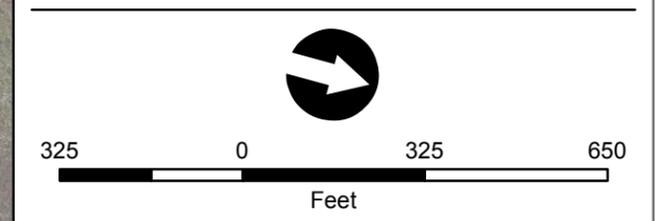


Legend

- Agriculture
- Annual Grassland
- Developed/Landscaped
- Freshwater Marsh
- Seasonal Drainage
- Perennial Drainage
- Central Coast Arroyo Willow Riparian
- Ruderal
- Seasonal Wetland

- Permanent Impact Area Under Alternative 6 (Near Full Standard)
- Limit of Temporary Impact
- Study Area

Aerial Photo Source: City of San Luis Obispo, 2005



S:\GIS\PROJECTS\DOCKEN\08150_06\MAPDOC\INES\FIG_3_1B_Alt_6_BIO.MXD (10-30-07)

Under the City tree ordinance, replacement of removed native trees would be required. The loss or disturbance of native trees is considered adverse because the trees provide a variety of important ecological functions and values. Implementation of Mitigation Measures BIO-2 and BIO-3 for riparian forest would address the impacts on native trees. No additional mitigation is recommended.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure BIO-1: Install Construction Barrier Fencing around the Construction Area to Protect Sensitive Biological Resources to be Avoided. The City or its contractor would install orange construction barrier fencing to identify environmentally sensitive areas. A qualified biologist would identify sensitive biological habitat at each bridge site before the final design plans are prepared so that the areas to be fenced can be included in the plans.

The area to be generally required for construction, including staging and access, is shown as the permanent and temporary impact area in Figures 2.3-1 and 2.3-2. Sensitive biological resources to be avoided during construction would be fenced off to avoid disturbance. Sensitive biological habitat next to the construction area includes the creek channels outside the construction zone, wetlands, and any trees that support nests of special-status bird species.

Before construction, the contractor would work with the project engineer and a biological resource specialist to identify the locations for the barrier fencing and would place stakes around the sensitive resource sites (riparian vegetation, seasonal wetlands, and trees that support nests of special-status birds) to indicate these locations. The protected areas would be designated as environmentally sensitive areas and identified clearly on the construction plans. The fencing would be installed before construction activities were initiated and would be maintained throughout the construction period. The following paragraph would be included in the construction specifications:

The contractor's attention is directed to the areas designated as "environmentally sensitive areas." These areas are protected, and no entry by the contractor for any purpose will be allowed unless specifically authorized in writing by Caltrans or the City of San Luis Obispo. The contractor will take measures to ensure that contractor's forces do not enter or disturb these areas, including giving written notice to employees and subcontractors. Vehicle operation, material and equipment storage, and other surface disturbing activities are prohibited within the fenced environmentally sensitive areas.

Temporary fences around the environmentally sensitive areas would be installed as one of the first orders of work. Temporary fences would be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. The fencing would be commercial-quality woven polypropylene, orange in color, and at

least 4 feet high (Tensor Polygrid or equivalent). The fencing would be tightly strung on posts set at maximum intervals of 10 feet.

Mitigation Measure BIO-2: Avoid and Minimize Potential Indirect Disturbance of Riparian Forest Communities. To the extent possible, the City would avoid and minimize potential indirect disturbance of riparian forest communities by implementing the following measures:

- The potential for long-term loss of riparian forest vegetation would be minimized by trimming vegetation rather than removing entire shrubs. Shrubs that need to be trimmed would be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting would be limited to the minimum area necessary within the construction zone. Cutting would be allowed only for shrubs; all trees would be avoided. Also, cutting would be allowed only in areas that do not provide habitat for sensitive species. To protect nesting birds, pruning or removal of woody riparian forest vegetation would not be allowed between March 1 and August 15.
- A certified arborist would be retained to perform any necessary pruning or root cutting of riparian forest trees. Work in riparian forest areas will be conducted between June 1 and October 1, and disturbed areas would be stabilized with erosion control measures before October 1.

Mitigation Measure BIO-3: Compensate for Temporary and Permanent Loss of Riparian Forest Vegetation. Riparian vegetation would be replanted within 15 feet (horizontally) of the wetted channel until a minimum replacement ratio of 2:1 for permanently affected shaded riverine aquatic cover vegetation is met. Once the requirement for mitigation for shaded riverine aquatic cover vegetation is met, the remainder of riparian vegetation mitigation can be replanted farther than 15 feet from the channel.

The City would compensate for temporary construction-related loss of riparian forest vegetation and shaded riverine aquatic cover vegetation at Prefumo Creek and San Luis Obispo Creek at a minimum ratio of 1:1 (1 acre restored for every 1 acre temporarily affected) by replanting the temporary access areas with the native species removed. These include arroyo willow, California black walnut, black cottonwood, coast live oak, coyote brush, coffeeberry, California blackberry, and elderberry. Replanting at each creek would occur at the earliest opportunity following completion of construction activities and during the time of year when maximum survival of planted vegetation is assured.

The City would compensate for the permanent loss of riparian forest vegetation within and adjacent to the study area along Prefumo and San Luis Obispo creeks at a minimum ratio of 2:1 (2 acres restored or created for every 1 acre permanently affected). All permanent riparian impacts would first be mitigated at the treatment ponds adjacent to the study area. While these commitments are made in the environmental document, final locations and quantities for

compensation would be confirmed through coordination with state and federal agencies as part of the permitting process and final design phase and would be based on the impacts calculated and presence of appropriate environmental conditions for enhancement or creation. Compensation would also include enhancement of the creek corridor through removing non-native species such as giant reed, castor bean, poison hemlock, English ivy, Himalayan blackberry, and big leaf periwinkle and replacing these plants with native riparian trees and shrubs.

With implementation of Alternative 3, compensation in this area can be achieved through enhancing 1.64 acres of existing riparian habitat within and adjacent to the study area. To replace shaded riverine aquatic cover vegetation that is *permanently* lost as a result of the project, a minimum of 520 linear feet of stream bank would need to be planted with riparian vegetation to meet the minimum 2:1 replacement ratio identified for permanent impacts on shaded riverine aquatic cover vegetation. To meet this mitigation requirement, shaded riverine aquatic cover vegetation can be planted on either bank. The total bank length replanted must equal at least 520 feet or 260 feet of stream length assuming both banks are planted. To replace shaded riverine aquatic cover vegetation that is *temporarily* lost, a minimum 640 linear feet of stream bank would need to be planted to meet the minimum 1:1 replacement ratio.

For Alternative 6, compensation would require enhancing 2.54 acres of existing riparian habitat within and adjacent to the study area (see Figure 2.3-2). Enhancement activities for Alternative 6 would include removing the existing southbound off-ramp onto Los Osos Valley Road (including a culvert across Prefumo Creek) and replanting with native riparian trees and shrubs. To replace shaded riverine aquatic cover vegetation that is *permanently* lost as a result of the project, a minimum of 1,820 linear feet of stream bank would need to be planted with riparian vegetation to meet the minimum 2:1 replacement ratio identified for permanent impacts on shaded riverine aquatic cover vegetation. To meet this mitigation requirement, shaded riverine aquatic cover vegetation can be planted on either bank. The total bank length replanted must equal at least 910 linear feet or 455 linear feet of stream length assuming both banks are planted. To replace shaded riverine aquatic cover vegetation that is *temporarily* lost, a minimum of 290 linear feet of stream bank would need to be planted to meet the minimum 1:1 replacement ratio.

Riparian enhancement areas could occur within the study area; the exact location would be determined in coordination with the City and state (e.g. Caltrans) and federal (e.g. U.S. Fish and Wildlife Service) agencies. Plantings would consist of cuttings taken from local plants, or plants grown from local material obtained within the Prefumo and San Luis Obispo creek watersheds. Plantings would be monitored annually for three years, or as required in the project permits. A minimum of 75 percent of the plantings would survive at the end of the monitoring period. If the survival criterion were not met at the end of the monitoring period, planting and monitoring would be repeated until the survival criterion were met.

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 main 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: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (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.

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. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the 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. This order states that a federal agency, such as the Federal Highway Administration, and Caltrans as assigned, 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 mainly 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 U.S. 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 see the Water Quality section for additional details.

Affected Environment

The study area supports seasonal wetland, freshwater marsh, seasonal drainage, and perennial drainage (Wetland Delineation 2007).

Seasonal Wetlands

Seasonal wetland communities in the study area are associated mostly with roadside drainages and basins south of Los Osos Valley Road. Two areas identified as seasonal wetland in the study area lie in the northbound on-ramp cloverleaf area. One is near the culvert under the on-ramp, and the other is in the adjacent area between the northbound off-ramp and the highway. These two seasonal wetlands are connected by a culvert under the on-ramp and receive runoff from the adjacent roads.

Another seasonal wetland lies between the highway and Calle Joaquin where the roadside drainage widens to a basin beneath a billboard. Common species in the seasonal wetlands include poison hemlock, Bermuda grass (*Cynodon* sp.), birdfoot trefoil (*Lotus corniculatus*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), Italian ryegrass (*Lolium multiflorum*), curly dock (*Rumex crispus*), bristly ox-tongue (*Picris echioides*), and Harding grass (*Phalaris aquatica*).

Additional seasonal wetland areas within the Calle Joaquin realignment project area include a spring-fed drainage channel that supports wetland vegetation located west of Calle Joaquin Road (Drainage 1) and seasonal wetlands located within the roadside drainage that crosses from the east side of Los Osos Valley Road to the west side of Calle Joaquin Road (Drainage 2). These roadside drainage wetlands convey runoff from the freshwater marsh and riparian vegetation east of Los Osos Valley Road and from the adjacent roads and are discussed. Segments of these drainages function as seasonal drainages and are discussed in the “Seasonal Drainages” section below.

Seasonal wetlands support many insects, which constitute a food source for a variety of birds, amphibians, and reptiles. During the July 2006 field survey, a great egret (*Ardea alba*) and red-winged blackbirds (*Agelaius phoeniceus*) were seen in the vicinity of seasonal wetlands in the study area. Tall vegetation associated with the seasonal wetland on the west side of US 101 may also provide nesting habitat for migratory birds.

Freshwater Marsh

The study area supports two locations of freshwater marsh community. One is located within the approved Calle Joaquin realignment project in Froom Ranch at the base of the Irish Hills. The

marsh feature is within the floodplain of Froom Creek and is in an area of high ground water (Calle Joaquin Wetland Delineation 2005). Portions of the marsh are perennially wet. Dominant plant species there include iris-leaved rush (*Juncus xiphioides*), sedges (*Carex* spp.), creeping leather root (*Hoita orbiculatus*), coastal silverweed (*Potentilla anserina* ssp. *pacifica*), bull thistle (*Cirsium vulgare*), birdfoot trefoil, goldentop (*Lamarckia aurea*), and meadow fescue (*Festuca arundinacea*). Dominant plant species in the wettest areas include tule (*Scirpus acutus*), iris-leaved rush, seep monkeyflower (*Mimulus guttatus*), and watercress (*Rorippa nasturtium-aquatica*).

The other freshwater marsh lies between US 101 and Calle Joaquin. This feature appears to be perennial, possibly due to high ground water. Dominant species in this community include narrow-leaved cattail (*Typha angustifolia*), iris-leaved rush, Himalayan blackberry (*Rubus discolor*), sneezeweed (*Helenium puberulum*), and fringed willowherb (*Epilobium ciliatum*).

Common bird species seen in freshwater marsh habitats in the study area include red-winged blackbird (*Agelaius phoeniceus*), song sparrow (*Melospiza melodia*), and mallard (*Anas platyrhynchos*). Freshwater marsh wetlands in the study area also provide habitat for aquatic amphibians and reptiles such as the Pacific tree frog (*Hyla regilla*) and common garter snake (*Thamnophis sirtalis*).

Seasonal Drainages

Several seasonal drainages cross the study area. Two seasonal drainages have been previously evaluated in a wetland delineation (2004) for the Calle Joaquin realignment project, identified as Drainage 1 and Drainage 2 in that wetland delineation (segments of these drainages function as seasonal wetlands and are discussed in the “Seasonal Wetlands” section above). Drainage 1 is spring fed and enters an underground culvert at its south end that emerges at the confluence with Froom Creek on the west side of Calle Joaquin. Froom Creek crosses under US 101 at this location to its confluence with San Luis Obispo Creek. Drainage 1 supports Central Coast arroyo willow riparian forest vegetation, dominated by arroyo willow, dogwood (*Cornus sericea*), California bay (*Umbellularia californica*), California blackberry, and cattail.

Drainage 2 parallels Los Osos Valley Road and US 101 and is fed by urban runoff. The north portion of Drainage 2 in the study area floods into the adjacent freshwater marsh under high flow conditions. The northern portion of Drainage 2 supports Central Coast arroyo willow riparian forest vegetation, including arroyo willow, poison hemlock, sweet fennel (*Foeniculum vulgare*), teasel (*Dipsacus fullonum*), and milk thistle (*Silybum maritimum*). The southern portion along Calle Joaquin supports scattered arroyo willow and eucalyptus, coyote brush, poison hemlock, a small area of tule and cattail, and ruderal herbaceous species.

The study area also includes a seasonal drainage that parallels US 101 and is separated from the southern end of Drainage 2 by a stand of eucalyptus. This drainage flows south and expands into

a seasonal wetland in a basin area between US 101 and Calle Joaquin. The lowest point of the basin supports freshwater marsh that appears to be perennial, then continues to another segment of seasonal drainage at the southernmost part of the study area. The upstream portion of this seasonal drainage is dominated by coyote brush, California blackberry, poison hemlock, and mugwort. The southernmost end of the drainage supports Central Coast arroyo willow riparian forest, with some non-natives, such as pepper tree.

The value of seasonal drainages as wildlife habitat varies with the duration and intensity of water flow. During the wet season, intermittent drainages are used by a variety of wildlife species. Mammals such as raccoons and opossum use the habitats for drinking and washing their food. Shorebirds and waterfowl may use intermittent drainages for resting or foraging, whereas these habitats may serve as travel corridors for amphibians, invertebrates, or other highly aquatic wildlife. Wildlife species observed in or adjacent to seasonal drainages in the study area during the 2006 field surveys included great egret, song sparrow, and mallard.

Perennial Drainages

Two perennial drainages—Prefumo Creek and San Luis Obispo Creek—cross roadways in the study area via cement box culverts and steel-pipe culverts of varying sizes. Froom Creek, which is intermittent in the vicinity of the study area, has a perennial reach upstream. These perennial drainages provide habitat for a variety of wildlife and fish. Vegetation growing along the edges of drainages provides nesting habitat for several bird species and foraging and refuge habitat for amphibians, reptiles, and mammals occupying the open water and adjacent grassland habitats.

Birds such as herons (*Ardeidae* spp.) and belted kingfishers (*Megaceryle alcyon*) forage in these communities, mainly along the water's edge. Many species of insectivorous birds, including white-throated swift (*Aeronautes saxatalis*), barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), black phoebe (*Sayornis nigricans*), and ash-throated flycatcher (*Myiarchus cinerascens*), catch their prey over open water.

Native fish species in San Luis Obispo Creek and Prefumo Creek include speckled dace (*Rhinichthys osculus*), prickly sculpin (*Cottus asper*), threespine stickleback (*Gasterosteus aculeatus*), south-central California coast steelhead (*Oncorhynchus mykiss*), and Pacific lamprey (*Lampetra tridentata*). Steelhead trout occur in perennial reaches of Froom Creek; the segment of Froom Creek within the study area is used as a migratory corridor for adults migrating to upstream spawning habitat and juveniles going to the ocean.

Introduced species such as goldfish, largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), mosquitofish (*Gambusia affinis*), channel catfish (*Ictalurus punctatus*), brown bullhead (*Ameiurus nebulosus*), golden shiners (*Notemigonus crysoleucas*), and fathead minnows (*Pimephales promelas*) are also present in the watershed.

Environmental Consequences

Table 2.3-1 shows total impacts, both permanent and temporary, to wetlands and other waters of the U.S. for Alternatives 3 and 6. Impacts to wetlands and waters of the U.S. cannot be avoided because the project would improve an interchange near the junction of several existing streams. Table 2.3-1 includes Seasonal Wetlands (b) claimed as jurisdictional by California Department of Fish and Game, but not by the U.S. Army Corps of Engineers. Figures 2.3-1 and 2.3-2 shows the locations of these impacts.

Table 2.3-1: Impacts to Wetlands and Other Waters of the U.S

Community Type	Alternative 3		Alternative 6	
	Permanently Affected (Acres)	Temporarily Affected (Acres)	Permanently Affected (Acres)	Temporarily Affected (Acres)
Seasonal Wetland (a)	0.03	0	0.02	0
Seasonal Wetland (b)	0.17	0	0.17	0
Freshwater Marsh	0	0	0	0
Seasonal Drainage	0.04	0	0.07	0
Perennial Drainage	0.07	0.19	0.15	0.11
Total Impacts	0.31	0.19	0.41	0.11

(a) Jurisdictional waters of the U.S., final acreages pending verification by the U.S. Army Corps of Engineers.

(b) Non-jurisdictional wetlands, final acreages pending verification by the U.S. Army Corps of Engineers.

Based on the above considerations, there is no practicable alternative to the proposed construction in wetlands, and the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use.

Avoidance, Minimization, and/or Mitigation Measures

Permits required for the project include a 404 Clean Water Act Permit from the U.S. Army Corps of Engineers, a 401 Water Quality Certification from Regional Water Quality Control Board, and a 1602 Lake and Streambed Alteration Agreement from the California Department of Fish and Game.

All practicable measures to minimize harm to the affected wetlands and waters have been included in the proposed alternative(s) as design features and additional avoidance, minimization, and mitigation measures. Below are design minimizations common to both build alternatives (many of these are beneficial to all aspects of the biological environment, but are discussed here

for the sake of brevity). Then design minimizations specific to individual alternatives are described.

Design Minimizations Common to Alternatives 3 and 6

1. Alignment adjustments

- Northbound off-ramp was moved west toward US 101, away from San Luis Obispo Creek, ensuring trees would not be removed in this area and work could be conducted from the existing roadway. This avoidance measure ensures no loss of riparian habitat along the northbound off-ramp.
- Moving this off-ramp also avoids impacts to the Froom Creek outfall since the culvert will not need to be extended to accommodate the road.

2. Retaining walls and embankment configurations

- A retaining wall on northbound off-ramp would limit impacts to San Luis Obispo Creek.
- A retaining wall on southbound off-ramp would limit impacts to Prefumo Creek.
- Steeper 2:1 side slopes are proposed along the northbound off-ramp and southbound off-ramp. Current standards call for 4:1 slopes, but the steeper 2:1 gradients further restrict the horizontal extent of the road embankment that would encroach into San Luis Obispo Creek and Prefumo Creek.

3. In-stream changes

- If disturbance to the gravel cannot be avoided in San Luis Obispo Creek, the gravel would be removed temporarily and replaced to the extent practicable with gravel removed from the site. Before returning gravels to the channel following construction, gravels would be washed to remove fines (term for fine sediment) before they are placed back into the creek channel. If it becomes necessary to augment disturbed gravels with gravel from outside sources, only washed river gravel (to remove fines) appropriately sized for adult steelhead would be used. To correct unnatural drainage patterns, about 200 feet downstream of the Los Osos Valley Road bridge, the project would remove fine sediments and replace them with appropriately-sized spawning gravels.
- Where rock slope protection is needed, native riparian vegetation and/or large woody material would be incorporated in the rock slope protection to the extent practicable.
- To reduce gaps in the shade, the design restricts extensions of stream bank rock slope protection or other bank protection (sheet piles or bank and channel armoring) to the minimum necessary to protect essential infrastructure.

- Permanent fish passage would be maintained or improved at each structure that requires modification.
 - a. Along Prefumo Creek, fish passage would be maintained by extending the structure on the rock slope protection on the outfall.
 - b. Along San Luis Obispo Creek, fish passage would not be impeded by the rock slope protection in the outfall.
 - c. No work is proposed in Froom Creek.

4. Replanting and final grading

- The two seasonal wetlands in the artificially created basins between US 101 and the existing northbound on-ramps and off-ramps would be restored onsite as a retention basin after the new ramps are constructed. To ensure sufficient ponding in support of wetland vegetation, the basin would be excavated to pre-project conditions and planted with a native seed mix.
- All disturbed areas would be seeded with native mixes and mulched with certified weed-free mulch (rice straw may be used in upland areas). Native, non-invasive species would be used in erosion control plantings to stabilize site conditions and prevent invasive species from colonizing.

Additional Alternative 3 Minimizations

Retaining walls and embankment configurations:

- A retaining wall would be built along the southbound on-ramp, restricting fills into a portion of Drainage Ditch #2.
- A retaining wall would be built along westbound Los Osos Valley Road between US 101 and the south southbound off-ramp. This would also restrict impacts to Prefumo Creek.

Additional Alternative 6 Minimizations

Retaining wall:

- The northbound diagonal on-ramp would use retaining walls and free-spans over Prefumo Creek.

Mitigation Measure BIO-4: Avoid and Minimize Potential Indirect Disturbance of Seasonal Wetlands Near the Construction Area. The City would minimize the potential for indirect disturbance of the seasonal wetlands in the US 101 northbound on-ramp portion of the study area by prohibiting the use of vehicles and equipment staging in this area. All access by vehicles in this portion of the study area would occur via the paved on-ramp.

Mitigation Measure BIO-5: Protect Water Quality and Prevent Erosion in Wetlands and Drainages. To protect water quality in seasonal wetlands, freshwater marsh, and Prefumo, San Luis Obispo, and Froom creeks, the City would implement the following best management practices before and during construction:

- All earthwork or foundation activities involving creeks, culverts, and bridges would occur in the dry season (generally between June 1 and October 1).
- All work in the drainages that may contain fish would be limited to the low-flow period in the dry season.
- Equipment used in and around waters of the U.S. would be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance, staging, and materials storage would occur at least 300 feet from all waters of the U.S. Any necessary equipment washing would occur where the water cannot flow into the stream channel.
- Any surplus concrete rubble, asphalt, or other rubble from construction would be taken to an approved disposal site.
- An erosion control plan would be prepared and implemented for the proposed project. It would include the following provisions and protocols:
 - Discharge from dewatering operations, if needed, and runoff from disturbed areas would conform to the water quality requirements of the waste discharge permit issued by the Regional Water Quality Control Board.
 - Material stockpiles would be located in non-traffic areas only. Side slopes would not be steeper than 2:1. All stockpile areas would be surrounded by a filter fabric fence and interceptor dike.
 - Erosion control measures would be applied throughout construction of the proposed project. The Storm Water Pollution Prevention Plan for the project would detail the applications and type of measures and the allowable exposure of unprotected soils.
 - Soil exposure would be minimized through the use of temporary best management practices, groundcover, and stabilization measures. Exposed dust-producing surfaces would be sprinkled daily, if necessary, until wet; this measure would be controlled to avoid producing runoff. Paved streets would be swept daily following construction activities.
 - The contractor would conduct periodic maintenance of erosion- and sediment-control measures.
 - All temporary erosion- and sediment-control measures would be removed after the working area is stabilized or as directed by the engineer.

- An appropriate seed mix of native species would be planted on disturbed areas upon completion of construction.
- Sandbagged silt fences would be installed in all named and unnamed waterways in which construction work occurs, both upstream and downstream of the construction site. Any accumulated sediment would be removed and trucked to an approved disposal site.

Mitigation Measure BIO-6: Compensate for the Permanent Loss of Seasonal Wetlands. The City would compensate for permanent loss of seasonal wetlands at a minimum ratio of 2:1 (2 acres restored for every 1 acre permanently affected). Permanent impacts on seasonal wetlands would first be mitigated onsite in the retention basin. Any remaining seasonal wetland mitigation that cannot be created onsite would be compensated at undetermined offsite locations such as the Johnson Ranch or through the San Luis Obispo Land Conservancy. While these commitments are made in the environmental document, final locations and quantities for compensation would be confirmed through coordination with state and federal agencies as part of the permitting process and final design phase and would be based on the impacts calculated and the presence of appropriate environmental conditions for creation.

If Alternative 3 were implemented, total required compensation for impacts on seasonal wetland would be 0.40 acre. If Alternative 6 were implemented, total compensation for impacts on seasonal wetlands would be 0.36 acre. Because two affected seasonal wetlands occur within artificially created basins between US 101 and the northbound on-ramps and off-ramps, these wetlands would be restored onsite after the completion of the retention basin construction. To ensure sufficient ponding to support wetland vegetation, the basin north of the on-ramp would be excavated to pre-project conditions and planted with a native seed mix. The basin south of the on-ramp would be excavated to a deeper level for construction of a vegetated retention basin that would provide biofiltration of runoff.

Mitigation Measure BIO-7: Avoid and Minimize Potential Indirect Disturbance of Freshwater Marsh near the Construction Area. The City would minimize the potential for indirect disturbance of the freshwater marsh in the Calle Joaquin/US 101 southbound on-ramp and off-ramp portion of the study area by prohibiting equipment staging in that area. All access by vehicle in that portion of the study area would be limited to the project right-of-way.

Mitigation Measure BIO-8: Avoid and Minimize Potential Indirect Disturbance of Seasonal Drainage near the Construction Area. The City would minimize the potential for indirect disturbance of the seasonal drainages in the realigned portion of the Calle Joaquin/US 101 southbound on-ramp under Alternative 3 or the Calle Joaquin/US 101 southbound on-ramp and off-ramp under Alternative 6 by prohibiting equipment staging in this area. All access by vehicle in this portion of the study area would be limited to the project right-of-way.

Mitigation Measure BIO-9: Compensate for Permanent Loss of Seasonal Drainage Habitat.

The City would compensate for the permanent fill of seasonal drainage (a direct impact associated with new road construction) at a minimum ratio of 2:1 (2 acres restored or created for every 1 acre permanently affected).

- Under Alternative 3, a minimum of 0.08 acre of compensation for permanent loss of seasonal drainage would be required.
- Under Alternative 6, a minimum of 0.07 acre of compensation for the permanent loss seasonal drainage would be required.

Mitigation proposed includes a combination of onsite mitigation and compensation at undetermined offsite locations such as the Johnson Ranch or through the San Luis Obispo Land Conservancy. Onsite compensation would be accomplished by restoring and/or enhancing riparian and in-stream habitats along Prefumo and San Luis Obispo creeks in the study area. Compensation for other waters of the U.S. would be in addition to and would follow the guidelines for riparian habitat compensation described under Section 4.1.1 of the Natural Environment Study Report (2008). Permanent impacts to seasonal drainages that cannot be mitigated onsite would be compensated at a ratio of at least 2:1 at offsite locations.

Temporarily disturbed portions of the drainages would be returned to original grade following construction, and would result in no permanent impacts.

Mitigation Measure BIO-10: Avoid and Minimize Potential Indirect Disturbance of Perennial Drainage Near the Construction Area. The City would minimize the potential for indirect disturbance of the perennial drainages, including Prefumo and San Luis Obispo creeks, in the project area by prohibiting equipment staging in these areas. All access by vehicle in these portions of the study area would be limited to the project right-of-way.

Mitigation Measure BIO-11: Compensate for Permanent Loss and Temporary Disturbance of Perennial Drainage Habitat. The City would compensate for temporary construction-related loss of perennial drainage at a minimum ratio of 1:1 (1 acre restored for every 1 acre temporarily affected) and would compensate for the permanent fill of perennial drainage (a direct impact associated with new road construction) in Prefumo and San Luis Obispo creeks at a minimum ratio of 2:1 (2 acres restored or created for every 1 acre permanently affected).

- Under Alternative 3, a minimum of 0.33 acre of compensation for loss of perennial drainage would be required.
- Under Alternative 6, a minimum of 0.41 acre of compensation for the loss of perennial drainage would be required.

Mitigation proposed includes a combination of onsite mitigation and compensation at undetermined offsite locations such as the Johnson Ranch or through the San Luis Obispo Land

Conservancy. Onsite compensation would be accomplished by restoring and/or enhancing riparian and in-stream habitats along Prefumo and San Luis Obispo creeks in the study area. Compensation for other waters of the U.S. would be in addition to and would follow the guidelines for riparian habitat compensation described under Section 4.1.1.2 of the Natural Environment Study Report (2008). Permanent impacts to seasonal drainages that cannot be mitigated onsite would be compensated at a ratio of at least 2:1 at offsite locations.

Temporarily disturbed portions of the drainages would be returned to original grade following construction, and would result in no permanent impacts.

The two seasonal wetlands in the artificially created basins between US 101 and the existing northbound on-ramps and off-ramps would be restored onsite as a retention basin after the new ramps are constructed. To ensure sufficient ponding in support of wetland vegetation, the basin would be excavated to pre-project conditions and planted with a native seed mix.

2.3.3 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 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. 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 Oceanographic and Atmospheric Administration 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
- Sections 4150 and 4152 of the Fish and Game Code

Affected Environment

As described in the Natural Environment Study Report, sensitive species that could potentially occur in the study area were identified based on a review of existing information, coordination with agency personnel, and field surveys, including a reconnaissance-level field survey and biological field surveys. With this information, the biologist determined that the sensitive wildlife species shown in Table 2.3-2 have the potential to occur in the study area or may be affected by construction activities.

Table 2.3-2: Sensitive Wildlife and Fish Species Potentially Occurring in the Study Area

Common Name, Scientific Name	Legal Status		Habitat Requirements	Species Present in Study Area?	Specific Habitat Present in Study Area?	Rationale
	Federal	State				
Foothill yellow-legged frog <i>Rana boylei</i>	–	Species of Special Concern	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks nearby	Not observed	Yes	No foothill yellow-legged frogs were observed during protocol-level surveys for California red-legged frog
Southwestern pond turtle <i>Emys marmorata pallida</i>	–	Species of Special Concern	Ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests. Overwintering habitat consists of mud in stream and pond bottoms or a variety of upland habitats including riparian habitat. Eggs are laid in earthen cavities, usually in sunny locations within 1,640 feet of aquatic habitat.	Yes	Yes	Suitable aquatic habitat for southwestern pond turtles is present within Prefumo and San Luis Obispo creeks in the study area. One adult pond turtle was observed in Prefumo Creek near the confluence with San Luis Obispo Creek in the study area during the April 2006 field surveys.

Common Name, Scientific Name	Legal Status		Habitat Requirements	Species Present in Study Area?	Specific Habitat Present in Study Area?	Rationale
	Federal	State				
Two-striped garter snake <i>Thamnophis hammondi</i>	–	Species of Special Concern	Perennial and intermittent streams having rocky beds bordered by willow thickets or other dense vegetation. Also inhabits large sandy riverbeds, such as the San Luis Obispo Creek, if a strip of riparian vegetation is present, and stock ponds if riparian vegetation and fish and amphibian prey are present	Not observed	Yes	San Luis Obispo and Prefumo creeks in the study area provide potential habitat for the species. The species is known to occur in San Luis Obispo County (California Natural Diversity Database, 2006).
Cooper's hawk <i>Accipiter cooperii</i>	–	Species of Special Concern	Nests primarily in riparian forests dominated by deciduous species; also nests in densely canopied forests from grey pine–oak woodland up to ponderosa pine; forages in open woodlands	Not observed	Yes	Species was not observed during reconnaissance-level fields surveys conducted between April and July 2006. Riparian forest in the study area provides suitable nesting and wintering habitat for the species.
Northern harrier <i>Circus cyaneus</i>	–	Species of Special Concern	Grasslands, meadows, marshes, and seasonal and agricultural wetlands.	Not observed	Yes	Species was not observed during reconnaissance-level fields surveys conducted between April and July 2006. Emergent marsh in the study area provides suitable nesting habitat for the species.
White-tailed kite <i>Elanus leucurus</i>	–	Fully Protected	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	Not observed	Yes	Species was not observed during reconnaissance-level fields surveys conducted between April and July 2006. Riparian forest in the study area provides suitable nesting and wintering habitat for the species.

Common Name, Scientific Name	Legal Status		Habitat Requirements	Species Present in Study Area?	Specific Habitat Present in Study Area?	Rationale
	Federal	State				
Western burrowing owl <i>Athene cunicularia hypugea</i>	–	Species of Special Concern	Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows.	Not observed	Yes	Species was not observed during reconnaissance-level fields surveys conducted between April and July 2006. Annual grasslands with active ground squirrel burrows in the study area provide suitable nesting and wintering habitat for the species.

The special-status species described below were either seen in the project area or suitable habitat for the species was present in the project area. These included the foothill yellow-legged frog (*Rana boylei*), southwestern pond turtle (*Emys marmorata pallida*), two-striped garter snake (*Thamnophis hammondi*), Cooper’s hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and western burrowing owl (*Athene Cunicularia hypugea*).

Foothill Yellow-legged Frog

Foothill yellow-legged frogs were reported just west of the study area in 1987, although the frog(s) could have been misidentified California red-legged frogs. Foothill yellow-legged frogs were not seen during field surveys or during protocol-level surveys for California red-legged frog done within Prefumo and San Luis Obispo creeks in the study area. Prefumo and San Luis Obispo creeks in the study area provide suitable habitat for this species.

Southwestern Pond Turtle

The southwestern pond turtle is designated as a state species of special concern. During the 2006 field surveys, a southwestern pond turtle was seen in Prefumo Creek, near the creek’s confluence with San Luis Obispo Creek. Prefumo and San Luis Obispo creeks provide suitable aquatic habitat for the species. Adjacent uplands in the study area occur within heavily disturbed urban areas in the city of San Luis Obispo and do not provide suitable nesting or wintering habitat.

Suitable upland habitat for pond turtles is not present in the study area; however, Prefumo and San Luis Obispo creeks in the study area provide suitable aquatic habitat and basking sites for the species, and turtles may use riparian areas along these creeks as well.

Two-striped Garter Snakes

Two-striped garter snakes were not seen during field surveys done within Prefumo and San Luis Obispo creeks in the study area. However, focused surveys for this species were not performed.

Suitable habitat is present within Prefumo and San Luis Obispo creeks, and the species is known to occur in San Luis Obispo County.

Prefumo and San Luis Obispo creeks provide suitable aquatic habitat for two-striped garter snakes.

Sensitive and Non-sensitive Migratory Birds

Several sensitive (including Cooper's hawk and white-tailed kite) and non-sensitive migratory birds could nest in and adjacent to the study area. The breeding season for most birds is generally from March 1 to August 15.

The Cooper's hawk, a state species of special concern, is a year-round resident throughout much of California, except in the high Sierra Nevada. Migrants from the north spend winter in California; residents move down slope and south from areas of heavy snow in fall and return in spring. The Cooper's hawk nests in coniferous and deciduous trees. It prefers second-growth conifers and deciduous riparian areas along streams. It forages along forest edges and in broken habitats for small birds and small mammals.

The white-tailed kite is a fully protected species under California Fish and Game Code 3511. The species has a restricted distribution in the U.S., occurring only in California and western Oregon and along the Texas coast. The species is fairly common in California's Central Valley lowlands. White-tailed kites nest in riparian and oak woodlands and forage in nearby grasslands, pastures, agricultural fields, and wetlands. White-tailed kites use nearby treetops for perching and nesting sites. Voles and mice are common prey.

The Cooper's hawk and white-tailed kite have been seen within 10 miles of the study area, and suitable nesting and foraging habitat is present within the study area. No Cooper's hawk or white-tailed kite was seen in the study area during the 2006 field surveys done between April and July. A focused nest survey was not performed during the 2006 surveys.

Within the study area, suitable nesting habitat for migratory birds occurs within riparian forest, seasonal wetland, annual grassland, and emergent marsh habitats. Migratory birds seen in and near the study area include the red-winged blackbird, northern mockingbird, lesser goldfinch, song sparrow, red-shouldered hawk, and red-tailed hawk.

Western Burrowing Owl

The western burrowing owl is a federal species of concern and a state species of special concern. The burrowing owl is a species of special concern in California because suitable habitat and both local and statewide populations have declined. It is protected during its nesting season under the Migratory Bird Treaty Act and the California Fish and Game Code Section 3503.5. Burrowing owl is a ground-nesting raptor that typically uses the burrows of other species, such as ground squirrels, for nesting and thermal and escape cover.

No burrowing owls were observed in the study area during the 2006 field surveys done between April and July. Historically, burrowing owls are known to occur along Froom Creek, where they were seen in 1988 during surveys conducted for the Froom Creek Project, northwest of the study area. Within the study area, annual grasslands and agricultural lands provide potential breeding or wintering habitat for burrowing owls. However, these areas are heavily disturbed by adjacent development and ongoing agricultural practices, reducing the likelihood that burrowing owls would occur within the study area. If burrowing owls are present in the project vicinity, they could use existing ground squirrel burrows that exist in the annual grassland habitat west of Calle Joaquin.

Swallows

Active swallow nests were not seen in the study area during the 2006 field surveys done between April and July. However, existing bridges and box culverts in the study area provide potential nesting areas for swallows. Swallows often build mud nests on the underside of concrete structures over permanent or semi-permanent water sources.

Environmental Consequences

Table 2.3-3 shows permanent and temporary impacts to habitat for special-status animals in the project area. Possible impacts for each species are described in the text that follows.

Table 2.3-3 Impacts to Habitat for Special-Status Animals

Special-Status Animals	Alternative 3		Alternative 6	
	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
Foothill yellow- legged frog	.51	1.03	1.23	.63
Southwestern pond turtle	.47	1.03	1.16	.63
Two-striped garter snake	.51	1.03	1.23	.63
Cooper's hawk	.40	.84	1.01	.52
Northern harrier	1.46	none	1.82	none
White-tailed kite	1.66	.84	2.64	.52
Western burrowing owl	1.26	none	1.63	none

Foothill Yellow-legged Frog

The proposed project may affect potential breeding and dispersal habitat for foothill yellow-legged frogs. If they are present in the creek channel or along the creek bank during construction, they could be injured or killed by construction activities or personnel. In addition, dewatering aquatic habitat during the period when eggs or larvae are developing could result in the loss of frogs. Although construction in the stream channel would be conducted outside a portion of the breeding season, tadpoles could still be present within the channel through the summer foothill yellow-legged frogs bred in San Luis Obispo or Prefumo creeks.

Potential impacts on foothill yellow-legged frog would be the same under both Alternative 3 and Alternative 6, except for the amount of habitat affected:

- Implementation of Alternative 3 would result in a permanent loss of about 0.40 acre and a temporary disturbance of about 0.84 acre of potential foraging habitat (riparian forest) in the study area (see Figure 2.3-1). This alternative would also result in a permanent loss of about 0.11 acre and a temporary disturbance of about 0.19 acre of aquatic dispersal/summer habitat for the foothill yellow-legged frog.
- Implementation of Alternative 6 would result in a permanent loss of about 1.01 acres and a temporary disturbance of about 0.52 acre of potential foraging habitat (riparian forest) in the study area (see Figure 2.3-2). This alternative would also result in a permanent loss of about 0.22 acre and a temporary disturbance of about 0.11 acre of aquatic dispersal habitat for the foothill yellow-legged frog.

Southwestern Pond Turtle

Southwestern pond turtles are very sensitive to disturbances and quickly retreat into the water when threatened. If pond turtles are present in the creek channel or along the creek bank during in-channel construction within Prefumo and San Luis Obispo creeks, they could become entrapped in areas being dewatered during installation of diversion structures within these creeks in the construction work area. Although the nature of potential impacts on southwestern pond turtle would be the same under both Alternative 3 and Alternative 6, the amount of habitat affected would be different.

The differences in impacts on riparian and aquatic habitat between Alternatives 3 and 6 are described below:

- Implementation of Alternative 3 would result in a permanent loss of about 0.40 acre and a temporary disturbance of about 0.84 acre of riparian forest in the study area (see Figure 2.3-1). This alternative would also result in a permanent loss of about 0.07 acre and a temporary disturbance of about 0.19 acre of perennial aquatic habitat for the southwestern pond turtle.
- Implementation of Alternative 6 would result in a permanent loss of about 1.01 acres and a temporary disturbance of about 0.52 acre of riparian forest within the study area (see Figure

2.3-2). This alternative would also result in a permanent loss of about 0.15 acre and a temporary disturbance of about 0.11 acre of perennial aquatic habitat for the southwestern pond turtle.

Two-striped Garter Snakes

If two striped-garter snakes are present in the creek channel or along the creek bank during in-channel construction, it is expected that they would move out of the way of construction equipment and would not be harmed. The potential exists for two-striped garter snakes to become entrapped in areas being dewatered during installation of diversion structures within Prefumo and San Luis Obispo creeks in the construction work area.

Potential impacts on two striped-garter snakes would be the same under both Alternative 3 and Alternative 6.

Sensitive and Non-sensitive Migratory Birds

The proposed project would result in a permanent loss and temporary disturbance of potential nesting habitat for the Cooper's hawk, white-tailed kite, and other migratory birds. Vegetation removal or noise associated with construction activities could result in the disturbance of nesting migratory birds if active nests are present within or near the permanent or temporary construction impact area. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at active nests in or near the study area. Such disturbance would violate California Fish and Game Code Sections 3503 (bird nests), 3503.5 (raptor nests), 3511 (fully protected birds), 3513 (migratory birds), and the Migratory Bird Treaty Act.

Potential impacts on Cooper's hawks, white-tailed kites, and other migratory birds would be the same for both Alternative 3 and Alternative 6. Impacts to habitat for these species are shown for both alternatives in Table 2.3-3.

Western Burrowing Owl

The proposed project would result in a permanent and temporary loss of annual grassland and agricultural lands that provide potential habitat for burrowing owls. Ground-disturbing activities or noise associated with construction activities could result in the disturbance of breeding or wintering burrowing owls if active burrows are present within or near the permanent or temporary construction impact area. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at active nests in or near the study area. The Migratory Bird Treaty Act and Section 3503.5 of the California Fish and Game Code prohibit the "take" of migratory birds, nests, and young.

Potential impacts on burrowing owls would be the same for both Alternative 3 and Alternative 6. Impacts to habitat for this species are shown for both alternatives in Table 2.3-3.

Swallows

Changes to the existing bridges and box culverts in the study area could result in the direct loss of active swallow nests. Loss of a nest could in turn result in the death of adults, young, or eggs. Construction activities that would remove any occupied nests with eggs or young would violate California Fish and Game Code Sections 3503 (active bird nests), 3513 (migratory birds), and the Migratory Bird Treaty Act (50 Code of Federal Regulations 10 and 21).

Potential impacts on nesting swallows would be the same for both Alternative 3 and Alternative 6. Impacts to habitat for this species are shown for both alternatives in Table 2.3-3.

Avoidance, Minimization, and/or Mitigation Measures

Many of the project design and avoidance features described in other sections of this document would also benefit these animal species. Similarly, many of the biological mitigation measures listed in other sections are also pertinent. In addition to those, the following mitigation measures would be used for wildlife:

Mitigation Measure BIO-12: Install Fencing and Monitor Dewatering Activities within the Construction Work Area and Relocate Sensitive Aquatic Wildlife, if Necessary. To avoid construction-related impacts on foothill yellow-legged frogs, southwestern pond turtles, and two-striped garter snakes during work within Prefumo and San Luis Obispo creeks, fences would be built upstream and downstream of the dewatering area to prevent these species from entering the construction area. The fences would stand at the edge of or just outside the area to be dewatered. The fences would be perpendicular to the creek and extend 100 feet out from the center of the creek on each side.

The City would retain a qualified wildlife biologist to monitor fence installation and dewatering activities associated with installation of cofferdams or water-diversion structures within Prefumo and San Luis Obispo creeks. Before dewatering, the area would be surveyed for all life stages of the foothill yellow-legged frog, southwestern pond turtle, and two-striped garter snake. If any were found, the biologist would move them outside the barrier fences to suitable habitat at least 300 feet from the construction area.

In addition, if a foothill yellow-legged frog, southwestern pond turtle, or two striped garter snake becomes entrapped in an area being dewatered or diverted, the biologist would help the contractor provide a means for the animal to voluntarily move out of the construction area, or the biologist would actually move the animal to an area outside the barrier fences. The biologist would have a valid scientific collecting permit as well as authorization from the Department of Fish and Game to relocate any of these three California species of special concern.

Mitigation Measure BIO-13: Conduct Preconstruction Nesting Bird and Raptor Surveys and Establish a No-Disturbance Buffer, if Necessary. To avoid and minimize impacts on

nesting migratory birds and raptors, the City or its contractor would implement one or more of the following surveys and restrictions:

- If feasible, conduct all tree and shrub removal and grading (within annual grasslands) during the non-breeding season (generally between August 16 and February 28) for most migratory birds and raptors.
- If construction activities are scheduled to occur during the breeding season for migratory birds and raptors (generally between March 1 and August 15), a qualified wildlife biologist (with knowledge of the species to be surveyed) would be retained to conduct the following focused nesting surveys before the start of construction and within the appropriate habitat:
 - For Cooper’s hawk, white-tailed kite, and other tree-nesting raptors: Tree-nesting raptor surveys would be conducted before any construction disturbances occurring in or near suitable nesting habitat (riparian forest) within the permanent and temporary impact area and up to 300 feet outside the permanent and temporary impact area between March 1 and August 15.
 - For tree- and shrub-nesting migratory birds: Tree- and shrub-nesting surveys for the loggerhead shrike and other non-special-status migratory birds and raptors would be conducted before any tree and shrub trimming or removal activities within the permanent and temporary impact area between March 1 and August 15.
 - For northern harrier and other ground-nesting migratory birds: Ground-nesting surveys for northern harrier and other ground-nesting migratory birds would be conducted before any construction disturbances occur in freshwater marsh, seasonal wetland, annual grassland, or agricultural areas within the permanent and temporary impact area between March 1 and August 15.

Nesting surveys should be conducted within 1 week of beginning construction activities in suitable habitat between March 1 and August 15. If no active nests were detected during these surveys, no additional mitigation would be required.

If surveys indicate that migratory bird or raptor nests are found in the survey area identified above, a no-disturbance buffer would be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a qualified wildlife biologist determines that the young have fledged (left the nest on their own – usually in late June to mid-July). The extent of these buffers would be determined by the biologist (coordinating with the City, Caltrans, and California Department of Fish and Game) and would depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. If construction activities are scheduled to occur within an area that supports an active nest site or within an established no-disturbance buffer,

construction would be delayed until after the breeding season or until the young have fledged (as determined by the biologist).

Mitigation Measure BIO-14: Conduct a Preconstruction Survey for Burrowing Owl in Accordance with the California Department of Fish and Game Guidelines and Establish a No-Disturbance Buffer, if Necessary. The California Department of Fish and Game (1995) recommends that a preconstruction survey be conducted to find active burrowing owl burrows in the construction work area and within a 250-foot-wide buffer zone around the construction area. A qualified wildlife biologist would be retained to conduct a preconstruction survey for active burrows according to the California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 1995). The preconstruction survey would be conducted within 30 days before construction activities begin. If no burrowing owls were detected, no further mitigation would be required. If active burrowing owl burrows were found in or near the permanent or temporary construction impact area, the City would implement the following measures:

- Occupied burrows would not be disturbed during the breeding season (February 1 to August 31).
- When destruction of occupied burrows is unavoidable during the non-breeding season (September 1 to January 31), unsuitable burrows would be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on protected lands approved by the California Department of Fish and Game. Newly created burrows would follow guidelines established by the California Department of Fish and Game.

Mitigation Measure BIO-15: Compensate for the Loss of Burrowing Owl Habitat in Accordance with Department of Fish and Game Guidelines. If active burrowing owl burrows are found within the permanent or temporary construction impact area and the owls must be relocated, the City would offset the loss of foraging and burrow habitat in the construction area by complying with the California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation California Department of Fish and Game 1995).

Mitigation Measure BIO-16: Conduct a Preconstruction Nesting Swallow Survey and Install Exclusion Netting on the Underside of Bridges or Culverts to Prevent Swallows from Nesting. To avoid impacts on nesting swallows and other bridge-nesting migratory birds that are protected under the Migratory Bird Treaty Act and Fish and Game Codes, the City would implement the following avoidance and minimization measures:

- If bridge or box culvert construction would take place during the breeding season (generally between February 15 and August 31), a qualified wildlife biologist would be hired to inspect these areas during the swallows' non-breeding season (September 1 through February 14). If nests are found and are abandoned, they may be removed. To avoid damaging active nests, all nests must be removed before the breeding season begins (February 15).

- After nests are removed, the undersides of the bridges and box culverts may be covered with 0.5- to 0.75-inch mesh net or poultry wire, or nests may be hosed and scraped every three days during construction to prevent swallows from reestablishing new nests. All net installation would occur before February 15. The netting would be anchored so that swallows cannot attach their nests through gaps in the net.
- If netting of the bridges and box culverts does not occur by February 15 or more than three days lapse between scraping and hosing and swallows colonize these areas, changes to the structure supporting active swallow nests should not begin before September 1 of that year or until a qualified biologist has determined that the young have fledged and all nest use has been completed.

If appropriate steps are taken to prevent swallows from constructing new nests, work can proceed at any time of the year.

2.3.4 Threatened and Endangered Species

Threatened or endangered species are species of plants and animals that are formally listed as endangered under the Federal Endangered Species Act or the California Endangered Species Act. Caltrans is required to determine if the proposed projects would involve—and possibly affect—proposed or listed species or their critical habitat.

Regulatory Setting

The main 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 endangered and threatened species and the ecosystems on which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, and Caltrans as assigned, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanographic and Atmospheric Administration 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 analysis of threatened/endangered species is based on a review of existing information, coordination with resources agencies, and a variety of field surveys reported in detail in the Natural Environment Study Report (2008), the Biological Assessment for South-Central California Coast Steelhead (2008), and the Biological Assessment for California Red-legged Frog (2008). Biological field surveys were conducted between February 2006 and August 2006.

The study area for biological resources was set around the existing Los Osos Valley Road and US 101 interchange and included portions of US 101, Los Osos Valley Road, Calle Joaquin Road, and South Higuera Street (see Figures 2.3-1 and 2.3-2). The study area lies in San Luis Obispo County within the San Luis Obispo and Pismo Beach 7.5-minute U.S. Geological Survey quadrangles. Land uses in the study area are mostly urban and agricultural.

The study area sits in the known ranges of, and provides suitable habitat for, two threatened species: the California red-legged frog (*Rana aurora draytonii*) (federally listed as threatened) and south-central California coast steelhead trout (federally listed as threatened). See Table 2.3-4.

Table 2.3-4: Threatened Species Potentially Occurring in the Study Area

Common Name, Scientific Name	Legal Status		Habitat Requirements	Species Present in Study Area?	Specific Habitat Present in Study Area?	Rationale
	Federal	State				
Central California Coast Steelhead <i>Oncorhynchus mykiss</i>	Threatened	–	Requires silt free gravel for spawning. Juveniles require cool water, refuge cover, and sufficient dissolved oxygen.	Yes	Yes	Species has been documented within San Luis Obispo and Pismo creeks in the study area.

Common Name, Scientific Name	Legal Status		Habitat Requirements	Species Present in Study Area?	Specific Habitat Present in Study Area?	Rationale
	Federal	State				
California red-legged frog <i>Rana aurora draytonii</i>	Threatened	Species of Special Concern	Permanent and semi-permanent aquatic habitats, such as creeks and coldwater ponds, with emergent and submergent vegetation. May aestivate in rodent burrows or cracks during dry periods.	Not observed	Yes	Within the study area, suitable habitat is present within Prefumo Creek and San Luis Obispo Creek and within the adjacent wastewater treatment ponds. Several California red-legged frogs were observed in wastewater treatment facility during protocol surveys (see Appendix F).

California Red-Legged Frog

California red-legged frog is a federally listed species that may be affected by the proposed project although no critical habitat for this species is present within the project area.

Two individual California red-legged frogs were observed during protocol-level surveys in the raceways at the wastewater treatment plant adjacent to the project area. No California red-legged frogs were found in San Luis Obispo, Prefumo, or Froom creeks during the surveys. These creeks do not provide suitable breeding habitat within the project area; however, riparian corridors associated with San Luis Obispo and Prefumo creeks could provide potential foraging habitat, summer habitat, and dispersal corridors.

California Coast Steelhead Trout

California Coast steelhead is a federally listed species that may be affected by the proposed project and critical habitat for this species is present within the project area.

In the study area, San Luis Obispo Creek supports rearing habitat for juvenile steelhead trout and is a known migration corridor for adult steelhead and out migrating juveniles, including steelhead smolts. Within the study area, Prefumo Creek also supports migratory habitat for adult and juvenile steelhead trout. Summer rearing habitat may be available in wet years; it is unknown how this habitat supports summer rearing.

The proposed project has potential to affect the federally listed south-central California Coast steelhead and its Critical Habitat. Critical habitat was redesignated for south-central California coast steelhead by the National Oceanic and Atmospheric Administration Fisheries (70 Code of Federal Regulations 52574, September 2, 2005). San Luis Obispo, Prefumo, and Froom creeks

are included in the critical habitat designation. The south-central California coast steelhead trout was listed as threatened by the National Oceanic and Atmospheric Administration Fisheries on August 18, 1997 (62 Code of Federal Regulations 43937) and is a California state species of special concern.

Consultation will also be necessary for the federally listed California red-legged frog and for the south-central California Coast steelhead trout and its Critical Habitat, which has the potential to be affected by the proposed project. Consultation for federally listed anadromous fish is under the jurisdiction of the National Oceanic and Atmospheric Administration Fisheries Service. A Biological Assessment addressing potential project effects on south-central California Coast steelhead has been prepared for the proposed project.

Environmental Consequences

Table 2.3-5 shows permanent and temporary impacts to habitat for threatened species in the project area. Possible impacts for each species are described in the text that follows.

Table 2.3-5 Impacts to Habitat for Threatened Species

Special-Status Animals	Alternative 3		Alternative 6	
	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
California red-legged frog	.47	1.03	1.16	.63
California coast steelhead trout	.51	1.03	1.23	.63

California Red-legged Frog

The proposed project may adversely affect California red-legged frog foraging, summer, or dispersal activities during construction efforts like dewatering or diversion, vegetation clearing, and heavy equipment use in riparian habitat. Potential impacts on the California red-legged frog would be the same under both Alternative 3 and Alternative 6, except for the amount of habitat affected as shown in Table 2.3-5 and described below:

- Implementation of Alternative 3 would result in a permanent loss of about 0.40 acre and a temporary disturbance of about 0.84 acre of potential foraging habitat (riparian forest) in the study area (see Figure 2.3-1). This alternative would also result in a permanent loss of about 0.11 acre and a temporary disturbance of about 0.19 acre of aquatic dispersal/summer habitat for the California red-legged frog.
- Implementation of Alternative 6 would result in a permanent loss of about 1.01 acres and a temporary disturbance of about 0.52 acre of potential foraging habitat (riparian forest) in the

study area (see Figure 2.3-2). This alternative would also result in a permanent loss of about 0.22 acre and a temporary disturbance of about 0.11 acre of aquatic dispersal habitat for the California red-legged frog.

South-Central California Coast Steelhead Trout

The project is expected to take three dry seasons, but work for the creek crossings and riparian areas would be restricted to two dry seasons. The number of working days in these sensitive areas would be determined during the permit phase, but would not exceed 300 days. The removal of riparian vegetation along San Luis Obispo and Prefumo creeks is likely to adversely affect rearing habitat for juvenile steelhead by reducing cover and shade. However, these affects largely would be temporary until planted vegetation becomes established in the affected areas. Changes in water temperature, channel morphology, and hydrology could occur due to in-channel activities. However, no measurable changes to water temperature are anticipated because the amount of existing shade that would be affected would be small, shade impacts would be temporary, and the additional shade created by bridge widening would offset, in part, shade loss associated with riparian vegetation and shaded riverine aquatic cover removal. Disturbance, injury, and mortality of individual fish could occur from work in and adjacent to water bodies, from fish salvage and relocation activities, and from pile driving. In addition, incidental take of steelhead could occur during dewatering of the stream channel to isolate work areas for bridge pier construction and during pile driving. However, the action is expected to have a minimal long-term effect on the stream or fish habitat, including spawning, rearing, or migratory habitat. Various measures have been identified to avoid and reduce potential effects on listed species and critical habitat.

The proposed extension of the arch culvert on San Luis Obispo Creek at the Los Osos Valley Road stream crossing would avoid the potential for creating an impediment to fish passage because the natural channel bottom would be maintained and the oversized culvert would avoid or minimize the potential to create adverse hydraulic characteristics at this stream crossing relative to existing conditions.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure BIO-26: Follow Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program [HAD-CA, File #: Section 7 within the Ventura U.S. Fish and Wildlife Service (US Fish and Wildlife Service), Document 3: S38192] (1-8-02-F-68).

1. Only biologists approved by the U.S Fish and Wildlife Service would participate in activities associated with the capture, handling, and monitoring of the California red-legged frog.
2. Ground disturbance would not begin until written approval is received from the U.S. Fish and Wildlife Service that the biologist is qualified to conduct the work.

3. Only biologists approved by the U.S Fish and Wildlife Service would survey aquatic and riparian areas at the project site 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist would be allowed sufficient time to move them from the site before work activities begin. The Service-approved biologist would relocate the California red-legged frog the shortest distance possible to a location that contains suitable habitat and where it would not be affected by the activities associated with the proposed project. The Service-approved biologist would maintain detailed records of any individuals that are moved (e.g. size, coloration, any distinguishing features, photographs) to assist him or her in determining whether relocated animals are returning to the original point of capture.
4. Before any activities begin on the project, a biologist approved by the U.S Fish and Wildlife Service would conduct a training session for all construction personnel. At a minimum, the training would include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
5. A biologist approved by the U.S Fish and Wildlife Service would be present at the work site until all California red-legged frogs are removed, workers have been instructed, and disturbance of habitat is completed. After this time, the state or local sponsoring agency would designate a person to monitor onsite compliance with all minimization measures. The Service-approved biologist would ensure that this monitor receives the training outlined in Measure 4 and in the identification of the California red-legged frog. If the monitor or the approved biologist recommends that work be stopped because California red-legged frogs would be affected to a degree that exceeds the levels anticipated by the U.S. Fish and Wildlife Service during review of the proposed action, the monitor or biologist would notify the resident engineer (the engineer directly overseeing and in command of construction activities) immediately. The resident engineer would either resolve the situation by eliminating the effect immediately or require that all action that is causing these effects be halted. If work were stopped, the U.S. Fish and Wildlife Service would be notified as soon as is reasonably possible.
6. During project activities, all trash that may attract predators would be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris would be removed from work areas.
7. All refueling, maintenance, and staging of equipment and vehicles would occur at least 60 feet from riparian habitat or water bodies and, preferably, not in a location from where a spill

would drain directly toward aquatic habitat. The monitor would ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the City would ensure that a plan is in place for prompt and effective response to any accidental spills. All workers would be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

8. Project sites would be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials would be used to the extent practicable. Invasive, exotic plant would be controlled to the maximum extent practicable. This measure would be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and the City determine that that it is not feasible or practicable. (For example, an area disturbed by construction that would be used for future activities need not be revegetated.)
9. Habitat contours would be returned to their original configuration at the end of project activities. This measure would be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and the City determine that it is not feasible or modification of original contours would benefit the California red-legged frog.
10. The number of access routes, size of staging areas, and the total area of the activity would be limited to the minimum necessary to achieve the project goal. Environmentally Sensitive Areas would be established to confine access routes and construction areas to the minimum area necessary to complete construction, and to minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.
11. The City would attempt to schedule work activities for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum degree practicable, during the breeding season (November through May). Isolated pools that are important to maintain the California red-legged frog through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and informal consultation between the City and U.S. Fish and Wildlife Service during project planning should be used to assist in scheduling work activities to avoid sensitive habitats during key times of the year.
12. To control sedimentation during and after project implementation, the City would implement best management practices outlined in any authorizations or permits, issued under the authorities of the Clean Water Act that it receives for the specific project. If best management practices are ineffective, the City would attempt to remedy the situation immediately, in consultation with the Service. If a work site were to be temporarily dewatered by pumping, intakes would be completely screened with wire mesh not larger than 0.2 inch to prevent any

California red-legged frog from entering the pump system. Water would be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. The methods and materials used in any dewatering would be determined by the City in consultation with U.S. Fish and Wildlife Service on a site-specific basis. Upon completion of construction activities, any diversions or barriers to flow would be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed would be minimized to the maximum extent possible; any imported material would be removed from the streambed upon completion of the project.

13. Unless approved by U.S. Fish and Wildlife Service, water would not be impounded in a manner that may attract the California red-legged frog.
14. A biologist approved by the U.S Fish and Wildlife Service would permanently remove any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes from the project area, to the maximum extent possible. The Service-approved biologist would be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.
15. To ensure that diseases are not conveyed between work sites by the biologist approved by the U.S Fish and Wildlife Service, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force would be followed at all times.

Central California Coastal Steelhead Trout

As part of the proposed action, the City would implement preventive actions to avoid and minimize potential adverse construction effects on aquatic and riparian resources by replanting riparian vegetation disturbed or removed during construction. A Storm Water Pollution Prevention Plan would be implemented as part of the National Pollutant Discharge Elimination System's General Construction Activity Storm Water Permit to minimize the potential for sediment input to the aquatic system, where it could adversely affect steelhead spawning and rearing habitat. A toxic materials control and spill response plan would be implemented to regulate the use of hazardous materials, such as the petroleum-based products used as fuel and lubricants for equipment and other potentially toxic materials associated with project construction.

Any activity that would temporarily divert flow from any segment of the river would require implementation of a variety of constraints. Pile-driving activities would also require sound minimization measures. Although construction would occur during the low-flow period (June 1 through October 1), in-channel construction activities could result in some harassment or delay of migrating juvenile steelhead trout from noise, artificial light, and other disturbances. Injury or death could also occur due to pile driving and fish salvage and relocation efforts. These disturbances are expected to take place over two dry seasons, each four months in duration.

Some juvenile steelhead trout are expected to be in the project area during in-channel construction and would be affected by project activities. Juvenile survival and growth could be affected. Implementation of avoidance and minimization measures described under riparian forest and seasonal wetlands, along with the following measures would ensure that the proposed project avoids and minimizes potential adverse construction effects on steelhead trout in San Luis Obispo and Prefumo creeks. The measures below apply to both creeks:

Mitigation Measure BIO-17: Limit In-Channel Construction Activities to the Low-Precipitation Period. In-channel construction, including riverbank and channel bed construction below the ordinary high-water mark, would be limited to the summer low-precipitation period (June 1 to October 1) to minimize adverse effects on adult fish spawning and smolt migration. Project construction in the channel would also be subject to the following constraints:

- Construction requiring stream dewatering, stream crossings, or work in the channel bed would not start before June 1. Upstream and downstream passage for fish, including juvenile steelhead, would be provided through or around construction sites at all times. Cofferdams would be installed in all creeks to divert stream flow around each footing excavation. The construction period limits would also apply to a pipe diversion system that would be needed on San Luis Obispo Creek and Prefumo Creek. Limiting in-channel construction to the June 1 to October 1 period would achieve two goals:
 - Construction would not be concurrent with the primary migration and spawning periods of steelhead.
 - The length of the construction period would be maximized, thereby reducing the potential for in-channel construction (i.e., below the ordinary high-water mark) to have to be extended beyond October 1.

Minimization Measure BIO-18: Implement Water Quality Measures. The City would avoid or minimize increased sediment input to the project area channel. As part of the National Pollution Discharge Elimination System's General Construction Activity Storm Water Permit, a Storm Water Pollution Prevention Plan would be implemented that includes the following:

- Conducting all construction work according to site-specific construction plans that minimize the potential for sediment input to the aquatic system.
- Identifying all areas requiring clearing, grading, revegetation, and recontouring, and minimizing the areas to be cleared, graded, and recontoured.
- Grading spoil sites to minimize surface erosion.
- Avoiding riparian and wetland vegetation wherever possible and identifying and fencing specific trees to protect existing riparian habitat.
- Covering bare areas with mulch and revegetating all cleared areas.

- Avoiding equipment operation in flowing water during in-channel activities by constructing cofferdams and diverting all stream flows through or around construction sites.
- Constructing sediment catch basins across stream channels immediately below the project site when performing in-channel construction to prevent silt- and sediment-laden water from entering the main stream flow (accumulated sediments would be periodically removed from the catch basin).

Increased pollutant input to the project area channel would also be minimized and avoided by:

- Preventing raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses.
- Establishing a spill prevention and countermeasure plan before project construction that includes strict onsite handling rules to keep construction and maintenance materials out of drainages and waterways
- Cleaning up all spills immediately according to the spill prevention and countermeasure plan and notifying California Department of Fish and Game and National Oceanic and Atmospheric Administration Fisheries Service immediately of any spills and cleanup activities.
- Providing areas located outside the ordinary high-water mark for staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants.
- Removing vehicles from the normal high-water area of the waterway before refueling and lubricating.
- Avoiding operation of equipment in flowing water.

Implementation of measures to avoid or minimize the effects of increased sediment input would also avoid and minimize increased input of pollutants associated with sediments (e.g., mercury) and the potential for subsequent effects on steelhead trout.

Mitigation Measure BIO-19: Implement Stream Diversion Restrictions. Flow would be diverted in San Luis Obispo Creek and Prefumo Creek during bridge widening and other in-channel work. Flow would be diverted from June 1 to October 1. Any activity that temporarily diverts flow from any segment of the creeks would trigger implementation of the following constraints:

- Before flow is diverted, cofferdams would be placed so that flow to river segments downstream from the construction site would not be interrupted.
- Subject to the sufficiency of ambient conditions, adequate fish passage conditions would be sustained by maintaining contiguous flows, avoiding the creation of vertical drops in excess

of 6 inches, and maintaining suitable water velocities (i.e., 8 feet per second or less) and water depths (minimum of 1 foot).

Mitigation Measure BIO-20: Avoid Stranding Impacts to Fish in Dewatered Areas. A qualified fish biologist would be onsite during the installation of cofferdams and during the cofferdam dewatering process to capture and move trapped salmonids and other fish. The fish would be relocated to the nearest suitable habitat unaffected by construction activities and upstream of the work area. Within temporarily drained stream channel areas, salvage activities would be initiated before or at the same time as stream area draining and completed within a timeframe necessary to avoid injury and death of steelhead trout. Protocols for the capture, handling, and release of fish would be developed in cooperation with the National Oceanic and Atmospheric Administration Fisheries Service, California Department of Fish and Game, the City, and Caltrans. Fish biologists would contact the National Oceanic and Atmospheric Administration Fisheries Service and California Department of Fish and Game immediately if any steelhead trout are found dead or injured.

Mitigation Measure BIO-21: Avoid and Minimize Impacts to Spawning Habitat. The City would, to the extent practicable, avoid disturbance to any spawning gravel beds located in the study area on San Luis Obispo Creek. If disturbance to the gravel cannot be avoided, the gravel would be removed temporarily and replaced to pre-disturbance conditions. Before returning gravels to the channel following construction, gravels would be washed to remove fines before they are placed back into the creek channel. If it becomes necessary to augment disturbed gravels with gravel from outside sources, only washed river gravel (to remove fines) appropriately sized for adult steelhead (0.5 inch to 3 inches) would be used.

Mitigation Measure BIO-22: Minimize Noise Impacts from Pile Driving. Potential injury and death associated with pile driving would be avoided or minimized by the following measures:

- In-channel construction would be limited to the summer low-flow period (June 1 to October 1) when stream flow in the creek is typically low, thereby minimizing the potential for sound pressure waves to travel long distances.
- Restriction of pile driving activities to the low-flow period coincides with the least likely occurrence of upstream migrating adults and downstream steelhead smolt migration.
- The smallest pile driver and minimum force necessary would be used to complete the work.
- Pile driving would be done within the dewatered cofferdams.

Mitigation Measure BIO-23: Minimize Loss of Steelhead Spawning and Rearing Habitat as a Result of Permanent Changes to Stream Hydraulics, Sediment Processes, and Channel Bottom Stabilization. The potential for loss of steelhead spawning and rearing habitat would be avoided or minimized by the following measures:

- The amount of riparian vegetation removal, including vegetation providing shaded riverine aquatic cover, substrate, and in-stream woody material necessary to ensure suitable fish passage conditions, would be minimized, and existing spawning and rearing habitat would be maintained.
- Disturbance to the stream width, depth, velocity, and slope would be minimized, and modified or disturbed portions of the stream, banks, and riparian areas would be restored as nearly as possible to their pre-project contours (i.e., elevations, profile, and gradient).
- Native riparian vegetation and/or large woody material would be included where rock slope protection (rock slope protection) is needed.
- Environmentally sensitive areas would be fenced to prevent encroachment of equipment and personnel into riparian areas, stream channels, and banks to the maximum extent practicable (see Measure BIO-1).
- Disturbance and removal of aquatic vegetation would be avoided to the extent practicable; temporary fills, cofferdams, and other in-channel structures would be removed in a manner that minimizes disturbance to downstream flows and water quality and restores pre-existing streambed gradient and contours; and fine sediments removed downstream of the Los Osos Valley Road bridge (about 200 feet) would be replaced with appropriately sized spawning gravels (0.5 inch to 3 inches).

Mitigation Measure BIO-24: Avoid Substantial Increases in Water Temperature as a Result of Lost Shade and Disturbance to Streambed and Banks. The potential for substantial increases in water temperature would be avoided or minimized by the following measures:

- Exclusionary fencing would be used to minimize the potential for the accidental removal of more vegetation than is necessary to complete construction (see Measure BIO-1).
- Soil compaction would be minimized by using equipment that can reach over sensitive areas, thereby ensuring suitable soil conditions for mitigation plantings.
- Disturbance to the stream width, depth, velocity, and slope would be minimized and modified or disturbed portions of the stream, banks, and riparian areas would be restored as nearly as possible to their pre-project contours (i.e., elevations, profile, and gradient); and gaps in the post-construction canopy (i.e., shade), would be reduced by restricting extensions of streambank rock slope protection or other bank protection (e.g., sheet piles or bank and channel armoring) to the minimum necessary to protect essential infrastructure.

2.4 Construction Impacts

Traffic Management

Major traffic delays are not expected due to the construction staging. Most construction would be accomplished using conventional traffic controls. Freeway traffic would be maintained with two lanes of traffic in each direction continuing through the falsework for the overcrossing widening. Falsework erection and removal would be performed during low traffic periods. Median crossovers would be used temporarily to maintain northbound flow. Southbound flow would be detoured onto the existing southbound off-ramp, through the intersection of Los Osos Valley Road, and back onto the freeway via the existing southbound on-ramp. Such activities would be restricted to periods when a single lane in each direction would be sufficient, which is likely at night.

The widening and reconstruction of the ramps would require some brief ramp closures. For the northbound off-ramp and southbound on-ramp closures, traffic would be detoured to the Higuera/US 101 interchange. Shorter closures would be scheduled for the northbound on-ramp and southbound off-ramp; those closures would require traffic to use ramps at Prado Road and Madonna Road.

Minimization Measure TRA-1: Prepare and Implement a Traffic Control Plan: In accordance with the City of San Luis Obispo policy on street closures and traffic diversion for arterial and collector roadways, the construction contractor would prepare a traffic control plan per the most current version of the Manual on Uniform Traffic Control Devices and the California Supplement to be approved by the City prior to construction.

The traffic control plan would include the following:

- A street layout that shows the location of construction activity and surrounding streets to be used as detour routes, including “special signage.”
- The tentative start date and construction duration for each phase of construction.
- The name, address, and emergency contact number for those responsible for maintaining the traffic control devices during the course of construction.
- Written approval to implement traffic control from other agencies, as needed.

Additionally, the traffic control plan would include the following stipulations:

- Provide access for emergency vehicles at all times.
- During lane closures, notify the City of San Luis Obispo Fire and Police Departments of construction locations to ensure that alternative evacuation and emergency routes are designed to maintain response times during construction periods, if necessary.

- Maintain access for driveways and private roads, except for brief periods of construction, in which case property owners would be notified.
- Limit construction-related vehicle and equipment parking to the staging area. Or provide adequate off-street parking or use designated public parking areas for construction-related vehicles not in use throughout the construction period.
- Maintain pedestrian and bicycle access and circulation during project construction, where safe to do so. If construction encroaches on a sidewalk, provide a safe detour for pedestrians at the nearest painted crosswalk. If construction encroaches on a bike lane, post warning signs that indicate bicycles and vehicles are sharing the roadway.
- Provide traffic controls to warn motorists of construction activity. Such controls may include flag persons wearing Occupational Safety and Health Administration-approved vests and using the “Stop/Slow” paddle.
- Post standard construction warning signs in advance of the construction area and at any intersection that provides access to the construction area.

Utilities/Emergency Services

Project construction would generate a small amount of solid waste through the removal of earthen material from the channel bottom during construction of support infrastructure for the bridge, and general debris from project construction. Upon completion, the expanded bridge would not generate any solid waste. It is expected that the small amount of solid waste generated by project construction would be disposed of at an appropriate landfill that can easily accommodate the small volume of solid waste.

Cultural Resources

Mitigation Measures CR-1 through CR-3 would minimize the adverse effects and/or mitigate such late discoveries.

Mitigation Measure CR-1: Stop Work if Buried Cultural Resources Are Inadvertently Discovered. If cultural materials were discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could assess the nature and significance of the find.

Mitigation Measure CR-2: Comply with State Laws Relating to Native American Remains. If human remains were discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the county coroner would be contacted. Per Public Resources Code Section 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission, which would then notify the Most Likely Descendent. At this time, the person who discovered the remains would contact Valerie Levulett, District 5 Heritage

Resources Coordinator, so that she may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Mitigation Measure CR-3: Comply with City Ordinances if Buried Cultural Resources Are Inadvertently Discovered. In accordance with the City of San Luis Obispo Resolution 8459 (1995 series) 4.60 Archaeological Discoveries During Construction, if during the course of a project, archaeological materials are identified by an archaeological monitor, City staff, the project sponsor, or his/her representative or employee, all construction activities that may disrupt those materials would cease. The District 5 Heritage Resources Coordinator, Valerie Levulett, shall be notified immediately of the discovery of archaeological materials.

**Construction Air Quality
Environmental Consequences**

Implementation of the project would result in the construction of widened roads, overcrossings, and embankments, as well as intersection improvements. Temporary construction emissions would result from grubbing/land clearing, grading/excavation, drainage/utilities/subgrade, and paving activities and construction worker commuting patterns. Pollutant emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather. It is anticipated that construction activities would begin in 2010 and continue for approximately 24 to 36 months.

Minimization of construction activities is requested by SLOAPCD when the following emission thresholds are exceeded by both fugitive and combustion emissions, as presented in Table 2.4-1. (Compare to Table 2.4-2.)

Table 2.4-1: Level of Construction Activity Requiring Mitigation

Pollutant of Concern	Thresholds		Amount of Material Moved	
	Tons per Quarter	Pounds per Day	Cubic Yards per Quarter	Cubic Yards per Day
Reactive Organic Gases	2.5 – 6.0	185	247,000 – 593,000	9,100
Nitrogen Dioxide	2.5 – 6.0	185	53,500 -129,000	2,000
PM10	2.5		Any project with a grading area greater than 4 acres of continuously worked area will exceed the 2.5-ton PM ₁₀ quarterly threshold. Combustion emissions should also be calculated based on the amount of cut and fill expected.	

Source: San Luis Obispo Air Pollution Control District

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- Greater than 185 pounds per day of reactive organic gases or nitrogen dioxide emissions requires Best Available Control Technology for construction equipment
- Between 2.5 and 6.0 tons per quarter of reactive organic gases and nitrogen dioxide emissions requires Best Available Control Technology
- Over 6.0 tons per quarter of reactive organic gases or nitrogen dioxide emissions requires Best Available Control Technology plus further mitigation, including emission offsets
- Greater than 2.5 tons per quarter of PM₁₀ requires Best Available Control Technology

Construction emissions of reactive organic gases (ROG), nitrogen dioxide (NO₂), carbon monoxide (CO), and particulate matters less than 10 microns in diameter (PM₁₀) were estimated using the Road Construction Emissions Model (Version 5.2). The ambient air quality effects of traffic emissions were evaluated. Estimation of criteria pollutant emissions associated with the proposed project was done using an emission rate program and vehicle activity data provided by the project traffic engineer.

Vehicular delays from construction would cause temporary build-up of carbon monoxide levels within the roadway corridor. Although sensitive receptors (homes) are present, this would not be a substantial impact because the project does not adversely affect existing conditions.

Temporary Increase in Ozone Precursor (Reactive Organic Gases and Nitrogen Dioxide) and PM₁₀ Emissions could occur during Grading and Construction Activities.

The Road Construction Emissions Model (Version 5.2) was used to estimate construction-related ozone precursors (reactive organic gases and nitrogen dioxide), carbon monoxide, and PM₁₀ emissions from construction activities. It was assumed that construction activities would occur for 8 hours per day over a 12-month period. The total project length was assumed to be 0.70 mile, with a total acreage of 9 acres, and a maximum of 1 acre disturbed per day. Construction activities were divided into separate phases and analyzed separately. The results of modeling for construction activities are summarized in Table 2.4-2.

Table 2.4-2: Construction Emission Estimates in pounds/day

Construction Phase	Reactive Organic Gases	Carbon Monoxide	Nitrogen Dioxide	PM₁₀ Pounds per day [tons per quarter]
Grubbing/land clearing	8	41	45	7
Grading/excavation	9	50	54	8
Drainage/utilities/subgrade	9	46	48	8
Paving	3	16	23	1
Maximum	9	50	54	8 [0.9]
Thresholds Pounds per day [tons per quarter]	185	185	185	75 [2.5]
Exceedance	No	No	No	No

Note: Emissions calculations based on Road Construction Emissions Model (Version 5.2).

The San Luis Obispo Air Pollution Control District recommends the implementation of all feasible, effective, and comprehensive control measures to reduce PM₁₀ emissions from construction activities. These measures are summarized in Table 2.4-3, Construction Control Measures.

In addition to following Caltrans Standard Specifications, the following Minimization Measures AQ-1 through AQ-3 would insure that the project impacts for air quality are minimized.

Minimization Measure AQ-1: Implement California Department of Transportation Standard Specification 7-1.01F and Standard Specification 10.

The project proponent will follow Caltrans Standard Specification 7-1.01F and Standard Specification 10, which address the requirements of the local air pollution control district (San Luis Obispo Air Pollution Control District) and dust control, respectively.

Minimization Measure AQ-2: Implement San Luis Obispo Air Pollution Control District Control Measures for Construction Emissions of PM₁₀.

The project proponent will implement all feasible PM₁₀ control measures required by the San Luis Obispo Air Pollution Control District.

Minimization Measure AQ-3: Implement ARB ATCM Control Measures for Naturally Occurring Asbestos.

In addition, naturally occurring asbestos may exist at the site. A geological survey is required for the site. If the naturally occurring asbestos is found, then the project proponent will implement all feasible control measures required by the San Luis Obispo Air Pollution Control District to comply with the requirements listed in the ARB's Asbestos Airborne Toxic Control Measures for

Construction, Grading, Quarrying, and Surface Mining Operations. Such measures include, but are not limited to, the following:

- a. The San Luis Obispo Air Pollution Control District is notified in writing at least fourteen (14) days before the beginning of the activity or in accordance with a procedure approved by the district.
- b. All the following dust control measures are implemented during any road construction or maintenance activity:
 1. Unpaved areas subject to vehicle traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 % asbestos.
 2. The speed of any vehicles and equipment traveling across unpaved areas must be no more than 15 mph unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 mph from emitting dust that is visible crossing the project boundaries.
 3. Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 % asbestos.
 4. Activities must be conducted so that no track-out from any road construction project is visible on any paved roadway open to the public.

Implementation of appropriate control measures from this list would further minimize air quality impacts from construction activities.

Table 2.4-3 Construction Control Measures

Category	Control Actions
Standard Minimization Measures for Construction Equipment	<ol style="list-style-type: none"> 1. Maintain all construction equipment in proper tune according to manufacturer's specifications. 2. Fuel all off-road and portable diesel-powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, with Air Resources Board certified motor vehicle diesel fuel (non-taxed version suitable for use off-road). 3. Maximize to the extent feasible, the use of diesel construction equipment meeting the Air Resources Board's 1996 or newer certification standard for off-road, heavy-duty diesel engines.
Discretionary Minimization Measures for Construction Equipment	<ol style="list-style-type: none"> 1. Electrify equipment where feasible. 2. Substitute gasoline-powered for diesel-powered equipment, where feasible. 3. Use alternative fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel. 4. Use equipment that has Caterpillar pre-chamber diesel engines.

Category	Control Actions
Construction Best Available Control Technology	1. Install diesel oxidation catalyts (DOC), catalyzed diesel particulate filters (CDPF), or other District approved emission reduction retrofit devices where feasible.
Activity Management Techniques	<ol style="list-style-type: none"> 1. Develop a comprehensive construction activity management plan designed to minimize the amount of large construction equipment operating during any given time period. 2. Schedule construction truck trips during non-peak hours to reduce peak hour emissions. 3. Limit the length of the construction workday period, if necessary. 4. Phase construction activities, if appropriate.
Fugitive Dust Source Category	<ol style="list-style-type: none"> 1. Reduce the amount of the disturbed area where possible. 2. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 miles per hour. Reclaimed (nonpotable) water should be used whenever possible. 3. All dirt stock-pile areas should be sprayed daily as needed. 4. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil-disturbing activities. 5. Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast-germinating native grass seed and watered until vegetation is established. 6. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the Air Pollution Control District. 7. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, road surfaces should be laid as soon as possible after grading unless seeding or soil binders are used. 8. Vehicle speed for all construction vehicles shall not exceed 15 miles per hour on any unpaved surface at the construction site. 9. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code (CVC) section 23114. 10. Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site. 11. Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
All categories	1. Any other control measures approved by the Air Pollution Control District where necessary.

**Construction Noise
Environmental Consequences**

Two types of short-term noise impacts would occur during construction of the project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities would be moved onsite, remain for the duration of each construction phase, and not add to the daily traffic volume in the project vicinity. There would be a relatively high single-event noise exposure potential at a maximum sound level of 87 dBA with trucks passing at 50 feet. (A-weighted decibels or dBA are adjusted to approximate the way humans perceive sound.) However, the projected construction traffic would

be light when compared to the existing traffic volumes on US 101, Los Osos Valley Road, South Higuera Street, and other affected streets; associated long-term noise level change would not be perceptible. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would not be substantial.

The second type of short-term noise impact is related to noise generated during excavation, grading, and roadway construction. Construction is performed in steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and, therefore, the noise levels along the alignments as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 2.4-4 lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Table 2.4-4 Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers, 12,000 to 18,000 feet-lb/blow	81–96	93
Rock Drills	83–99	96
Jackhammers	75–85	82
Pneumatic Tools	78–88	85
Pumps	68–80	77
Dozers	85–90	88
Tractors	77–82	80
Front-End Loaders	86–90	88
Hydraulic Backhoe	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–86	86
Trucks	81–87	86

dBA = A-weighted decibels are adjusted to approximate the way humans perceive sound

Project construction would produce a periodic increase in ambient noise levels in the project vicinity above levels existing without the project. The project is also located within an airport

land use plan, and construction activities would produce noise levels that exceed local criteria for short standards.

Minimization Measures NOI-1 through NOI-3 would reduce construction noise impacts for sensitive receptors adjacent to the project site:

Minimization Measure NOI-1: Implement Caltrans Standard Provision Section 5.1. The provisions are as follows:

“Sound control shall conform to the provisions in Section 7-1.01I (Sound Control Requirements) of the Standard Specifications and these special provisions. The noise level from the Contractor’s operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBA at a distance of 50 feet. This requirement in no way relieves the Contractor from responsibility for complying with local ordinances regulating noise level. The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixer, or transient equipment that may or may not be owned by the contractor. The use of loud signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel. Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.”

Minimization Measure NOI-2: Provide Contact Information for Noise Complaints. A notice of the duration of potential impacts from noise, dust, and glare from the proposed construction would be placed in local news media by the project sponsor two weeks in advance of the beginning of construction. A number would be made available to the public for calls concerning noise impacts or the proposed schedule. If noise complaints are received, temporary barriers of plywood on safety shape can be effective at reducing noise impacts when the line of sight between the source and receiver can be interrupted.

Minimization Measure NOI-3: Limit Night Work to Extent Feasible. Night construction should be avoided. If it cannot be avoided, the contractor would conduct the noisiest operations nearest the residents as early in the evening as possible.

2.5 Cumulative Impacts

Regulatory Setting

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

Environmental Consequences

The project would not result in cumulative impacts that are individually limited or cumulatively considerable. The project effects are mostly temporary and construction related. Cumulative impacts were covered in the appropriate sections above. Since none of these impacts would result in a substantial contribution to a cumulative impact, no further discussion is needed.

2.6 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. In 2002, with the passage of Assembly Bill 1493, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the Air Resources Board to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year. Greenhouse gases related to human activity include carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1,1,1,2-tetrafluoroethane), and HFC-152a (difluoroethane).

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this executive order is to reduce California's greenhouse gas emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020, and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32, the Global Warming Solutions Act of 2006. Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals while further mandating that the 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, signed on October 17, 2006, 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. However, California, in conjunction with several environmental organizations and several other states, sued to force the U.S. Environmental Protection Agency (EPA) to regulate greenhouse gases as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.*, U.S. Supreme Court No. 05-1120. 549 U.S. ____ [2007]. Argued November 29, 2006—Decided April 2, 2007). The court ruled that greenhouse gases do fit within the Clean Air Act's definition of a pollutant, and that the Environmental Protection Agency does have the authority to regulate greenhouse gases. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

Affected Environment

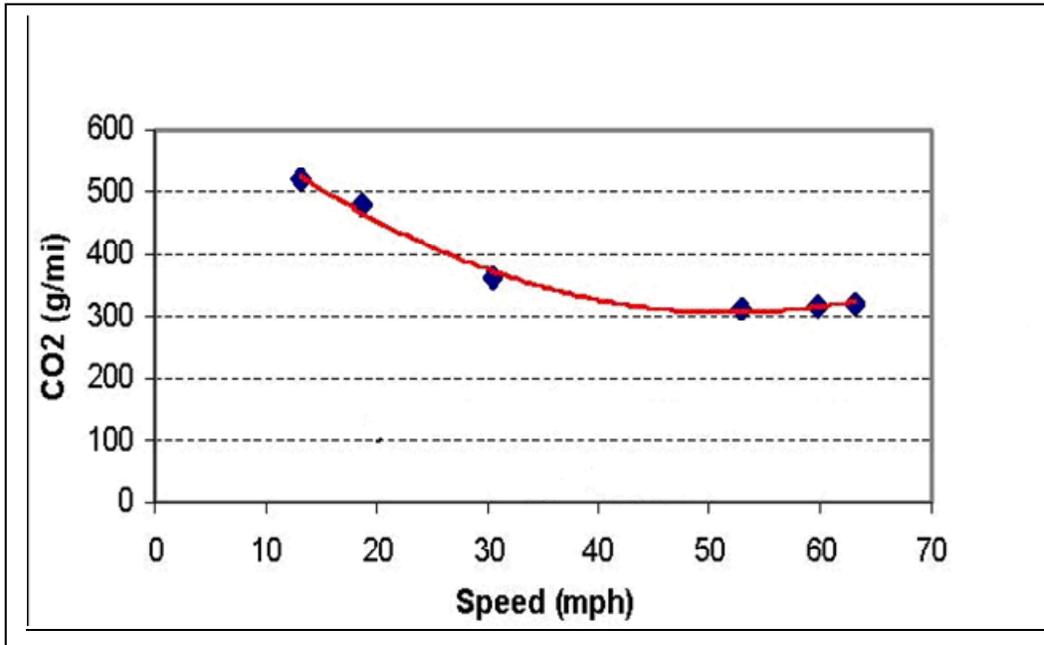
According to Recommendations by the Association of Environmental Professionals on How to Analyze Greenhouse Gas Emissions and Global Climate Change in California Environmental Quality Act Documents (March 5, 2007), an individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases.

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

Transportation's contribution to greenhouse gas emissions is dependent on three factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel.

One of the main strategies in Caltrans' 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 2.6-1 below). Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in greenhouse gas emissions.

Figure 2.6-1 Fleet Carbon Dioxide (CO₂) Emissions vs. Speed (Highway)



Environmental Consequences

The project alternatives under analysis are designed to reduce congestion. Both alternatives improve the current and project level of service for the interchange and would reduce emissions related to regular operations. Introductory discussion of the purpose and need provides the supporting data for both build alternatives and the No-Build Alternative.

Caltrans recognizes the concern that carbon dioxide emissions raise for climate change. However, modeling and gauging the impacts associated with an increase in greenhouse gas emission levels, including carbon dioxide, at the project level is not currently possible. No federal, state, or regional regulatory agency has provided methodology or criteria for greenhouse gas emissions and climate change impact analysis. Therefore, Caltrans is unable to provide a scientific- or regulatory-based conclusion regarding whether the project's contribution to climate change is cumulatively considerable.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans continues to be actively involved on the Governor's Climate Action Team as the Air Resources Board works to implement Assembly Bills 1493 and 32. As part of the Climate Action Program at Caltrans (December 2006), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, 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 and light and heavy-duty trucks. However, it is important to note that control of fuel economy standards is held by the U.S. Environmental Protection Agency and the Air Resources Board.

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

To the extent that it is applicable or feasible for the project, the following measures can also help to reduce the greenhouse gas emissions and potential climate change impacts from projects:

1. Use of reclaimed water—currently 30 percent of the electricity used in California is used for the treatment and delivery of water. Use of reclaimed water helps conserve this energy, which reduces greenhouse gas emissions from electricity production.
2. Landscaping—reduces surface warming and through photosynthesis decreases carbon dioxide.
3. Portland cement—use of lighter color surfaces such as Portland cement helps to reduce the albedo effect (measure of how much light a surface reflects) and cool the surface; in addition, Caltrans has been a leader in the effort to add fly ash to Portland cement mixes. Adding fly ash reduces the greenhouse gas emissions associated with cement production—it also can make the pavement stronger.
4. Lighting—Use of energy efficient lighting, such as LED traffic signals Idling restrictions—for trucks and equipment

Chapter 3 **Comments and Coordination**

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and individual consultations via mail, phone, and in person. This chapter summarizes the agencies and individuals who have been or will be contacted to fully identify, address, and resolve project-related issues through early and continuing coordination.

Endangered Species

California red-legged frog is a federally listed species that may be affected by the proposed project, although no critical habitat for this species is present within the project area. A field meeting was held on April 4, 2006. Attendees included representatives from the County, Caltrans, Dokken Engineering, and Jones & Stokes. Although the U.S. Fish and Wildlife Service was not in attendance, a meeting summary was prepared and sent via e-mail by David Hacker of Caltrans, District 5, to Steve Kirkland and Julie Vanderwier of the U.S. Fish and Wildlife Service on April 11, 2006. The U.S. Fish and Wildlife Service was notified on August 14, 2006 of the positive identification of California red-legged frog during the protocol-level survey effort. Subsequently, a field meeting was held on November 16, 2006 with the City of San Luis Obispo, Caltrans, and the U.S. Fish and Wildlife Service, to review the location of California red-legged frog in relation to this project and the proposed expansion of the Bob Jones Bike Trail.

The proposed project has potential to affect the federally listed south-central California Coast steelhead and its Critical Habitat. Consultation for federally listed anadromous fish is under the jurisdiction of the National Oceanic and Atmospheric Administration Fisheries Service. A Biological Assessment addressing potential project effects on south-central California Coast steelhead was completed in 2008.

Permit Consultations

The U.S. Army Corps of Engineers will be contacted for approval and issuance of a Section 404 Permit for filling or dredging Waters of the United States. A field meeting was held with Bruce Henderson from the U.S. Army Corps of Engineers on December 11, 2007. The California Department of Fish and Game will be contacted for obtaining a 1602 Agreement for Lake or Streambed Alteration, and the Central Coast Regional Water Quality Control Board will be contacted for Section 401 Water Quality Certification. The State Water Resources Control Board will be coordinated with for obtaining a Section 402 National Pollution Discharge Elimination System Permit.

Other Coordination and Consultation

The San Luis Obispo County Historical Society and Central Coastal Information Center were contacted. The Native American Heritage Commission performed a sacred lands database search that was negative. The Native American Heritage Commission also provided a contact list of Native American representatives for San Luis Obispo County. The list included 24 individuals. Each individual was contacted by U.S. mail, and follow up phone calls were made to each person.

Two responses were obtained:

1. In a letter dated June 10, 2006, Fred Collins, spokesperson for the Northern Chumash Tribal Council, requested a detailed description of the project and a detailed map of the project. He further noted concern about “any projects that are near creeks.” He wrote “that a thorough site assessment be conducted by the Northern Chumash Tribal Council.” Last, he requested a meeting when the consulting archaeologist was in the area.
2. In an email dated May 24, 2006, Mona Tucker and Matthew Goldman requested “that you have a recognized Chumash Cultural Resource Monitor accompany you with any archaeological survey.” They further requested “a response to their email.”

Additionally, Brian Stark with the Land Conservancy has been coordinated with regarding the watershed enhancement plan and Arundo eradication.

Community Interaction

Public Informational Workshops were held at the Mountainbrook Community Church on March 27, 2003 and July 1, 2004. The meetings provided opportunities for the public to see the proposed alternatives and provide input. The first meeting was attended by about 40 members of the public; the second meeting was attended by about 25 members of the public.

An individual working group meeting with Los Verdes Home Owners Association was held on March 11, 2003 at the Los Verdes Board Meeting Room.

The project was presented to City Council on August 28, 2003.

A public hearing will be scheduled to gather input on the two viable alternatives during the environmental document circulation period.

Chapter 4 List of Preparers

The following people were the principal contributors in the preparation of this environmental document.

California Department of Transportation

William Arkfeld, Environmental Engineer (Water Quality) PE – BS Environmental Engineering Humboldt State University; 22 years of experience in water quality and hazardous waste investigation. Contribution: Reviewed Water Quality Report.

Bob Carr, Landscape Architect. B.S. Landscape Architecture; 17 years of experience in visual impact analysis and landscape architecture. Contribution: Reviewed Scenic Resources Evaluation.

Paula Juelke Carr, Architectural Historian. M.A. in an interdisciplinary history program from the University of California; 25 years of experience in California History. Contribution: Reviewed Historic Properties Survey Report.

Dave Hacker, Associate Environmental Planner (Biologist). B.S. Natural Resource Management; 10 years of experience in biotic resource inventories and impact assessment. Contribution: Reviewed Natural Environment Study and Biological Assessment documents.

Doug Heumann, Project Manager. P.E. B.S. Civil Engineering. 20 years experience in civil engineering. Contribution: Project Manager and Project design oversight.

Terry Joslin, Associate Environmental Planner (Archaeologist). B.S. Anthropology/Geography; 15 years of experience in California prehistory and history fieldwork and document preparation. Contribution: Reviewed Historic Properties Survey Report.

Val Levulett, Senior, Environmental Planner (District Heritage Resources Coordinator). M.A., Ph.D. Anthropology; 38 years of experience in cultural resource studies. Contribution: Reviewed Native America Consultation, and provided quality assurance quality control review.

Wayne Mills, Noise, Air, Paleontology Specialist. B.A. Social Science and B.A. Earth Science; 24 years of experience in civil engineering. Contribution: Reviewed Noise, Air, and Paleontology documents.

Mike Thomas, Associate Environmental Planner. B.S., Environmental Horticultural Science; 9 years environmental and transportation planning experience. Contribution: Reviewed Initial Study and coordinated the environmental process for the project.

James Tkach, Environmental Engineer (Hazardous Waste). B.S. Soil Science; 7 years of experience in project design and construction, 18 years of experience in hazardous waste management. Contribution: Reviewed Hazardous Waste.

City of San Luis Obispo

Tim Bochum, Deputy Director of Public Works. T.E. B.S. Mathematics; 17 years experience in traffic engineering/operations, neighborhood traffic management programs, non-motorist transportation, transit, public involvement, and traffic safety. Contribution: Coordinated project, traffic studies, and project design.

Dr. Neil Havlik, Natural Resources Manager. B.S. Biology, M.S. Botany, and PhD in Wildland Resources Science; Over 35 years experience in land use planning, environmental impact analysis and mitigation, natural resource management, and biological conservation. Contribution: Reviewed Natural Environment Study and Biological Assessment documents.

Peggy Mandeville, Principal Transportation Planner. B.S. Landscape Architecture; 20 years experience in landscape architecture, land use planning, community planning, and bicycle and transportation planning. Contribution: Reviewed and provided quality assurance/quality control for the environmental document.

Freddy Otte, City Biologist. B.S. Biology Fisheries Biology; 10 years of experience in biotic resource inventories and impact assessment. Contribution: Reviewed Natural Environment Study and Biological Assessment documents.

Consultants

Dokken Engineering

Angela Alcala, Wildlife Biologist. B.S., Wildlife Fisheries; 5 years experience as wildlife biologist. Contribution: Habitat evaluation.

Michelle Campbell, Senior Environmental Planner. B.A. and M.A., Anthropology; 9 years environmental planning experience. Contribution: Environmental document preparation.

Matt Griggs, Project Manager. B.S. and M.S., Civil Engineering; 15 years experience in civil engineering. Contribution: Project design.

Namat Hosseinion, Senior Environmental Planner. B.A., Anthropology; 8 years environmental planning experience. Contribution: Environmental planning coordination and environmental document preparation.

Sarah Jenkins, Associate Environmental Planner. B.A., Biology and B.S., Environmental Science; 2 years environmental planning experience. Contribution: Environmental document preparation.

Rob Lawrence, Geotechnical Engineer. B.S. and M.S., Civil Engineering; 13 years experience in civil engineering. Contribution: Hazardous Waste Report.

Tony Overly, Associate Environmental Planner. B.A. and M.A., Anthropology; 15 years cultural resources management experience. Contribution: Environmental document preparation.

Jones and Stokes Associates

Christiaan Havelaar, Staff Archaeologist. B.A., Anthropology; 6 years cultural resources management experience. Contribution: Wrote Historic Properties Survey Report.

Shannon Hatcher, Air Quality Specialist. B.S., Environmental Science and Environmental Health and Safety; 8 years experience. Contribution: Air quality report.

Jeff Kozlowski, Fish Biologist. B.S., Natural Resources Management and M.S., Ecology; 20 years experience in fish impact analysis. Contribution: wrote fish Biological Assessment.

Debbie Loh, Project Director. B.A., Geography/Ecosystems and M.A., Urban Planning; 29 years environmental planning experience. Contribution: Coordination of Special Studies performed by Jones and Stokes Associates.

Lisa Webber, Wetland Ecologist. B.A., Biology and M.S., Botany; 16 years experience as a botanist. Contribution: Botanical surveys.

LSA Associates Inc.

Brooke Langle, Senior Biologist. B.S., Ecology and Systematic Biology; 10 years experience in field biology. Contribution: California Red-legged Frog Biological Assessment.

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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. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts and avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.

Potentially significant impact	Less than significant impact with mitigation	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 type="checkbox"/> | <input checked="" 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input 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"/> |
|---|--------------------------|--------------------------|-------------------------------------|--------------------------|

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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 type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Expose sensitive receptors to substantial pollutant concentration?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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e) Create objectionable odors affecting a substantial number of people?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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"/>
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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"/>
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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"/>
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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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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"/>
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b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

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"/>
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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 checked="" type="checkbox"/>	<input type="checkbox"/>
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ii) Strong seismic ground shaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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iii) Seismic-related ground failure, including liquefaction?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

iv) Landslides?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

b) Result in substantial soil erosion or the loss of topsoil?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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 checked="" type="checkbox"/>	<input type="checkbox"/>
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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"/>
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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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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"/>
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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 type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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 type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

HYDROLOGY AND WATER QUALITY - Would the project:

a) Violate any water quality standards or waste discharge requirements?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Otherwise substantially degrade water quality?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 impact with mitigation	Less than significant impact	No impact
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i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

j) Result in inundation by a seiche, tsunami, or mudflow?

LAND USE AND PLANNING - Would the project:

a) Physically divide an established community?

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

MINERAL RESOURCES - Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

NOISE - Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) A substantial temporary or periodic increase in

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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 checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
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Police protection?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Schools?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

RECREATION -

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

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)?

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

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?

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e) Result in inadequate emergency access?

f) Result in inadequate parking capacity?

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

UTILITY AND SERVICE SYSTEMS - Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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
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P. O. BOX 942873
SACRAMENTO, CA 94273-0001
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*Flex your power!
Be energy efficient!*

January 14, 2005

TITLE VI POLICY STATEMENT

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

A handwritten signature in black ink that reads "Will Kempton".

WILL KEMPTON
Director

"Caltrans improves mobility across California"

Appendix C Minimization and/or Mitigation Summary

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
Mitigation Measure V-1: Screening of increased concrete visibility. The landscape plan shall include a planting screen along exposures of bridge abutments and at some proposed retaining wall locations, where appropriate. The planting shall complement the naturally appearing form of the interchange and not look like a formal, manicured landscape. The design shall avoid a linear planting along the wall locations. The landscape plan shall be developed in coordination with Caltrans Landscape Architecture staff for areas within state right-of-way as well as with the City's Architectural Review Committee and City staff. A Caltrans maintenance plan shall be developed during Plans, Specifications & Estimate to ensure that plantings within the state right-of-way establish to sufficiently reduce the identified impact.	During and after construction.	City of San Luis Obispo	Caltrans	<input type="checkbox"/>	_____
Mitigation Measure V-2: Replace vegetation lost because of construction. This mitigation will result in a naturalized condition comparable to the density, spacing, and species variety of the existing conditions. The site will be replanted with similar species to those that were affected by the project. Replacement plants will be sized so as to reach the existing plant sizes within the minimal time feasible. Maintenance and monitoring will be required to assure plant survival so that the existing conditions are closely replicated within the determined timeframe. The revegetation plan shall be developed in coordination with Caltrans Landscape Architecture staff for areas within state right-of-way as well as with the City's Architectural Review Committee and City staff.	During and after construction.	City of San Luis Obispo	Caltrans	<input type="checkbox"/>	_____
Mitigation Measure V-3: Consideration of aesthetic features for the bridge structure and interchange setting. Implementation of architectural features, developed with Caltrans/City aesthetic standards, shall be considered to meet the desired goals as defined in the Conservation and Open Space Element of the City's General Plan. The esthetic features shall be developed in coordination with Caltrans Landscape Architecture staff for areas within state right-of-way as well as with the City's Architectural Review Committee and City staff.	Prior to and during construction.	City of San Luis Obispo	Caltrans	<input type="checkbox"/>	_____
Mitigation Measure V-4: Develop Lighting Plan. A lighting plan would be developed that requires project lighting to be appropriately shielded. Project lighting design would be consistent with all Caltrans and City lighting guidelines and standards and would be developed with Caltrans and City aesthetic standards. The lighting plan would be	Prior to construction.	City of San Luis Obispo	Caltrans	<input type="checkbox"/>	_____

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
developed in coordination with Caltrans Landscape Architecture staff for areas within state right-of-way, as well as with the City's Architectural Review Committee and City staff.					
<p>Mitigation Measure AQ-1: Implement California Department of Transportation Standard Specification 7-1.01F and Standard Specification 10.</p> <p>The project proponent will follow Caltrans Standard Specification 7-1.01F and Standard Specification 10, which address the requirements of the local air pollution control district (San Luis Obispo Air Pollution Control District) and dust control, respectively.</p>	Prior to and during construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	_____
<p>Mitigation Measure AQ-2: Implement San Luis Obispo Air Pollution Control District Control Measures for Construction Emissions of PM10. The project proponent will implement all feasible PM10 control measures required by the San Luis Obispo Air Pollution Control District.</p> <p>Standard Mitigation Measures for Construction Equipment:</p> <ol style="list-style-type: none"> 1. Maintain all construction equipment in proper tune according to manufacturer's specifications. 2. Fuel all off-road and portable diesel-powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, with Air Resources Board certified motor vehicle diesel fuel (non-taxed version suitable for use off-road). 3. Maximize to the extent feasible, the use of diesel construction equipment meeting the Air Resources Board's 1996 or newer certification standard for off-road, heavy-duty diesel engines. <p>Discretionary Mitigation Measures for Construction Equipment:</p> <ol style="list-style-type: none"> 1. Electrified equipment where feasible. 2. Substitute gasoline-powered for diesel-powered equipment, where feasible. 3. Use alternative fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel. 4. Use equipment that has Caterpillar pre-chamber diesel engines. <p>Construction Best Available Control Technology</p> <ol style="list-style-type: none"> 1. Install diesel oxidation catalysts (DOC), catalyzed diesel particulate filters (CDPF), or other District approved emission reduction retrofit devices where feasible. 	During construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	_____

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Activity Management Techniques</p> <ol style="list-style-type: none"> 1. Develop a comprehensive construction activity management plan designed to minimize the amount of large construction equipment operating during any given time period. 2. Schedule construction truck trips during non-peak hours to reduce peak hour emissions. 3. Limit the length of the construction workday period, if necessary. 4. Phase construction activities, if appropriate. <p>Fugitive Dust Source Category:</p> <ol style="list-style-type: none"> 1. Reduce the amount of the disturbed area where possible. 2. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 miles per hour. Reclaimed (nonpotable) water should be used whenever possible. 3. All dirt stock-pile areas should be sprayed daily as needed. 4. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil-disturbing activities. 5. Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast-germinating native grass seed and watered until vegetation is established. 6. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the Air Pollution Control District. 7. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, road surfaces should be laid as soon as possible after grading unless seeding or soil binders are used. 8. Vehicle speed for all construction vehicles shall not exceed 15 miles per hour on any unpaved surface at the construction site. 9. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code (CVC) section 23114. 10. Install wheel washers where vehicles 					

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Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.</p> <p>11. Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.</p> <p>All categories: 1. Any other control measures approved by the Air Pollution Control District where necessary.</p>					
<p>Mitigation Measure AQ-3: Implement Air Resources Board’s Airborne Toxic Control Measures for Naturally Occurring Asbestos. In addition, naturally occurring asbestos may exist at the site. A geological survey is required for the site. If the naturally occurring asbestos is found, then the project proponent will implement all feasible control measures required by the San Luis Obispo Air Pollution Control District to comply with the requirements listed in the Air Resources Board’s Asbestos Airborne Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations. Such measures include, but are not limited to, the following:</p> <p>a. The San Luis Obispo Air Pollution Control District is notified in writing at least fourteen (14) days before the beginning of the activity or in accordance with a procedure approved by the district.</p> <p>b. All the following dust control measures are implemented during any road construction or maintenance activity:</p> <ol style="list-style-type: none"> 1. Unpaved areas subject to vehicle traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 % asbestos; 2. The speed of any vehicles and equipment traveling across unpaved areas must be no more than 15 miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust that is visible crossing the project boundaries; 3. Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 % asbestos; and 4. Activities must be conducted so that no track-out from any road construction project is visible on any paved roadway open to the public. <p>c. Equipment and operations must not cause the emission of any dust that is visible crossing the project boundaries.</p>	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Mitigation Measure BIO-1: Install Construction Barrier Fencing around the Construction Area to Protect Sensitive Biological Resources to Be Avoided.</p> <p>The City or its contractor will install orange construction barrier fencing to identify environmentally sensitive areas. A qualified biologist will identify sensitive biological habitat at each bridge site before the final design plans are prepared so that the areas to be fenced can be included in the plans. The area that would generally be required for construction, including staging and access, is shown as the permanent and temporary impact area on Figures 2.3-1 and 2.3-2. Sensitive biological resources that are to be avoided during construction should be fenced off to avoid disturbance. Sensitive biological habitat that occurs adjacent to the construction area includes the creek channels outside the construction zone, wetlands, and any trees that support nests of special-status bird species. Before construction, the contractor will work with the project engineer and a biological resource specialist to identify the locations for the barrier fencing and will place stakes around the sensitive resource sites (i.e., riparian vegetation, seasonal wetlands, and trees that support nests of special-status birds) to indicate these locations. The protected areas will be designated as environmentally sensitive areas and identified clearly on the construction plans. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following paragraph will be included in the construction specifications:</p> <p>The contractor’s attention is directed to the areas designated as “environmentally sensitive areas.” These areas are protected, and no entry by the contractor for any purpose will be allowed unless specifically authorized in writing by Caltrans or the City of San Luis Obispo. The contractor will take measures to ensure that contractor’s forces do not enter or disturb these areas, including giving written notice to employees and subcontractors. Vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced environmentally sensitive areas.</p> <p>Temporary fences around the environmentally sensitive areas will be installed as one of the first orders of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least 4 feet high (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts set at maximum intervals of 10 feet.</p>	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Mitigation Measure BIO-2: Avoid and Minimize Potential Indirect Disturbance of Riparian Forest Communities.</p> <p>To the extent possible, the City will avoid and minimize potential indirect disturbance of riparian forest communities by implementing the following measures:</p> <ul style="list-style-type: none"> • The potential for long-term loss of riparian forest vegetation will be minimized by trimming vegetation rather than removing entire shrubs. Shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. Cutting will be allowed only for shrubs; all trees will be avoided. Also, cutting will be allowed only in areas that do not provide habitat for sensitive species. To protect nesting birds, pruning or removal of woody riparian forest vegetation will not be allowed between March 1 and August 15. • A certified arborist will be retained to perform any necessary pruning or root cutting of riparian forest trees. Work in riparian forest areas will be conducted between June 1 and October 1, and disturbed areas will be stabilized with erosion control measures before October 1. 	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	
<p>Mitigation Measure BIO-3: Compensate for Temporary and Permanent Loss of Riparian Forest Vegetation.</p> <p>This mitigation measure compensates for temporary and permanent construction-related loss of streamside vegetation, including both riparian vegetation and shaded riverine aquatic cover (a component of riparian vegetation); see Natural Environment Study Report (2008) section 4.4, “Sensitive Fish Species” for a discussion of impacts on shaded riverine aquatic cover. Shaded riverine aquatic cover vegetation is defined as streamside vegetation growing at the interface between the wetted channel and the streambank and includes woody, terrestrial vegetation that extends over the wetted channel and associated tree roots and branches projecting into the water column. Because shaded riverine aquatic cover typically is composed of riparian vegetation growing within 15 feet (horizontal distance) of the wetted channel, compensatory mitigation for construction-related losses of shaded riverine aquatic cover necessitates that riparian vegetation plantings occur within 15 linear feet of the wetted channel in order to be considered mitigation for impacts on shaded riverine aquatic cover vegetation. Therefore, to be effective as mitigation for impacts on both</p>	<p>Prior to, during, and after construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>riparian vegetation and shaded riverine aquatic cover, this measure includes the requirement that riparian vegetation be replanted within 15 feet (horizontally) of the wetted channel until a minimum replacement ratio of 2:1 for affected shaded riverine aquatic cover vegetation is met. Once the requirement for mitigation for shaded riverine aquatic cover vegetation is met, the remainder of riparian vegetation mitigation can be replanted farther away than 15 feet from the channel.</p> <p>The City will compensate for temporary construction-related loss of riparian forest vegetation and shaded riverine aquatic cover vegetation at Prefumo Creek and San Luis Obispo Creek at a minimum ratio of 1:1 (1 acre restored for every 1 acre temporarily affected) by replanting the temporary access areas with the native species removed, including arroyo willow, California black walnut, black cottonwood, coast live oak, coyote brush, coffeeberry, California blackberry, and elderberry. Replanting at each creek will occur at the earliest opportunity following completion of construction activities and during the time of year when maximum survival of planted vegetation is assured.</p> <p>The City will compensate for the permanent loss of riparian forest vegetation within and adjacent to the study area along Prefumo and San Luis Obispo creeks at a minimum ratio of 2:1 (2 acres restored or created for every 1 acre permanently affected). All permanent riparian impacts will first be mitigated at the treatment ponds adjacent to the study area. While these commitments are made in the environmental document, final locations and quantities for compensation will be confirmed through coordination with state and federal agencies as part of the permitting process and final design phase and will be based on the impacts calculated and presence of appropriate environmental conditions for enhancement or creation. Compensation would also include enhancement of the creek corridor through removal of nonnative species such as giant reed, castor bean, poison hemlock, English ivy, Himalayan blackberry, and big leaf periwinkle and replacing these plants with native riparian trees and shrubs.</p> <p>With implementation of Alternative 3, compensation in this area can be achieved through enhancement of 1.64 acres of existing riparian habitat within and adjacent to the study area by removing nonnative species (such as giant reed, castor bean, poison hemlock, English ivy, Himalayan blackberry, and bigleaf periwinkle and replacing these plants with native riparian trees and shrubs) and planting this area with native riparian trees and shrubs (such as arroyo willow, California black walnut, black cottonwood, coast live oak, coyote brush, coffeeberry, California blackberry, elderberry, mugwort, and other readily establishing native riparian forest species).</p>					

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>For Alternative 6, compensation would require enhancement of 2.54 acres of existing riparian habitat within and adjacent to the study area (see Figure 2.3-1). Enhancement activities for Alternative 6 would include removal of the existing southbound off-ramp onto Los Osos Valley Road (including the a culvert across Prefumo Creek) and replanting with native riparian trees and shrubs. To replace shaded riverine aquatic cover vegetation that is permanently lost as a result of the project, a minimum of 1,820 linear feet of stream bank would need to be planted with riparian vegetation to meet the minimum 2:1 replacement ratio identified for permanent impacts on shaded riverine aquatic cover vegetation. To meet this mitigation requirement, shaded riverine aquatic cover vegetation can be planted on either bank. The total bank length replanted must equal at least 910 linear feet or 455 linear feet of stream length assuming both banks are planted. To replace shaded riverine aquatic cover vegetation that is temporarily lost, a minimum of 290 linear feet of stream bank would need to be planted to meet the minimum 1:1 replacement ratio.</p> <p>Riparian enhancement areas could occur within the study area and the exact location would be determined in coordination with Caltrans and the City. Plantings will consist of cuttings taken from local plants, or plants grown from local material obtained within the Prefumo and San Luis Obispo Creek watersheds. Plantings will be monitored annually for 3 years, or as required in the project permits. A minimum of 75% of the plantings will survive at the end of the monitoring period. If the survival criterion is not met at the end of the monitoring period, planting and monitoring will be repeated until the survival criterion is met.</p>					
<p>Mitigation Measure BIO-4: Avoid and Minimize Potential Indirect Disturbance of Seasonal Wetlands Near the Construction Area. The City will minimize the potential for indirect disturbance of the seasonal wetlands in the US 101 northbound on-ramp portion of the study area by prohibiting the use of vehicles and equipment staging in this area. All access by vehicle in this portion of the study area will occur via the paved on-ramp.</p>	During construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	
<p>Mitigation Measure BIO-5: Protect Water Quality and Prevent Erosion in Wetlands and Drainages.</p> <p>To protect water quality in seasonal wetlands, freshwater marsh, and Prefumo, San Luis Obispo, and Froom creeks, the City will implement the following best management practices before and during construction:</p> <ul style="list-style-type: none"> • All earthwork or foundation activities involving creeks, culverts, and bridges will occur in the dry season (generally between June 1 and October 1). 	Prior to and during construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<ul style="list-style-type: none"> • All work in the drainages that may contain fish will be limited to the low-flow period in the dry season. • Equipment used in and around waters of the United States will be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance, staging, and materials storage will occur at least 300 feet from all waters of the United States. Any necessary equipment washing will occur where the water cannot flow into the stream channel. • Any surplus concrete rubble, asphalt, or other rubble from construction will be taken to an approved disposal site. • An erosion control plan will be prepared and implemented for the proposed project. It will include the following provisions and protocols: <ul style="list-style-type: none"> – Discharge from dewatering operations, if needed, and runoff from disturbed areas will be made to conform to the water quality requirements of the waste discharge permit issued by the Regional Water Quality Control Board. – Material stockpiles will be located in non-traffic areas only. Side slopes will not be steeper than 2:1. All stockpile areas will be surrounded by a filter fabric fence and interceptor dike. – Erosion control measures will be applied throughout construction of the proposed project. <p>The Storm Water Pollution Prevention Plan for the project will detail the applications and type of measures and the allowable exposure of unprotected soils. Soil exposure will be minimized through the use of temporary best management practices, groundcover, and stabilization measures. Exposed dust-producing surfaces will be sprinkled daily, if necessary, until wet; this measure will be controlled to avoid producing runoff. Paved streets will be swept daily following construction activities. The contractor will conduct periodic maintenance of erosion and sediment control measures. All temporary erosion and sediment control measures will be removed after the working area is stabilized or as directed by the engineer. An appropriate seed mix of native species will be planted on disturbed areas upon completion of construction. Sandbagged silt fences will be installed in all named and unnamed waterways in which construction work occurs, both upstream and downstream of the construction site. Any accumulated sediment will be removed and trucked to an approved disposal site.</p>					

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Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Mitigation Measure BIO-6: Compensate for the Permanent Loss of Seasonal Wetlands. The City will compensate for permanent loss of seasonal wetlands at a minimum ratio of 2:1 (2 hectares/acres restored for every 1 hectare/acre temporarily affected). Permanent impacts on seasonal wetland will first be mitigated onsite in the retention basin. Any remaining seasonal wetland mitigation that cannot be created onsite will be compensated at undetermined off-site locations such as the Johnson Ranch or through the San Luis Obispo Land Conservancy. While these commitments are made in the environmental document, final locations and quantities for compensation will be confirmed through coordination with state and federal agencies as part of the permitting process and final design phase and will be based on the impacts calculated and presence of appropriate environmental conditions for creation. If Alternative 3 is implemented, total required compensation for impacts on seasonal wetland will be 0.40 acre. If Alternative 6 is implemented, total compensation for impacts on seasonal wetlands will be 0.36 acre. Because two of the affected seasonal wetlands occur within artificially created basins between US 101 and the northbound on- and off ramps, these wetlands will be restored onsite after the completion of the retention basin construction. To ensure sufficient ponding to support wetland vegetation, the basin north of the on-ramp will be excavated to pre-project conditions and planted with a native seed mix. The basin south of the on-ramp will be excavated to a deeper level for construction of a vegetated retention basin that will provide biofiltration of runoff.</p>	<p>Prior to construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	
<p>Mitigation Measure BIO-7: Avoid and Minimize Potential Indirect Disturbance of Freshwater Marsh near the Construction Area. The City will minimize the potential for indirect disturbance of the freshwater marsh in the Calle Joaquin/US 101 southbound on-ramp and off-ramp portion of the study area by prohibiting equipment staging in this area. All access by vehicle in this portion of the study area will be limited to the project right-of-way.</p>	<p>During construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	
<p>Mitigation Measure BIO-8: Avoid and Minimize Potential Indirect Disturbance of Seasonal Drainage near the Construction Area. The City will minimize the potential for indirect disturbance of the seasonal drainages in the realigned portion of the Calle Joaquin/US 101 southbound on-ramp under Alternative 3 or the Calle Joaquin/US 101 southbound on-ramp and off-ramp under Alternative 6 by prohibiting equipment staging in this area. All access by vehicle in this portion of the study area will be limited to the project right-of-way.</p>	<p>During construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	
<p>Mitigation Measure BIO-9: Compensate for Permanent Loss of Seasonal Drainage Habitat. The City will compensate for the permanent fill of seasonal drainage (a direct impact associated with new road construction) at a minimum ratio of 2:1 (2 hectares/acres restored or created for</p>	<p>Prior to, during, and after construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>every 1 hectare/acre permanently affected).</p> <ul style="list-style-type: none"> Under Alternative 3, a minimum of 0.08 acre of compensation for permanent loss of seasonal drainage will be required. Under Alternative 6, a minimum of 0.07 acre of compensation for the permanent loss seasonal drainage will be required. <p>Mitigation proposed includes a combination of on-site mitigation and compensation at undetermined offsite locations such as the Johnson Ranch or through the San Luis Obispo Land Conservancy. Onsite compensation will be accomplished by restoring and/or enhancing riparian and in-stream habitats along Prefumo and San Luis Obispo creeks in the study area. Compensation for other waters of the United States will be in addition to and will follow the guidelines for riparian habitat compensation described under section 4.1.1 of the Natural Environment Study Report (2008). "Riparian Forest." Permanent impacts to seasonal drainages that cannot be mitigated onsite will be compensated at a ratio of at least 2:1 ratio at offsite locations. Temporarily disturbed portions of the drainages will be returned to original grade following construction, and will result in no permanent impacts.</p>					
<p>Mitigation Measure BIO-10: Avoid and Minimize Potential Indirect Disturbance of Perennial Drainage Near the Construction Area. The City will minimize the potential for indirect disturbance of the perennial drainages, including Prefumo and San Luis Obispo creeks, in the project area by prohibiting equipment staging in these areas. All access by vehicle in these portions of the study area will be limited to the project right-of-way.</p>	During construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	
<p>Mitigation Measure BIO-11: Compensate for Permanent Loss and Temporary Disturbance of Perennial Drainage Habitat. The City will compensate for temporary construction-related loss of perennial drainage at a minimum ratio of 1:1 (1 hectare/acre restored for every 1 hectare/acre temporarily affected) and will compensate for the permanent fill of perennial drainage (a direct impact associated with new road construction) in Prefumo and San Luis Obispo creeks at a minimum ratio of 2:1 (2 hectares/acres restored or created for every 1 hectare/acre permanently affected).</p> <ul style="list-style-type: none"> Under Alternative 3, a minimum of 0.33 acre of compensation for loss of perennial drainage will be required. Under Alternative 6, a minimum of 0.41 acre of compensation for the loss of perennial drainage will be required. <p>Mitigation proposed includes a combination of onsite mitigation and compensation at undetermined offsite locations such as the</p>	Prior to, during, and after construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	

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Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Johnson Ranch or through the San Luis Obispo Land Conservancy. Onsite compensation will be accomplished by restoring and/or enhancing riparian and in-stream habitats along Prefumo and San Luis Obispo creeks in the study area. Compensation for other waters of the United States will be in addition to and will follow the guidelines for riparian habitat compensation described under section 4.1.1.2 of the Natural Environment Study Report (2008) "Riparian Forest." Permanent impacts to seasonal drainages that cannot be mitigated onsite will be compensated at a ratio of at least 2:1 ratio at off-site locations.</p> <p>Temporarily disturbed portions of the drainages will be returned to original grade following construction, and will result in no permanent impacts.</p> <p>The two seasonal wetlands, located in the artificially created basins between US 101 and existing northbound on- and off-ramps, will be restored onsite as a retention basin after the new ramps are constructed. To ensure sufficient ponding in support of wetland vegetation, the basin will be excavated to pre-project conditions and planted with a native seed mix.</p>					
<p>Mitigation Measure BIO-12: Install Fencing and Monitor Dewatering Activities within the Construction Work Area and Relocate Sensitive Aquatic Wildlife, if Necessary.</p> <p>To avoid construction-related impacts on foothill yellow-legged frog, southwestern pond turtles, and two-striped garter snakes during work within Prefumo and San Luis Obispo creeks, fences will be constructed upstream and downstream of the dewatering area to prevent these species from entering the construction area. The fences will be constructed at the edges of or just outside of the area to be dewatered. The fences will be perpendicular to the creek and will extend 100 feet out from the center of the creek on each side. The City shall retain a qualified wildlife biologist to monitor fence installation and dewatering activities associated with installation of cofferdams or water-diversion structures within Prefumo and San Luis Obispo creeks. Prior to dewatering, the area will be surveyed for all lifestages of foothill yellow-legged frog, southwestern pond turtle, and two-striped garter snake and the biologist will relocate any individuals found to the outside of the barrier fences in suitable habitat at least 300 feet from the construction area. In addition, if a foothill yellow legged-frog, southwestern pond turtle, or two striped garter snake becomes entrapped in an area being dewatered or diverted, the biologist will assist the contractor in providing means for the animal to voluntarily move out of the construction area or the biologist will actively relocate the animal to an area outside the barrier fences. The biologist will have a valid scientific collecting permit as well as authorization from the Department of Fish and Game to relocate these three California species of special concern.</p>	<p>Prior to and during activities in the creeks.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Mitigation Measure BIO-13: Conduct Preconstruction Nesting Bird and Raptor Surveys and Establish a No-Disturbance Buffer, if Necessary.</p> <p>To avoid and minimize impacts on nesting migratory birds and raptors, the City or its contractor will implement one or more of the following surveys and restrictions.</p> <ul style="list-style-type: none"> • If feasible, conduct all tree and shrub removal and grading (within annual grasslands) during the nonbreeding season (generally between August 16 and February 28) for most migratory birds and raptors. • If construction activities are scheduled to occur during the breeding season for migratory birds and raptors (generally between March 1 and August 15), a qualified wildlife biologist (with knowledge of the species to be surveyed) shall be retained to conduct the following focused nesting surveys prior to the start of construction and within the appropriate habitat. <ul style="list-style-type: none"> – Cooper’s Hawk, White-Tailed Kite, and other Tree-Nesting Raptors. Tree-nesting raptor surveys will be conducted before any construction disturbances occurring in or near suitable nesting habitat (riparian forest) located within the permanent and temporary impact area and up to 300 feet outside the permanent and temporary impact area between March 1 and August 15. – Tree and Shrub Nesting Migratory Birds. Tree- and shrub-nesting surveys for loggerhead shrike and other non-special-status migratory birds and raptors shall be conducted prior to any tree and shrub trimming or removal activities located within the permanent and temporary impact area between March 1 and August 15. – Northern Harrier and other Ground-Nesting Migratory Birds. Ground-nesting surveys for northern harrier and other ground-nesting migratory birds shall be conducted before any construction disturbances occur in freshwater marsh, seasonal wetland, annual grassland, or agricultural areas located within the permanent and temporary impact area between March 1 and August 15. <p>The nesting surveys should be conducted within 1 week prior to initiation of construction activities that will occur in suitable habitat</p>	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>between March 1 and August 15. If no active nests are detected during these surveys, then no additional mitigation is required.</p> <ul style="list-style-type: none"> If surveys indicate that migratory bird or raptor nests are found in the survey area identified above, a no-disturbance buffer shall be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a qualified wildlife biologist determines that the young have fledged (usually late June to mid-July). The extent of these buffers shall be determined by the biologist (coordinating with the City, Caltrans, and California Department of Fish and Game) and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. If construction activities are scheduled to occur within an area that supports an active nest site or within an established no-disturbance buffer, construction will be delayed until after the breeding season or until the young have fledged (as determined by the biologist). 					
<p>Mitigation Measure BIO-14: Conduct a Preconstruction Survey for Burrowing Owl in Accordance with the California Department of Fish and Game Guidelines and Establish a No-Disturbance Buffer, if Necessary. The California Department of Fish and Game (1995) recommends that a preconstruction survey be conducted to locate active burrowing owl burrows in the construction work area and within a 250-foot-wide buffer zone around the construction area. A qualified wildlife biologist will be retained to conduct a preconstruction survey for active burrows according to the California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 1995). The preconstruction survey will be conducted within 30 days before construction activities begin. If no burrowing owls are detected, no further mitigation is required. If active burrowing owl burrows are identified within or near the permanent or temporary construction impact area, the City will implement the following measures:</p> <ul style="list-style-type: none"> Occupied burrows will not be disturbed during the breeding season (February 1 to August 31). When destruction of occupied burrows is unavoidable during the nonbreeding season (September 1 to January 31), unsuitable burrows will 	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	

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Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on protected lands approved by California Department of Fish and Game. Newly created burrows will follow guidelines established by California Department of Fish and Game.</p>					
<p>Mitigation Measure BIO-15: Compensate for the Loss of Burrowing Owl Habitat in Accordance with California Department of Fish and Game Guidelines. If active burrowing owl burrows are found within the permanent or temporary construction impact area and the owls must be relocated, the City shall offset the loss of foraging and burrow habitat in the construction area by complying with the California Department of Fish and Game's Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 1995).</p>	During and after construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	
<p>Mitigation Measure BIO-16: Conduct a Preconstruction Nesting Swallow Survey and Install Exclusion Netting on the Underside of Bridges or Culverts to Prevent Swallows from Nesting. To avoid impacts on nesting swallows and other bridge-nesting migratory birds that are protected under the Migratory Bird Treaty Act and Fish and Game Codes, the City will implement the following avoidance and minimization measures.</p> <ul style="list-style-type: none"> • If bridge or box culvert construction will take place during the breeding season (generally between February 15 and August 31), a qualified wildlife biologist will be hired to inspect these areas during the swallows' non-breeding season (September 1 through February 14). If nests are found and are abandoned, they may be removed. To avoid damaging active nests, all nests must be removed before the breeding season begins (February 15). • After nests are removed, the undersides of the bridges and box culverts may be covered with 0.5- to 0.75-inch mesh net or poultry wire, or nests may be hosed and scraped every three days during construction to prevent swallows from reestablishing new nests. All net installation shall occur before February 15. The netting shall be anchored so that swallows cannot attach their nests through gaps in the net. • If netting of the bridges and box culverts does not occur by February 15 or more than three days lapse between scraping and hosing and swallows colonize these areas, 	Prior to and during construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	

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Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>modifications to the structure supporting active swallow nests should not begin before September 1 of that year or until a qualified biologist has determined that the young have fledged and all nest use has been completed.</p> <p>If appropriate steps are taken to prevent swallows from constructing new nests, work can proceed at any time of the year.</p>					
<p>Mitigation Measure BIO-17: Limit In-Channel Construction Activities to the Low-Precipitation Period.</p> <p>In-channel construction, including riverbank and channel bed construction below the ordinary high-water mark (ordinary high-water mark), will be limited to the summer low-precipitation period (June 1 to October 1) to minimize adverse effects on adult fish spawning and smolt migration. Project construction in the channel will also be subject to the following constraints:</p> <ul style="list-style-type: none"> • Construction requiring stream dewatering, stream crossings, or work in the channel bed will not start before June 1. Upstream and downstream passage for fish, including juvenile steelhead, will be provided through or around construction sites at all times. Cofferdams will be installed in all creeks to divert stream flow around each footing excavation. The construction period limits will also apply to a pipe diversion system that will be needed on San Luis Obispo Creek and Prefumo Creek. Limiting in-channel construction to the June 1 to October 1 period will achieve two goals: <ul style="list-style-type: none"> – Construction will not be concurrent with the primary migration and spawning periods of steelhead. – The length of the construction period will be maximized, thereby reducing the potential for in-channel construction (i.e., below the ordinary high-water mark) to have to be extended beyond October 1. 	<p>During construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<input type="checkbox"/>	
<p>Minimization Measure BIO-18: Implement Water Quality Measures.</p> <p>The City will avoid or minimize increased sediment input to the project area channel. As part of the National Pollutant Discharge Elimination System’s General Construction Activity Storm Water Permit, a Storm Water Pollution Prevention Plan will be implemented that includes the following:</p> <ul style="list-style-type: none"> • conducting all construction work according to site-specific construction plans that minimize the potential for 	<p>During construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<input type="checkbox"/>	

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>sediment input to the aquatic system;</p> <ul style="list-style-type: none"> • identifying all areas requiring clearing, grading, revegetation, and recontouring, and minimizing the areas to be cleared, graded, and recontoured; • grading spoil sites to minimize surface erosion; • avoiding riparian and wetland vegetation wherever possible and identifying and fencing specific trees to protect existing riparian habitat; • covering bare areas with mulch and revegetating all cleared areas; • avoiding equipment operation in flowing water during in-channel activities by constructing coffer dams and diverting all stream flows through or around construction sites; and • constructing sediment catch basins across stream channels immediately below the project site when performing in-channel construction to prevent silt- and sediment-laden water from entering the main stream flow (accumulated sediments will be periodically removed from the catch basin). <p>Increased pollutant input to the project area channel will also be minimized and avoided by:</p> <ul style="list-style-type: none"> • preventing raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses; • establishing a spill prevention and countermeasure plan before project construction that includes strict onsite handling rules to keep construction and maintenance materials out of drainages and waterways; • cleaning up all spills immediately according to the spill prevention and countermeasure plan and notifying the California Department of Fish and Game and the National Oceanic and Atmospheric Administration Fisheries Service immediately of any spills and cleanup activities; • providing areas located outside the ordinary high-water mark for staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants; 					

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<ul style="list-style-type: none"> • removing vehicles from the normal high-water area of the waterway before refueling and lubricating; and • avoiding operation of equipment in flowing water. <p>Implementation of measures to avoid or minimize the effects of increased sediment input will also avoid and minimize increased input of pollutants associated with sediments (e.g., mercury) and the potential for subsequent effects on steelhead.</p>					
<p>Mitigation Measure BIO-19: Implement Stream Diversion Restrictions. Flow will be diverted in San Luis Obispo Creek and Prefumo Creek during bridge widening and other in-channel work. Flow will be diverted from June 1 to October 1. Any activity that temporarily diverts flow from any segment of the creeks will trigger implementation of the following constraints.</p> <ul style="list-style-type: none"> • Before flow is diverted, cofferdams will be placed so that flow to river segments downstream from the construction site will not be interrupted. • Subject to the sufficiency of ambient conditions, adequate fish passage conditions will be sustained by maintaining contiguous flows, avoiding the creation of vertical drops in excess of 6 inches, and maintaining suitable water velocities (i.e. 8 feet per second or less) and water depths (minimum of 1 foot). 	During construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	
<p>Mitigation Measure BIO-20: Avoid Stranding Impacts to Fish in Dewatered Areas. A qualified fish biologist will be onsite during the installation of cofferdams and during the cofferdam dewatering process to capture and move trapped salmonids and other fish. The fish will be relocated to the nearest suitable habitat unaffected by construction activities and upstream of the work area. Within temporarily drained stream channel areas, salvage activities shall be initiated before or at the same time as stream area draining and completed within a timeframe necessary to avoid injury and mortality of steelhead. Protocols for the capture, handling, and release of fish will be developed in cooperation with National Oceanic and Atmospheric Administration Fisheries, California Department of Fish and Game, the City, and Caltrans. Fish biologists will contact National Oceanic and Atmospheric Administration Fisheries and California Department of Fish and Game immediately if any steelhead are found dead or injured.</p>	During construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	
<p>Mitigation Measure BIO-21: Avoid and Minimize Impacts to Spawning Habitat. The City will, to the extent practicable, avoid disturbance to any spawning gravel beds located in the study area on San Luis Obispo</p>	During construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	

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<p>Creek. If disturbance to the gravel cannot be avoided, the gravel will be removed temporarily and replaced to pre-disturbance conditions. Before returning gravels to the channel following construction, gravels will be washed to remove fines before they are placed back into the creek channel. If it becomes necessary to augment disturbed gravels with gravel from outside sources, only washed river gravel (to remove fines) appropriately sized for adult steelhead, (0.5 inch to 3.0 inches) will be used.</p>					
<p>Mitigation Measure BIO-22: Minimize Noise Impacts from Pile Driving. Potential injury and mortality associated with pile driving will be avoided or minimized by the following measures:</p> <ul style="list-style-type: none"> • In-channel construction will be limited to the summer low-flow period (June 1 to October 1) when stream flow in the creek is typically low, thereby minimizing the potential for sound pressure waves to travel long distances. • Restriction of pile driving activities to the low-flow period coincides with the least likely occurrence of upstream migrating adults and downstream steelhead smolt migration. • The smallest pile driver and minimum force necessary will be used to complete the work. • Pile driving will be done within the dewatered cofferdams. 	During construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	
<p>Mitigation Measure BIO-23: Minimize Loss of Steelhead Spawning and Rearing Habitat as a Result of Permanent Changes to Stream Hydraulics, Sediment Processes, and Channel Bottom Stabilization. The potential for loss of steelhead spawning and rearing habitat will be avoided or minimized by the following measures:</p> <ul style="list-style-type: none"> • the amount of riparian vegetation removal, including vegetation providing shaded riverine aquatic cover, substrate, and in-stream woody material necessary to ensure suitable fish passage conditions will be minimized, and existing spawning and rearing habitat will be maintained; • disturbance to the stream width, depth, velocity, and slope will be minimized and modified or disturbed portions of the stream, banks, and riparian areas will be restored as nearly as possible to their pre-project contours (i.e., elevations, profile, and gradient); • native riparian vegetation and/or large 	During construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	

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Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>woody material will be included where rock slope protection (rock slope protection) is needed;</p> <ul style="list-style-type: none"> • environmentally sensitive areas will be fenced to prevent encroachment of equipment and personnel into riparian areas, stream channels, and banks to the maximum extent practicable (see Measure BIO-1); • disturbance and removal of aquatic vegetation will be avoided to the extent practicable; temporary fills, coffer dams, and other in-channel structures will be removed in a manner that minimizes disturbance to downstream flows and water quality and restores pre-existing streambed gradient and contours; and • fine sediments removed downstream of the Los Osos Valley Road bridge (approximately 200 feet) will be replaced with appropriately-sized spawning gravels (0.5 inch to 3.0 inches). 					
<p>Mitigation Measure BIO-24: Avoid Substantial Increases in Water Temperature as a Result of Lost Shade and Disturbance to Streambed and Banks.</p> <p>The potential for substantial increases in water temperature will be avoided or minimized by the following measures:</p> <ul style="list-style-type: none"> • exclusionary fencing will be used to minimize the potential for the accidental removal of more vegetation than is necessary to complete construction (see Measure BIO-1); • soil compaction will be minimized by using equipment that can reach over sensitive areas, thereby ensuring suitable soil conditions for mitigation plantings; • disturbance to the stream width, depth, velocity, and slope will be minimized and modified or disturbed portions of the stream, banks, and riparian areas will be restored as nearly as possible to their pre-project contours (i.e., elevations, profile, and gradient); and • gaps in the post-construction canopy (i.e., shade), will be reduced by restricting extensions of streambank rock slope protection or other bank protection (e.g., sheet piles or bank and channel armoring) to the minimum necessary to protect essential infrastructure. 	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Mitigation Measure BIO-25: Avoid the Introduction and Spread of Invasive Plants The City’s contractor shall be responsible for avoiding the introduction of new invasive plants and the spread of invasive plants previously documented in the study area. Accordingly, the following measures shall be implemented during construction:</p> <ul style="list-style-type: none"> • Construction supervisors and managers will be educated about invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations. • Surface disturbance within the construction work area will be minimized to the greatest extent possible. • All disturbed areas will be seeded with certified weed-free native mixes and mulched with certified weed-free mulch (rice straw may be used in upland areas). • Native, non-invasive species will be used in erosion control plantings to stabilize site conditions and prevent invasive species from colonizing. • To the maximum extent practicable invasive species rated A or B will be eradicated from the areas disturbed by construction activities. 	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>
<p>Mitigation Measure BIO-26: Follow Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program [HAD-CA, File #: Section 7 within the Ventura U.S. Fish and Wildlife Service (US Fish and Wildlife Service), Document 3: S38192] (1-8-02-F-68). Avoidance and minimization measures included within the Programmatic Biological Opinion (2003) will be incorporated into the project and are listed below:</p> <ol style="list-style-type: none"> 1. Only Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frog. 2. Ground disturbance will not begin until written approval is received from the US Fish and Wildlife Service that the biologist is qualified to conduct the work. 3. Only US Fish and Wildlife Service-approved biologists will survey aquatic and riparian areas at the project site 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The US Fish and Wildlife Service-approved biologist 	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>will relocate the California red-legged frog the shortest distance possible to a location that contains suitable habitat and where it will not be affected by the activities associated with the proposed project. The US Fish and Wildlife Service-approved biologist will maintain detailed records of any individuals that are moved (e.g. size, coloration, any distinguishing features, photographs) to assist him or her in determining whether relocated animals are returning to the original point of capture.</p> <p>4. Before any activities begin on the project, a US Fish and Wildlife Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measure that are being implemented to conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any question.</p> <p>5. A US Fish and Wildlife Service-approved biologist will be present at the work site until all California red-legged frogs are removed, workers have been instructed, and disturbance of habitat is completed. After this time, the state or local sponsoring agency will designate a person to monitor onsite compliance with all minimization measures. The US Fish and Wildlife Service-approved biologist will ensure that this monitor receives the training outlined in Measure 4 and in the identification of California red-legged frog. If the monitor or the approved biologist recommends that work be stopped because California red-legged frog have would be affected to a degree that exceeds the levels anticipated by US Fish and Wildlife Service during review of the proposed action, they will notify the resident engineer (the engineer directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the effect immediately or required that all action that is causing these effects be halted. If work is stopped, the US Fish and Wildlife Service will be notified as soon as is reasonably possible.</p> <p>6. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.</p> <p>7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat or water bodies and preferably, not in a location from where a spill would drain directly</p>					

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>toward aquatic habitat. The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the City will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.</p> <p>8. Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plant will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless US Fish and Wildlife Service and the City determine that that it is not feasible or practicable. (For example, an area disturbed by construction that would be used for future activities need not be revegetated).</p> <p>9. Habitat contours will be returned to their original configuration at the end of project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless US Fish and Wildlife Service and the City determine that it is not feasible or modification of original contours would benefit the California red-legged frog.</p> <p>10. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Environmentally Sensitive Areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.</p> <p>11. The City will attempt to schedule work activities for times of the year when impacts to California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum degree practicable, during the breeding season (November through May). Isolated pools that are important to maintain the California red-legged frog through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and informal, consultation between the City and US Fish and Wildlife Service during project planning should be used to assist in scheduling work activities to avoid sensitive habitats during key times of the year.</p>					

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<p>12. To control sedimentation during and after project implementation, the City will implement best management practices outlined in any authorizations or permits, issued under the authorities of the Clean Water Act that it receives for the specific project. If best management practices are ineffective, the City will attempt to remedy the situation immediately, in consultation with the Service. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. The methods and materials used in any dewatering will be determined by the City in consultation with US Fish and Wildlife Service on site-specific basis. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the stream bed will be minimized to the maximum extent possible; any imported material will be removed from the stream bed upon completion of the project.</p> <p>13. Unless approved by US Fish and Wildlife Service, water will not be impounded in a manner that may attract the California red-legged frog.</p> <p>14. A US Fish and Wildlife Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes from the project area, to the maximum extent possible. The US Fish and Wildlife Service-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.</p> <p>15. To ensure that diseases are not conveyed between work sites by the US Fish and Wildlife Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.</p>					
<p>Mitigation Measure CR-1: Stop Work if Buried Cultural Resources Are Inadvertently Discovered. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.</p>	<p>During construction, if resources are discovered</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>
<p>Mitigation Measure CR-2: Comply with State Laws Relating to Native American Remains. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section</p>	<p>During construction, if human remains are discovered</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>

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5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission, which will then notify the Most Likely Descendent. At this time, the person who discovered the remains would contact Valerie Levulett, District 5 Heritage Resources Coordinator, so that she may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.					
Mitigation Measure CR-3: Comply with City Ordinances if Buried Cultural Resources Are Inadvertently Discovered. In accordance with the City of San Luis Obispo Resolution 8459 (1995 series) section 4.60 Archaeological Discoveries During Construction, if during the course of a project, archaeological materials are identified by an archaeological monitor, City staff, the project sponsor or his/her representative or employee, all construction activities that may disrupt those materials shall cease. The District 5 Heritage Resources Coordinator, Valerie Levulett, shall be notified immediately of the discovery of archaeological materials.	During construction, if resources are discovered	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	_____
Mitigation Measure Paleo-1: Stop Work if Buried Paleontological Materials Are Inadvertently Discovered. If paleontological materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified paleontologist can assess the nature and significance of the find.	During construction, if resources are discovered	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	_____
Minimization Measure HW-1: Determine the Current Status of Remediation. Perform a case file review and conduct interviews with owners/managers of the ARCO gas station, former Texaco gas station site, and Perry Ford car dealership to determine the current status of remediation at these sites. Further investigation should also be done to determine if the proposed project alignments will require acquisition of any, or all of these properties and, if so, has remediation of these properties been completed sufficiently so as not to impact the project.	Prior to construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	_____
Minimization Measure HW-2: Perform a Preliminary Aerially Deposited Lead (ADL) Investigation. In areas of exposed soil within 50 feet of the paved surfaces of US 101, conduct a survey to determine the possible presence and levels of aerially deposited lead from motor vehicle exhaust emissions.	Prior to construction.	City of San Luis Obispo	City of San Luis Obispo and Caltrans	<input type="checkbox"/>	_____
Minimization Measure HW-3: Conduct Lead-Based Paint Survey. Use a certified consultant to ascertain the absence or presence of lead based paint prior to modifications/demolition of the existing Los Osos Valley Road bridges within the study area.	Prior to construction.	City of San Luis Obispo	City of San Luis Obispo and Caltrans	<input type="checkbox"/>	_____
Minimization Measure HW-4: Test Yellow Stripe and Pavement Marking Materials.	Prior to construction.	City of San Luis Obispo	City of San Luis Obispo and	<input type="checkbox"/>	_____

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Conduct tests and follow removal requirements for yellow striping and pavement marking materials in accordance with Caltrans Construction Program Procedure Bulletin 99-2 (CPB 99-2).			Caltrans		
Minimization Measure HW-5: Conduct Asbestos Survey. Use a certified consultant to ascertain the absence or presence of asbestos prior to any modification to or demolition of the Los Osos Valley Road bridges.	Prior to construction.	City of San Luis Obispo	City of San Luis Obispo and Caltrans	<input type="checkbox"/>	_____
Minimization Measure HW-6: Conduct Naturally Occurring Asbestos Survey. Use a certified consultant to ascertain the absence or presence of naturally occurring asbestos (NOA) in the existing road base materials in areas where the road base materials will be removed or disturbed.	Prior to construction.	City of San Luis Obispo	City of San Luis Obispo and Caltrans	<input type="checkbox"/>	_____
Minimization Measure HW-7: Test Leaking Transformers for PCBs if Disturbed. Any leaking transformers observed during the course of the project should be considered a potential polychlorinated biphenyl (PCB) hazard unless tested and should be handled accordingly.	Prior to construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	_____
Minimization Measure HW-8: Follow Caltrans Standards if Unknown Hazards are Inadvertently Discovered. For any previously unknown hazardous waste/material encountered during construction, the contractor shall follow Unknown Hazards Procedures for Construction as outlined by Caltrans in the current Construction Manual.	Prior to construction.	City of San Luis Obispo	City of San Luis Obispo and Caltrans	<input type="checkbox"/>	_____
Minimization Measure WQ-1: Implement Erosion-Control Measures During Project Construction. To minimize the mobilization of sediment to adjacent water bodies, the following erosion- and sediment-control measures would be included in the Storm Water Pollution Prevention Plan to be included in the construction specifications, based on standard City measures and standard dust-reduction measures. <ul style="list-style-type: none"> Cover or apply nontoxic soil stabilizers to inactive construction areas that could contribute sediment to waterways within 48 hours of predicted rainfall event. Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways. Contain soil and filter runoff from disturbed areas by using berms, vegetated filters, silt fencing, straw wattle, plastic sheeting, catch basins, or other means necessary to prevent the escape of sediment from the disturbed area. Prohibit the placement of earth or organic material where it may be directly carried into a stream, marsh, 	Prior to and during construction.	City of San Luis Obispo	City of San Luis Obispo	<input type="checkbox"/>	_____

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>slough, lagoon, or body of standing water.</p> <ul style="list-style-type: none"> Prohibit the following types of materials from being rinsed or washed into streets, shoulder areas, or gutters: concrete, solvents and adhesives, fuels, dirt, gasoline, asphalt, and concrete saw slurry. Conduct dewatering activities according to the provisions of the Storm Water Pollution Prevention Plan. Prohibit placement of dewatered materials in local water bodies or in storm drains leading to such bodies without implementation of proper construction water quality control measures. 					
<p>Minimization Measure WQ-2: Implement Measures to Control Turbidity. If water is flowing in the streams during construction, the City of San Luis Obispo or its contractor(s) will control the release of sediment to the creeks during construction by installing a sheet-pile cofferdam or other method that will control turbidity to the specifications given below. This will ensure that activities result in minimal increase in turbidity or suspended solids in the channel. During installation of the cofferdam, the City or its contractor will monitor turbidity and suspended solids during the installation of the cofferdam, construction, and removal of the cofferdam. If levels exceed the Central Coast Regional Water Quality Control Board Basin Plan standards, the city or its contractor will stop work until levels are within Basin Plan limits. Basin plan standards for turbidity state that project activities will not cause an increase in ambient river turbidity by more than 20% above background turbidity where the natural turbidity is between 0 and 50 JTU (Jackson Turbidity Unit), an increase by more than 10% where natural turbidity is over 100 JTU (Central Coast Regional Water Quality Control Board 1998). During the first week of construction, turbidity measurements will be taken upstream of the project construction area and at a distance of 200 feet downstream of the project construction area (or far enough downstream where applicable mixing has occurred) to provide a baseline comparison conditions. During the construction period, measurements will be taken two times per day and will be taken where flow regime is applicable to the relative flow regime around the construction zone, so the sample is representative of the water quality affected by construction. If turbidity limits are exceeded above the applicable turbidity level, operations will stop and the Regional Water Quality Control Board will be notified. Investigation of the cause of the significant turbidity increase will be conducted and corrections made in construction operations where applicable. This</p>	<p>During construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>

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Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>minimization may be modified in coordination with the Regional Water Quality Control Board and/or other regulatory entities, provided that in no case will turbidity levels be allowed to increase as a result of the project such that beneficial uses of the streams become substantially degraded or impaired.</p>					
<p>Minimization Measure WQ-3: Implement a Spill Prevention and Control Program. The City of San Luis Obispo and/or its contractor(s) will develop and implement a spill prevention and control program to minimize the potential for and effects from spills of hazardous, toxic, or petroleum substances during project construction. The federal reportable spill quantity for petroleum products, as defined the Environmental Protection Agency (40 Code of Federal Regulations 110) is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines. If a spill is reportable, the contractor's superintendent will notify the relevant San Luis Obispo County officials, which have spill response and clean-up ordinances to govern emergency spill response. A written description of reportable releases must be submitted to the Central Coast Regional Water Quality Control Board. This submittal must include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases must be documented on a spill report form. If an appreciable spill occurs and results determine that project activities have adversely affected groundwater quality, a detailed analysis will be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials standards, and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the City and/or its contractors will select and implement measures to control contamination, with a performance standard that groundwater quality must be returned to baseline conditions. These measures will be subject to City approval.</p>	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>

Appendix C • Minimization and/or Mitigation Summary

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Minimization Measure WQ-4: Design and Implement Detention Basin between the mainline US 101 and the northbound off-ramp or within northbound loop on-ramp. A detention basin will be constructed in between the mainline US 101 and the northbound off-ramp or within the interior of the northbound loop on-ramp. Storm water from the eastern portion of the overcrossing and from the reconstructed on-ramp would then be then transported to the basin before ultimately draining into San Luis Obispo Creek. This treatment will allow pollutants to settle in the basin by slowing down the discharge rate of storm water flows.</p>	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>
<p>Minimization Measure WQ-5: Where Possible Use San Luis Obispo Creek Waterway Management Plan Design Criteria. Although the project is a transportation project and Best Management Practices must meet Caltrans standards, all treatment Best Management Practices should also meet local standards, established in the San Luis Obispo Creek Waterway Management Plan, when these local specifications do not conflict with Caltrans guidance.</p>	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>
<p>Mitigation Measure WQ-6: Permanent Treatment Best Management Practices. Appropriate permanent treatment Best Management Practices will be implemented during final design. Proposed Best Management Practices may include Infiltration or detention devices, media filters and multi-chambered treatment trains.</p>	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>
<p>Minimization Measure NOI-1: Implement Caltrans Standard Provision Section 5.1. The provisions are as follows: “Sound control shall conform to the provisions in Section 7-1.01I (Sound Control Requirements) of the Standard Specifications and these special provisions. The noise level from the Contractor’s operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dBA at a distance of 15 m (50 ft). This requirement in no way relieves the Contractor from responsibility for complying with local ordinances regulating noise level. The noise level requirement shall apply to the equipment on the job or related to the job, including but not limited to trucks, transit mixer or transient equipment that may or may not be owned by the contractor. The use of loud signals shall be avoided in favor of light warnings except those required by safety laws for the protection of personnel. Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.”</p>	<p>During construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>

Appendix C • Minimization and/or Mitigation Summary

Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>Minimization Measure NOI-2: Provide Contact Information for Noise Complaints. A notice of the duration of potential impacts from noise, dust, and glare from the proposed construction will be placed in local news media by the project sponsor two weeks in advance of the beginning of construction. A number will be made available to the public for calls concerning noise impacts or the proposed schedule. If noise complaints are received, temporary barriers of plywood on safety shape can be effective at reducing noise impacts when the line of sight between the source and receiver can be interrupted.</p>	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>
<p>Minimization Measure NOI-3: Limit Night Work to Extent Feasible. Night construction should be avoided. If it cannot be avoided, the contractor shall conduct the noisiest operations nearest the residents as early in the evening as possible.</p>	<p>During construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>
<p>Minimization Measure TRA-1: Prepare and Implement a Traffic Control Plan. In accordance with the City of San Luis Obispo policy on street closures and traffic diversion for arterial and collector roadways, the construction contractor will prepare a traffic control plan per the most current version of the Manual on Uniform Traffic Control Devices (MUTCD) and the California Supplement to be approved by the City prior to construction. The traffic control plan will include the following:</p> <ul style="list-style-type: none"> • A street layout that shows the location of construction activity and surrounding streets to be used as detour routes, including “special signage.” • The tentative start date and construction duration for each phase of construction. • The name, address, and emergency contact number for those responsible for maintaining the traffic control devices during the course of construction. • Written approval to implement traffic control from other agencies, as needed. <p>Additionally, the traffic control plan will include the following stipulations.</p> <ul style="list-style-type: none"> • Provide access for emergency vehicles at all times. • During lane closures, notify the City of San Luis Obispo Fire and Police Departments of construction locations to ensure that alternative evacuation and emergency routes are designed to maintain response times during construction periods, if necessary. • Maintain access for driveways and 	<p>Prior to and during construction.</p>	<p>City of San Luis Obispo</p>	<p>City of San Luis Obispo</p>	<p><input type="checkbox"/></p>	<p>_____</p>

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Mitigation Measure	Timing	Implementing Party	Monitoring Party	Completed	Initials
<p>private roads, except for brief periods of construction, in which case property owners will be notified.</p> <ul style="list-style-type: none"> • Limit construction-related vehicle and equipment parking to the staging area. Or provide adequate off-street parking or use designated public parking areas for construction-related vehicles not in use throughout the construction period. • Maintain pedestrian and bicycle access and circulation during project construction, where safe to do so. If construction encroaches on a sidewalk, provide a safe detour for pedestrians at the nearest painted crosswalk. If construction encroaches on a bike lane, post warning signs that indicate bicycles and vehicles are sharing the roadway. • Provide traffic controls to warn motorists of construction activity. Such controls may include flag persons wearing OSHA-approved vests and using the “Stop/Slow” paddle. • Post standard construction warning signs in advance of the construction area and at any intersection that provides access to the construction area. 					

List of Technical Studies that are Bound Separately

- Air Quality Report
- Noise Study Report
- Natural Environment Study
- Wetland Delineation
- Biological Assessments for California Red-legged Frog and Steelhead Trout
- Location Hydraulic Study
- Historical Property Survey Report
 - Archaeological Survey Report
- Hazardous Waste Report
 - Initial Site Assessment
- Scenic Resource Evaluation/Visual Assessment