

# **Salsipuedes Creek Bridge Scour Mitigation**

Approximately 3.5 miles south of the City of Lompoc  
on Highway 1 in Santa Barbara County

05-SB-1-PM 15.6

Project ID# 05-0000-0007

EA# 05-0A050

SCH # 2014071009

## **Initial Study with Mitigated Negative Declaration**



Prepared by the  
State of California Department of Transportation

**October 2015**



## **General Information About This Document**

### ***What's in this document:***

This document contains a Mitigated Negative Declaration, which examines the environmental effects of a proposed project on State Route 1 in Santa Barbara County.

The Initial Study with proposed Mitigated Negative Declaration was circulated for public review from July 7, 2014 to August 7, 2014. Three comment letters were received on the draft document. The letters and the responses to them are included in the Comments and Responses section of this document (refer to Appendix D), which has been added since the draft. Throughout this document, a line in the left margin indicates changes made since the draft document circulation.

### ***What happens after this:***

The proposed project has completed environmental compliance with circulation of this document. When funding is approved, the California Department of Transportation can design and build all or part of the project.

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Bridge Replacement to address bridge scour, Highway 1, at post mile 15.6 in Santa Barbara County

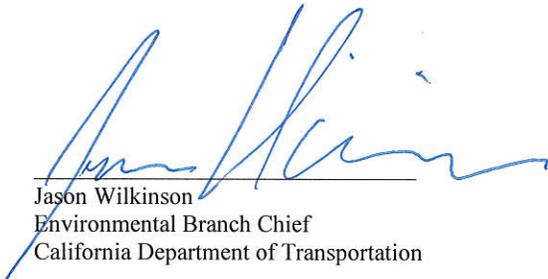
**INITIAL STUDY  
with Mitigated Negative Declaration**

Submitted Pursuant to: Division 13, California Public Resources Code

THE STATE OF CALIFORNIA  
Department of Transportation

Responsible Agencies:  
California Department of Fish and Wildlife  
Central Coast Regional Water Quality Control Board  
California Transportation Commission

10/30/15  
Date of Approval

  
Jason Wilkinson  
Environmental Branch Chief  
California Department of Transportation

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## **Mitigated Negative Declaration**

Pursuant to: Division 13, Public Resources Code

### ***Project Description***

The California Department of Transportation (Caltrans) proposes to replace the existing Salsipuedes Creek Bridge (Br. No. 51-95) on Highway 1 in Santa Barbara County. Highway 1 through the project area consists of a rural two-lane road passing through agricultural land. The Salsipuedes Creek Bridge is located at post mile 15.6, approximately 3.5 miles southeast of the City of Lompoc.

### ***Determination***

Caltrans has prepared an Initial Study for this project and, following public review, has determined from this study that the project would not have a significant effect on the environment for the following reasons.

The proposed project would have no effect on: land use, growth, farmland/timberland, the local community, traffic and transportation, cultural resources, hydrology and floodplains, paleontology, or air quality.

The proposed project would not create any impacts due to noise, vibration, hazardous waste or materials; the proposed project would not be vulnerable to seismic activity.

In addition, the proposed project would have no significant effects on: Visual resources, utilities or emergency services, water quality, or storm water runoff.

In addition, the proposed project would not have a significant adverse effect on any special status plant or animal species because the following mitigation measures would reduce potential effects to less than significant:

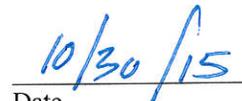
- Existing vegetation and tree canopy adjacent to areas that require clearing to construct the new bridge would be protected through the use of environmentally sensitive area fencing.
- Tree trimming would be limited to that required in order to provide a clear work area. If overhanging branches must be removed for construction equipment access, the branches are to be cut with a saw rather than mechanically removed or knocked down by construction equipment.
- Existing trees to be removed would be marked in the field and approved for removal by the engineer prior to any removal.
- Impacts to native riparian vegetation would be offset by replacement planting within the project limits. Replacement planting will be achieved using a 3:1 ratio for native riparian trees and shrubs. The number and species of trees removed or trimmed will be recorded in order to accurately restore the habitat back to pre-construction conditions.

- Removal of all existing manmade concrete elements inside the channel and replacement of the three-span bridge with a single-span bridge.
- Construction of National Marine Fisheries Service approved rock ramp (roughened channel design) at a 2% slope to improve steelhead passage conditions within the project limits per the August 24, 2015 Biological Opinion (refer to Appendix F).
- All work in the creek channel is to occur between June 1 and October 31.
- No work is to occur in a wetted stream channel.
- To prepare for construction in dry conditions, the work area will be temporality isolated from surface water and any steelhead, California red-legged frog, southwestern pond turtle, and any other special status species that may occur within the area of impact will be relocated. A coffer dam will be constructed across the channel immediately upstream of the proposed bridge and remain in place for the duration of each construction season. Surface flows will travel through the work area in a diversion comprised of a 36-inch diameter pipe and return to the creek approximately 450-feet downstream.
- Prior to dewatering activity, surveys will be conducted up and down stream by National Marine Fisheries Service and U.S. Fish and Wildlife Service approved biologists to identify and evaluate suitability of appropriate habitat sites for relocation of special status animal species.
- The names and credentials of personnel requested to conduct special status animal relocation activities as well as the relocation plan for steelhead and California red-legged frog shall be supplied to the National Marine Fisheries Service and the U.S. Fish and Wildlife Service, as appropriate, for review and approval at least 30 days prior to the onset of construction activities. The approved biologist(s) will monitor the biological study area during all phases of construction within the wetted channel that have the potential to affect special status species.
- If any life stage of the California red-legged frog is detected in the project area during construction, work will cease immediately and the resident engineer, authorized biologist, or biological monitor will notify the Ventura Fish and Wildlife Office. If Caltrans and the U.S. Fish and Wildlife Service determine that adverse effects to California red-legged frog cannot be avoided, construction activities will remain suspended until Caltrans and the U.S. Fish and Wildlife Service complete the appropriate level of consultation.
- Non-native species, such as bullfrogs, signal and red swamp crayfish and centrachid fishes will be removed from the project area to the extent feasible.
- Caltrans shall retain at least two biologists with expertise in the areas of resident or anadromous salmonid biology and ecology, fish/habitat relationships, biological monitoring and handling, collecting, and retaining salmonid species.

- Prior to any construction activity, agency approved biologists will conduct a training session for all construction personnel. At a minimum, the training will include a description of individual special status species that have the potential to occur within the project limits, each species habitat requirements, specific measures that are being implemented to conserve these species and the boundaries in which the project may be accomplished.
- Prior to the actual diversion of surface water, National Marine Fisheries Service and U.S. Fish and Wildlife Service approved biologists will survey the entire work area for steelhead, California red-legged frog, southwestern pond turtle, and all other special status species that may occur within the area of impact. These species will be captured, then relocated to predetermined areas. Once relocations are complete, streamflow will be diverted slowly and in stages to ensure the creek does not dewater suddenly. As flows are diverted, continual surveys of the dewatered area will be conducted and all steelhead, California red-legged frog, southwestern pond turtle and other special status species in the dewatered area will be captured and relocated from residual wetted areas. Detailed records of all captured species will be kept and reported to the appropriate resource agency.
- Following the diversion, dewatering will be required to maintain a dry work area. As the work area is de-watered, remaining pools shall be inspected for California red-legged frogs, steelhead, and other special status species. All debris and aquatic and emergent vegetation in the pumped area shall be carefully inspected for special status animal species. Water will be pumped into a settling tank to prevent suspended sediments from being discharged back into the creek. Intakes shall be completely screened with wire mesh not larger than five millimeters to prevent juvenile aquatic animals from entering the pump system.
- All construction activities, instream habitat, and performance of sediment-control devices will be monitored by National Marine Fisheries Service and U.S. Fish and Wildlife Service approved biologists to identify and reconcile any condition that could adversely affect special status species and their habitat.
- Stockpiling materials, storing equipment and liquid waste containers, washing vehicles or equipment or fueling and maintaining vehicles or mobile equipment must be performed at least 100-feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward the aquatic habitat.
- Equipment used in the channel during construction will be inspected daily for fluid leaks. Any equipment found to be leaking will immediately be removed from the streambed for repair.

- Use of herbicides in the aquatic environment will be prohibited. Application of herbicides for controlling invasive plant species outside of the aquatic environment will be restricted to the extent possible and will only be allowed if there is no other feasible method. Caltrans will implement herbicide application measures outlined in the U.S. Fish and Wildlife Service Programmatic Biological Opinion for California red-legged frog
- If one or more steelhead are found dead, the approved biological monitor(s) will immediately contact the National Marine Fisheries Service to review the activities resulting in the “take” of steelhead to determine if additional protective measures are required.
- Implementation of all protective measures set forth in the Programmatic Biological Opinion from the U.S Fish and Wildlife Service for the protection of California red-legged frog.
- Implementation of all protective measures set forth in the August 24, 2015 Biological Opinion from the National Marine Fisheries Service for the protection of steelhead (refer to Appendix F).

  
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Jason Wilkinson  
Environmental Branch Chief  
California Department of Transportation

  
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Date

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# **Chapter 1**      **Proposed Project**

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## **1.1 Introduction**

The California Department of Transportation (Caltrans) is proposing to replace the existing Salsipuedes Creek Bridge (Br. No. 51-95) on State Route 1 at post mile 15.6 in Santa Barbara County. For the past several decades the creek has scoured the streambed and eroded the stream banks. Past attempts to slow erosion have extended the life of the existing bridge, however the erosion has caused the slope under the western most bridge abutment to steepen to nearly vertical and the bridge and associated roadway approach is in danger of failure. Salsipuedes Creek Bridge is located in a rural agricultural area approximately 3.5 miles southeast of the City of Lompoc. Figures 1-1 and 1-2 show the project vicinity and location.

The proposed project is programmed under the 2012 State Highway Operation and Protection Program (SHOPP) to be built in fiscal year 2017/2018. Project construction is currently estimated to cost \$5,700,000 and is anticipated to take approximately 20 months to complete. An additional one-year plant establishment period will begin once construction of the new bridge and roughened rock ramp are complete.

Caltrans is the Lead Agency under the California Environmental Quality Act.

## **1.2 Purpose and Need**

### **1.2.1 Purpose**

The purpose of the project is to ensure the long-term serviceability of the bridge and roadway by addressing stream bank and streambed erosion that is threatening the integrity of the existing bridge and adjacent roadway.

### **1.2.2 Need**

The existing bridge was listed as scour critical during a bridge inspection conducted on June 15, 1995. The bridge scour is due to the erosive condition of the soils below abutment #4, the western most bridge abutment (Figure 1-3). The erosion has caused the slope below abutment #4 to steepen to nearly vertical, threatening to expose the abutment supports. If the erosion is left unattended, the abutment will become undermined, and the soil supporting the roadbed behind the abutment will be washed out, causing both the road and the bridge to fail.

### **1.3 Project Description**

The proposed project would remove the existing three-span bridge and construct a single-span bridge in the same location. To account for potential future stream channel and stream bank erosion, the new bridge would be lengthened to the northwest by approximately 30 feet. The additional length of the new bridge, combined with the addition of bike railing on top of the bridge rail would require that two private driveways just north of the existing bridge be relocated approximately 200 feet to the north. The project would also remove all manmade elements (concrete check dam, sacked concrete, and fish ladder) constructed within the creek over the past several decades (Figure 1-4). The concrete check dam and sacked concrete were placed in an effort to stall stream bank and streambed erosion. The fish ladder was installed in 2002 by the Cachuma Operations and Maintenance Board Fisheries Division as a compliance measure for the 2000 Cachuma Project Biological Opinion from the U.S. Bureau of Reclamation to facilitate upstream fish passage. Per the August 24, 2015 National Marine Fisheries Service Biological Opinion for the proposed project, a roughened rock ramp is to be constructed inside the creek channel to improve steelhead passage conditions (refer to Appendix F). Following completion of all construction, including the roughened rock ramp, all disturbed areas will be re-vegetated with locally native riparian and coastal scrub species.

### **1.4 Project Alternatives**

There are two alternatives under consideration: The Build Alternative and the No-Build alternative.

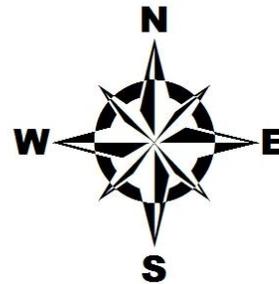
#### **1.4.1 Build Alternative**

The proposed build alternative consists of replacing the existing three-span bridge with a single-span bridge. The existing bridge is a 120-foot long, reinforced concrete girder bridge that was constructed in 1929. The bridge was later widened to standard 12-foot-wide lanes and 8-foot-wide shoulders in 1980. The bridge abutments are supported by concrete piles embedded into bedrock and the three roadway spans are supported by two bents and spread footings located inside the creek channel.



## Project Vicinity Map

Salsipuedes Creek Bridge, Scour Mitigation  
Santa Barbara County, Route 1, Postmile 15.6



*Not to Scale*

**Figure 1-1 Project Vicinity Map**

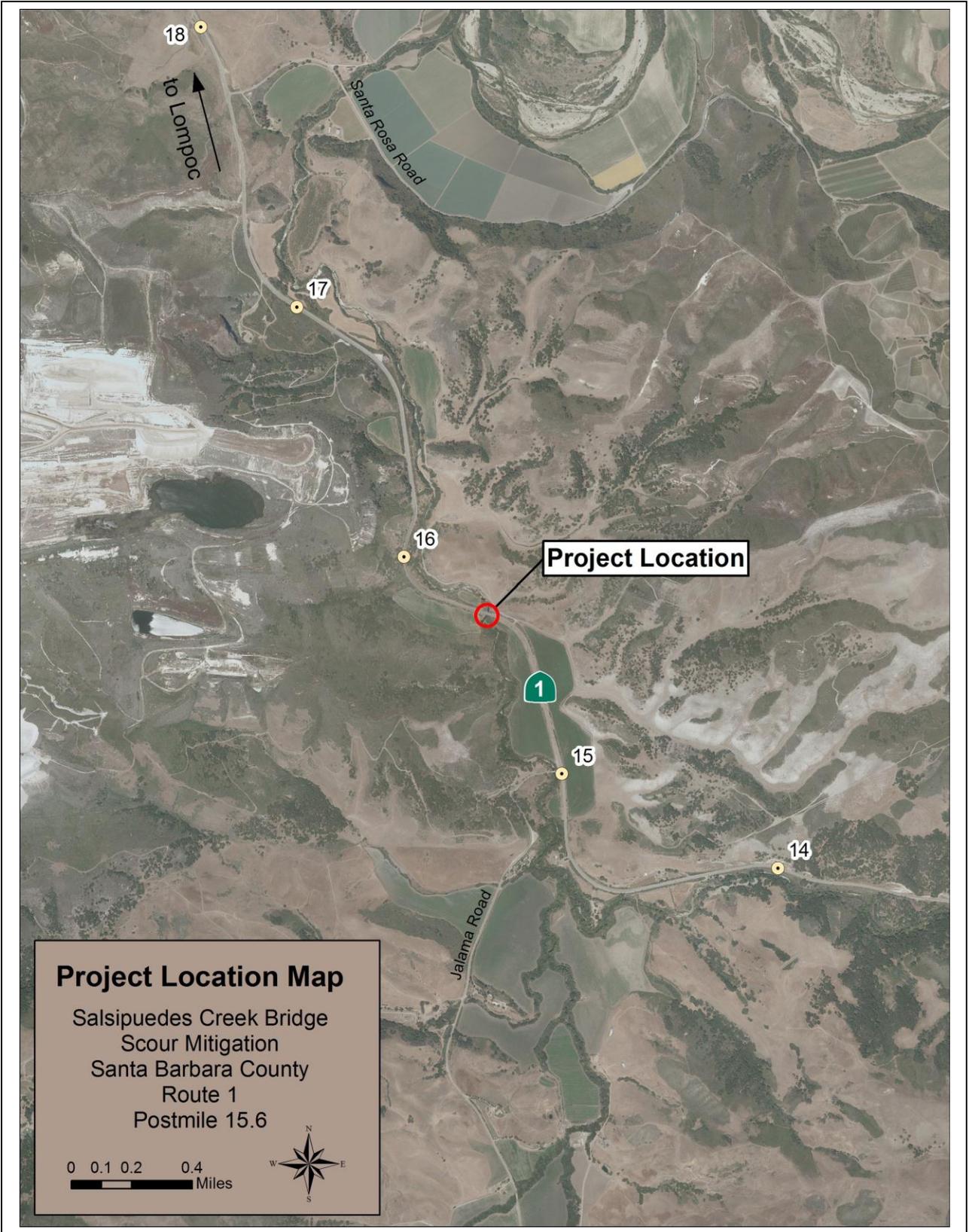
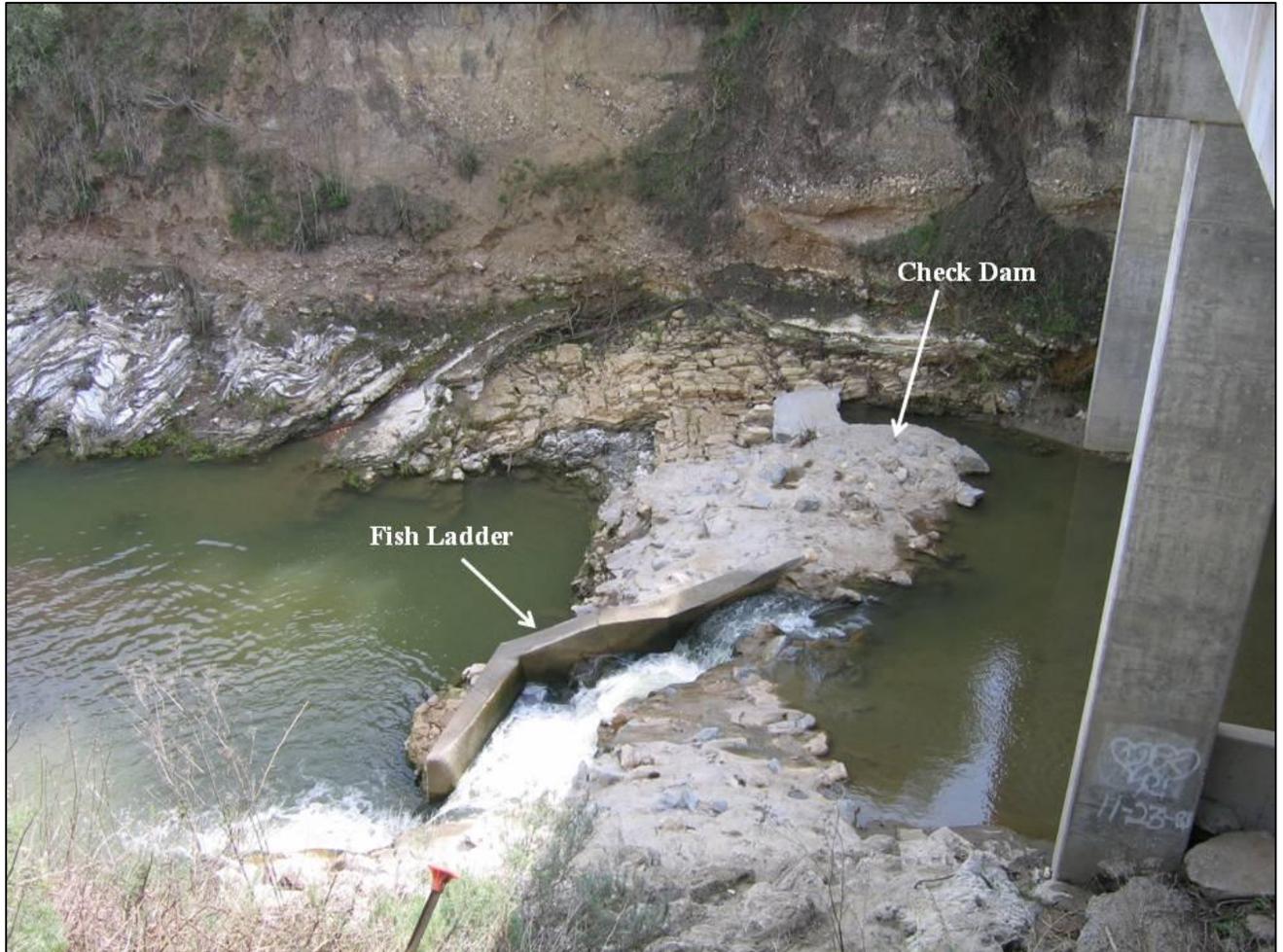


Figure 1-2 Project Location Map



Figure 1-3 Bridge Elements



**Figure 1-4 In Channel Concrete Features**

The critical nature of the scour requires implementation of a project that will address the impacts that erosion is having on the existing bridge to ensure the long-term serviceability of the bridge and bridge approaches.

The new bridge would be a single-span reinforced concrete girder bridge with no piers within the creek channel<sup>1</sup>. The proposed bridge would be 150 feet long and would be designed to allow for future lengthening if erosion along the banks of the creek accelerates. Lane widths and shoulder widths would remain the same (12-foot lanes and 8-foot shoulders).

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<sup>1</sup> A three-span bridge has two piers in the creek channel to support the bridge, a single-span bridge has no supports within the creek channel itself, only abutments in the creek banks themselves at either end.

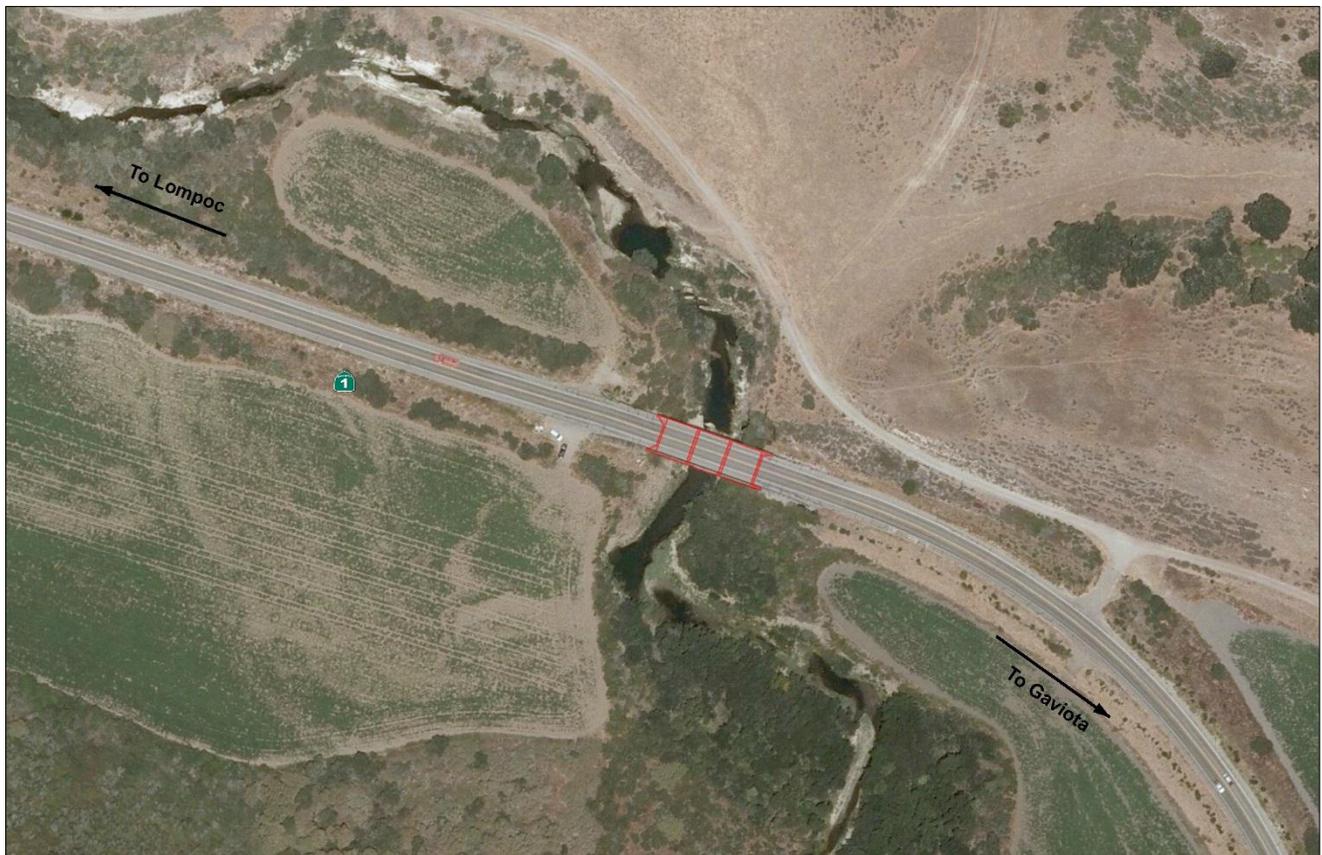
The proposed bridge rail would be changed from the existing solid concrete barrier to an open-style concrete barrier with bicycle rail attached, similar to the bridge rail shown in figure 1-5 below.



**Figure 1-5 Concrete Open-Style Bridge Rail with Bicycle Rail**

The new bridge would cross Salsipuedes Creek at the same location as it does now, but the northern bridge abutment would be situated approximately 30 feet to the north of the existing bridge's northern abutment. Figure 1-6 provides an aerial view of the existing bridge. A temporary access road leading down to the creek channel will need to be constructed in order to demolish the existing bridge and construct the new bridge. Because of topographical restrictions and the incised nature of the creek, the only feasible location for the access road is adjacent to the southeast corner of the existing bridge. Approximately 3.5 acres of land would need to be temporarily attained from the adjacent land owner for a temporary construction easement to accommodate construction of the new bridge, allow for the creek diversion, allow for construction of the fish passage structure and relocate the two private driveways just north of the existing bridge.

There is an existing underground fiber optic line and an aerial and underground telecommunications line that may be in conflict with construction. These utilities, if deemed in conflict, would require relocation.



**Figure 1-6 Existing Bridge Structure**

Over the past several decades, attempts to slow the erosion under the existing bridge resulted in the placement of sack concrete along the creek bank and a concrete check dam in the creek channel. The placement of these in-channel structures, combined with continuing creek bed erosion, contributed to a low-flow fish passage barrier, which was addressed through the construction of the fish ladder. The build alternative will include removal of all of the manmade elements (check dam, sacked concrete and fish ladder) within the creek channel, allowing the creek to flow unimpeded and return to its natural meander and reach a state of equilibrium over time. Even though this alternative would substantially improve the function of the creek at the Salsipuedes Creek Bridge, it was determined that the low-flow fish passage barrier would still exist and mitigation would be required to address the barrier and facilitate upstream migration of adult and juvenile steelhead.

Both the National Marine Fisheries Service and California Department of Fish and Wildlife had concerns about potential up and downstream effects resulting from the

removal of the check dam and required that further analysis be done on fish passage mitigation design options.

A supplemental geomorphology report was completed in January 2015 to address concerns raised by the National Marine Fisheries Service and the California Department of Fish and Wildlife. The results of this study helped to inform the development of a rock ramp (roughened channel design) consisting of a 2% slope that will meet National Marine Fisheries Service fish passage criteria for adult and juvenile steelhead. The design criteria and pre-and post-construction monitoring of the roughened rock ramp is described in more detail in the August 24, 2015 Biological Opinion issued by the National Marine Fisheries Service (refer to Appendix F).

The project will also include a replanting plan that will re-vegetate all areas disturbed during construction with native species appropriate for this site.

#### **1.4.2 No-Build (No-Action) Alternative**

The No-Build Alternative would leave the existing bridge in place and would not directly address the streambed and stream bank erosion that is threatening the integrity of the existing bridge and roadway. The existing fish ladder, sacked concrete and check dam that had been previously placed inside the creek channel would remain as well, perpetuating the existence of the low-flow fish passage barrier. Streambed and stream bank erosion would eventually cause bridge and roadway failure, severing access along this stretch of Highway 1 until a new bridge is constructed under an emergency situation.

The No-Build Alternative would not meet the purpose and need for the project, nor would it offer any improvements for fish passage.

### **1.5 Identification of a Preferred Alternative**

The build alternative was selected as the preferred alternative because it meets the purpose and need of the project by removing the conflict points between the creek channel and bridge structure. This alternative would also improve creek function by spanning the creek channel with a single-span bridge and removing the manmade concrete objects (check dam, sacked concrete) inside the channel, allowing the creek to flow unimpeded and reach a natural state of equilibrium over time. The combination of replacing the bridge with a single-span bridge, and constructing a roughened rock ramp to mitigate for the existing low-flow fish passage barrier, will

result in an overall improvement to the aquatic environment and a substantial benefit to steelhead critical habitat.

## 1.6 Alternatives Considered but Eliminated from Further Discussion

A potential alternative to address the erosion (scour) below abutment #4 would have constructed a combination soil-nail and tie-back retaining wall with reinforced concrete facing. Construction of a retaining wall on the slope below abutment #4 would have reduced erosion and prolonged the life of the structure and roadway supports. This potential alternative would have required modification of the check dam and removal of the sacked concrete to accommodate installation of the soil-nail retaining wall.

During consultation with representatives from the National Marine Fisheries Service and the California Department of Fish and Wildlife, it was determined that this alternative would have perpetuated the low-flow fish passage barrier that currently exists and would require mitigation to off-set impacts to steelhead and their critical habitat. Following these discussions, the first of two geomorphology studies was conducted. *The River Geomorphology Study for Salispuedes Creek at State Route 1 in Santa Barbara County, California*, was completed in August 2012. This study evaluated the viability of building either a fish ladder or a fish weir. The results of the study indicated that, of the two fish passage structures, the fish weir was the only viable alternative. The excessive cost of the fish weir (\$2,208,000), combined with the potential maintenance costs associated with the need to clean out the fish weirs if they were to clog up with debris, resulted in the decision to dismiss this alternative from further consideration and select the preferred alternative. However, fish passage mitigation, consisting of a roughened rock ramp is required per the August 24, 2015 Biological Opinion issued by the National Marine Fisheries Service (refer to Appendix F).

## 1.7 Permits and Approvals Needed

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

<b>Agency</b>	<b>Permit/Approval</b>	<b>Status</b>
Central Coast Regional Water Quality Control Board	Section 401 Certification for impacts to waters of the United States	To be obtained prior to construction
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement for impacts to Salsipuedes Creek	To be obtained prior to construction
California Transportation Commission	Approve construction capital	Approved when project is Ready to List
U.S. Army Corps of Engineers	Section 404 Nationwide Permit (#'s 27 & 14) for impacts to Waters of the United States	To be obtained prior to construction
National Marine Fisheries Service	Biological Opinion (BO) for Southern California Steelhead	BO obtained on 8/24/15 (See Appendix F)
U.S. Fish and Wildlife Service	Programmatic Biological Opinion (BO) for California Red-legged Frog	Letter of Concurrence 8/11/2014

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

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

- **Land Use:** The proposed bridge replacement will not change or impact existing land uses, as the existing bridge will be removed and the new bridge will be constructed along the same alignment. The proposed project will not conflict with any policies or ordinances set forth in the Santa Barbara County Comprehensive Land Use Plan (February 2011).
- **Growth:** The proposed project does not add capacity to the roadway and will not increase development or population as the project will only involve replacement of the existing Salsipuedes Creek Bridge (Source: project description).
- **Farmlands/Timberlands:** The County of Santa Barbara zoning map identifies the project area as being zoned agricultural. However, the proposed project would not result in impacts to farmland. The proposed project does not require permanent acquisition of right-of-way or conversion of farmland because the new bridge will be located within the existing State Right-of-Way on the same alignment as the existing bridge (Source: project description). No timberlands exist within the project limits.
- **Community Impacts:** The project would not divide any communities nor impact any residences. The area adjacent and around the project site is rural agricultural land. The nearest town is 3.0 miles from the project and the nearest residence is 0.8 miles from the project location (Source: project description).
- **Traffic and Transportation:** There would be no adverse impacts on traffic and transportation because traffic volumes are not expected to increase. The new bridge will remain a two lane bridge and will maintain the same standard 12-foot lanes and 8-foot shoulder widths that currently exist (Source: project description). Minor temporary delays will occur during the duration of construction. A Traffic

Management Plan would be established to reduce delays and to assist emergency responders during construction to minimize response times.

- **Cultural Resources:** No historic properties or archaeological resources would be affected by this project (Source: Cultural Resource Review Screening memo, December 17, 2013; Revised July 6, 2015).
- **Hydrology and Floodplain:** No floodplain impacts would occur with the project. The elevation of the creek is below the floodplain, therefore the project would not encroach upon the 100-year floodplain (Source: Location Hydraulic Study, November 6, 2013).
- **Paleontology:** Paleontological resources are not expected to be encountered or impacted during construction of the proposed project (Source: Paleontology Review, January 2007; Revised Paleontology Assessment, July 31, 2013).
- **Hazardous Waste/Materials:** The project site was investigated for potential aerially deposited lead in soil and lead based paint and asbestos containing material in the bridge structure. No impacts from the above hazardous materials are anticipated (Source: Initial Site Assessment, May 2012; Revised Initial Site Assessment, August 8, 2013).
- **Air Quality:** The project would not add capacity or change the alignment of the existing highway. Thus, there will be no long-term effects to local air quality resulting from the project. Temporary increases in air emissions during construction are anticipated. The primary source of air pollutants would be from windblown dust generated during excavation. There are no nearby sensitive receptors that would be adversely affected by construction emission. (Source: Air Quality Report, March 2006; Revised Air Quality Report, January 2014).
- **Noise and Vibration:** The project would not produce any long-term effects from noise or vibration. The project would not change the existing highway alignment and would not cause an increase or decrease in traffic volumes (Source: Noise Report, March 2006; Revised Noise Study Report, January 2014).

## **2.1 Human Environment**

### **2.1.1 Utilities/Emergency Services**

#### ***Affected Environment***

Utilities in the vicinity of the project site include an underground fiber optic line, as well as aerial and underground telecommunication lines, which are in close proximity to the existing bridge.

### **Environmental Consequences**

An underground fiber optic line runs parallel along the highway in the vicinity of the project. Positive identification of the specific location of the fiber optic line will be required to determine if a conflict exists and if relocation prior to construction is necessary. There is a telecommunication line that runs above and below ground within the vicinity of the project and will likely require relocation because of its close proximity to the construction work zone. It is anticipated that these utilities fall within the area of construction impacts and that the work involved in locating the fiber optic line and potential relocation of utilities would not result in additional environmental impacts. However, if the fiber optic line is in conflict with construction of the proposed project, and relocation is necessary, additional temporary impacts to riparian areas, other waters and coastal scrub could occur. All areas disturbed by potential relocation of the fiber optic line will be restored and revegetated with locally occurring native species.

Construction of the project will result in minor temporary traffic delays at various times during the duration of construction. As such, minor delays to emergency services could result. Coordination between the Caltrans Resident Engineer, responsible for Construction, and the local emergency service providers is a standard practice on Caltrans construction sites. This coordination would result in any delay times being as minimal as possible in the event of an emergency vehicle needing access through the construction site.

Demolition of the existing bridge and construction of the new bridge will be done in stages. The existing bridge will be decommissioned one-half at a time, leaving one lane of traffic open while the new bridge is being constructed. Once half of the new bridge is constructed, traffic will be shifted over and the remainder of the existing bridge will be removed. A temporary traffic signal will be used to maintain one-way traffic during the duration of construction.

### **Avoidance, Minimization, and/or Mitigation Measures**

1. If temporary or permanent utility relocation is required, the utility companies would be responsible for moving their respective lines. Utility companies would notify affected residents in advance of any disruption in service during utility relocation.

2. A Traffic Management Plan would be established during the Design phase of the project development process. This plan would assist emergency responders during construction to minimize response time delays.

### **2.1.2 Visual/Aesthetics**

#### ***Regulatory Setting***

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

#### ***Affected Environment***

The following analysis regarding potential impacts to visual resources is derived from the Visual Impact Study (December 2013). Defining the regional landscape context establishes a frame of reference for comparing the visual effects of the proposed project and determining the significance of these effects.

The landform of the region is composed primarily of undulating, rolling hills with moderate slopes. Valleys and surrounding ridge lines create a strong contrast in landform. The form of the landscape is a dominant visual characteristic of the area because of topographical relief.

Native vegetation plays a substantial role in establishing a continuity of visual character within the region. The vegetation consists primarily of oak woodlands, oak savannah, coastal scrub and grasslands. Riparian corridors including sycamore, willow and alder, along with various shrubs, vines and herbaceous vegetation are found along many of the creeks in the areas, including Salsipuedes Creek.

The project is located in a rural area with scattered ranches, ranch roads and some overhead power lines. The scale and frequency of man-made development within and adjacent to the project area are such that it does not dominate the views.

In 1971, at the request of Santa Barbara County, Highway 1 from Las Cruces to Lompoc was designated as an Official State Scenic Highway due to its "natural beauty" and to preserve it as a "scenic asset" for the region. Salsipuedes Creek Bridge is within this stretch of designated Scenic Highway.

The primary potential viewer group associated with the project is the highway user. No adjacent ranch houses or established public trails are within sight of the project

location, although the creek is thought to be used occasionally by local fishermen. Highway 1 users include local residents, commuters, tourists, and some commercial traffic. The primary mode of travel is by motor vehicle, although bicyclists also use the route. The awareness of visual resources by the highway user varies with their activity, but generally the highway user experiences a "broad brush" view of an area.

The project location can be seen from the highway for approximately ten seconds in either direction. From highway viewpoints, Salsipuedes Creek is mostly noticeable by the riparian vegetation lining its banks and crossing under the highway. Because of the deeply incised stream channel, combined with the solid type bridge rail, visibility of surface water is substantially limited as seen from a moving vehicle. Bicyclists and pedestrians have a somewhat better view of the water while crossing the bridge.

The existing visual quality of the area is considered high. The highway alignment is such that neither the sides nor the underside of the bridge structure can be readily seen from viewpoints along the roadway. From these on-highway vantage points, the bridge is identified most by its bridge rail, roadside guard rail end-treatments, and identification signage. The existing bridge rail is a solid concrete type, approximately 32 inches in height and does not block or adversely affect views to the hillsides or surrounding landscape along the corridor. The rail does, however, limit views of the creek channel and the surface water as seen from the bridge deck.

### ***Environmental Consequences***

The proposed bridge rail consists of an open-style, type 80 concrete rail. The proposed rail would allow views of the creek channel and surface water from the bridge deck. Regardless of bridge rail type, views of scenic vistas such as the hillsides, ridgelines, native hillside vegetation and oak savannah would remain unchanged with implementation of the project.

No substantial or visually critical trees, or qualifying Scenic Resources would be removed as part of the project. Therefore, the project would not damage or impact scenic resources.

The project would have a minor short-term effect on the visual character of the immediate surroundings. The removal of some of the vegetation along the roadside and creek banks for access and construction would be visible from portions of the highway. Much of the proposed work would occur below the bridge deck and would not be seen from public vantage points. During construction, heavy equipment,

trucks, materials, workers, orange fencing and signs would be visible. Following construction however, the project site would be re-graded and re-vegetated. After approximately five to seven years, the area surrounding the bridge structure would appear much as it does today.

Alterations to the bridge itself would not represent a substantial change to the visual environment. The width of the roadway lanes and shoulders would be the same as the existing configuration. The proposed bridge would be approximately 30 feet longer, but this additional length would not affect the visual quality or character of the area. The overall form of the bridge structure would change, however that change would occur below the bridge deck and would not generally be seen from public viewpoints. If seen, the new bridge form would not appear out of place or uncharacteristic in the setting. In addition, because of the abundance of high quality views in the vicinity and along the corridor, changes proposed by the project would be visually subordinate to the surrounding visual landscape. The project would not detract from the overall viewing experience for the highway user and would result in only minor effects on the existing visual character and quality of the site and its surroundings.

### ***Avoidance, Minimization, and/or Mitigation Measures***

The following measures would reduce visual impacts as seen from State Route 1.

1. The proposed bridge rail consists of a concrete open-style Type 80 rail with aesthetic treatment. The aesthetic treatment would include color and texture, as determined through collaboration between Caltrans Bridge Architecture and Aesthetics Department and Caltrans District 5 Landscape Architecture Department.
2. Pedestrian and/or bicycle rail would be darkened to give it an aged, rustic appearance.
3. New or replaced metal beam guardrail or metal end-treatments would be darkened to give it an aged, rustic appearance. Darkening measures would be applied to horizontal beams, posts and all other metal components.
4. All disturbed areas outside of the creek bed would be re-contoured to their pre-construction conditions.

5. All areas disturbed during construction would be replanted using native plants appropriate for the site. It is expected that the site would be fully established with native plants within a seven year period.

## **2.2 Physical Environment**

### **2.2.1 Water Quality and Storm Water Runoff**

#### ***Regulatory Setting***

##### *State Requirements: Porter-Cologne Water Quality Control Act*

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a Report of Waste Discharge for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. The Porter-Cologne Act predates the Clean Water Act and regulates discharges to waters of the state. Waters of the state include more than just Waters of the U.S. such as groundwater and surface waters not considered Waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the Clean Water Act definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

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

### *State Water Resources Control Board and Regional Water Quality Control Boards*

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

### *National Pollution Discharge Elimination System Program*

#### *Municipal Separate Storm Sewer Systems (MS4)*

Section 402(p) of the Clean Water Act requires the issuance of National Pollution Discharge Elimination System permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.” The State Water Resources Control Board has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans' MS4 permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollution Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

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

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

#### *Construction General Permit*

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

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

accordance with the Caltrans Standard Specifications, a Water Pollution Control Plan is necessary for projects with disturbed soil areas less than one acre.

### ***Section 401 Permitting***

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

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

### ***Affected Environment***

The following analysis regarding potential project-related water quality and storm water runoff impacts is based on the Water Quality Assessment Report (January 2014).

The project is located in the Salsipuedes-Santa Ynez River watershed, in the Santa Ynez Hydrologic Area, Santa Rita Hydrologic Area #314.20. Salsipuedes Creek is a tributary of the Santa Ynez River and is within the Santa Ynez Hydrologic Unit (HU), which is part of the Central Coast Hydrologic Region. Salsipuedes Creek is a perennial creek that meanders through the region from its headwaters in the Santa Ynez Mountains towards its confluence with the Santa Ynez River approximately 3 miles downstream (north) of the project site. Salsipuedes Creek drains approximately 52.4 square miles of watershed and is one of only two tributaries to the Santa Ynez River in which the United States Geologic Society has documented as having flows that exceed 1,000 cubic feet per second.

Both Salsipuedes Creek and the Santa Ynez River are listed as being impaired under the Environmental Protection Agencies', Clean Water Act 2010 303(d) list. Waters

failing to meet standards for specific pollutants are listed by the State and Regional Water Quality Control Boards in accordance with the Clean Water Act. If a water body is listed as impaired for one or more constituents, and the standards cannot be met through point source controls, the Clean Water Act requires the establishment of total maximum daily loads that specify allowable pollutant loads from all sources (point, nonpoint, and natural) for a given watershed. Total maximum daily loads for Salsipuedes Creek and the Santa Ynez River are scheduled for approval in the year 2021. Salsipuedes Creek is listed as being impaired with chloride and sodium. The sources for impairment have been identified as agriculture, grazing related sources and natural sources. The Santa Ynez River (above and below the City of Lompoc) is listed as being impaired with sedimentation /siltation, sodium, water temperature, total dissolved solids, chloride, Escherichia coli (E. coli), fecal coliform, low dissolved oxygen, and nitrate.

Both the Salsipuedes Creek and the Santa Ynez River include a large array of beneficial uses such as agricultural water supply, municipal and domestic water supply, wildlife habitat, and recreation.

Biological, physical/chemical and human use constituents were examined to determine whether the discharge of storm water from the proposed project would have the potential to affect the beneficial use of all water bodies within the project limits. Construction activities were evaluated for the potential to affect surface water quality due to uncontrolled runoff and discharges. In addition to evaluating potential impacts that could result during construction of the proposed project, analysis was conducted to determine potential impacts to water quality from maintenance and operation activities following completion of the proposed project, with particular focus on storm water runoff.

## ***Environmental Consequences***

### ***Short-Term Impacts***

The proposed project would have the potential of having short-term water quality impacts as a result of construction activities as well as the transitional adjustment of the stream channel once the existing bridge and in-channel concrete structures were removed.

Construction of the project would have the potential to contribute pollutants to receiving water bodies. Potential runoff and discharges during construction could include accidental releases of construction related hazardous materials, ground

disturbance and associated erosion and sedimentation, storm water discharges, and dewatering discharges, particularly in locations within or close to surface water bodies.

The use of construction equipment, construction materials and improper handling of waste material could result in storm water contamination and affect water quality. Leaking construction equipment or accidental spills can result in fuel, hydraulic fluid, oil or other contaminants coming into direct contact with receiving water bodies. Indirect water quality impacts can occur through contaminated sediments being transported to downstream drainages and ultimately into collecting waterways, contributing to the chemical degradation of water quality.

During construction of the project, approximately 5.3 acres of soil disturbance would be expected. Disturbed soils are susceptible to high rates of erosion from wind and rain, which can result in sediment transport via storm water runoff from the project area. Erosion and sedimentation can contribute to levels of natural turbidity and total suspended solids in water bodies. This turbidity can block light transmission and penetration, reduce oxygen levels, affect the food chain and create changes in water temperature.

Initially, the stream channel would experience a flush of sediment as a result of removing the concrete check dam, which has been functioning as a stream grade control point, arresting sediment flow since its placement in 1984. Because the concrete check dam has been functioning as a fixed hard point in the stream channel, it has halted the head cutting of the channel. Once the check dam is removed, there could be potential for the channel to continue to head cut up stream until the channel reaches another fixed feature, such as a bedrock formation.

With a new single-span bridge in place, the creek would have more space to maintain a natural meander. As the creek moves laterally, the potential for creek bank instability could increase. Although this level of bank instability could increase for a few years following completion of the new bridge, ultimately this change would enhance the geomorphology of the creek and improve the ecological conditions upstream and downstream of the bridge by allowing the creek to return to its natural meander.

### *Long-Term Impacts*

Removing the bridge bents, spread footings, concrete check dam, and all other concrete elements previously placed inside the stream channel would improve aquatic

species migration in the long-term by allowing the creek channel to flow unrestricted, eventually reaching a natural state of equilibrium.

There will be no long-term negative water quality impacts associated with the proposed project. The project will not add impervious surfaces such as additional lanes and therefore will not result in an increase in vehicle traffic or result in additional storm water discharges.

***Avoidance, Minimization, and/or Mitigation Measures***

Caltrans has a well-developed storm water program that, under most circumstances, addresses all potentially significant impacts to water quality during storm events. This program is primarily intended to comply with the Caltrans Statewide National Pollution Discharge Elimination System Storm Water Permit and ensures that all construction, design and treatment Best Management Practices are implemented and that they comply with the Regional Water Quality Control Board requirements.

In addition to Caltrans' storm water program, the following avoidance and minimization measures will be implemented to further protect water quality and ensure that no adverse impacts occur:

1. Work within the streambed would be limited to the low-flow period between June 1 and October 31 to reduce the potential for erosion and sedimentation and to avoid potential impacts to steelhead during their spawning season.
2. The project will be designed so that storm water from the highway and bridge structure will be routed through vegetated swales as a green highway/low impact development strategy to reduce the potential for erosion and highway pollutants entering the water body.
3. No work would be performed in a wet stream channel. The water in Salsipuedes Creek would be diverted during construction activities via a 36-inch diameter pipe culvert.
4. Equipment used in the channel during construction would be inspected daily for fluid leaks. Any equipment found to be leaking would immediately be removed from the job site for repair and would not be allowed on the job site until all fluid leaks are fixed.

5. Stockpiling materials, storing equipment and liquid waste containers, washing vehicles or equipment or fueling and maintaining vehicles or mobile equipment must be performed at least 100-feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward the aquatic habitat.

## **2.3 Biological Environment**

### **2.3.1 Natural Communities**

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Section 2.3.5. Wetlands and other waters are discussed in Section 2.3.2.

#### ***Affected Environment***

A Natural Environmental Study, dated May, 2014 was prepared for this project. An addendum to the Natural Environmental Study, dated April 2015, was prepared to include analysis of the white-tailed kite. The Natural Environmental Study consisted of defining a biological study area by considering the following criteria: the elements of the proposed project, the expected level and extent of environmental effects, the presence of natural communities of special concern, the potential presence of special status species, area topography, and any protocol surveys required to evaluate species presence. The biological study area consists of approximately 2 acres. Refer to the Biological Study Area map (Figure 2-1).

Habitat within the biological study area was divided into four communities: central coast scrub, non-native grasslands, central coast arroyo willow riparian forest, and the active creek channel, which is discussed in Section 2.3.2 under wetlands and other waters.

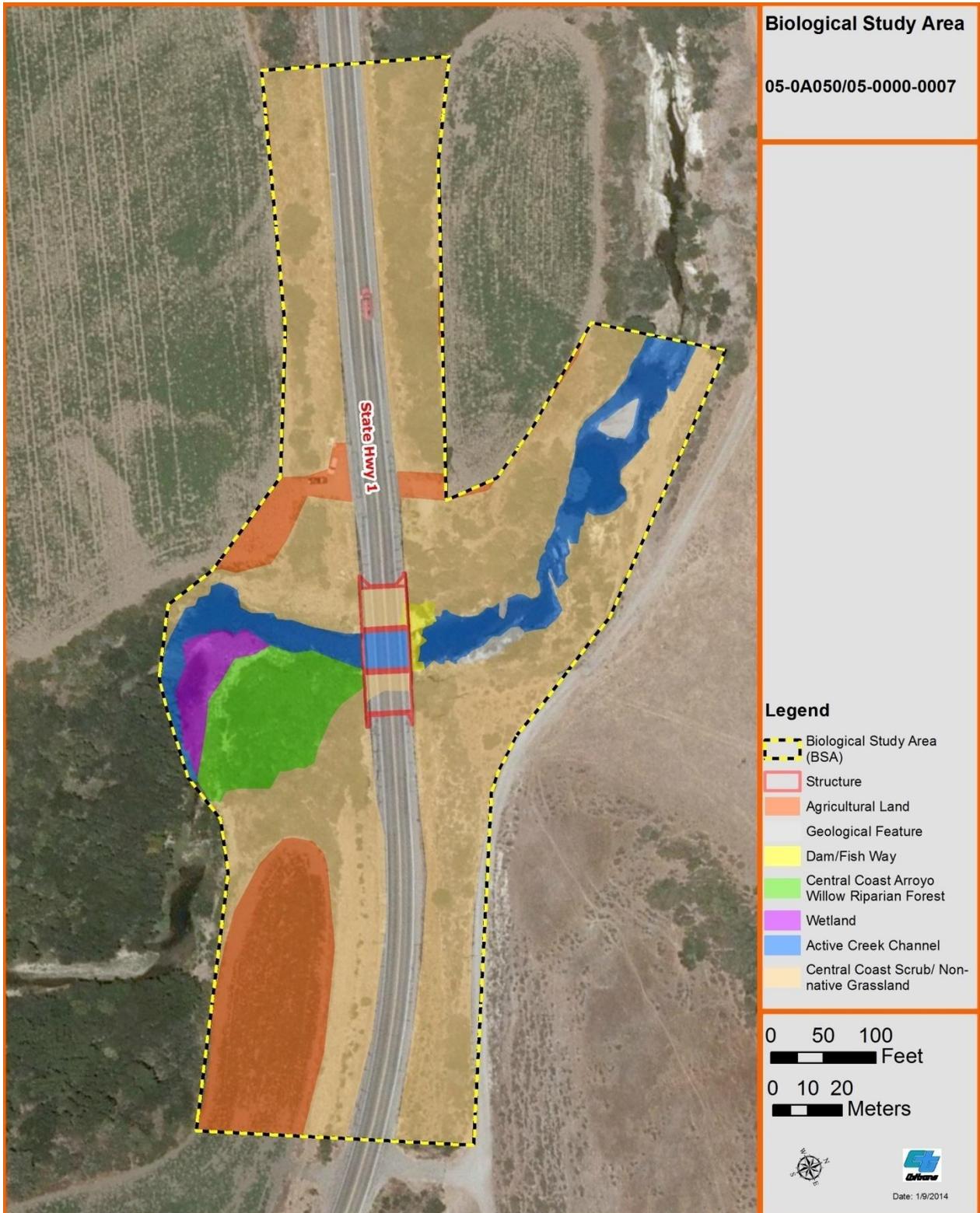


Figure 2-1 Biological Study Area

### *Central Coast Scrub/Non-native Grasslands*

Central coast scrub and non-native grasslands are interspersed along the upper bank of the incised creek within the project area, forming scrub/grassland complex.

Central coast scrub at this site is dominated by coyote brush, while the non-native grasslands are dominated by ruderal grasses and non-native thistle. Ruderal vegetation is typical of areas where the native vegetation is regularly disturbed by human activities, such as land that has been altered by agriculture, grazing, construction, or other land clearing activities.

Central coast scrub vegetation supports habitat for animals such as raccoon, coyote, woodrat, various reptile species, and nesting bird species, while the non-native grasslands provide habitat for various small mammal species and bird species that utilize grasslands for nesting and foraging.

### *Central Coast Arroyo Willow Riparian Forest*

Central coast arroyo willow riparian forest is considered a natural community of special concern and occurs in patches mixed with non-native grasses along Salsipuedes Creek. The riparian forest habitat is dominated by arroyo willow. Blue elderberry is also present within the riparian corridor. Understory species are comprised primarily of poison oak and California blackberry.

Riparian forest habitats are considered to be among the most valuable wildlife habitats due to the microhabitats that are created by the layered trees, shrubs, and herbaceous and aquatic vegetation. Riparian forests provide habitat to an array of wildlife. Mammal species commonly found in riparian forests include raccoon, woodrat, coyote, and rabbits. The riparian forest also provides nesting habitat for a variety of bird species such as sparrows, finches, warblers, and crows. Amphibians and reptiles found in this habitat include California red-legged frog, southwestern pond turtle, Pacific chorus frog, and two-striped garter snake. Habitat for the Southern California steelhead is also supported by the riparian forest through shading and cooling, and in trapping sediments from entering the creek channel. Riparian forests also enhance the functions of adjacent habitats, and are considered very valuable when they occur in a continuous corridor throughout the length of the watershed.

### ***Environmental Consequences***

#### ***Central Coast Scrub/Non-native Grasslands***

Approximately 0.9 acres of temporary impacts to mixed central coast scrub/non-native grasslands complex are expected to result from construction staging and grading work along the top of the creek bank. Approximately 0.5 acres of permanent impacts are expected as a result of lengthening the new bridge structure by 30 feet and relocating the two driveways just north of the bridge.

#### ***Central Coast Arroyo Willow Riparian Forest***

Approximately 0.1 acre of temporary impacts to central coast arroyo willow riparian forest are expected as a result of trimming willow tree limbs and the potential need to cut willows down to ground level to construct an access road to the creek channel and the existing bridge. Approximately 0.02 acres of permanent impacts may result from the need to grade an area adjacent to the new bridge abutments to provide access for bridge maintenance and inspection.

### ***Avoidance, Minimization, and/or Mitigation Measures***

The following measures will be incorporated into the project to avoid and minimize impacts to both central coast scrub and central coast arroyo willow riparian forest habitats:

1. Existing vegetation and tree canopy adjacent to areas that require clearing for construction activity would be protected by delineating these areas as environmentally sensitive and use of environmentally sensitive area fencing.
2. Tree trimming would be limited to that required in order to provide a clear work area. If overhanging branches must be removed for construction equipment access, the branches are to be cut with a saw rather than mechanically removed or knocked down by construction equipment.
3. Existing trees to be removed would be marked in the field and approved for removal by the engineer prior to any removal.
4. All trees and other woody vegetation 6 inches in diameter or less that must be removed would be chipped and stockpiled for use as mulch following bridge construction.

5. Upland trees and shrubs such as elderberry, coyote brush, blackberry, toyon and coffeeberry would be planted on the upper slopes and at the top of the creek banks.
6. Clearing and grubbing would occur only within the excavation and embankment slope limits, the temporary dewatering limits, the temporary contractor access, and the temporary equipment and materials storage limits.
7. To promote slope stability following completion of construction, riparian trees that must be removed would be cut at the base and the root ball left intact for expected re-sprouting.
8. During excavation, the contractor would be directed to collect and stockpile native topsoil to be used on disturbed slopes following bridge construction. This would encourage re-vegetation, minimizing surface erosion.
9. All slopes disturbed during construction would be re-contoured to match pre-existing grade.
10. Application of permanent erosion control on all disturbed areas would consist of replacing native duff/topsoil, chipping existing vegetation, placing a compost blanket, a compost sock and berms, standard application of hydroseed (using native plant species) and Rolled Erosion Control Product<sup>2</sup>, on all slopes 2:1 and steeper. No plastic netting will be allowed in the Rolled Erosion Control Product.
11. A combination of arroyo willow, white alder, California sycamore, western cottonwood, big leaf maple, and understory plants would be planted on the re-contoured slopes within the impacted portions of the riparian corridor to replace riparian plants and provide shade to the creek.
12. Foliage and root protectors would be installed around newly planted container plants to reduce browsing by animals.
13. Planting basins would be mulched to minimize weed growth around new plantings.

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<sup>2</sup> Long-term, degradable, open-weave, textile that is manufactured into rolls designed to reduce soil erosion and assist in plant establishment, growth and protection of vegetation.

14. Use of herbicides in the aquatic environment will be prohibited. Application of herbicides for controlling invasive plant species outside of the aquatic environment will be restricted to the extent possible and will only be allowed if there is no other feasible method. Caltrans will implement herbicide application measures outlined in the U.S. Fish and Wildlife Service Programmatic Biological Opinion for California red-legged frog.
15. Willow pole cuttings would be collected from local willows within a 5-mile radius of the project site and planted on stable slopes above the ordinary high water mark on both sides of the creek.

### **2.3.2 Wetlands and Other Waters**

#### ***Regulatory Setting***

Wetland and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 United States Code 1344) is the primary law regulating wetlands and surface 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 formed during saturation/inundation of water). 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 discharge of dredged or fill material cannot 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 United States Environmental Protection Agency.

The U.S. Army Corps of Engineers issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide

permits are issued to authorize a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. Environmental Protection Agency Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations [CFR] Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration 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 primarily by the California Department of Fish and Wildlife, the State Water Resources Control Board and the Regional Water Quality Control Boards. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify California Department of Fish and Wildlife before beginning construction. If California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. California Department of

Fish and Wildlife 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 California Department of Fish and Wildlife.

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 Board also issues water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section 2.2.1 for additional details.

### ***Affected Environment***

Information from the Natural Environmental Study dated May 2014, (addendum April 2015) were used to prepare the following section.

Salsipuedes Creek, as well as the seasonal, in-channel wetland located upstream, are considered jurisdictional other waters of the U.S. and are subject to regulation by the U.S. Army Corps of Engineers. They are also considered waters of the state and are subject to regulations by the California Department of Fish and Wildlife and the Regional Water Quality Control Board.

### ***Environmental Consequences***

The project would temporarily impact approximately 0.3 acres of jurisdictional other waters as a result of stream diversion, removal of existing structures, and bridge construction.

There is a wetland located approximately 135-feet upstream of the existing bridge. This wetland will not be affected by the proposed project because it will be protected during construction through the use of Environmentally Sensitive Area fencing.

There will be no permanent impact to wetlands or other waters. The project will constitute a net improvement to these jurisdictional waters as a result of removal of all in-channel manmade concrete objects and replacement of the existing three-span bridge with a single-span bridge.

### **Avoidance, Minimization and/or Mitigation Measures**

The following avoidance and minimization measures would be implemented to avoid and/or reduce construction impacts to wetlands and other waters:

1. Construction within the defined jurisdictional areas within Salsipuedes Creek will be limited to the low-flow period between June 1 and October 31 to minimize potential erosion and sedimentation and to avoid potential take of steelhead during their spawning season.
2. No work will be performed in a wetted stream channel. The water in Saslipuedes Creek will be diverted during construction activities prior to the beginning of steelhead spawning season.
3. Environmentally sensitive area fencing would be used in order to avoid impacts to the seasonal wetland located upstream of the project work area as areas outside of the designated construction zone.
4. Water flow through the construction area will be maintained through a pipe culvert. The pipe culvert would be a minimum of 36-inches in diameter and would not include screening to ensure that fish and other aquatic species are not restricted from migrating up or downstream. The flow rate would be as close to natural conditions as possible to facilitate movement of steelhead, California red-legged frog and other aquatic species.
5. Erosion and sediment control Best Management Practices would be incorporated to reduce water quality impacts downstream of the project.
6. Water quality measures 2, 4 and 5 (Section 2.2.1) would also protect jurisdictional waters.

### **2.3.3 Plant Species**

#### ***Regulatory Setting***

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife share regulatory responsibility for the protection of special status plant species. “Special status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal

Endangered Species Act and/or the California Endangered Species Act. Please see the Threatened and Endangered Species Section 2.3.5 in this document for detailed information regarding these species.

This section of the document discusses all the other special status plant species, including California Department of Fish and Wildlife species of special concern, U.S. Fish and Wildlife Service candidate species, and California Native Plant Society rare and endangered plants.

The regulatory requirements for the Federal Endangered Species Act can be found at United States Code 16 (USC), Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq. Caltrans' projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, CA Public Resources Code, Sections 2100-21177.

### ***Affected Environment***

Information provided in the Natural Environmental Study (May 2014), indicates that one special status plant species, California sawgrass, has been identified as having the potential to occur within the project limits.

#### ***California sawgrass (Cladium californicum)***

California sawgrass is listed as a California Native Plant Society threatened plant. California sawgrass is a perennial herb belonging to the sedge family, occurring almost exclusively in wetlands. The plant flowers between June and September.

California sawgrass was identified during botanical surveys conducted in 2009. The plant was located outside of the low-flow creek channel and beyond the limits of the biological study area, on the southeast bank of the creek.

### ***Environmental Consequences***

With implementation of the following avoidance and minimization measure, potential impacts to this species will be avoided.

### ***Avoidance, Minimization, and/or Mitigation Measures***

1. The location where the California sawgrass is present would be delineated as an Environmentally Sensitive Area (ESA) and would be separated from the construction area and all construction activity with ESA fencing. The limits

of the fencing would be depicted on the contract plans and the contractor would be required to ensure that the fencing is maintained throughout the duration of construction.

### **2.3.4 Animal Species**

#### ***Regulatory Setting***

Many state laws regulate impacts to wildlife. The California Department of Fish and Wildlife is 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 Endangered Species Act, and therefore have no protected status under these laws. Species listed or proposed for listing as threatened or endangered, and fully listed species are discussed in Section 2.3.5. All other special status animal species are discussed here.

State laws and regulations relevant to wildlife include the following:

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

#### ***Affected Environment***

The Natural Environmental Study dated May 2014 (addendum April 2015) has provided information on special status animal species that have the potential to occur or are known to occur within the biological study area.

Table 2-1 below provides a list of animal species that have the potential to be affected by the proposed project. The species with the asterisks next to their names have been included in this final document based upon comments received from the California Department of Fish and Wildlife, in their August 4, 2014 comment letter regarding the Draft Initial Study with Proposed Mitigated Negative Declaration. These species have the potential to occur but have not been identified during biological surveys and are not likely to be found within the project limits due to poor habitat quality.

Because of their threatened and/or endangered status, California red-legged frog, Southern California steelhead and least Bell's vireo are discussed in Section 2.3.5, *Threatened and Endangered Species*. Due to their fully protected status, White-tailed kite is also discussed in Section 2.3.5.

**Table 2-1 Special Status Animals Known to Occur or with the potential to occur Within the Biological Study Area**

<b>Species</b>	<b>Status</b>	<b>Presence</b>
Southwestern pond turtle	California Species of Special Concern	Confirmed present; habitat present
Two-striped garter snake	California Species of Special Concern	Confirmed present; habitat present
California red-legged frog	California Species of Special Concern; Federally threatened	Confirmed present; habitat present
Southern California Steelhead	California Species of Special Concern; Federally endangered	Confirmed present; critical habitat present
White-tailed kite *	Fully Protected	Not known to occur within the biological study area.
Least Bell's Vireo *	Federally Endangered State Endangered	Nearest documented occurrence listed in the CNDDDB is approximately 20 miles from the project site.
Western yellow bat *	California Species of Special Concern	No evidence of roosting
Hoary bat *	California Species of Special Concern	No evidence of roosting
Pallid bat *	California Species of Special Concern	No evidence of roosting
Townsend's big-eared bat *	California candidate Species	No evidence of roosting
Western mastiff bat *	California Species of Special Concern	No evidence of roosting
Western red bat *	California Species of Special Concern	No evidence of roosting

(\* Species included at the request of CDFW in their comment letter to the Draft IS/MND)

### *Southwestern Pond Turtle*

The southwestern pond turtle is a subspecies of the western pond turtle, which is the only native turtle in California. Though considered an aquatic species, southwestern pond turtles will use upland areas for refuge, nesting and resting sites. Breeding, however, usually takes place under water. The eggs are laid in excavated nests, typically in upland areas neighboring the aquatic habitat. Mating typically occurs in late April or early May, but may occur year-round. Most hatchlings are thought to emerge from the nest and move to the aquatic site in the spring.

Aquatic habitat for the southwestern pond turtle is present within Salsipuedes Creek at the project site. The presence of southwestern pond turtles has been confirmed in the project area several times during the last ten years.

### *Two-Striped Garter Snake*

The two-striped garter snake is a highly aquatic, non-venomous snake found along the coast from Salinas, California to northwestern Baja. Habitat for this species usually consists of stream corridors with permanent water and rocky beds bordered by willows or other vegetation, such as the habitat within the project area. The species was most recently observed at the project site in 2009 during a maintenance inspection of the existing bridge.

### *Migratory Birds*

Various species of migratory birds could potentially nest in the Central Coast Arroyo Willow Riparian Forest and Central Coastal Scrub habitats which occur within the project area. There is also the potential for swallows nesting on the bridge structure. Common birds observed within the project area include; turkey vulture, American cliff swallow, California towhee, spotted towhee and house finch.

### *Bats*

Several species of bats are currently listed as California State Species of Concern. Bridges and tree snags are commonly used as bat roosts. The project area could provide suitable habitat for a wide variety of bats. Protected species that could be found within the project limits are listed in Table 2-2.

No signs of bat roosting, such as guano deposits or staining were observed in trees or on the existing bridge during general daytime surveys. Nighttime roost surveys were not conducted due to the absence of bat roosting signs during daytime surveys.

## **Environmental Consequences**

### *Southwestern Pond Turtle*

There will be no loss of acreage to aquatic habitat as a result of the project. However, approximately 300 feet of existing habitat up and downstream of the bridge will be altered as a result of construction of the roughened rock ramp to mitigate for impacts to fish passage as required by the National Marine Fisheries Service, August 24, 2015 Biological Opinion (Appendix F). The ponded habitat that now exists will be filled with large boulders in order to construct the roughened rock ramp at a 2% slope, creating a series of step pools to allow for passage of juvenile and adult steelhead. It is anticipated that these step pools will also be accessible for use by southwestern pond turtle.

Approximately 0.3 acres of aquatic habitat would be temporarily impacted during construction as a result of water diversion. Approximately 0.1 acres of upland riparian habitat would be temporarily impacted in order to provide construction access down to the creek bed. Permanent impact to 0.02 acres of riparian habitat may result from the need to grade an area adjacent to the new bridge abutments to provide access for bridge maintenance and inspection.

Habitat disturbance during construction could place individual turtles at risk. If southwestern pond turtles enter the work area during construction, they could be injured or killed. The proposed project would require the relocation of southwestern pond turtles found in the work area during construction.

### *Two-Striped Garter Snake*

Similar to impacts to the southwestern pond turtle habitat, temporary impacts to aquatic and riparian habitat would be due to diverting water around the construction site and clearing an access path to the creek bed. There is potential for approximately 0.02 acres of permanent impact to riparian habitat due to the potential need to grade an area adjacent to the new bridge abutments to provide access for bridge maintenance and inspection.

Habitat disturbance during construction could place these snakes at risk. If two-striped garter snakes enter the work area during construction they could be injured or killed.

### *Migratory Birds*

Vegetation removal could directly affect active bird nests containing eggs or young. Indirect impacts could also result from noise and disturbance associated with construction, which could alter perching, foraging, and/or nesting behavior.

### *Bats*

Though no signs of bats or bat roosts were found during general daytime surveys, it is possible that bats could establish new roosts in trees within the area of potential impact, or on the existing bridge prior to the commencement of construction. If bat roosting is established, direct impacts to bats could result during removal of vegetation and/or the bridge. These direct effects could result in injury or death of bats and/or harassment that could alter roosting behavior. Indirect impacts could also result from noise and disturbance associated with construction, which could also alter roosting behaviors.

### ***Avoidance, Minimization, and/or Mitigation Measures***

#### *Southwestern Pond Turtle and Two-Striped Garter Snake*

The following measures will be incorporated into the project to avoid and minimize impacts to both southwestern pond turtle and two-striped garter snake.

1. Surveys will be conducted by qualified biologists up and downstream of the work area in order to identify appropriate habitat for relocation of special status animals.
2. Pre-construction surveys for southwestern pond turtle, two-striped garter snake and other special status animal species will be conducted no more than 48 hours before the onset of any work activities.
3. Southwestern pond turtle, two-striped garter snake or other special status animal species discovered during pre-construction surveys would be relocated to pre-identified suitable habitat locations within Salsipuedes Creek far enough from the construction work area to reduce the likelihood of re-entry into the project limits.
4. No work would be conducted in the stream channel while wet. Per the National Marine Fisheries Service Biological Opinion, dated August 24, 2015, (Appendix F), water in Salsipuedes Creek is to be diverted around the area where construction will be taking place through use a cofferdam and a 36-inch diameter pipe. The cofferdam would be constructed across

the width of the channel and immediately upstream of the bridge. The dam will be composed of gravel bags (filled with washed river gravel) and a plastic liner, diverting water from the full width of the stream down to the pipe, returning to the creek approximately 450-feet downstream.

5. The California Department of Fish and Wildlife will be consulted prior to constructing the diversion.
6. As part of the cofferdams, animal barriers will be installed prior to the diversion. Any special status animals present between these barriers will be relocated within Salsipuedes Creek by a National Marine Fisheries Service and U.S. Fish and Wildlife Service approved biologist(s), as authorized under the National Marine Fisheries Service Biological Opinion (Appendix F) and U.S. Fish and Wildlife Programmatic Biological Opinion (Appendix G). All debris and aquatic emergent vegetation in the area will be carefully inspected for special status animals.
7. Following the diversion, dewatering will be required to maintain a dry work area. As the work site is de-watered, remaining pools shall be inspected for special status animals. Water will be pumped into a settling tank to prevent suspended sediments from being discharged back into the creek. Intakes shall be completely screened with wire mesh not larger than five millimeters (mm) to prevent juvenile aquatic species from entering the pump system.
8. All project personnel will receive environmental training that is to include; special status animal identification and natural history, protective measures and boundaries within which the project may be accomplished.
9. If two-striped garter snake, southwestern pond turtle or other special status animal species are observed within the biological study area during construction, they will be relocated by an approved biologist to suitable areas within Salsipuedes Creek and outside of the biological study area.
10. Detailed records of special status animals handled will be kept and reported to the appropriate resource agency.
11. Stockpiling materials, storing equipment and liquid waste containers, washing vehicles or equipment or fueling and maintaining vehicles or

mobile equipment must be performed at least 100-feet from riparian habitat or water bodies and in a location in which a spill would not drain directly toward the aquatic habitat.

12. Effects to downstream habitat will be avoided through the use of erosion and sedimentation Best Management Practices (BMPs).
13. Vegetation along the limits of the environmentally sensitive area fencing would be removed by hand to avoid or reduce unnecessary impacts to snakes, turtles and other wildlife species.
14. Vegetation in areas where temporary impacts would occur will be cut off at ground level rather than cleared and grubbed using heavy equipment. This measure would promote vegetative re-sprouting and minimize impacts to two-striped garter snake and other wildlife species.
15. A combination of Arroyo Willow, White Alder, California Sycamore, Western Cottonwood, Big Leaf Maple, and understory plants will be installed on the re-contoured slopes within the impacted portions of the riparian corridor in order to replace the lost riparian canopy and provide shade to the creek. Other upland trees and shrubs, such as Elderberry, Baccharis, Blackberry, Toyon, and Coffeeberry will be planted as small container plants on the upper slopes and top of the creek banks.

### *Migratory Birds*

Caltrans' Standard Specifications for Bird Protection will be included in the contract bid package and will be implemented during construction. Additional measures to be implemented for the protection of nesting migratory birds include:

1. Swallow nesting shall be excluded from the bridge prior to and during construction either by active removal of unfinished nests (no more than  $\frac{3}{4}$  completed) or through the use of exclusion netting. General bird surveys will be conducted two weeks prior to the onset of construction activities by a qualified biologist to determine if nesting on the bridge is occurring.
2. To avoid impacting nesting birds all clearing of vegetation will be accomplished between September 1 and February 15, outside the nesting season.

3. If any active bird nests are found, Caltrans will coordinate with the California Department of Fish and Wildlife to determine an appropriate buffer based on the habitats and needs of the species. Trees with active nests will not be removed until the young have fledged and are no longer reliant on the nest.

### **Bats**

The following measures will be incorporated into the project to avoid impacts to bats.

1. Prior to the removal of the existing bridge and vegetation, pre-construction surveys will be conducted by a qualified biologist(s) to determine presence/absence of bats within the area of direct project impact. The biologist(s) will also identify the nature of the bats' (i.e., no roosting, night roost, day roost, maternity roost) and determine if passive bat exclusion will be necessary or feasible.
2. If a qualified biologist(s) determines that bat exclusion is necessary and feasible, a qualified/licensed individual or contractor would implement passive exclusion (for example, netting) in areas where bats are roosting within the area of potential impact.
3. If bats are found to be maternity roosting (March 1 to September 15), active bat maternity roosts would not be disturbed or destroyed at any time.
4. If biological surveys indicate that bats are using the existing bridge, bat houses will be installed in and adjacent to the Salsipuedes creek bridge following completion of construction to replace habitat.

## **2.3.5 Threatened and Endangered Species**

### ***Regulatory Setting***

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This Act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this Act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or

destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. 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 Wildlife 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 Wildlife. For species listed under both the Federal Endangered Species Act and California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

### ***Affected Environment***

The following information came from the Natural Environmental Study, dated May 2014 (addendum April 2015)

#### ***California Red-Legged Frog***

The California red-legged frog is a federally threatened species and listed as a California Species of Special Concern. The California red-legged frog is known to occupy several types of habitat, from deep ponds fringed with vegetation to upland habitat, where they inhabit burrows during the dry season. California red-legged frogs breed from November through March in permanent or temporary freshwater bodies that will hold water for at least 20 weeks, usually through the month of July. Monterey, San Luis Obispo and Santa Barbara counties support the largest remaining California red-legged frog populations.

Presence and breeding of California red-legged frog within the biological study area was confirmed in 2007 during biological surveys. Egg masses were seen near the downstream extent of the biological study area in ponds that form during periods of low stream flow. One adult frog was observed at the upstream end of the biological study area.

#### ***Steelhead Trout***

The steelhead population within the project area is part of the Southern California Steelhead Distinct Population Segment (DPS). Steelhead are listed as federally endangered and as a California Species of Special Concern. Steelhead are anadromous fish, meaning that they migrate from the sea into fresh water to mate and lay eggs. The majority of adult steelhead enter freshwater streams or rivers in the fall or winter and spawn in early winter or spring.

Salsipuedes creek is a known steelhead fishery. While no steelhead were observed during biological studies, presence of steelhead is assumed within the project area.

#### ***White-Tailed Kite***

The white-tailed kite is recognized as a State of California Fully Protected species. Its Fully Protected status means no take authorization can be granted by the State of California for the species, other than for scientific purposes; therefore, take must be completely avoided. 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 distribution of this species is known to include parts of southern Santa Barbara County. White-tailed kite is not known to occur within the biological study area. No

white-tailed kites were observed during surveys of the biological study area. The nearest documented occurrence in the California Natural Diversity Database (CNDDDB) is approximately 45 miles to the Southeast, just south of U.S. 101 in Goleta, California. Nesting and perching habitat for this species consists of isolated, dense topped trees adjacent to foraging habitat which includes open grasslands, meadows or marshes. There is a small patch (less than 0.40 acres) of suitable nesting/roosting habitat within the project footprint and very little foraging habitat.

### ***Least Bell's Vireo***

Least Bell's vireo are listed as a federally and state endangered species. This species was once widespread and abundant throughout California's Central Valley and other low elevation riverine areas of California. This small gray migratory songbird has declined dramatically in both numbers and distribution due to widespread loss of riparian habitats and brood parasitism (one species laying eggs in another species nest so they don't have to rear their own young) by the brown-headed cowbird. Currently, breeding distribution is restricted to a few localities in southern California and northwestern Baja California. Critical habitat for this species was designated by the U.S. Fish and Wildlife Service in 1994 and includes reaches of ten streams in southern California from Santa Barbara County to San Diego County but not within Salsipuedes Creek. No least Bell's vireo have been reported at the project site and the nearest documented occurrence in the California Natural Diversity Database (CNDDDB) is approximately 20 miles to the northeast along the Sisquoc River. However, in their August 4, 2014 comment letter (Appendix D) on the draft Initial Study with Proposed Mitigated Negative Declaration, the California Department of Fish and Wildlife expressed concerns about the potential for marginal habitat within the project limits. Based on this concern, Caltrans biologists conducted a least Bell's vireo survey on June 18, 2015. The results of this survey concluded that marginal habitat does currently exist and since this species is experiencing range expansions in parts of Santa Barbara County it may make its way into the project's watershed given enough time. A small patch (less than 0.40 acres) of suitable habitat will be temporarily impacted during construction.

## ***Environmental Consequences***

### ***California Red-Legged Frog***

The project would temporarily impact 0.3 acres of aquatic habitat due to the need to divert water around the construction area inside the creek channel so that work can be conducted in a dry creek bed. Approximately 0.1 acre of upland riparian habitat would be temporarily impacted through construction of an access road leading down

to the creek channel. Approximately 0.02 acres of permanent impact to riparian habitat may occur if there is a need to grade an area adjacent to the new bridge abutments to provide access for bridge maintenance and inspection.

There will be no loss of acreage to aquatic habitat as a result of the project. However, approximately 300 feet of existing habitat up and downstream of the bridge will be altered as a result of construction of the roughened rock ramp to mitigate for impacts to fish passage as required by the National Marine Fisheries Service, August 24, 2015 Biological Opinion (Appendix F). The ponded breeding habitat that exists during periods of low-flow will be filled with large boulders in order to construct the roughened rock ramp at a 2% slope. This will create a series of smaller step pools to allow for passage of juvenile and adult steelhead. These small step pools could also serve as available California red-legged frog breeding habitat during periods of low-flow. California red-legged frog breeding habitat is present up and downstream of the proposed project within the Salsipuedes Creek Watershed, which drains approximately 52.4 square miles of water. Therefore, filling of this breeding pool will not result in a significant impact to California red-legged frog. Caltrans will be coordinating with the California Department of Fish and Wildlife, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service during the design of the roughened rock ramp to ensure that impacts to the breeding pond are minimized to the extent feasible while still meeting terms and conditions of the August 24, 2015 Biological Opinion.

The proposed project would require the relocation of California red-legged frogs found in the work area during construction. Direct effects on California red-legged frog would be associated with the necessary diversion of water within Salsipuedes Creek. It is likely that California red-legged frogs will be present at the beginning of construction activities. If this is the case, then impacts to California red-legged frog could include mortality and harassment of an unknown quantity that require capture and relocation to an area outside the of the construction zone. The project is likely to adversely affect California red-legged frog individuals due to the relocation (take) of individuals during stream channel diversion and dewatering activities. To authorize "take" of California red-legged frog, a Letter of Concurrence was issued by the U.S. Department of Fish and Wildlife on 8/11/2014, authorizing use of the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program (8-8-10-F-58). The U.S. Fish and Wildlife Service Programmatic Biological Opinion is attached as Appendix G.

### *Steelhead Trout*

Critical habitat for steelhead is defined as the width of the stream channel at the ordinary high-water line and the associated riparian vegetation. The project would temporarily impact 0.3 acres of critical habitat as a result of placement and operation of the stream diversion and during demolition and removal of the existing man-made structures in the creek. Approximately 0.1 acres of temporary impacts to riparian vegetation associated with steelhead aquatic habitat will occur as a result of clearing an access way to the creek channel for construction personnel and equipment. Approximately 0.02 acres of permanent impact to riparian habitat may occur if there is a need to grade an area adjacent to the new bridge abutments to provide access for bridge maintenance and inspection.

The proposed project would require the relocation of steelhead within the work area during construction. Direct effects on steelhead would be associated with the necessary diversion of water within Salsipuedes Creek. The project is likely to adversely affect steelhead individuals due to the relocation (take) of individuals during the stream diversion and dewatering. To authorize “take” of steelhead, a Biological Opinion, dated August 24, 2015 has been issued by the National Marine Fisheries Service (Appendix F). It is expected that construction will be completed over two-seasons, as all instream work must occur between June 1 and October 31. It is likely that steelhead will be present at the beginning of construction activities. If this is the case, then impacts to steelhead could include mortality and harassment of an unknown quantity of steelhead that require capture and relocation to an area outside the of the construction zone.

Beneficial effects to steelhead habitat from the proposed project would result from the removal of all manmade structures inside the creek channel (bridge elements, concrete check dam, sacked concrete), construction of a roughened rock ramp to provide low-flow fish passage until the creek reaches a natural state of equilibrium, removal of non-native plants, and revegetation of all disturbed areas with native plant species.

Design of the roughened rock ramp will occur during the design of the new bridge and in consultation with the National Marine Fisheries Service.

### *White-Tailed Kite*

Due to the low likelihood of white-tailed kites occurring within the project biological study area, impacts are not anticipated. However, the species is known to occur in

parts of Santa Barbara County and may make its way into the projects watershed given enough time. General bird surveys will be conducted two weeks prior to the onset of construction activities by a qualified biologist. If white-tailed kite is identified during these surveys, Caltrans will notify the California Department of Fish and Wildlife.

#### ***Least Bell's Vireo***

Due to the low likelihood of least Bell's vireo occurring within the project biological study area, impacts are not anticipated. However, since this species is currently experiencing range expansions in parts of Santa Barbara County it could make its way into the project's watershed given enough time. Caltrans will conduct surveys for least Bell's vireo the season prior to start of construction. The work will most likely require contracting with a qualified biological firm to conduct protocol level surveys. If evidence of least Bell's vireo is confirmed, Caltrans will notify the California Department of Fish and Wildlife, and Section 7 Endangered Species Act Consultation will be reinitiated with the U.S. Fish and Wildlife Service.

#### ***Avoidance, Minimization, and/or Mitigation Measures***

##### ***California Red-Legged Frog***

The proposed project may adversely affect individual California red-legged frog during water diversion and dewatering activity. The following avoidance and minimization measures will be implemented to reduce potential adverse effects to California red-legged frog and their habitat. For additional details regarding measures to be implemented for the protection of California red-legged frog and their habitat please refer to the Programmatic Biological Opinion (Appendix G).

1. Only U.S. Fish and Wildlife approved biologist(s) will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. No ground disturbance is to occur until written approval is obtained from the U.S. Fish and Wildlife service regarding the qualifications of such biologist(s).
2. Appropriate relocation sites will be coordinated with the U.S. Fish and Wildlife Service prior to capturing and relocating any California red-legged frogs.

3. The names and credentials of personnel that are to conduct special status animal relocation activities as well as the relocation plan for California red-legged frog shall be supplied to the U.S. Fish and Wildlife Service for review and approval at least 30 days prior to the onset of construction activities. The approved biologist(s) will monitor the biological study area during all phases of construction within the wetted channel that have the potential to affect special status species.
4. No work would be conducted in the stream channel while wet. Water in Salsipuedes Creek is to be diverted around the area where construction will be taking place through use a cofferdam and a 36-inch diameter pipe. The cofferdam would be constructed across the width of the channel and immediately upstream of the bridge. The dam will be composed of gravel bags (filled with washed river gravel) and a plastic liner, diverting water from the full width of the stream down to the pipe, returning to the creek approximately 450-feet downstream.
5. The California Department of Fish and Wildlife will be consulted prior to constructing the diversion.
6. A U.S. Fish and Wildlife Service approved biologist(s) with experience in identification of all life stages of the California red-legged frog shall survey the project area no more than 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(s) will be allowed sufficient time to move them from the site before work begins. The approved biologist(s) will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and that will not be affected by activities associated with the proposed project. The relocation site should be in the same drainage to the extent practicable. Additional surveys will be conducted up and downstream of the project area in order to identify appropriate habitat for relocation of individual frogs.
7. Prior to the actual diversion of surface water, agency approved biologist(s) will survey the entire work area for steelhead, California red-legged frog, southwestern pond turtle, and all other special status species that may occur within the area of impact. These species will be captured, then relocated to predetermined area(s). Once relocations are complete, streamflow will be

diverted slowly and in stages to ensure the creek does not dewater suddenly. As flows are diverted, continual surveys of the dewatered area will be conducted and all California red-legged frog and other special status species in the dewatered area will be captured and relocated from residual wetted areas. Handling time shall be minimized to the maximum extent practicable. Detailed records of all captured species will be kept and reported to the appropriate resource agency.

8. Following the diversion, dewatering will be required to maintain a dry work area. As the work area is de-watered, remaining pools shall be inspected for California red-legged frogs and other special status species. All debris and aquatic and emergent vegetation in the pumped area shall be carefully inspected for California red-legged frogs and any other special status animal species. Water will be pumped into a settling tank to prevent suspended sediments from being discharged back into the creek. Intakes shall be completely screened with wire mesh not larger than five millimeters to prevent juvenile frogs or other special status animals from entering the pump system.
9. All project personnel will receive environmental training that is to include, at a minimum, a description of the California red-legged frog and all other special status species that may occur in the project area, their habitat requirements, protective measures, the boundaries within which the project may be accomplished, and reporting protocols for California red-legged frog, steelhead, and other special status species.
10. If California red-legged frog or other special status animal species are observed within the biological study area during construction, they will be relocated by an approved biologist to suitable areas within Salsipuedes Creek and outside of the biological study area.
11. Non-native species, such as bullfrogs, signal and red swamp crayfish and centrachid fishes will be removed from the project area to the extent feasible.
12. Effects to downstream habitat will be avoided through erosion and sedimentation best management practices.

13. 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 the work area.
14. All areas disturbed by construction will be recontoured to match existing natural habitat contours.
15. The number of access routes, size of staging areas, and the total area disturbed by construction will be limited to the minimum necessary to complete the project. Environmentally Sensitive Areas (ESA) will be delineated on the plans and protected with ESA fencing.
16. A combination of arroyo willow, white alder, California sycamore, western cottonwood, big leaf maple, and native understory plants will be planted on the re-contoured slopes within the impacted portions of the riparian corridor in order to replace the lost riparian canopy and provide shade to the creek. Other upland trees and shrubs, such as elderberry, coyote brush, blackberry, toyon, and coffeeberry will be planted on the upper slopes and along the top of the creek bank.
17. Use of herbicides in the aquatic environment will be prohibited. Application of herbicides for controlling invasive plant species outside of the aquatic environment will be restricted to the extent possible and will only be allowed if there is no other feasible method. Caltrans will implement herbicide application measures outlined in the U.S. Fish and Wildlife Service Programmatic Biological Opinion for California red-legged frog (Appendix G).
18. Stockpiling materials, storing equipment and liquid waste containers, washing vehicles or equipment or fueling and maintaining vehicles or mobile equipment must be performed at least 100-feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward the aquatic habitat.
19. Equipment used in the channel during construction will be inspected daily for fluid leaks. Any equipment found to be leaking will immediately be removed from the streambed for repair and will not be allowed on the job site until all fluid leaks are fixed.

### *Steelhead Trout*

The proposed project may adversely affect individual steelhead during water diversion and dewatering activity. The following avoidance, minimization and/or mitigation measures will be implemented to reduce potential adverse effects to steelhead and their habitat. For more detail regarding measures to be implemented for the protection of steelhead and their habitat please refer to the August 24, 2015 Biological Opinion in Appendix F:

1. Caltrans shall retain at least two biologists with expertise in the areas of resident or anadromous salmonid biology and ecology, fish/habitat relationships, biological monitoring and handling, collecting, and retaining salmonid species.
2. Approved biologist(s) shall monitor all construction activities, instream habitat, and performance of sediment-control devices for the purpose of identifying and reconciling any condition that could adversely affect steelhead or their habitat.
3. The names and credentials of personnel requested to conduct special status animal relocation activities as well as the relocation plan for steelhead shall be supplied to National Marine Fisheries Service for review and approval at least 30 day prior to the onset of relocation activities. The approved biologist(s) will monitor the biological study area during all phases of construction within the wetted stream channel.
4. All project personnel will receive environmental training that is to include, at a minimum, a description of the steelhead and all other special status species that may occur in the project area, their habitat requirements, protective measures, the boundaries within which the project may be accomplished, and reporting protocols for steelhead, and all other special status species that may be affected by the project.
5. Construction in defined jurisdictional areas within Salsipuedes Creek would be limited to the low-flow period between June 1 and October 31 to avoid potential take of steelhead during their spawning run.

6. No work would be conducted in the stream channel while wet. Per the Biological Opinion, dated August 24 (Appendix F), water in Salsipuedes Creek is to be diverted around the area where construction will be taking place through use a cofferdam and a 36-inch diameter pipe. The Cofferdam would be constructed across the width of the channel and immediately upstream of the bridge. The dam will be composed of gravel bags (filled with washed river gravel) and a plastic liner, diverting water from the full width of the stream down to the pipe, returning to the creek approximately 450-feet downstream. The flow rate will be as close to natural conditions as possible to facilitate movement of special status animals up and down stream.
7. Prior to the actual diversion of surface water, agency approved biologist(s) will survey the entire work area for steelhead, and all other special status species that may occur within the area of impact. These species will be captured, then relocated to a predetermined area(s). Once relocations are complete, streamflow will be diverted slowly and in stages to ensure the creek does not dewater suddenly. As flows are diverted, continual surveys of the dewatered area will be conducted and all steelhead, California red-legged frog, southwestern pond turtle and other special status species in the dewatered area will be captured and relocated from residual wetted areas. Handling time shall be minimized to the maximum extent practicable. Detailed records of all captured species will be kept and reported to the appropriate resource agency.
8. Following the diversion, dewatering will be required to maintain a dry work area. As the work area is de-watered, remaining pools shall be inspected for steelhead and other special status species. All debris and aquatic and emergent vegetation in the pumped area shall be carefully inspected for steelhead and any other special status animal species. Water will be pumped into a settling tank to prevent suspended sediments from being discharged back into the creek. Intakes shall be completely screened with wire mesh not larger than five millimeters to prevent juvenile aquatic species from entering the pump system.
9. Approved biologist(s) shall identify and evaluate the suitability of downstream and upstream steelhead relocation habitat(s) prior to undertaking dewatering activities.

10. Approved biologist(s) shall provide a written steelhead relocation report to the National Marine Fisheries Service within 30 working days following completion of the proposed project. The report shall include the number and size of all steelhead relocated during construction, the date and time of the collection and relocation, a description of any problems encountered during the project or when implementing the terms and conditions and any effect of the proposed action on steelhead that was not previously considered.
11. The approved biologist(s) shall contact the National Marine Fisheries Service immediately if one or more steelhead are found dead or injured in order to review the activities that resulted in the take and to determine if additional protective measures are required.
12. Use of herbicides in the aquatic environment will be prohibited. Application of herbicides for controlling invasive plant species outside of the aquatic environment will be restricted to the extent possible and will only be allowed if there is no other feasible method. Caltrans will implement herbicide application measures outlined in the U.S. Fish and Wildlife Service Programmatic Biological Opinion for California red-legged frog (Appendix G).
13. Following completion of construction each season (after October 31), barriers to surface flow will be removed and the streambed will be restored.
14. Equipment used in the channel during construction will be inspected daily for fluid leaks. Any equipment found to be leaking will immediately be removed from the streambed for repair.
15. Stockpiling materials, storing equipment and liquid waste containers, washing vehicles or equipment or fueling and maintaining vehicles or mobile equipment must be performed at least 100-feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward the aquatic habitat.
16. Effects to downstream habitat will be avoided through the use of erosion and sedimentation Best Management Practices (BMPs).
17. To preserve vegetation for bank stability and prevent unnecessary impacts to aquatic habitat, all construction related activities would be limited to the

- minimum area needed in order to construct the new bridge. Existing vegetation and tree canopy located adjacent to the areas that require clearing to construct the new bridge would be protected through the use of environmentally sensitive area fencing.
18. Clearing and grubbing will only occur only within the excavation and embankment slope limits, the temporary de-watering limits, the temporary contractor access area and equipment and materials storage limits.
  19. A combination of arroyo willow, white alder, California sycamore, western cottonwood, big leaf maple, and native understory plants will be planted on the re-contoured slopes within the impacted portions of the riparian corridor in order to replace the lost riparian canopy and provide shade to the creek. Other upland trees and shrubs, such as elderberry, coyote brush, blackberry, toyon, and coffeeberry will be planted on the upper slopes and along the top of the creek bank.
  20. A revegetation report that is to include a description of the locations that are revegetated, the proposed methods to monitor and maintain revegetated areas, criteria used to determine the success of plantings and pre- and post-planting photographs of the revegetated areas shall be provided to the National Marine Fisheries Service within 30 days following the completion of construction.
  21. Following completion of the new bridge structure, a National Marine Fisheries Service approved roughened rock ramp will be construction to improve fish passage and mitigate for the existing low-flow fish passage barrier.
  22. Design and construction of the roughened rock ramp is to be done in consultation with the National Marine Fisheries Service to insure that fish passage mitigation structure is stable and will provide suitable steelhead-passage conditions.
  23. Implementation of a monitoring and maintenance plan to assess post-project hydraulic and geomorphic conditions resulting from the fish passage structure shall be coordinated with the National Marine Fisheries Service.

### ***White-Tailed Kite***

The proposed project is not expected to result in impacts to White-tailed kite. General bird surveys will be conducted 2 weeks prior to the onset of construction activities by a qualified biologist. Caltrans standard specification for the protection of nesting migratory birds will be included as part of the contract bid package. If white-tailed kite is identified within the biological study area, Caltrans will notify the California Department of Fish and Wildlife.

### ***Least Bell's Vireo***

The proposed project is not expected to result in impacts to least Bell's vireo. However, Caltrans biologist(s) will conduct surveys for least Bell's vireo the season prior to start of construction. The work will most likely require contracting with a qualified biological firm to conduct protocol level surveys. If evidence of least Bell's vireo is confirmed, Caltrans will notify the California Department of Fish and Wildlife, and Section 7, Endangered Species Act Consultation will be reinitiated with the U.S. Fish and Wildlife Service.

## **2.3.6 Invasive Species**

### ***Regulatory Setting***

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health."

### ***Affected Environment***

The Natural Environment Study (April 2014) prepared for this project identified several invasive plant species within the biological study area including: Italian thistle, bull thistle, pampas grass, brass buttons, and yellow sweet clover.

### ***Environmental Consequences***

The proposed project is not likely to introduce or promote the spread of invasive plant species. Following Executive Order 13112, it is the intent of Caltrans to remove and control the spread of invasive plants at every opportunity.

### **Avoidance, Minimization, and/or Mitigation Measures**

1. During the plant establishment period, invasive species found within the areas that are being re-vegetated would be removed.
2. Invasive species encountered within the project area would be removed.

## **2.4 Cumulative Impacts**

### **Regulatory Setting**

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

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive 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.

California Environmental Quality Act Guidelines Section 15130 describes when a cumulative impact analysis is necessary 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. The cumulative impacts analysis prepared for this project was done so in conformance with Caltrans Guidance for Preparers of Cumulative Impact Analysis.

### **Affected Environment**

Identification of the resources to consider is the first step in preparing a cumulative impact analysis.<sup>3</sup> The proposed project would result in impacts to Southern

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<sup>3</sup> Guidance for Preparers of Cumulative Impact Analysis; developed by Federal Highway Administration California Division, Caltrans and the Environmental Protection Agency, Region IX.

California steelhead, California red-legged frog, southwestern pond turtle and two-striped garter snake individuals, as well as their associated riparian and/or aquatic habitats. All of these species are dependent on riparian and aquatic habitat therefore, consideration of the effects of past, present and reasonably foreseeable activities on these habitats and hence these species provided the basis for selection of these resources in this cumulative impact analysis.

The Resource Study Area was identified by considering the effects that past, current and reasonably foreseeable future projects have had or could have on local populations of steelhead, California red-legged frog, southwestern pond turtle and two-striped garter snake and their associated riparian and aquatic habitat. Two-striped garter snake has been added to the cumulative impact analysis since the circulation of the Draft Initial Study with Proposed Mitigated Negative Declaration because this species is known to be present within the project limits, is in poor or declining health and has the potential to be indirectly impacted by the proposed project. The boundaries of the Resource Study Area were defined by analyzing topographic maps and determining the flow pattern of waterways leading into Salsipuedes Creek. The Resource Study Area covers approximately 19,633 acres of land (30.7 square miles) adjacent to and surrounding the project site, encompassing the Salsipuedes Creek watershed from its headwaters to its confluence with the Santa Ynez river and from the headwaters of La Hoya, Los Anoles, El Jaro, and Palos Colorados Creeks to their confluences with Salsipuedes Creek (Figure 2-2).

### *Steelhead Trout*

Steelhead populations have decreased significantly from historic levels. In 1996 it was estimated that the total statewide population was 250,000 adults, less than half the population estimate in 1966<sup>4</sup>. Freshwater habitat loss and degradation of existing habitat are the primary contributors to the decline in steelhead populations. The National Marine Fisheries Service has identified over 50 Evolutionary Significant Units of salmon and steelhead, of which 26 are listed as threatened or endangered species under the Federal Endangered Species Act. An Evolutionary Significant Unit is defined as a population that 1) is substantially reproductively isolated from other populations, and 2) represents an important component in the evolutionary legacy of the species<sup>5</sup>.

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<sup>4</sup> Steelhead Restoration and Management Plan for California, DFG 1996

<sup>5</sup> Updated Status of Federally Listed ESU's of West Coast Salmon and Steelhead NOAA June 2005

The steelhead population within the project area is part of the Southern California Distinct Population Segment (DPS) and was listed as a federally endangered species in 1997 by the National Marine Fisheries Service.

Historically, the Santa Ynez River (a tributary to Salsipuedes Creek) supported the largest steelhead run in southern California<sup>6</sup>. As early as the late 1800s the Santa Ynez River and its lower tributaries, such as San Miguelito and Salsipuedes Creeks, provided a steelhead and rainbow trout recreational fishery. However, several studies have attributed the decline of Santa Ynez River steelhead to the construction of several large dams beginning in the 1920s; The Gibraltar Dam, built in 1920 by the City of Santa Barbara, the Juncal Dam, built by the Montecito Water District in 1930 and the Bradbury dam, built in 1953 by the Bureau of Reclamation. Bradbury Dam is of particular concern because it is the largest of the dams and is situated the farthest downstream, blocking more than two-thirds of the historic steelhead spawning and rearing habitat.<sup>7</sup> Various life stages of steelhead, including upstream migrants and smolts have been consistently observed within the Resource Study Area however, it is suspected that run sizes are small and that populations are not viable over the long-term.

Following the listing of the southern California steelhead as endangered in 1997, the National Marine Fisheries Service organized a Technical Recovery Team, to develop the scientific information necessary to issue a Recovery Plan. The team released a series of technical memoranda, followed by a Final Recovery Plan, which identified a number of measures designed to assist in the recovery of southern California steelhead. Over the years, researchers from the National Marine Fisheries Service as well as other agencies, organizations, and academic institutions have compiled an increasing amount of research on southern steelhead history, biography, ecology, demographics, behavior, genetics and other topics. Until now, the history of steelhead in the Santa Ynez River watershed and its recreational fishery has not been examined in detail but with the growing research, such information will be crucial for future southern steelhead science and management.

Based on the National Oceanic and Atmospheric Administration Technical Memorandum dated June 2005, the Biological Review Team conducting reviews of

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<sup>6</sup> California Department of Fish and Game, *Steelhead Restoration and Management Plan*, February 1996

<sup>7</sup> A History of Steelhead and Rainbow Trout (*Oncorhynchus mykiss*) in the Santa Ynez River Watershed, Santa Barbara County, California. Peter S. Alagona, Scott D. Cooper, Mark Capelli, Matthew Stoecker, and Peggy H. Beedle, December 2012.

the status of West Coast populations of Pacific Salmon and steelhead predicted that the viability of self-sustaining steelhead populations within the Southern California Steelhead Distinct Population Segment are in danger of extinction. In 1996 the original Biological Review Team noted that there had been extensive loss of Southern California steelhead populations, especially south of Malibu Creek, due to urbanization, dewatering, channelization of creeks, man-made barriers to migration and the introduction of exotic fish and riparian plants. Historic estimates on steelhead run size within the Santa Ynez, Ventura and Santa Clara rivers and Malibu Creek was estimated to be 32,000-46,0000. As of the writing of the National Oceanic and Atmospheric Administration Technical Memorandum (June 2005), run sizes for the same four systems were estimated to be less than 500 adults.

### *California Red-Legged Frog*

The California red-legged frog was listed as a federally threatened species in May of 1996 and is considered a California species of special concern. The historic range for the California red-legged frog extended along the coast from southern Mendocino County and inland from the vicinity of Redding California to northwestern Baja California, Mexico. Currently, California red-legged frogs are found primarily in the coastal streams and wetlands of Monterey, San Luis Obispo and Santa Barbara counties. It is estimated that this species has been eliminated from approximately 70% of its historic range due to habitat loss and destruction and possibly due to the introduction of predatory species such as the American bullfrog. One of the largest known populations currently occurs within the Resource Study Area, on the Santa Ynez River between Jameson and Gibraltar reservoirs. A Final Recovery Plan for this species was approved on September 12, 2002. In areas that have been designated critical habitat, some form of management will need to take place to address current and future threats to the species and maintain the physical and biological features necessary for conservation of the species. Critical habitat unit STB 4 is within the Resource Study Area therefore, management of habitat within the Resource Study Area has been established. According to the Recovery Plan for the California Red-legged Frog, delisting of the species could occur by 2025 if recovery criteria are met.<sup>8</sup>

### *Southwestern Pond Turtle*

The southwestern pond turtle is listed as a California Species of Special Concern. Southwestern pond turtle inhabit the central coast range south of the San Francisco Bay area to northern Baja California, including parts of the Mojave River. Habitat is

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<sup>8</sup> U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. viii+173pp

composed of ponds, lakes, rivers, streams, creeks, marshes and irrigation ditches with ample vegetation overwintering in woodlands, grasslands and open forests.<sup>9</sup>

Southwestern pond turtle were once widely distributed but populations have declined and continue to decline in southern California and over most of their northern range. Habitat destruction is attributed to being the major cause of this population decline. Over 90% of the wetland habitat within the historic range of the southwestern pond turtle in California has been eliminated due to agricultural development, flood control, water diversion projects and urbanization<sup>10</sup>. Population decline has occurred rapidly within a short period of time. In 1960, there were 87 known sites between Ventura County to the Mexican border that were occupied by southwestern pond turtles. By 1970, only 57 of the 87 previously identified sites contained turtles. In 1987, 255 sites were surveyed for turtles and only 53 locations out of the 255 sites surveyed contained turtles. Of the 53 locations, only 10 were thought to contain reproductively viable populations<sup>11</sup>.

### *Two-Striped Garter Snake*

The two-striped garter snake is listed as a California Species of Special Concern. The range of the two-striped garter snake extends from coastal California near Salinas, in Monterey County, south to northern Baja California (Mexico)<sup>12</sup>. Habitat for this species generally consists of stream corridors with permanent water and rocky beds bordered by willows or other vegetation.<sup>13</sup> Two-striped garter snake populations have declined due to loss and degradation of habitat through urbanization and flood control, agricultural practices such as excessive livestock grazing, predation by introduced species such as bullfrogs, fishes and feral pigs, and loss of amphibian prey. This species is now gone from about 40% of its original range.<sup>14</sup>

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<sup>9</sup> <http://www.californiaherps.com/turtles/pages/a.pallida.html>

<sup>10</sup> U.S. Fish and Wildlife, 1992

<sup>11</sup> Western Pond Turtle, Jeff Lovich, United State Geological Survey

<sup>12</sup> <http://www.iucnredlist.org/details/21707/0>

<sup>13</sup> Stebbins, R. 1985. Peterson Field Guide to Western Reptiles and Amphibians. Boston: Houghton Mifflin

<sup>14</sup> Jennings, M.R., and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final Report of the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA. 225 pp.

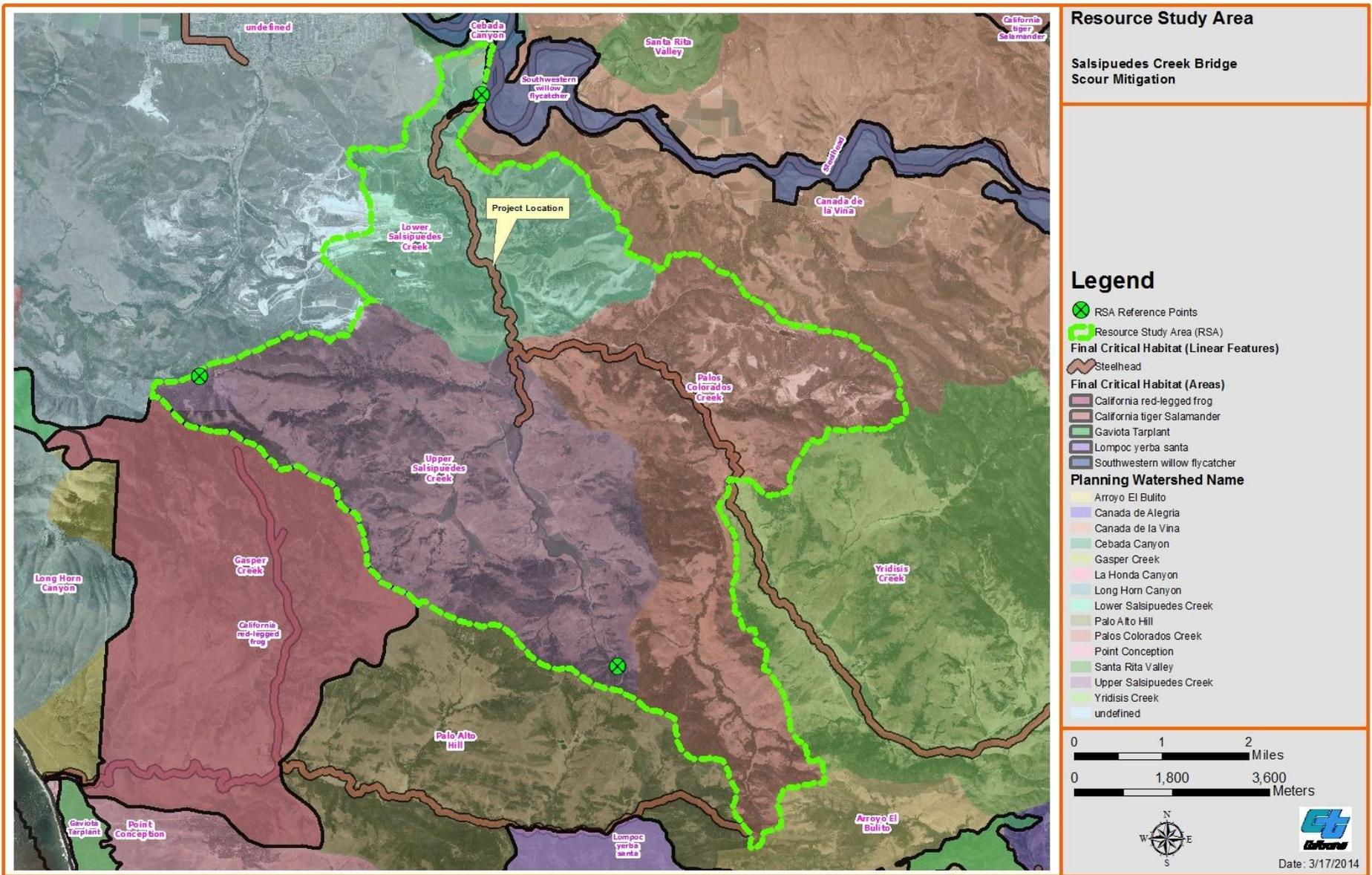


Figure 2-2 Resource Study Area

## ***Environmental Consequences***

Information on current and probable future projects was requested from the County of Santa Barbara Planning Department, California Department of Fish and Wildlife, the Regional Water Quality Control Board, the United States Army Corps of Engineers, the U.S. Fish and Wildlife Service, Cachuma Operations and Maintenance Board, and the Southern California Gas Company as well as from Caltrans' Encroachment Permits Branch and Transportation Planning Department.

Currently there is a long-term, ongoing project within the Resource Study Area that is being implemented as part of the Lower Santa Ynez River Fish Management Plan (FMP). This project consists of extensive ongoing scientific studies involving monitoring of steelhead habitat and water quality conditions. This monitoring effort is conducted annually by the Cachuma Operations and Maintenance Board (COMB) as a compliance condition of the Biological Opinion issued by the National Marine Fisheries Service to the U.S. Bureau of Reclamation for the operation and maintenance of Bradbury Dam (Cachuma Project). The studies serve to evaluate the effects of the Cachuma Project on Santa Ynez River steelhead below Bradbury Dam. The studies involve collection of data throughout the year on steelhead population changes, movement and reproductive success, target flow compliance, water quality conditions, and the effectiveness of restoration activities.<sup>15</sup> The most recent Annual Monitoring Summary and Trend Analysis Report was finalized on June 28, 2013. This report presents the data and summarizes the results of monitoring southern steelhead and water quality conditions in the Lower Santa Ynez River below Bradbury Dam between October 1, 2010 and September 30, 2011. The report also includes references to observations and fish population trends between 2001 through 2011, which suggest that population trends in the number of southern steelhead in the basin have increased, likely due to projects implemented by the U.S. Bureau of Reclamation. Such projects include; the Hilton Creek Watering System (HCWS), completed in 1999, which provides additional water for steelhead spawning, rearing and passage; the tributary passage enhancement projects on Hilton, Quiota, El Jaro, and Salsipuedes creeks completed between 2004 and 2005; bank stabilization and erosion control projects on El Jaro Creek, maintenance of the mainstem and Hilton

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<sup>15</sup> 2008 Annual Monitoring Report and Trend Analysis for 2005-2008, U.S. Bureau of Reclamation – South Central California Area Office; June 23, 2011.

Creek flow targets; and implementation of the Fish Passage Supplementation Program.<sup>16</sup>

These observations suggest that management actions implemented by the U.S. Bureau of Reclamation on the Lower Santa Ynez River have had a positive affect to trends in the number of southern steelhead in the basin. This positive influence is likely due to several completed projects implemented through the Lower Santa Ynez River Fish Management Plan.

Several reasonably foreseeable projects within the resource study area have been identified and include:

- Santa Barbara County Public Works Department proposed Jalama Road Bridge Widening Project located approximately 200 feet from the junction of Highway 1 at post mile 15.0 and Jalama Road. A Draft Mitigated Negative Declaration dated December 2013 has been prepared for this proposed project.
- A proposed project that would revise the Reclamation Plan (the process of restoring land that has been mined) for the Sepulveda Sand/Lompoc Stone Company. The original Reclamation Plan is set to expire on June 30, 2045. The proposed revised Reclamation Plan would extend the expiration date until December 31, 2060 as well as expand the reclamation area from 138.6 acres to 178.5 acres and extend the termination date for mining activities from June 30, 2045 to December 31, 2060. The revision also proposes to expand the area used for processing and storage of mined material from 3 acres to 6.5 acres. The mine is located at the north end of the Resource Study Area near the confluence of Salsipuedes Creek and the Santa Ynez River. A draft Negative Declaration dated June 26, 2014 has been prepared for this proposed project.
- A proposed project that would clean out the sediment basin at the Imerys Minerals California Inc. The mine is located approximately one mile south of the city of Lompoc.

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<sup>16</sup> 2011 Annual Monitoring Report Summary and Trend Analysis, Cachuma Operation and Maintenance Board, Fisheries Division; June 28, 2013.

- A project proposed by the Cachuma Operations and Maintenance Board to make modifications to the existing fish ladder at Jalama Bridge. The fish ladder is located at the downstream side of the Jalama Bridge.

### *Steelhead Trout*

Temporary impacts to steelhead trout habitat and individuals would result during construction of the proposed Salsipuedes Creek Bridge Scour Mitigation Project. Temporary impacts would occur due to the need to dewater the creek channel and to relocate individuals before and potentially during the dewatering process. The project will also involve construction of a National Marine Fisheries Service approved roughened rock ramp that will facilitate upstream migration of juvenile and adult steelhead. Replacing the existing three-span bridge with a single-span bridge, removal of the existing manmade materials from the creek channel and construction of the roughened rock ramp will result in long term benefits to southern steelhead.

Biologists working for the Cachuma Operations and Maintenance Board have been monitoring the Santa Ynez River watershed for over two decades as part of the Lower Santa Ynez River Fish Management Plan<sup>17</sup>. This monitoring effort provides valuable information on the health of the steelhead habitat within the watershed and helps inform the development of cost-effective programs that can benefit steelhead and the environment. The main goal of the fish management plan is to provide projects and management strategies that will protect, enhance, restore and create new habitat for spawning and rearing of steelhead while balancing the need for adequate public water supply. Projects implemented through the Fish Management Plan will continue to benefit steelhead populations and habitat within the resource study area. This ongoing monitoring project and associated programs are expected to contribute to a direct and indirect cumulative benefit to steelhead and their habitat.

According to the Draft Mitigated Negative Declaration (December 2013), the Jalama Road Bridge Widening Project could potentially cause indirect impacts to steelhead habitat from elevated turbidity and suspended sediments due to erosion and sedimentation resulting from construction activity. Widening of the bridge will also lead to permanent and temporary loss of riparian vegetation. In accordance with the provisions of the Memorandum of Understanding between the Federal Highway Administration and Caltrans (October 1, 2012) codified in 23 U.S.C. 327, Caltrans serves as the lead federal agency for the proposed bridge widening project and has

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<sup>17</sup> <http://fmp.cachuma-board.org/ssmp/about.htm>

made the determination that the proposed project is not likely to adversely affect steelhead or designated critical habitat. The National Marine Fisheries Service has concurred with this determination. The proposed bridge widening project is not expected to result in an adverse cumulative impact to steelhead or their habitat.

According to the Draft Mitigated Negative Declaration for the Sepulveda Sand/Lompoc Stone Revised Reclamation Plan (June 26, 2014), reclamation activities involve earthmoving, compaction and re-contouring. These activities create airborne dust and can cause erosion depending on the steepness of the slopes, the time it takes for re-establishment of vegetation and precipitation events. These activities could potentially result in temporary adverse effects to water quality within the Resource Study area, causing temporary impacts to steelhead and steelhead habitat. Additionally, the current ongoing mining operation is likely having an indirect adverse impact to water quality due to its close proximity to the Santa Ynez River and any expansion of the mining operation would potentially result in continued indirect impacts to water quality, affecting steelhead habitat within the Resource Study Area. The continued mining in combination with the reclamation project are likely contributing to a cumulative effect to steelhead and steelhead habitat. However, once mining of the area is terminated and reclamation is complete, consistent with the conditions of the Reclamation Plan, water quality and hence improved steelhead habitat would result.

The current and ongoing operation of the Imerys Minerals California Inc. is likely adversely contributing to indirect water quality impacts within the resource study area. Currently the corporation is preparing an environmental document which will disclose potential environmental impacts that could result from a project that proposes to clean out an existing silt basin. The silt basin acts as a sediment trap for mine tailings and is currently at full capacity. The proposed project to clean out the silt basin could have temporary water quality impacts associated with construction. However, when complete, the proposed project would likely result in an indirect benefit to water quality and steelhead habitat by trapping sediments on site and reducing the amount of sediment runoff into the drainages within the resource study area. Cleaning out the silt basin so that it functions properly by collecting sediments before they reach waterways would likely contribute to an indirect cumulative benefit to Steelhead habitat.

As part of the Lower Santa Ynez River Fish Management Program, The Cachuma Operations and Maintenance Board is proposing a project that would modify the

existing fish ladder at Jalama Bridge. Modification of the existing fish ladder could have temporary impacts to steelhead during construction; however, this project would ultimately provide a beneficial cumulative contribution to steelhead within the Resource Study Area by improving fish passage conditions.

Based on the analysis of cumulative impacts to steelhead in the Resource Study Area, although there appears to have been a historically significant cumulative impact to steelhead trout and their habitat, this analysis has found that the negative impacts have stabilized and with the trend towards improved habitat, that there is not a significant cumulative impact on steelhead trout or their habitat within the Resource Study Area. The proposed Salsipuedes Creek Bridge Scour Mitigation Project would not contribute to a significant adverse cumulative impacts to steelhead trout. The proposed project is expected to result in a cumulative benefit to steelhead habitat by replacing the three-span bridge with a single-span structure and removing all manmade structures within the creek channel, which will allow the creek to flow unimpeded and return to its natural meander, reaching a state of equilibrium over time. The construction of a National Marine Fisheries Service approved roughened ramp designed to pass juvenile steelhead will further benefit steelhead habitat and upstream migration.

#### *California red-legged frog*

In 2007, during biological surveys for the proposed Salsipuedes Creek Bridge Scour Mitigation Project, California red-legged frog egg masses were discovered in a pool located just downstream of the existing bridge.

During construction of the proposed Salsipuedes Creek Bridge Scour Mitigation Project, water will be diverted out of these pools so that work can be conducted in a dry stream channel. This water diversion will result in approximately 0.3 acres of direct temporary impacts to California red-legged frog aquatic habitat. The proposed project will also result in approximately 0.1 acres of temporary impact to riparian habitat due to the need to construct an access road to the work area. Approximately .02 acres of permanent impacts to riparian habitat may result if there is a need to grade an area adjacent to the new bridge abutments to provide access for bridge maintenance and inspection. The proposed project will also include construction of a roughened rock ramp to improve upstream steelhead migration as a condition of the August 24, 2015 Biological Opinion from the National Marine Fisheries Service (Appendix F). There will be no loss of acreage to aquatic habitat as a result of implementation of the rock ramp. However, approximately 300 feet of existing pool

habitat directly up and downstream of the bridge will be altered through filling of the ponded habitat with large boulders in order to construct the rock ramp at a 2% slope. The rock ramp will create a series of step pools that will allow for passage of juvenile and adult steelhead.

The ongoing monitoring conducted by the Cachuma Operations and Maintenance Board on water quality and steelhead habitat provides valuable data on the health of the lower Santa Ynez River and tributaries and helps inform the development and implementation of potential future projects that would improve water quality and habitat for southern steelhead. Any improvement to the aquatic environment and adjacent riparian habitat would also benefit California red-legged frog. Projects implemented through the Fish Management Plan will continue to benefit California red-legged frogs and their habitat within the lower Santa Ynez River basin. This ongoing monitoring project and associated programs are expected to contribute to direct and indirect cumulative benefit to California red-legged frog and their habitat.

According to the Draft Mitigated Negative Declaration (December 2013), the Jalama Road Bridge Widening Project will result in temporary impacts to California red-legged frog habitat through removal of riparian vegetation during construction. The project could also result in destruction, crushing and mortality of individual frogs. Because the proposed project has federal funding under the Federal Highway Administration's Federal Aid Program, authorization to use Caltrans Programmatic Biological Opinion (No. 8-8-10-F-58) has been obtained for this project. Implementation of avoidance and minimization measures from this permit will be incorporated to reduce potential impacts to California red-legged frog to less than significant. The proposed bridge widening project is not expected to result in an adverse cumulative impact to California red-legged frog or their habitat.

According to the Draft Mitigated Negative Declaration for the Sepulveda Sand/Lompoc Stone Revised Reclamation Plan (June 26, 2014), reclamation activities involve earthmoving, compaction and re-contouring. These activities create airborne dust and can cause erosion depending on the steepness of the slopes, the time it takes for re-establishment of vegetation and precipitation events. These activities could potentially result in indirect temporary adverse effects to water quality within the Resource Study Area, causing temporary impacts to California red-legged frog and their habitat. Additionally, the current ongoing mining operation is likely having an indirect adverse impact to water quality due to its close proximity to the Santa Ynez River and any expansion of the mining operation would potentially result in

continued indirect impacts to water quality, affecting aquatic habitat within the Resource Study Area. The continued mining in combination with the reclamation project are likely contributing to a cumulative effect to California red-legged frog and their aquatic habitat. However, once mining of the area is terminated and reclamation is complete, consistent with the conditions of the Reclamation Plan, water quality and hence improved aquatic habitat for California red-legged frog would result.

The current and ongoing operation of the Imerys Minerals California Inc. is likely adversely contributing to indirect water quality impacts within the Resource Study Area. Currently, the corporation is preparing an environmental document which will disclose potential environmental impacts that could result from a project that proposes to clean out an existing silt basin. The silt basin acts as a sediment trap for mine tailings and is currently at full capacity. The proposed project to clean out the silt basin could result in temporary water quality impacts associated with construction. However, when completed, the proposed project would likely result in an indirect benefit to California red-legged frog aquatic habitat by trapping sediments on site and reducing the amount of sediment runoff into the drainages within the resource study area. Cleaning out the silt basin so that it functions properly by collecting sediments before they reach waterways would likely contribute to an indirect cumulative benefit to California red-legged frog aquatic habitat.

As part of the Lower Santa Ynez River Fish Management Program, the Cachuma Operations and Maintenance Board is proposing a project that would make modifications to the existing fish ladder at Jalama Bridge. It is possible that temporary impacts to California red-legged frog could occur during the modification work on the existing fish ladder however, this project is not expected to result in adverse permanent impacts to California red-legged frog, nor would it adversely contribute to a cumulative impact to California red-legged frogs or their habitat.

Based on the analysis of cumulative impacts to California red-legged frog in the Resource Study Area, there appears to have been historically significant cumulative impacts to California red-legged frogs and their habitat. However, the trend toward improved habitat within the Resource Study Area through implementation of the California red-legged frog Recovery Plan as well as projects conducted through the Lower Santa Ynez River Fish Management Plan are expected to help stabilize the frog population. Due to the trend towards improved habitat, there is not a significant cumulative impact on California red-legged frog or their habitat within the Resource Study Area. The proposed Salsipuedes Creek Bridge Scour Mitigation Project would

not contribute to a significant adverse cumulative impact to California red-legged frog or their habitat.

### *Southwestern pond turtle*

Southwestern pond turtles have been documented by Caltrans biologists several times during the past ten years in pools up and downstream of the existing Salsipuedes Creek Bridge.

During construction of the proposed Salsipuedes Creek Bridge Scour Mitigation Project, water will be diverted out of these pools so that work can be conducted in a dry stream channel. This water diversion will result in approximately 0.3 acres of direct temporary impacts to southwestern pond turtle aquatic habitat. The proposed project will also result in approximately 0.1 acres of temporary impact to riparian habitat due to the need to construct an access road to the work area. Approximately .02 acres of permanent impacts to riparian habitat may result if there is a need to grade an area adjacent to the new bridge abutments to provide access for bridge inspection and/or maintenance. The proposed project will also include construction of a roughened rock ramp to improve upstream steelhead migration as a condition of the August 24, 2015 Biological Opinion from the National Marine Fisheries Service (Appendix F). There will be no loss of acreage to aquatic habitat as a result of implementation of the rock ramp. However, approximately 300 feet of existing pool habitat directly up and downstream of the bridge will be altered through filling of the ponded habitat with large boulders in order to construct the rock ramp at a 2% slope. The rock ramp will create a series of step pools that will allow for passage of juvenile and adult steelhead. It is anticipated that these step pools will also be accessible for use by southwestern pond turtle.

The ongoing monitoring conducted by the Cachuma Operations and Maintenance Board on water quality and steelhead habitat within the lower Sana Ynez River provides valuable data on the health of the lower Santa Ynez River and tributaries and helps inform the development and implementation of potential future projects that would improve water quality and habitat for southern steelhead as well as other aquatic species. Any improvement to the aquatic environment and adjacent riparian habitat would also benefit southwestern pond turtle. Projects implemented through the Fish Management Plan will continue to benefit southwestern pond turtle and their habitat within the lower Santa Ynez River. This ongoing monitoring project and associated programs are expected to contribute to a direct and indirect cumulative benefit to southwestern pond turtles and their habitat.

According to the Draft Mitigated Negative Declaration (December 2013), the Jalama Road Bridge Widening Project construction activities associated with bridge abutments/pilings and bridge widening could result in the loss of southwestern pond turtle habitat. Impacts to Southwestern pond turtle as a result of this project would be reduced to less than significant through incorporation of mitigation measures. The proposed bridge widening project is not expected to contribute to an adverse cumulative impact to southwestern pond turtles.

According to the Draft Mitigated Negative Declaration for the Sepulveda Sand/Lompoc Stone Revised Reclamation Plan (June 26, 2014), reclamation activities involve earthmoving, compaction and re-contouring. These activities create airborne dust and can cause erosion depending on the steepness of the slopes, the time it takes for re-establishment of vegetation and precipitation events. These activities could potentially result in temporary adverse effects to water quality within the Resource Study Area, causing temporary impacts to southwestern pond turtle aquatic habitat. Additionally, the current ongoing mining operation is likely having an indirect adverse impact to water quality due to its close proximity to the Santa Ynez River. Any expansion of the mining operation would potentially result in continued indirect impacts to water quality affecting southwestern pond turtle within the Resource Study Area. The continued mining in combination with the reclamation project are likely contributing to a cumulative effect to southwestern pond turtle and their aquatic habitat. However, once mining of the area is terminated and reclamation is complete, consistent with the conditions of the Reclamation Plan, water quality and hence improved aquatic habitat for southwestern pond turtle would result.

The current and ongoing operation of the Imerys Minerals California Inc. is likely adversely contributing to indirect water quality impacts within the Resource Study Area. Currently, the corporation is preparing an environmental document which will disclose potential environmental impacts that could result from a project that proposes to clean out an existing silt basin. The silt basin acts as a sediment trap for mine tailings and is currently at full capacity. The proposed project to clean out the silt basin could result in temporary water quality impacts associated with construction. However, when complete, the proposed project would likely result in an indirect benefit to southwestern pond turtle aquatic habitat by trapping sediments on site and reducing the amount of sediment runoff into the drainages within the Resource Study Area. Cleaning out the silt basin so that it functions properly by collecting sediments before they reach waterways would likely contribute to an indirect cumulative benefit to southwestern pond turtle aquatic habitat.

As part of the Lower Santa Ynez River Fish Management Program, the Cachuma Operations and Maintenance Board is proposing a project that would make modifications to the existing fish ladder at Jalama Bridge. It is possible that temporary impacts to southwestern pond turtle could occur during the modification work on the existing fish ladder however, this projects is not expected to result in adverse permanent impacts to southwestern pond turtles, nor would it adversely contribute to a cumulative impact to southwestern pond turtles or their habitat.

Based on the analysis of cumulative impacts to southwestern pond turtles in the Resource Study Area, there appears to have been a historically significant cumulative impact to southwestern pond turtle and their habitat. However, through implementation of projects associated with the California red-legged frog Recovery Plan and the Lower Santa Ynez River Fish Management Plan, improved habitat for southwestern pond turtle is likely occurring and will continue. Due to the trend towards improved habitat, there is not a significant cumulative impact on southwestern pond turtles within the Resource Study Area. The proposed Salsipuedes Creek Bridge Scour Mitigation Project would not contribute to a significant adverse cumulative impact to southwestern pond turtle.

#### *Two-Striped Garter Snake*

Two-striped garter snakes have been confirmed within the biological study area by Caltrans Biologist Tom Edell in 1998. The most recent sighting of this species at the project site was during maintenance monitoring in late August of 2009. The proposed project will result in 0.1 acre of temporary impacts. There is potential that the project would include grading an area adjacent to the new bridge abutments to provide access for bridge inspection and maintenance. If this occurs, approximately 0.02 acres of permanent impacts to garter snake (riparian) habitat would result.

The ongoing monitoring conducted by the Cachuma Operations and Maintenance Board on water quality and steelhead habitat within the lower Sana Ynez River provides valuable data on the health of the lower Santa Ynez River and tributaries and helps inform the development and implementation of potential future projects that would improve water quality and habitat for southern steelhead. Any improvement to the aquatic environment and adjacent riparian habitat would also benefit two-striped garter snake. Projects implemented through the Fish Management Plan will continue to benefit two-striped garter snake and their habitat within the lower Santa Ynez River. This ongoing monitoring project and associated programs are expected to

contribute to a direct and indirect cumulative benefit to two-striped garter snake and their habitat.

According to the Draft Mitigated Negative Declaration (December 2013) for the Jalama Road Bridge Widening Project, construction activities associated with bridge abutments/pilings and bridge widening will result in temporary and permanent impacts to willow riparian habitat, which is considered habitat for two-striped garter snake. This project is within the range of two-striped garter snake and the snake has been observed within the limits of the Salsipuedes Creek Bridge Scour Mitigation Project. Therefore, there is potential for impacts to this species as a result of this project. The Mitigation measures implemented for the protection of aquatic and invertebrate species outlined in the Draft Mitigated Negative Declaration will also reduce impacts to two-striped garter snake individuals and associated habitat. Therefore, impacts to two-striped garter snake as a result of this project would be reduced to less than significant through incorporation of these mitigation measures. The proposed bridge widening project is not expected to contribute to an adverse cumulative impact to two-striped garter snake.

According to the Draft Mitigated Negative Declaration for the Sepulveda Sand/Lompoc Stone Revised Reclamation Plan (June 26, 2014), reclamation activities involve earthmoving, compaction and re-contouring. These activities create airborne dust and can cause erosion depending on the steepness of the slopes, the time it takes for re-establishment of vegetation and precipitation events. These activities could potentially result in temporary adverse effects to water quality within the Resource Study Area, causing temporary impacts to two-striped garter snake aquatic habitat. Additionally, the current ongoing mining operation is likely having an indirect adverse impact to water quality due to its close proximity to the Santa Ynez River and any expansion of the mining operation would potentially result in continued indirect impacts to water quality affecting two-striped garter snake aquatic habitat within the resource study area. The continued mining, in combination with the reclamation project, are likely contributing to a cumulative effect to two-striped garter snake and their aquatic habitat. However, once mining of the area is terminated and reclamation is complete, consistent with the conditions of the Reclamation Plan, water quality and hence improved aquatic habitat for two-striped garter snake would result.

The current and ongoing operation of the Imerys Minerals California Inc. is likely adversely contributing to indirect water quality impacts within the Resource Study

Area. Currently the corporation is preparing an environmental document which will disclose potential environmental impacts that could result from a project that proposes to clean out an existing silt basin. The silt basin acts as a sediment trap for mine tailings and is currently at full capacity. The proposed project to clean out the silt basin could result in temporary water quality impacts associated with construction. However, when complete, the proposed project would likely result in an indirect benefit to two-striped garter snake aquatic habitat by trapping sediments on site and reducing the amount of sediment runoff into the drainages within the Resource Study Area. Cleaning out the silt basin so that it functions properly by collecting sediments before they reach waterways would likely contribute to an indirect cumulative benefit to two-striped garter snake aquatic habitat.

As part of the Lower Santa Ynez River Fish Management Program, the Cachuma Operations and Maintenance Board is proposing a project that would make modifications to the existing fish ladder at Jalama Bridge. It is possible that temporary impacts to two-striped garter snake could occur during the modification work on the existing fish ladder, however, this projects is not expected to result in adverse permanent impacts to two-striped garter snake, nor would it adversely contribute to a cumulative impact to two-striped garter snake or their habitat.

Based on the analysis of cumulative impacts to two-striped garter snake in the Resource Study Area, there appears to have been a historically significant cumulative impact to two-striped garter snake and their habitat. However, through implementation of projects associated with the California red-legged frog Recovery Plan and the Lower Santa Ynez River Fish Management Plan, improved habitat for two-striped garter snake is occurring and will likely continue. Due to the trend towards improved habitat, there is not a significant cumulative impact on two-striped garter snake within the Resource Study Area. The proposed Salsipuedes Creek Bridge Scour Mitigation Project would not contribute to a significant adverse cumulative impact to two-striped garter snake.

## 2.5 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of greenhouse gases generated by human activity including carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the United States, the main source of greenhouse gas emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of greenhouse gas emitting sources. The dominant greenhouse gas emitted is carbon dioxide, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing greenhouse gas emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)<sup>18</sup>.

There are four primary strategies for reducing greenhouse gas emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower greenhouse gas emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.<sup>19</sup>

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<sup>18</sup> [http://climatechange.transportation.org/ghg\\_mitigation/](http://climatechange.transportation.org/ghg_mitigation/)

<sup>19</sup> [http://www.fhwa.dot.gov/environment/climate\\_change/mitigation/](http://www.fhwa.dot.gov/environment/climate_change/mitigation/)

## **Regulatory Setting**

### *State*

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with green house gas emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this order is to reduce California's greenhouse gas emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 sets the same overall greenhouse gas emissions reduction goals as outlined in EO S-3-05, while further mandating that California Air Resources Board create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.”

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007). This order set forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research to develop recommended amendments to the California Environmental Quality Act Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning

Organization for each region must then develop a "Sustainable Communities Strategy" that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

### *Federal*

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level GHG analysis.<sup>20</sup> FHWA supports the approach that climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by FHWA to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but

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<sup>20</sup> To date, no national standards have been established regarding mobile source GHGs, nor has U.S. EPA established any ambient standards, criteria or thresholds for GHGs resulting from mobile sources.

also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. U.S. EPA in conjunction with NHTSA issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.<sup>21</sup>

The U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, U.S. EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards this program is projected to save approximately four billion barrels of oil and two billion metric tons of GHG emissions.

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<sup>21</sup> <http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq>

The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO<sub>2</sub> emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy duty vehicles.

### ***Project Analysis***

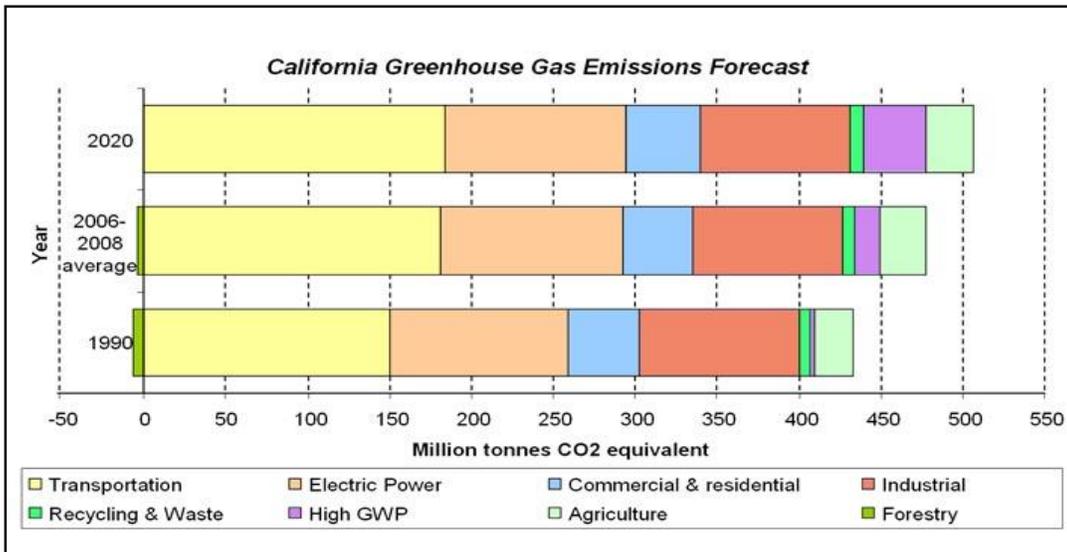
An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of greenhouse gas.<sup>22</sup> In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (California Environmental Quality Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The Assembly Bill 32 Scoping Plan mandated by Assembly Bill 32 includes the main strategies California will use to reduce greenhouse gas emissions. As part of its supporting documentation for the Draft Scoping Plan, the California Air Resources Board released the greenhouse gas inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the Greenhouse gas inventory for 2006, 2007, and 2008.

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<sup>22</sup> This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

**Figure 2-3 California Greenhouse Gas Forecast**



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

The Department and its parent agency, the Transportation Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California’s greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.<sup>23</sup>

The proposed project would not increase the capacity of the highway, as it would maintain the same number of lanes and capacity as the existing roadway. Because the project would not increase capacity nor vehicle hours travelled, no increases in operational greenhouse gas emissions are anticipated. During construction, traffic will be reduced to one lane while each half of the new bridge is constructed, which could create localized but temporary increases in traffic congestion. While construction emissions of greenhouse gases are unavoidable, the proposed project will result in an overall public benefit by maintaining a road connection that is at risk of failure.

<sup>23</sup> Caltrans Climate Action Program is located at the following web address: [http://www.dot.ca.gov/hq/tpp/offices/ogm/key\\_reports\\_files/State\\_Wide\\_Strategy/Caltrans\\_Climate\\_Action\\_Program.pdf](http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf)

### **Construction Emissions**

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

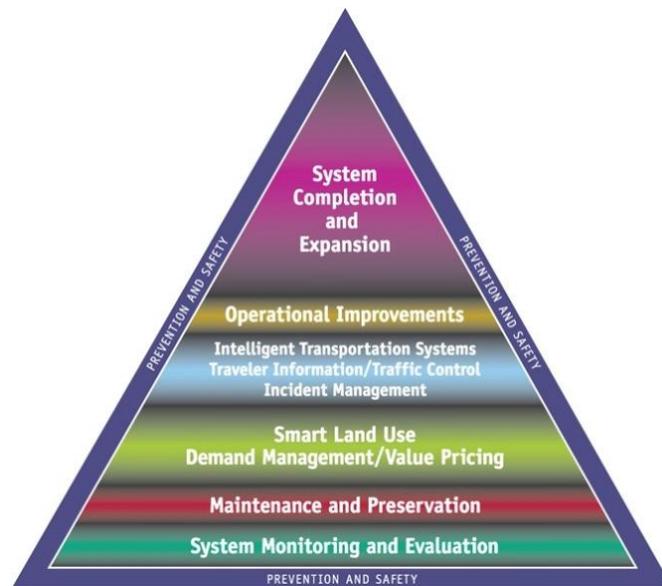
### **California Environmental Quality Act Conclusion**

While construction would result in a slight increase in greenhouse gas emissions, Caltrans' expects that there will be no operational increase in greenhouse gas emissions associated with the proposed project, as the project will not increase the capacity of Highway 1 through the project limits. While it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change. Caltrans' is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

### **Greenhouse Gas Reduction Strategies**

Caltrans continues to be involved on the Governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Many of the strategies Caltrans is using to help meet the targets in Assembly Bill 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California.

The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in greenhouse gas emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain carbon dioxide reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 2-3: The Mobility Pyramid.



**Figure 2-4 Mobility Pyramid**

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. Environmental Protection Agency and the Air Resources Board.

Caltrans is also working towards enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill 375 (Steinberg 2008), Senate Bill 391(Liu

2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill 32.

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. The California Transportation Plan defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the California Transportation Plan is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the California Transportation Plan 2040 will identify the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the State's transportation needs.

Table 2-2 summarizes the Departmental and statewide efforts that the Caltrans is implementing to reduce greenhouse gas emissions. More detailed information about each strategy is included in the [Climate Action Program at Caltrans](#) (December 2006)

<b>Table 2-2 Climate Change/CO<sub>2</sub> Reduction Strategies</b>						
Strategy	Program	Partnership		Method/Process	Estimated CO <sub>2</sub> Savings Million Metric Tons (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.045 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix	1.2	4.2
				25% fly ash cement mix > 50% fly ash/slag mix	0.36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Caltrans Directors Policy 30 (DP-30) Climate Change (June 22, 2012): is intended to establish a Caltrans policy that will ensure coordinated efforts to incorporate climate change into departmental decisions.

Caltrans Activities to Address Climate Change (April 2013)<sup>24</sup> provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

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

1. The project proposes to revegetate all disturbed soil areas following completion of construction. Landscaping reduces surface warming and, through photosynthesis, removes carbon dioxide from the atmosphere.
2. According to Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District rules, ordinances, and regulations in regard to air quality.
3. The temporary traffic signal used during construction for one-way traffic control, would be timed to reduce vehicle idling time.
4. Signage would be installed adjacent to the temporary traffic signal encouraging motorists to turn off their engines while waiting for the signal to change.
5. The project would make use of energy efficient, light emitting diode (LED) bulbs in the temporary traffic signal.

### **Adaptation Strategies**

“Adaptation strategies” refer to how the Department and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may

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<sup>24</sup> [http://www.dot.ca.gov/hq/tpp/offices/orip/climate\\_change/projects\\_and\\_studies.shtml](http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml)

affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011<sup>25</sup>, outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

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

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop The California Climate Adaptation Strategy (Dec 2009)<sup>26</sup>, which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and

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<sup>25</sup> <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>

<sup>26</sup> <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report<sup>27</sup> to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

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<sup>27</sup> *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at [http://www.nap.edu/catalog.php?record\\_id=13389](http://www.nap.edu/catalog.php?record_id=13389).

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

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

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

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## **Chapter 3**      **Comments and Coordination**

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Early and continuing coordination with the general public and public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis required, potential impacts and avoidance, minimization and/or mitigation measures and related environmental requirements. Agency consultation for this project has been accomplished through a variety of formal and informal methods, including Project Development Team meetings, interagency coordination meetings, site visits with various resource agencies, et cetera. Public outreach for this project included mailing out Notices of Intent and Notices of Opportunity for a public meeting to individuals and agencies who may have an interest in the project. A public notice was also published in the Lompoc Record. These notices provided individuals, government and non-government entities an opportunity to review and comment on the draft environmental document (Initial Study/Proposed Mitigated Negative Declaration) as well as an opportunity to request a public meeting. Comments received during the public circulation and comment period (July 7, 2014 to August 7, 2014) and responses to these comments can be found in Appendix D. There were no requests for a public meeting. This chapter summarizes the results of the Department's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

### *Biological Resource Coordination*

On June 04, 2009 a field meeting was held at the Salsipuedes Creek Bridge with the California Department of Fish and Wildlife. The focus of the meeting was to familiarize the Department of Fish and Wildlife with the project and seek input on potential mitigation requirements.

On August 20, 2009, a field meeting was held at the Salsipuedes Creek Bridge. The discussion focused on the existing fish ladder and whether or not it had the potential to be considered part of the project and if it met the requirements to pass juvenile steelhead. The possibility of needing a geomorphologic study of the creek was suggested.

On November 23, 2009, Caltrans representatives met with National Marine Fisheries Service to discuss whether the project would affect the fish ladder. The National Marine Fisheries Service requested that Caltrans conduct further analysis of the existing fish ladder and potential upgrades.

On April 29, 2010 a Project Development Team meeting was held at the Caltrans office with representatives from the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the California Department of Fish and Wildlife to discuss fish passage requirement and Caltrans preferred fish passage options. The National Marine Fisheries Service explained that the project would have to include a fish passage structure that would meet their guidelines for passing adult and juvenile steelhead and that more information on the creeks geomorphology would be required in order to determine what type of fish passage structure would meet this criteria. Therefore, Caltrans contracted Balance Hydrologics, Inc. to prepare the Salsipuedes Creek River Geomorphology Study (August 22, 2012).

Between October 2011 and August 2012 Caltrans engaged in Section 7 informal consultation with the National Marine Fisheries Service. The result of this coordination was a completed geomorphology report that included guidance on the feasibility of incorporating a fish weir or a fish way.

On July 18, 2013 an interagency meeting was held at the project site with representatives from California Department of Fish and Wildlife and the National Marine Fisheries Service to discuss concerns from both agencies regarding potential upstream and downstream effects resulting from the removal of the bridge and associated manmade in-stream elements, primarily the existing check dam. Additional discussions focused on how the project could mitigate for impacts to southern California steelhead and their critical habitat. The concerns and questions brought up during this meeting resulted in the preparation of the Supplemental River Geomorphology Report finalized in January, 2015.

On July 25, 2014 Caltrans sent a letter to the U.S. Department of Fish and Wildlife notifying them of the project and the fact that the project would likely result in adverse effects to the California red-legged frog, but would not affect the long-term viability of the population within the limits of the project. On August 11, 2014, the U.S. Fish and Wildlife Service issued a Letter of Concurrence that the proposed project is consistent and appropriate for inclusion under the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (HAD-CA, File # Section 7 with Ventura USFWS, Document #: S38192, Reference #: 1-8-F-68).

On May 15, 2015, Caltrans submitted a Supplemental Biological Assessment to the National Marine Fisheries Service, requesting Formal Section 7 Consultation. This consultation resulted in the issuance of the Biological Opinion, dated August 24, 2015. A copy of the Biological Opinion is attached in appendix F of this document.

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## **Chapter 4**      **List of Preparers**

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This document was prepared by the following Caltrans Central Region staff:

Allam Alhabaly, Transportation Engineer. B.S., Industrial Engineering; 11 years of experience in environmental technical studies, with emphasis on noise studies. Contribution: Updated Noise Study Report

Bonner, Larry, Senior Environmental Planner, B.S. Forestry and Natural Resources Management, California Polytechnic State University, San Luis Obispo; 15 years experience in environmental analysis and compliance. Contribution: Initial Study review.

Boudreau, Cecilia. Associate Environmental Planner. B.S. Forestry and Natural Resource Management, California Polytechnic State University, San Luis Obispo; 7 years experience in environmental analysis. Contribution: Coordinated environmental process, prepared Initial Study.

Brown, Katherine L. Landscape Associate. B.A. Landscape Architecture, University of California, Berkeley; 24 years experience in landscape architecture. Contribution: Project Landscape Architect.

Carr, Paula Juelke. Associate Environmental Planner (Architectural History). M.A., Independent Studies: History, Art History, Anthropology, Folklore and Mythology, University of California, Santa Barbara; B.A., Cultural Anthropology, University of California, Santa Barbara; 25 years of experience in California history. Contribution: Prepared Supplemental Historic Property Survey Report (2007).

Carr, Robert. Associate Landscape Architect. B.S., Landscape Architecture, California Polytechnic State University, San Luis Obispo; 20 years experience preparing Visual Impact Assessments. Contribution: Visual Impact Study.

Chafi, Abdulrahim, P.E., Civil/Environmental Engineer. Ph.D., Environmental Engineering Management, California Coast University at Santa Ana; M.S., Civil Engineering, California State University Fresno; 18 years experience in Environmental Engineering conducting Air, Noise and Water Quality Analysis. Contribution: Air Quality Review

- Donatello, Amy. P.E. B.S., Civil Engineering, California Polytechnic State University, San Luis Obispo, 20 years experience in civil and transportation engineering. Contribution: Project Manager.
- Dwivedi, Rajeev. Engineering Geologist. M.S. Geology, Wichita State University, M.S. Civil Engineering, Oklahoma State University, PhD Environmental Science, Oklahoma State University; 25 years of environmental science/engineering experience. Contribution: Water Quality Assessment
- Fisher, Tom. Senior Transportation Engineer. B.S., Civil Engineering, San Jose State University; 18 years experience. Contribution: Location Hydraulic Study.
- Gledhill, Jonathan. Project Engineer, B.S. Civil Engineering, California Polytechnic State University San Luis Obispo, 15 years experience in Transportation Engineering and Civil Engineering. Contribution: Project Design.
- Joe, Gary. Senior Bridge Engineer. B.S., Civil Engineering, California State University, Sacramento; 31 years of experience in bridge engineering. Contribution: Structure Preliminary Geotechnical Report.
- Leyva, Isaac. Engineering Geologist. B.S., Geology, California State University, Bakersfield; A.S., Cuesta College, San Luis Obispo; 20 years experience in petroleum geology, environmental, geotechnical engineering. Contribution: Paleontology technical report and Initial Site Assessment.
- MacDonald, Christina.. Associate Environmental Planner. M.A., Cultural Resources Management; H.A., Anthropology; 14 years experience in California prehistoric and historical archaeology. Contribution: Cultural Resource Review.
- Walth, Jimmy. Associate Environmental Planner (Natural Sciences). M.S., Biology, California Polytechnic State University, San Luis Obispo; B.S., Biology California Polytechnic State University, Bakersfield; 10 years experience in biological sciences, environmental planning and geographic information systems. Contribution: Natural Environmental Study.

## Chapter 5      Distribution List

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<p>City of Lompoc Public Library Main Branch 501 E. North Avenue Lompoc CA 93436</p>	<p>Santa Barbara County Planning and Building Dept. 123 East Anapamu St. Santa Barbara, CA 93101-2058</p>
<p>Vandenberg Village Branch Library 3755 Constellation Road Lompoc, CA 93463</p>	<p>John Karamitsos, Supervising Planner Santa Barbara County Planning and Building Dept. North County Office 624 West Foster Road, Suite C Santa Maria, CA 93455-6258</p>
<p>Buellton Branch Library 140 West Highway 246 Buellton, CA 93427</p>	<p>Santa Barbara County Public Works Department 620 West Foster Road Santa Maria, CA 93455</p>
<p>California Highway Patrol Santa Barbara Office 6465 Calle Real Goleta, CA 93117-1597</p>	<p>California Highway Patrol Santa Maria Office 1710 North Carlotti Drive Santa Maria, CA 93454-1505</p>
<p>Jamie Jackson California Department of Fish and Wildlife South Coast Region 3883 Ruffin Rd. San Diego, CA 92123</p>	<p>City of Lompoc Fire Department 115 South G St. Lompoc, CA 93436</p>
<p>Timothy H. Robinson, PhD Sr. Environmental Scientist Cachuma Conservation Release Board 3301 Laurel Canyon Road Santa Barbara, CA 93105-2017</p>	<p>Jay Ogawa National Marine Fisheries Service 501 West Ocean Boulevard, Suite 4200 Long Beach, CA 90802-4213</p>
<p>Santa Barbara Association of Governments 260 North San Antonio Road, Suite B Santa Barbara, CA 93110</p>	<p>Native American Heritage Commission 1560 Harbor Blvd., Room 100 West Sacramento, CA 95691</p>
<p>Central Coast RWQCB 895 Aerovista Place, Suite 101 San Luis Obispo, CA 93401-7906</p>	<p>U.S. Fish and Wildlife Service Ventura Fish and Wildlife Office 2493 Portola Road, Suite B Ventura, CA 93003</p>

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## **Appendix A** California Environmental Quality Act Checklist

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The following checklist identifies physical, biological, social and economic factors that might be affected by the project. The California Environmental Quality Act impact levels include "potentially significant impacts", "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 document. Documentation of "No impact" determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization and/or mitigation measures is under the appropriate topic headings in Chapter 2.

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

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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**III. AIR QUALITY:** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**IV. BIOLOGICAL RESOURCES:** Would the project:

- |  |                          |                                     |                          |                          |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**V. CULTURAL RESOURCES:** Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

**VI. GEOLOGY AND SOILS:** Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**VII. GREENHOUSE GAS EMISSIONS:** Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

**VIII. HAZARDS AND HAZARDOUS MATERIALS:** Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

**IX. HYDROLOGY AND WATER QUALITY:** Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which 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 which would result in substantial erosion or siltation on- or off-site?	<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 which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**X. LAND USE AND PLANNING:** Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**XI. MINERAL RESOURCES:** Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**XII. NOISE:** Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
) 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"/>

**XIII. POPULATION AND HOUSING:** Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<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"/>

**XIV. PUBLIC SERVICES:**

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
--	--------------------------------	---------------------------------------	------------------------------	-----------

**XV. RECREATION:**

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**XVI. TRANSPORTATION/TRAFFIC:** Would the project:

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in inadequate emergency access?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**XVII. UTILITIES AND SERVICE SYSTEMS:** Would the project:

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant 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 type="checkbox"/>	<input checked="" 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 a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<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"/>

**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE**

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which 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

EDMUND G. BROWN Jr. Governor

**DEPARTMENT OF TRANSPORTATION**  
OFFICE OF THE DIRECTOR  
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March 2013

## NON-DISCRIMINATION POLICY STATEMENT

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

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: [http://www.dot.ca.gov/hq/bep/title\\_vi/t6\\_violated.htm](http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm).

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14<sup>th</sup> Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

A handwritten signature in blue ink, appearing to read "Malcolm Dougherty".

MALCOLM DOUGHERTY  
Director

*"Caltrans improves mobility across California"*

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# **Appendix C** Minimization and/or Mitigation Summary

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Below are summaries of the avoidance, minimization and/or mitigation measures that would be used in the project. For a detailed description of the following measures, please refer to the appropriate topic section in Chapter 2.

## ***Utilities/Emergency Services***

- Utility companies would notify affected residents in advance of any disruption in service during utility relocation.
- A Traffic Management Plan would be established during the design phase. This plan would assist emergency responders during construction to minimize response time delays.

## ***Visual/Aesthetics***

- The bridge rail would be a concrete open-style Type 80 rail.
- Aesthetic architectural treatment would be applied to the bridge rail, bike rail and metal beam guardrail.
- Disturbed slopes would be re-contoured and vegetated with native plants

## ***Water Quality/Storm Water Runoff***

- The project would be designed so that storm water from the highway and bridge structure would be routed through vegetated swales as a green highway/low impact development strategy to the extent possible to reduce the potential for erosion and highway pollutants entering the water body.
- Work within the streambed would be limited to the low-flow period between June 1 and October 31 to reduce the potential for erosion and sedimentation and to avoid potential impacts to steelhead during their spawning season
- No work would be performed in a wetted stream channel.
- Equipment used in the channel during construction would be inspected daily for fluid leaks.

- No mobile equipment would be fueled within 100 feet of the creek.

### **Biological**

- Replacement of existing three-span bridge with a single-span bridge and removal of all instream manmade concrete.
- Construction of a roughened rock ramp with a 2% slope to facilitate passage of adult and juvenile steelhead.
- Design and construction of the roughened rock ramp is to be conducted in consultation with the National Marine Fisheries Service to insure that fish passage mitigation structure is stable and will provide suitable steelhead-passage conditions.
- Implementation of a monitoring and maintenance plan to assess post-project hydraulic and geomorphic conditions resulting from the fish passage structure shall be coordinated with the National Marine Fisheries Service.
- Work area to be temporarily isolated from surface water by diversion and dewatering. Special status species will be relocated prior to and during diversion and dewatering.
- Water pumped during dewatering will be pumped into a settling tank to prevent suspended sediments from being discharged downstream. Pump intakes will be screened with wire mesh, not larger than five millimeters.
- Surveys will be conducted by qualified, agency approved biologists up and down stream to identify appropriate habitat for relocation of special status species. Detailed records of all special status species handled will be recorded and submitted to appropriate resource agency.
- Only U.S. Fish and Wildlife approved biologist(s) will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. No ground disturbance is to occur until written approval is obtained from the U.S. Fish and Wildlife service regarding the qualifications of such biologist(s).
- Preconstruction surveys for special status animal species would be conducted prior to ground disturbance. Species found will be relocated to pre-identified

suitable habitat within the watershed far enough from the construction work area to reduce likelihood of re-entry into the project limits.

- Non-native species, such as bullfrogs, signal and red swamp crayfish and centrarchid fishes will be removed from the project area to the extent feasible.
- All project personnel will receive environmental training that is to include, at a minimum, a description of the California red-legged frog and all other special status species that may occur in the project area, their habitat requirements, protective measures, the boundaries within which the project may be accomplished, and reporting protocols for California red-legged frog, steelhead, and other special status species.
- Agency approved biologist(s) will monitor all construction activity that has the potential to affect special status species.
- Use of herbicides in the aquatic environment will be prohibited and herbicide use for controlling invasive plants will be restricted to the extent possible.
- Environmentally sensitive area (ESA) fencing would be used to protect vegetation and wetlands.
- Tree trimming would be limited to that required in order to provide a clear work area.
- Vegetation in areas where temporary impacts will occur would be cut off at ground level.
- To avoid impacting nesting birds, all clearing would occur between September 1 and February 15, outside the nesting season.
- All trees and other woody vegetation that must be removed would be chipped and stockpiled for use as mulch.
- Disturbed areas would be re-vegetated with native plant species.
- National Marine Fisheries Service approved biologist(s) shall contact the National Marine Fisheries Service immediately if one or more steelhead are found dead or injured in order to review the activities that resulted in the take and to determine if additional protective measures are required.

- Replacement planting of native riparian trees and shrubs will be achieved using a 3:1 ratio. The number and species of trees removed or trimmed will be recorded in order to accurately restore the habitat back to pre-construction conditions.
- During excavation, native topsoil would be collected and stockpiled.
- Vegetation would be removed by hand along environmentally sensitive area fencing.
- Effects to downstream habitat would be avoided through the use of erosion and sedimentation best management practices.
- Erosion control included in the project would not use species listed as noxious weeds. All seed mixes use for restoration would be native seed, common to the area.
- During the plant establishment period, invasive species found within the areas that are being re-vegetated would be removed.
- 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 the work area.
- All areas disturbed by construction will be recontoured to match existing natural habitat contours.
- Caltrans shall retain at least two biologists with expertise in the areas of resident or anadromous salmonid biology and ecology, fish/habitat relationships, biological monitoring and handling, collecting, and retaining salmonid species.
- National Marine Fisheries Service approved biologist(s) shall monitor all construction activities, instream habitat, and performance of sediment-control devices for the purpose of identifying and reconciling any condition that could adversely affect steelhead or their habitat.

- Prior to the removal of the existing bridge and vegetation, pre-construction surveys will be conducted by a qualified biologist(s) to determine presence/absence of bats within the area of direct project impact. The biologist(s) will also identify the nature of the bats' (i.e., no roosting, night roost, day roost, maternity roost) and determine if passive bat exclusion will be necessary or feasible.
- If a qualified biologist(s) determines that bat exclusion is necessary and feasible, a qualified/licensed individual or contractor would implement passive exclusion (for example, netting) in areas where bats are roosting within the area of potential impact.
- If bats are found to be maternity roosting (March 1 to September 15), active bat maternity roosts would not be disturbed or destroyed at any time.
- If biological surveys indicate that bats are using the existing bridge, bat houses will be installed in and adjacent to the Salsipuedes creek bridge following completion of construction to replace habitat.

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# Appendix D Comments and Responses

This appendix contains the comments received during the public circulation and comment period from July 7, 2014 to August 7, 2014. A Caltrans response follows each comment presented.



State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
South Coast Region  
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San Diego, CA 92123  
(858) 467-4201  
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EDMUND G. BROWN JR., Governor  
CHARLTON H. BONHAM, Director



August 4, 2014

Ms. Cecilia Boudreau  
Department of Transportation, District 5 (Caltrans)  
50 Higuera Street  
San Luis Obispo, California 93401  
Fax #: (805) 549-3329

**Subject: Comments on the Initial Study with Proposed Mitigated Negative Declaration (ISMND) for the Salsipuedes Creek Bridge Scour Mitigation (SR-1) in Santa Barbara County (SCH # 2014071009)**

Dear Ms. Boudreau:

The Department of Fish and Wildlife (Department) has reviewed the above-referenced Initial Study with Proposed Mitigated Negative Declaration (ISMND) for the Salsipuedes Creek Bridge Scour Mitigation project (Project), located on the Pacific Coast Highway (SR-1) in Santa Barbara County, relative to impacts to biological resources. The ISMND was submitted by California Department of Transportation (Caltrans) acting as the Lead Agency under CEQA (§ 15367). If approved, the project would allow for the replacement of the Salsipuedes Creek Bridge and required infrastructure necessary to accommodate the new bridge, as well as allow for proposed improvements for passage of steelhead trout (*Oncorhynchus mykiss*), which is federally endangered and a Department species of special concern (SSC).

The following statements and comments have been prepared pursuant to the California Environmental Quality Act (CEQA) under the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (CEQA Guidelines § 15386), and pursuant to the Department's authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA), (Fish and Game Code § 2050 *et seq.*), and/or Fish and Game Code section 1600 *et seq.*

To enable the Department to adequately review and comment on the proposed Project, as it affects wildlife resources, we recommend the following information be included in a revised and recirculated ISMND:

1. **Proposed Alternatives.** The ISMND discusses two proposed alternatives, the No-Build and Build Alternatives. Caltrans previously presented the Department with four proposed alternatives and two sub-alternatives in the Salsipuedes Creek Alternative Memorandum on April 22, 2014. Caltrans requested extensive pre-project consulting and coordination regarding those proposed alternatives. As a result of those consultation efforts, the Department's Senior Engineering Geologist issued a Technical Memo (Attachment A). Due to the extensive coordination, the presence of several federal and State listed species, and species of special concern, the Department, acting as a Responsible Agency, and a Trustee Agency with respect to biological resources, recommends that the Lead Agency prepare an Environmental Impact Report.

*Conserving California's Wildlife Since 1870*

- a. Department Technical Memo. The Summary Draft Conceptual Design Alternatives for Fish Passage Memorandum submitted by Caltrans for Department consideration (J. Peters and J. Kozlowski, ICF International, April 22, 2014) was evaluated with regard to the four alternatives, including two additional sub-alternatives. The memorandum presents four basic strategies for rehabilitating fish passage throughout the project reach. Caltrans and their project consultant subsequently asked the Department to assist them in refining the design effort by providing the Department's expertise on the various conceptual models developed. Please see the Department's comments and recommendations in the attached Technical Memo dated May 29, 2014. The Department recommends that a complete hydraulic modeling of the proposed alternatives be conducted and that all design concepts for any proposed alternative fit the existing landscape.

#### **General Comments**

2. Analyses of the Potential Project-Related Impacts on the Biological Resources. To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the ISMND.
  - a. Cumulative Impacts. A discussion of impacts associated with increased lighting, noise, human activity, changes in drainage patterns, changes in water volume, velocity, and quality, soil erosion, and /or sedimentation in streams and water courses on or near the project site, with mitigation measures proposed to alleviate such impacts, should be included. The ISMND should include discussions regarding indirect project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with a Natural Community Conservation Plan). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated and provided. The latter subject should address: project-related changes to drainage patterns on and downstream of the project site, the volume, velocity, and frequency of existing and post-project surface flows, polluted runoff, soil erosion and/or sedimentation in streams and water bodies, and post-project fate of runoff from the project site. The discussions should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary, and the potential resulting impacts on the habitat, if any, supported by the groundwater.
  - b. Zoning. The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.
  - c. Project-effects Analyses. A cumulative effects analysis should be developed as described under CEQA Guidelines, Section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

3. Mitigation for the Project-Related Biological Impacts. The ISMND should include measures to fully avoid and otherwise protect Rare Natural Communities from Project-related impacts. The Department considers these communities as threatened habitats having both regional and local significance.
  - a. Mitigation Measures. The ISMND should include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, onsite habitat restoration or enhancement should be discussed in detail. If onsite mitigation is not feasible or would not be biologically viable and would therefore not adequately mitigate the loss of biological functions and values, offsite mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.
  - b. Preservation. For proposed preservation and/or restoration, the ISMND should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. The objective should be to offset the Project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.
  - c. Relocation Efforts. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.
4. Biological Resources within the Project's Area. The ISMND should include the following information to provide a complete assessment of the flora and fauna within and adjacent to the Project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats.
  - a. Regional Emphasis. Per CEQA Guidelines, Section 15125(c), information should be placed on the regional setting that is critical to an assessment of environmental impacts, with special emphasis placed on resources that are rare or unique to the region.
  - b. Rare Natural Communities. The ISMND should include a thorough assessment of rare plants and rare natural communities, following the Department's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see: <http://www.dfg.ca.gov/habcon/plant/>). A hard copy of the document is available upon request.
  - c. Biological Inventory. A current inventory of the biological resources associated with each habitat type on site and within the area of potential effect should be presented. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 322-2493 or [www.dfg.ca.gov/biogeodata/](http://www.dfg.ca.gov/biogeodata/) to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

Ms. Cecilia Boudreau  
Department of Transportation, District 5 (Caltrans)  
August 4, 2014  
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5. State Listed Species Impacts. The ISMND should describe Best Management Practices (BMPs) to minimize adverse effects to State listed species. In addition, any federally listed species included in any Biological Opinion (BO) issued for the Project from the US Fish and Wildlife Service (Service), pursuant to the Federal Endangered Species Act, should be included in the ISMND. In addition to any proposed BMPs, the Department recommends the following items also be addressed in order for the project to be fully evaluated for potential impacts to State listed species:
- a. Fully Protected Species. The Department considers impacts to fully protected species (Fish and Game Code §§ 3511, 4700, 5050, and 5515) for the purposes of CEQA, to be significant without mitigation. The Department has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. Except as provided in the Fish and Game Code (e.g., for necessary scientific research), take of any fully protected species is prohibited, and cannot be authorized by the Department.
    - i. White-tailed Kite (*Elanus leucurus*). The white-tailed kite is a fully protected species. Take of any fully protected species is prohibited, and cannot be authorized by the Department. White-tailed kite is known to forage throughout many coastal areas in northwest Santa Barbara County. The Department recommends the CEQA analysis for this Project evaluate and address potential impacts to any fully protected species that may occur onsite and propose appropriate species-specific avoidance and minimization measures within the CEQA document, as well as during subsequent project implementation. Please be advised that the white-tailed kite is also regulated by the Migratory Bird Treaty Act.
  - b. California Endangered Species Act (CESA). The Department considers adverse impacts to a species protected by the CESA, for the purposes of CEQA, to be significant without mitigation. Take of any endangered, threatened, or candidate species that results from the project is prohibited according to CESA, except as authorized by State law (Fish and Game Code, §§ 2080, 2085.) Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project results in take of a species designated as endangered or threatened, or is a candidate for listing under CESA, the Department recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from the Department may include an Incidental Take Permit (ITP) or a Consistency Determination in certain circumstances, among other options (Fish and Game Code §§ 2080.1, 2081, subds. (b),(c)). Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a 2081 permit. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail, resolution and enforceability to satisfy the requirements for a CESA Permit. The ISMND should fully address potential impacts to the following species:

Ms. Cecilia Boudreau  
Department of Transportation, District 5 (Caltrans)  
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- i. Least Bell's Vireo (*Vireo bellii pusillus*) and Southwestern Willow Flycatcher (*Empidonax traillii extimus*). The CESA-listed least Bell's vireo is known to use marginal habitat throughout Santa Barbara County. The CESA-listed Southwestern willow flycatcher been found outside their previously restricted range within Ventura County and should not be excluded from potentially using marginal habitat within Santa Barbara County. The Department recommends protocol level surveys be conducted in areas where marginal willow (*Salix* sp.) and mulefat (*Baccharis salicifolia*) scrub habitat is proposed for permanent or temporary impacts. The ISMND should fully evaluate the potential to impact these species as a result of the implementation of the Project. The Department recommends that surveys are performed prior to the circulation of the CEQA document to adopt protocols and timing of the surveys, which allow adequate time to adopt species specific mitigation measures as appropriate. Please see the following links for survey protocols: <http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/LBVireo.2001.protocol.pdf>, and <http://www.fws.gov/pacific/ecoservices/endangered/recovery/documents/SWWFlycatcher.2000.protocol.pdf>.
  - ii. Survey Methodology. An inventory of rare, threatened, endangered, and other sensitive species on site and within the area of potential effect, should be included in the ISMND. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, § 15380). This should include sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the Service. Please see the following for survey methodologies recommended by the Department: [http://www.dfg.ca.gov/wildlife/nongame/survey\\_monitor.html](http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html)
6. Department Species of Special Concern. The ISMND should describe several Best Management Practices (BMPs) to minimize adverse effects to species that are described SSC. A complete list of these species may be found at <http://www.dfg.ca.gov/wildlife/nongame/ssc/>. To fully evaluate impacts to sensitive species known to occur in the Project area the Department recommends the following species also be specifically addressed in the ISMND:
- a. Steelhead Trout. The Department recommends additional measures to minimize impacts and to protect steelhead trout during Project-related activities. The CEQA document should fully identify and evaluate potential impacts to steelhead trout and any SSC as a result of: exclusion from the area during Project-related activities, limitations of availability of water as a result of diversion or placement of temporary berms during Project construction, and mortality from Project-related activities. Impacts to SSC, without mitigation, could require a mandatory finding of significance by the Lead Agency (CEQA Guidelines 15065). The Department recommends all the following BMPs be included in any proposed avoidance, minimization and/or mitigation measures.
    - i. Flow Restrictions. The Department recommends all Project-related activities take place when there is no flow present in Salsipuedes Creek. If it becomes necessary

to work in a wetted portion of Salsipuedes Creek between October 31<sup>st</sup> and June 15<sup>th</sup>, which could negatively affect anadromous fish, the ISMND should instruct Caltrans to notify the Department via phone or email at a minimum of 7 days prior to any such impacts and request consultation from the Department prior to any work.

- ii. Materials Prohibited During Project Construction. The Department strongly discourages the use of any visqueen, or any other plastic tarps or draping materials in Salsipuedes Creek as it is known to trap aquatic animals and result in mortality.
- iii. Diversion of Flows in Salsipuedes Creek. The Department strongly recommends no diversion of flows and that all work should be conducted when the creek is dry to avoid impacts to steelhead trout. However, if a diversion is necessary, the ISMND should include specific language that requires that the Department be consulted prior to a diversion placement.
- iv. Steelhead Relocation Plan. The Department recommends that a Steelhead Trout Recovery and Relocation Plan be developed in concert with the ISMND to completely minimize and mitigate any potential impacts to steelhead trout and other aquatic species such as southwestern pond turtle (*Actinemys marmorata pallida*), and California red-legged frog (*Rana draytonii*), before any water diversion or fish removal activities begin. The ISMND should include language that requires that a NOAA-approved qualified fisheries biologist survey approximately 1 mile upstream and 1 mile downstream of the project limits to identify appropriate locations to release fish, and other aquatic species, captured during any diversion activities. Released fish should be spread throughout the area to prevent additional overcrowding of the release areas.
- v. Onsite Monitoring. The ISMND should address appropriate on-site monitoring during all Project-related demolition and construction activities to avoid, minimize, and mitigate any potential mortality to SSC caught in the path of Project-related activities. The Department recommends that a team of biologists be present to locate and remove any additional fish and aquatic species found during initial demolition and construction.
- vi. Housing of Captured Organisms. Captured fish should be stored in aerated coolers of at least 5 gallons for a maximum of 30 minutes to maintain oxygen and water temperature. Due to the travel time to relocation sites, should fish need to be in captivity longer than 30 minutes, appropriate measures to maintain oxygen and temperature should be used as deemed appropriate by the fisheries biologist.
- vii. Handling Requirements of Steelhead Trout. The Department recommends that the ISMND include in the Steelhead Relocation and Recovery Plan how captured fish will be removed to the pre-designated release locations in a timely manner so that the coolers do not become over crowded. The Department further recommends, should fry be present, that no more than 40 fry per 5 gallon bucket should be allowed. The water temperatures of the buckets should be frequently measured and compared to the water temperatures at the release points. If the two differ by more than a few degrees, the bucket should be slowly mixed with the creek water to acclimate the fish to the release temperature.

- viii. Critical Steelhead Habitat and Migratory Corridor. The ISMND should fully evaluate measures to avoid, to the extent possible, impacts to the migratory corridor within steelhead critical habitat as a result of dewatering, road improvements, and any other ground disturbance activities. The Department recommends that Caltrans further evaluate steelhead passage through the Project site. The Department is unlikely to authorize an activity that will create a substantial adverse effect on fish and wildlife resources and is in conflict with the Fish and Game Code. Specifically, Fish and Game Code § 5901 prohibits the construction or maintenance of any device that prevents, impedes, or tends to prevent or impede the passing of fish up and down the stream.
  - ix. Onsite Restoration. The ISMND should include specific language to include a Salsipuedes Creek Stream Restoration Plan developed by Caltrans to ensure that the morphology of the stream will be maintained in such a way as to allow fish migration and passage throughout the project footprint. The Department is concerned that the Project, as currently designed, will create fish passage issues for all life stages of steelhead. The Department recommends, as mandated by SB 857, that Caltrans conduct a passage assessment of the Project footprint in accordance with Department passage guidelines as a means to identify potential fish passage barriers. The Department recommends Caltrans coordinate with the Department to develop a plan to remediate any identified passage barriers within the project footprint.
- b. Coast Range Newt (*Taricha torosa torosa*), Southwestern Pond Turtle and Two-striped Garter Snake (*Thamnophis hammondi*). The ISMND does not fully evaluate impacts to the above species described in the CNDDDB as occurring, or potentially occurring in the Project area, and appropriate habitat is described in the ISMND as present on or within the Project impact area. The Department recommends additional measures to minimize impacts and to protect these biological resources.
- i. Intermittent and Perennial Drainages. Salsipuedes Creek is especially important to pond turtle, red-legged frog, newts, salamanders, fish, and other native aquatic species during times of drought, such as what is currently being experienced in this region. Southwestern pond turtle have been documented at the Project site and should be assumed to utilize associated suitable upland habitat adjacent on the Project site on at least an occasional basis, regardless of trapping results. Where avoidance is not possible, the ISMND should fully discuss how the Project will minimize and mitigate any impacts to this species.
  - ii. Cumulative Pressures. The extirpation of Southwestern pond turtle from much of southern California, including within the Los Padres National Forest, due to loss of habitat from fires and competition with exotic species, is of concern to the Department. The Department recommends that any proposed presence/absence surveys include live trapping. Research has indicated that live trapping is the only highly effective method to determine presence/absence of Southwestern pond turtle.

- iii. Focused Surveys. The Department recommends that focused surveys using science-based methodologies be fully analyzed in the ISMND and should be conducted early in the planning process prior to designing the bridge replacement and infrastructure. Focused surveys for the Salsipuedes Creek southwestern pond turtle population will assist in determining: critical pools used for reproduction, site-specific areas that are critical use areas movement between pools and uplands, and assist in locating optimal upland habitat on the site for nesting and flood refugia. The Project should be designed to avoid these areas. Where avoidance is not possible, the ISMND should fully discuss how the Project will minimize and mitigate any impacts to this species.
  - iv. Project Design. Further efforts should be made to design the Project, or to clarify that the Project has been designed, to assure the continued persistence of Southwestern pond turtle and other riparian wildlife species and their upland habitats within the Project site adjacent to Salsipuedes Creek. If suitable uplands are no longer afforded to wildlife adjacent to Salsipuedes Creek as the result of Project, wildlife will be forced to cross the busy roadway to access suitable upland habitat and will risk mortality from vehicles. Increased mortality to special status species such as Southwestern pond turtle, which presently suffer a statewide population decline, should be considered significant under CEQA. Impacts to SSC could require a mandatory finding of significance by the Lead Agency (CEQA Guidelines 15065).
7. Impacts to Bats. Project work near, around, in, and under the existing structure along at Salsipuedes Creek should be fully evaluated for disturbances to bats. Also, bats commonly are found associated with snags and broken tress. Many broken and snagged oaks (*Quercus agrifolia*), sycamores (*Platanus occidentalis*), and other riparian trees have been identified adjacent to the current proposed Project.
- a. Status of Bats in California. Bats are considered non-game mammals and are afforded protection by State law from take and/or harassment (Fish and Game Code Section 4150, California Code of Regulations, Section 251.1). Several bat species are also considered SSC and meet the CEQA definition of rare, threatened or endangered species (CEQA Guidelines 15065). Again, take of SSC could require a mandatory finding of significance by the Lead Agency (CEQA Guidelines 15065).
  - b. Bat Species of Concern. The ISMND should discuss impacts to Townsend's big ear bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillei*), western yellow bat (*Lasiurus xanthinus*), hoary bat (*Lasiurus cinereus*), and pallid bat (*Antrozous pallidus*). The Department recommends additional measures should be used to minimize impacts and to protect these biological resources. The CEQA document should fully identify and evaluate potential impacts to any of these SSC species described as potentially occurring or where appropriate habitat is described as existing on or adjacent to the Project impact area.
  - c. Bat Avoidance. The Department recommends avoiding disturbances to bridge structures between March 1<sup>st</sup> and September 15<sup>th</sup> to avoid the breeding season for bats unless preconstruction surveys are conducted by a qualified biologist and no bat roosts or nurseries are found within the Project area.

- d. Replacement of Structures. The Department recommends the ISMND evaluate the potential to design the replacement of the Salsipuedes bridge with the bridge deck (4-inch gaps between the abutments) to be acceptable for use by local bat populations as roosting and nursery habitat. Also, the Department recommends the placement of bat houses in and adjacent the Salsipuedes bridge proposed Project areas where appropriate habitat exists within the Caltrans right-of-way, at a minimum of 1-year in advance of Project implementation, if biological surveys indicate bats are utilizing the structure at Salsipuedes Creek.
8. Impact to Streams and Wetlands. The ISMND should identify any tributaries to Salsipuedes Creek that have the potential to be subject to regulatory authority by the Department. The Department has regulatory authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed. For any such activities, the Project applicant (or "entity") must provide written notification to the Department pursuant to Section 1600 *et seq.* of the Fish and Game Code. Based on this notification and other information, The Department determines whether a Lake and Streambed Alteration Agreement (LSA) with the applicant is required prior to conducting the proposed activities. The Department's issuance of a LSA for a Project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. The Department as a Responsible Agency under CEQA may consider the Lead Agency's EIR for the project. To minimize additional requirements by the Department pursuant to Section 1600 *et seq.* and/or under CEQA, the document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA.
    - a. In Stream Structures. The Department recommends that the current Project exclude the placement of check dams, new culverts, or other flow restriction devices within Salsipuedes Creek to retain the barrier-free status of this stretch of the stream, and utilize open-span bridges in these critical habitat areas.
    - b. Salvage of Native Aquatic Vertebrates. The Department recommends that the Project proponent include BMPs in the ISMND to specify that all native aquatic vertebrates will be moved out of harm's way. Salvaged species should be relocated to appropriate habitat within the same watershed as determined by a qualified aquatic biologist.
    - c. Other Downstream Sensitive Species. The ISMND should include a thorough study of the hydrological impact to downstream and upstream structures and resources to continue their proper function, such as at Jamala Road.
  9. Breeding and/or Nesting Birds. The Department recommends that the ISMND include language to anticipate active bird nest or bird nesting behavior during Project-related activities. The Department recommends avoiding, minimizing, and mitigating impacts to nesting birds; a nesting bird avoidance and minimization plan should be established by a qualified biologist. The ISMND should include language specific to the development of the plan and the plan should be based on, but not limited to, site lines from the nest to the work site and observations of the nesting bird's reaction to project activities. Breeding habitat/nest sites fenced and/or flagged in accordance with State and federal nesting bird guidelines

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should not be disturbed until the nest becomes inactive, i.e., the young have fledged, the young are no longer being fed by the parents, the young have left the area, and the young will no longer be impacted by the project. Continuous monitoring of the nest site by a qualified biologist should occur during disturbance activities, and a nest observation log should be updated once per hour during construction activities. If the monitoring biologist determines nesting activities may fail as a result of work activities, the plan should allow the biologists to cease all Project-related activities in the recommended avoidance area until the biologist determines the adults and young are no longer reliant on the nest site.

Thank you for this opportunity to provide comments. Please contact Ms. Jamie Jackson, Senior Environmental Scientist (Specialist) at (805) 382-6906 if you should have any questions and for further coordination on the proposed project.

Sincerely,



Edmund Pert  
Regional Manager  
South Coast Region

Attachments (2)  
Department Interoffice Technical Memo  
Salsipuedes Creek Alternatives Memo

ec: Ms. Jamie Jackson, CDFW, Oxnard  
Ms. Betty Courtney, CDFW, Santa Clarita  
Ms. Christine Found-Jackson, CDFW, Glendale  
Mr. Martin Potter, CDFW, Ojai  
Ms. Mary Larson, CDFW, Los Alamitos

cc: U.S. Fish and Wildlife Office, Caltrans Liaison, Fax #: (805) 644-3958

*Response to Comments from California Department of Fish and Wildlife.*

Thank you for your comments on this project.

**Response to comment 1.** The two proposed alternatives, the No-Build and Build Alternatives, discussed in the Initial Study with Proposed Mitigated Negative Declaration refer to the project alternatives that support the project purpose and need, (to ensure the long term serviceability of the bridge and roadway by addressing stream bank and streambed erosion). The Salsipuedes Creek Alternative Memorandum dated April 22, 2014 was prepared to summarize the draft conceptual design alternatives (options) being considered to facilitate fish passage, which is a required mitigation measure. The draft conceptual fish passage design alternatives are mitigation alternatives/options which evaluate fish passage designs that would correct the existing fish passage barrier and are not project alternatives that meet the project purpose and need.

Caltrans greatly appreciates the extensive interagency consultation and coordination efforts involved in analyzing the various fish passage design alternatives. The result of these efforts and the implementation of a roughened rock ramp will enable upstream migration of adult and juvenile steelhead, mitigating for impacts to steelhead migration caused by the existing fish passage barrier. The presence of Federal and State Listed Species and Species of Special Concern within the limits of a project does not require preparation of an EIR. The determination to prepare an EIR is based on whether or not any aspect of the project has the potential to cause a substantial adverse change in the environment (CEQA§21068). Caltrans, as the Lead Agency, has determined that the proposed project would not have a significant effect on the environment with the incorporation of identified avoidance, minimization and/or mitigation measures. Therefore, it has been determined that a Mitigated Negative Declaration is the appropriate CEQA document for this project.

**Response to comment 1.a.** The Supplemental River Geomorphology Report, finalized in January 2015, included complete hydraulic modeling and streambed simulation for 2 of the 4 conceptual design fish passage mitigation alternatives (4a and 4b) described in the Summary Draft Conceptual Design Alternatives for Fish Passage dated April 22, 2014. Modeling for these mitigation alternatives was chosen based on input received from both the California Department of Fish and Wildlife and National Marine Fisheries Service. The discussion of hydraulic modeling can be found in Section 4.4 of the Supplemental River Geomorphology Report. The results of the modeling will guide the final fish passage design to fit the existing landscape.

The January 2015 Report was sent to California Department of Fish and Wildlife in May of 2015.

**Response to comment 2.a.**

*Lighting:* The proposed project will not require nighttime construction or the use of artificial lighting. The project will not increase traffic because it will not add lanes or increase highway capacity in any way. The project will not add lighting within the project limits, therefore no impacts to wildlife will occur as a result of lighting.

*Noise:* Standard measures to reduce overall construction noise will be implemented: The Noise Study Report dated March 28, 2006 (addendum, January 10, 2014) concluded that the proposed project would not generate long-term noise since the project will not result in an increase in traffic volumes, or change the roadway alignment (see page 13, Noise and Vibration bullet). No substantial adverse impacts to biological resources are anticipated as a result of short-term increases in noise during construction.

*Human activity:* The project will result in a temporary increase in human activity during construction. However, construction equipment and human activity will be restricted to the area needed to conduct work. Habitat adjacent to the area of direct impact will be delineated on the project plans as Environmentally Sensitive Areas (ESA) and will be fenced off with ESA fencing to keep construction equipment and personnel out of these areas. The proposed project will not result in a long term increase in human activity. The proposed project will not create substantial adverse impacts to biological resources from the temporary increase in human activity during construction.

*Drainage patterns:* Drainage patterns will be temporarily altered during construction when water is diverted around the work area. Water diversion will be accomplished by using a cofferdam and corrugated pipe(s). The diversion will be designed to maintain adequate creek flow volumes and velocity for movement of aquatic species. Streamflow will be diverted slowly and in stages to ensure the creek does not dewater suddenly. The upstream inlet will include a check dam and the downstream outlet will include measures to minimize sedimentation and erosion. There will be no permanent, long term alterations to drainage patterns that would result in substantial siltation, erosion or flooding. The proposed project will not result in substantial adverse impacts to biological resources from the temporary water diversion during construction. Additional information regarding water diversion can be found in

Section 2.3.2, 2.3.4 and 2.3.5 under the Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures headings. Caltrans will coordinate the design of the diversion with the California Department of Fish and Wildlife and the National Marine Fisheries Service.

*Water volume:* Dewatering of the site during construction will be necessary to maintain a dry work area. Water will be pumped into to a settling tank to prevent suspended sediments from being discharged back into the creek. Pump intakes will be screened with wire mesh not larger than five millimeters to prevent juvenile animals from entering the pump system. There will be no long term impacts to water volume and velocity as a result of the proposed project. The proposed project will not create substantial adverse impacts to biological resources from the temporary water diversion or dewatering operation during construction.

*Water quality, soil erosion and/or sedimentation:* A discussion of water quality impacts and measures to be implemented to protect water quality during construction can be found in the Water Quality and Storm Water Runoff Section (2.2.1), as well as under Section (2.3.2) in the discussion about Wetlands and Other Waters. Additional discussion on potential cumulative effects to aquatic habitat which supports listed species that have the potential to be impacted as a result of past, present and reasonably foreseeable future projects can be found in the Cumulative Impacts Section (2.4). The proposed project will not compound or contribute to water quality impacts in conjunction with other past, present and foreseeable future projects within the Resource Study Area. The proposed project will not result in a significant adverse contribution to cumulative impacts to water quality.

Chapter 5 of the Supplemental River Geomorphology Report (January 2015) provides additional information on existing and post project surface flows and potential changes to drainage patterns, volume, and velocity, as a result of removal of all manmade elements inside the creek channel and construction of a roughened rock ramp. This document was sent to California Department of Fish and Wildlife in May of 2015.

*Indirect project impacts:* Discussion of indirect cumulative impacts to Southern California Steelhead, California red-legged frog and southwestern pond turtle and their habitat can be found in in the Cumulative Impact Section (2.4). A discussion about potential indirect and direct cumulative impacts to two-striped garter snake has been added to the Cumulative Impact Section. Because the four animal species listed

above are dependent upon aquatic and riparian habitat, the boundaries of the Resource Study Area (RSA) focused on waterways that led into Salsipuedes creek (Section 2.4, Affected Environment). The RSA was determined by analyzing topographic maps and determining the flow pattern of waterways leading into Salsipuedes Creek (Figure 2-2: Resource Area Map). The RSA encompasses approximately 19,633 acres of land (30.7 square miles) adjacent to and surrounding the project site. The cumulative impact analysis concluded that the proposed project will not contribute to significant adverse cumulative impacts to biological resources such as riparian ecosystems and aquatic habitat within the Resource Study Area. The proposed project will not affect any nearby public lands, open space, or any designated and/or proposed or existing reserve lands. The proposed project will not impact wildlife corridors or movement areas, in-fact, the project will improve aquatic movement by removing all in-stream manmade elements, replacing the existing three-span bridge with a single-span bridge, and mitigating for the existing fish passage barrier by constructing a roughened rock ramp. The project will not promote access to undisturbed habitats.

**Response to comment 2.b.** Lands adjacent to the project site are zoned agricultural. The zoning designation will not change as a result of the project. The project will require temporary construction easements on the adjacent agricultural land. There are no conflicts between the development and the agricultural operations adjacent to the project site.

**Response to comment 2.c.** A cumulative impact analysis was conducted to assess whether or not impacts to steelhead, California red-legged frog, southwestern pond turtle and two-striped garter snake and their associated aquatic and riparian habitats would be cumulatively considerable as a result of the proposed project, when considered with past, present and reasonably foreseeable projects. The cumulative impact analysis considered these species and their habitat because these resources are currently in poor or declining health and will be impacted by the project.<sup>28</sup> The RSA defined in the cumulative impact analysis was designed to encompass the Salsipuedes Creek watershed from its headwaters to its confluence with the Santa Ynez River in order to analyze effects to aquatic and riparian habitat resulting from past, present and reasonably foreseeable future projects. The analysis determined that the proposed project, when combined with past, present and reasonably foreseeable projects within

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<sup>28</sup> Guidance for Preparers of Cumulative Impact Analysis; developed by Federal Highway Administration California Division, Caltrans and the Environmental Protection Agency, Region IX.

the resource study area would not contribute to a cumulative effect on the species listed above or their habitat. Rather, it has been determined, that the proposed project and associated mitigation would result in a long term benefit to these species and their habitat.

**Response to comment 3.** In the absence of a definition for Rare Natural Communities, we have assumed that communities of special concern described in Section 2.3.1 are synonymous. This section discusses the natural communities of special concern that have the potential to be directly impacted by the project (Central coast scrub/non-native grasslands, Central coast arroyo willow riparian forest and the active stream channel). Section 2.3.1 includes a list of avoidance, minimization and mitigation measures that will be incorporated into the project to reduce impacts to these natural communities.

**Response to comment 3.a.** The Biological Sections 2.3.1, 2.3.4, and 2.3.5 include a list of avoidance, minimization and mitigation measures that will be incorporated into the project to reduce impacts to each of the communities of special concern, special status animal species and threatened and endangered species respectively. All impacts that could not be avoided were mitigated to offset those impacts.

**Response to comment 3.b.** Water quality will be protected during construction by using temporary and permanent erosion control measures and best management practices as required by the National Pollutant Discharge Elimination System (NPDES) permit (Order No. 2012-0011-DWQ) and the Construction General Permit (Order No. 2009-009-DWQ) issued by the State Water Resource Control Board. Many of the water quality protection measures also protect the riparian habitat along creek banks. Examples include preserving existing vegetation to the maximum extent possible; using fiber rolls and silt fencing; and applying erosion control on all areas to be disturbed by construction. Additional measures to be incorporated for protecting water quality and riparian habitat can be found in Section 2.2.1 (Water Quality and Storm Water Runoff) and Section 2.3 (Biological Environment) respectively. Replacement of the three-span bridge with a single-span bridge, combined with removal of all in-stream manmade concrete elements will result in an overall long-term benefit to aquatic habitat along the riparian corridor by allowing the creek to flow unimpeded and return to a state of equilibrium over time. Implementation of a roughened rock ramp will alleviate the low flow fish passage barrier, improving upstream fish migration. These measures will effectively protect the targeted habitat values from direct and indirect project impacts. A summary of all avoidance,

minimization and mitigation measures to be implemented can be found in Appendix C.

Restrictions to prevent unauthorized human access to the creek will be included in the final design. The details will be developed during PS&E and may include additional fencing, signage, and removal of access features such as steps or ladders. Restrictions to cattle entry to the creek (permanent and movable fencing) were installed by The Cachuma Operations and Maintenance Board in 2014 along the upper banks downstream of the bridge structure. These features will be replaced in-kind if effected by this project.

**Response to comment 3.c.** If sensitive species, such as steelhead, California red-legged frog, two-striped garter snake or southwestern pond turtle are found within the work area during construction activities they will be relocated to pre-determined, suitable habitat areas outside of the work area to minimize take. Details of the relocation protocols will be developed as part of the Relocation Plan, which is a requirement under the U.S. Fish and Wildlife Service Biological Opinion (Appendix G - pg. 7 of the Programmatic Biological Opinion for California red-legged frog; 8-8-10-F-58), the National Marine Fisheries Service Biological Opinion, (Appendix F - Section 2.4.2) and likely the future California Department of Fish and Wildlife Streambed Alteration Agreement (SAA).

**Response to comment 4.a.** CEQA requires disclosure of a project's potential impacts to the environment, including but not limited to rare and unique resources that would be affected by a project. Section 2.3 (Biological Environment) discusses natural communities of concern, wetlands and other waters, special status plant species, special status animal species and State and Federal threatened and endangered species that have the potential to be affected by the project. CEQA does not require a discussion of environmental resources that do not have the potential to be impacted by the project. However, a current threatened and endangered species list identifying species that may occur near or within the project location has been included in Appendix E. Sensitive species potentially occurring in the project area were targeted during site assessments and field surveys. Table 2 in the Natural Environmental Study (NES) provides a complete list of all regional special status species potentially occurring or known to occur within the project vicinity. The complete California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) reports for the Lompoc Hills, Lompoc, Los Alamos, Santa Rosa Hills, Tranquillon Mountain, Sacate, Surf, and Point Conception USGS

Quadrangles are provided in Appendix B and C of the NES. A copy of the NES and the addendum dated April 2015 can be obtained upon request.

**Response to comment 4.b.** Refer to Section 2.3.1 for a discussion of natural communities of special concern that have the potential to be impacted by the project and Section 2.3.2 for a discussion of potential project impacts to wetlands and other waters. Section 2.3.3 provides a discussion of special status plant species that have the potential to be impacted by the project. Chapter 3 of the NES provides additional information about the environment in which the project will occur. A copy of the NES can be provided upon request.

**Response to comment 4.c.** The CEQA document lists those biological resources that may be impacted by the project. Refer to Section 2.3.4 for a discussion on animal species that have the potential to be impacted by the project. The CEQA document does not discuss species that do not have the potential to be affected by the project. A full inventory of species [compiled from a query of the California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS) inventories] that have the potential to occur or are known to occur within the project vicinity can be found in Table 2 of the NES. The CNDDDB and CNPS inventories can be found in Appendix B and C of the NES respectively. A copy of the NES will be provided upon request.

**Response to comment 5.** Avoidance, minimization and/or mitigation measures to minimize adverse effects to State listed species that have the potential to be affected by the project can be found in Section 2.3.4. Section 2.3.5 (Threatened and Endangered Species) includes a detailed discussion of the Federally Endangered steelhead and the Federally Threatened California red-legged frog. A discussion on white-tailed kite and least Bell's vireo has been included in Section 2.3.5 based on California Department of Fish and Wildlife's comments. A Biological Opinion for impacts to steelhead was issued by the National Marine Fisheries Service on August 24, 2015 (Appendix F). A Letter of Concurrence was issued by the U.S. Department of Fish and Wildlife on 8/11/2014 authorizing use of the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program (8-8-10-F-58). Please refer to Appendix G for a copy of the Programmatic Biological Opinion.

**Response to comment 5.a.** The project is not expected to result in impacts to fully protected species.

**Response to comment 5.a.i.** Evaluation for the occurrence of white-tailed kite and the presence of habitat within the biological study area has been conducted. Information regarding this species has been included in Table 2-1 and in Section 2.3.5. Additional information on this species has been included in an addendum to the NES dated April 2015, which is available upon request.

**Response to comment 5.b.** The project is not expected to result in the “take” of a State listed or candidate species. However, if least Bell's vireo is discovered during protocol level surveys, Caltrans will notify the California Department of Fish and Wildlife and Section 7 Consultation will be reinitiated with the U.S. Fish and Wildlife Service.

**Response to comment 5.b.i.** Impacts to southwestern willow flycatcher and least Bell's vireo as well as other sensitive species potentially occurring in the project area were targeted during site assessments and field surveys. Neither species were observed during appropriately timed faunal surveys. Impacts to Southwestern willow flycatcher are not expected to occur as a result of this project due to the absence of habitat within the biological study area and therefore are not discussed in this document. To address the California Department of Fish and Wildlife's comment regarding marginal habitat for least Bell's vireo, Caltrans biologists conducted a least Bell's vireo survey on June 18, 2015. The results of this survey concluded that marginal habitat does exist and since this species is currently experiencing range expansions in parts of Santa Barbara County it may make its way into the project's watershed given enough time. Therefore, a discussion on least Bell's vireo has been included in Section 2.3.5. Caltrans biologists will conduct surveys for least Bell's vireo the season prior to start of construction. The work will most likely require contracting with a qualified biological firm to conduct protocol level surveys. If evidence of least Bell's vireo is confirmed, Caltrans will notify the California Department of Fish and Wildlife, and Section 7, Endangered Species Act Consultation will be reinitiated with the U.S. Fish and Wildlife Service.

**Response to comment 5.b.ii.** Appropriate survey methodologies were used to generate an inventory of rare, threatened, endangered, and other sensitive species on site and within the biological study area. Table 2 in the NES provides a complete list of all regional special status species potentially occurring or known to occur within the project vicinity. A description of the study methods employed can be found in Chapter 2 of the NES. The NES and the April 2015 addendum are available upon request.

**Response to comment 6.** Section 2.3.4 of the IS/MND provides a list of avoidance, minimization and/or mitigation measures that will be implemented to minimize adverse effects on the two-striped garter snake and southwestern pond turtle. Section 2.3.5 provides a list of avoidance, minimization and/or mitigation measures that will be implemented to minimize adverse effects to threatened or endangered species that have the potential to be impacted by the project. Additionally, a complete list of avoidance and minimization measures is given in appendix E of the NES. A copy of the NES can be obtained upon request.

**Response to comment 6.a.** Formal Section 7 Consultation with the National Marine Fisheries Service has resulted in issuance of a Biological Opinion dated August 24, 2015. Additional mitigation measures from this consultation have been included under the Avoidance, Minimization and/or Mitigation Measures heading in Section 2.3.5. The Biological Opinion is included in Appendix F.

**Response to comment 6.a.i.** Flow is present year-round within Salsipuedes Creek however, a water diversion will be used throughout construction to avoid work within a wetted stream channel. A discussion about the water diversion can be found in Sections 2.3.2, 2.3.4 and 2.3.5 under the Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures headings. Per the Biological Opinion issued by the National Marine Fisheries Service, no instream work is allowed between November 1 and May 31. Caltrans will notify and coordinate creek diversion work with the California Department of Fish and Wildlife.

**Response to comment 6.a.ii.** For the protection of steelhead and other sensitive aquatic species, no work will be allowed in the wetted stream channel, therefore a creek diversion will be necessary. Water diversion will be accomplished by using a cofferdam and a 36-inch diameter pipe. The cofferdam will be constructed of gravel bags (filled with washed river gravel) and a plastic liner will be used on the upstream end to divert the water from the full width of the stream down to the dimensions of the pipe, where it will terminate approximately 450 feet downstream. Measures to be implemented as part of the U.S. Fish and Wildlife Service Programmatic Biological Opinion (Appendix G) and the National Marine Fisheries Service Biological Opinion dated August 24, 2015 (Appendix F) will minimize risk to aquatic species associated with stream diversion and dewatering and construction activity. These measures will include biological monitoring by biologists approved by the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife before diversion and dewatering takes place, during initial diversion

and dewatering activity and throughout construction, as the diversion and dewatering operation is ongoing.

**Response to comment 6.a.iii.** Caltrans appreciates California Department of Fish and Wildlife concern about diverting flows in the creek. However, because flow is present year round, a diversion is required in order to avoid or reduce direct impacts to aquatic species and to conduct work in a dry streambed. A condition indicating that California Department of Fish and Wildlife will be consulted prior to constructing the diversion has been include on pages 41 and 50 of the ISMND. Additionally, Caltrans will be obtaining a 1600 Streambed Alteration Agreement (SAA) in which notification of construction will occur per standard terms and conditions generally found in a SAA.

**Response to comment 6.a.iv.** Agreements made in the August 24, 2015 National Marine Fisheries Service Biological Opinion include measure to reduce risk to steelhead during construction and relocation efforts. The relocation plan will be submitted to the National Marine Fisheries Service prior to implementation. The relocation plan will include a National Marine Fisheries Service approved relocation site, identified by a National Marine Fisheries Service approved biologist. The site will likely be downstream of the project work area. Specifics regarding the capture and relocation plan can be found in Section 2.4.2 and 2.8.4 1B of the National Marine Fisheries Service Biological Opinion (Appendix F).

**Response to comment 6.a.v.** Additional avoidance, minimization and/or mitigation measures regarding on-site monitoring have been added to Sections 2.3.4 and 2.3.5 to address this comment. Additional information regarding on-site monitoring requirements can be found in the August 24, 2015, National Marine Fisheries Service Biological Opinion in Appendix F.

**Response to comment 6.a.vi.** Caltrans appreciates and acknowledges the California Department of Fish and Wildlife's advice on housing of captured organisms. Information about storing and relocating steelhead will be included as part of the required relocation plan per the August 24, 2015 National Marine Fisheries Service Biological Opinion. This information will also be addressed during the California Department of Fish and Wildlife permit process. During preparation of the relocation plan and in coordination with the California Department of Fish and Wildlife and the National Marine Fisheries Service, measures proposed by California Department of Fish and Wildlife regarding housing of captured organisms, or very similar measures,

will be incorporated into the relocation plan to protect steelhead during capturing and housing activities.

**Response to comment 6.a.vii.** Caltrans appreciates and acknowledges the California Department of Fish and Wildlife's recommendations on the safe handling of Steelhead during relocation. The Relocation Plan will be prepared during the design of this project by a National Marine Fisheries Service approved biologist(s). Caltrans will request that California Department of Fish and Wildlife's suggested conditions for safely relocating steelhead be included in the relocation plan. The final relocation plan is subject to approval by the National Marine Fisheries Service and the California Department of Fish and Wildlife once the Streambed Alteration Agreement is finalized.

**Response to comment 6.a.viii** As part of formal Section 7 consultation with the National Marine Fisheries Service, measures to be implemented to avoid impacts to Southern California steelhead migration and critical habitat during and after construction have been addressed in the August 24, 2015, National Marine Fisheries Service Biological Opinion (Appendix F). There is currently an impediment to upstream migration below the existing bridge. The project is expected to result in improved steelhead passage conditions by removing the manmade concrete structures and constructing a roughened ramp designed to pass both juvenile and adult steelhead. Caltrans contracted two river geomorphology studies (August 2012 River Geomorphology Study and January 2015 Supplemental River Geomorphology Study) to determine the most appropriate fish passage remediation to address the existing fish passage barrier and analyze various fish passage mitigation options. The results of these studies were submitted to National Marine Fisheries Service as part of formal Section 7 consultation for steelhead. As part of the resulting Biological Opinion, the National Marine Fisheries Service requires that the final design of the fish passage be coordinated with and ultimately approved by a National Marine Fisheries Service hydraulic engineer through 30, 60, 90 and 100% design. It is anticipated that the California Department of Fish and Wildlife will be included in this process.

**Response to comment 6.a.ix.** A stream restoration plan will be developed in conformance with the terms and conditions of the August 24, 2015 Biological Opinion (Appendix F) and during consultation with the California Department of Fish and Wildlife during the permitting process. As part of the river geomorphology studies (August 2012 River Geomorphology Study and January 2015 Supplemental River Geomorphology Study), a full fish passage assessment has been conducted for

the existing conditions and for the proposed fish passage remediation. The Biological Opinion requires that an analysis of fish passage as well as hydraulic conditions be conducted following the final construction. The Biological Opinion also requires that immediately following construction, a topographic survey and regular comprehensive monitoring and reporting of the fish passage be conducted by a qualified geomorphologist and biologist. Caltrans and the California Department of Fish and Wildlife have been coordinating on the issue of fish passage throughout the development of this IS/MND (Chapter 3-Comments and Coordination) and intends to continue this coordination effort to ensure that both California Department of Fish and Wildlife and National Marine Fisheries Service concerns regarding fish passage are addressed.

**Response to comment 6.b.** The IS/MND only discusses species that have the potential to be impacted by the project. Coast range newt were not observed within the biological study area during faunal surveys. The nearest documented occurrence of this species is 10.5 miles from the biological study area reported on July 19, 2001. Therefore, it has been determined that presence of this species within the limits of the project is not likely. Both Southwestern pond turtle and two-striped garter snake have been observed within the limits of the project. A discussion about environmental consequences as a result of the project to habitat and individuals as well as a discussion of avoidance, minimization and/or mitigation measures is included in Section 2.3.4.

**Response to comment 6.b.i.** Additional avoidance, minimization and/or mitigation measures have been added to Section 2.3.4 to avoid or reduce impacts to two-striped garter snake, southwestern pond turtle or other special status animal species if they are discovered within the biological study area during construction.

**Response to comment 6.b.ii.** Presence of southwestern pond turtle has been confirmed within the limits of the project. Avoidance and minimization measures are discussed in Section 2.3.4 and will be implemented with guidance from the California Department of Fish and Wildlife. Live trapping to determine presence is not necessary since presence is already known.

**Response to comment 6.b.iii.** Caltrans conducted passive biological surveys for all animals including southwestern pond turtle during multiple site visits (4/30/13; 6/17/2009; 5/19/2008; 3/7/2007). Because southwestern pond turtles were observed within the creek it was assumed they would be utilizing the in-channel ponds, creek,

and banks. As such, avoidance and minimization measures were developed to address this potential and to avoid or reduce impacts to riparian and aquatic habitat as well as to individual turtles. These measures can be found in section 2.3.4. Additional information on biological surveys can be found in the May 2014 NES in Sections 2.2, 2.3, and 2.4. A copy of the NES is available upon request.

**Response to comment 6.b.iv.** The project, as proposed, will not have an impact on the ability for southwestern pond turtle to persist within the biological study area. There will be no loss of acreage to aquatic habitat as a result of the project. However, approximately 300 feet of existing habitat directly up and downstream of the bridge will be altered as a result of construction of the roughened rock ramp to mitigate for impacts to fish passage, as required by the National Marine Fisheries Service, August 24, 2015 Biological Opinion (see Appendix F). The ponded habitat that now exists will be filled with large boulders in order to construct a roughened rock ramp at a 2% slope, creating a series of step pools to allow for passage of juvenile and adult steelhead. It is anticipated that these step pools will also be accessible for use by southwestern pond turtle. The project has been designed to reduce impacts to upland habitat to the extent possible by establishing environmentally sensitive areas where access will be prohibited, allowing only one equipment access road to the construction site and by constructing the bridge on the same alignment as the existing bridge. Approximately 0.9 acres of temporary impacts to mixed central coast scrub/non-native grasslands complex (upland habitat) are expected to result from construction staging and grading work along the top of the creek bank. Approximately 0.5 acres of permanent impacts are expected as a result of lengthening the new bridge structure by 30 feet and relocating the two driveways just north of the bridge. Avoidance, minimization and mitigation measures listed in Section 2.3.4 will be incorporated to further reduce impacts to upland habitat.

**Response to comment 7.** General daytime surveys for bats were conducted and no signs of bat roosting, such as guano deposits or staining were observed in trees or on the existing bridge. Nighttime surveys were not conducted due to the absence of bat roosting signs during daytime surveys. The tree snags visible under the bridge were evaluated for bats, but no evidence of roosting was observed in these snags. Bats have not been recorded by Caltrans as being present at this location. However, it is possible that bats could establish new roosts in trees or on the bridge within the area of construction. Therefore, provisions have been added under Section 2.3.4 that include pre-construction surveys. If bats are found within the area of construction impact, a provision for bat exclusion will be included in the contract. If bats are

found to be maternity roosting (March 1 to September 15), active bat maternity roosts would not be disturbed or destroyed.

**Response to comment 7a.** A records search in the California Natural Diversity Database showed no documented occurrences of special status bat species near the project site. Potential impacts to bats as a result of this project are not anticipated. However, to ensure that no take or harassment of bats occurs, provision will be included in the contract for pre-construction bat surveys and bat exclusion (if necessary).

**Response to comment 7b.** Caltrans appreciates the California Department of Fish and Wildlife's comments regarding avoiding impacts to bats during construction. A discussion about bats and measures to be implemented to avoid or minimize potential impacts to bats has been included in Section 2.3.4. Bat species that could be found within the project limits are listed in Table 2-1 in Section 2.3.4.

**Response to comment 7c.** Please see measures that have been included in Section 2.3.4 for the protection of bats. These measures include pre-construction surveys to determine presence/absence of bats on the bridge and/or adjacent vegetation and a measure to avoid maternity roosting (March 1 to September 15) if bats are discovered during pre-construction surveys has also been included.

**Response to comment 7d.** The current bridge design includes gaps, cracks and other features capable of accommodating bats however, no bats or signs of bats have been observed. The new structure may include areas in which bats could roost however, it is not likely that they will utilize the new bridge since they are not utilizing the existing bridge. The new structure's design will be guided by engineering needs to provide a free-span structure with the minimal of in-channel work. If biological surveys indicate that bats are using the existing bridge, bat houses will be installed in and adjacent to the Salsipuedes creek bridge following completion of construction. This measure has been included in the avoidance, minimization and/or mitigation heading in Section 2.3.4.

**Response to comment 8.** Impacts to Salsipuedes Creek and associated riparian habitat are discussed in Chapter 2 (Section 2.3.1). Tributaries to Salsipuedes Creek were included in the resource study area during cumulative impact analysis in Section 2.4. A Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife will be sought during the design phase of project development.

**Response to comment 8a.** The current project will replace the three-span bridge with a single-span bridge and remove all instream manmade concrete elements previously placed to stall streambank erosion. The project will also involve removal of the existing fish ladder and installation of a roughened rock ramp with a 2% slope that will meet the conditions of the National Marine Fisheries Service Biological Opinion issued for this project (Appendix F).

**Response to comment 8b.** As part of the relocation plan for steelhead per the August 24, 2015 National Marine Fisheries Service Biological Opinion (Appendix F), provisions to relocate all native aquatic vertebrates during water diversion and dewatering will be included. The final relocation plan is subject to approval by National Marine Fisheries Service and California Department of Fish and Wildlife once the Streambed Alteration Agreement is finalized.

**Response to comment 8c.** The *River Geomorphology Study for Salsipuedes Creek at State Route 1 in Santa Barbara County, California*, was completed in August 2012. The purpose of this study was to develop an understanding of how the creek channel would respond to construction of the rejected alternative, which proposed to construct a combination soil-nail and tie-back retaining wall with reinforced concrete facing and to evaluate the viability of building either a fish ladder or a fish weir to address the low-flow fish passage barrier. This study contains information on potential up and downstream effects to the creek channel based on the rejected alternative. A copy of this document can be obtained upon request.

Following completion of this document, it was determined that the most feasible approach to addressing bank erosion below the bridge would be to replace the bridge with a single-span structure and allow the creek to flow unimpeded and eventually reach a natural state of equilibrium. However, the question remained as to what effect this action would have to up and downstream creek morphology. A Supplemental River Geomorphology Report was completed in January 2015. The purpose of this study was to analyze upstream and downstream effects (linear length of specific habitat types) from removal of the check dam associated with the proposed build alternative, and how to provide adequate fish passage once the check dam is removed. The study determined that "No hydraulic effects would occur upstream near the Jalama Road fish ladder under either design option" (Section 6.2 of the Supplemental report). The January 2015 Report was sent to California Department of Fish and Wildlife in May of 2015.

**Response to comment 9.** Caltrans' appreciates the comments regarding the potential for impacts to active bird nests during construction. A discussion of potential project impacts and measures to be implemented to avoid or reduce impacts to nesting birds has been included under Section 2.3.4.



CACHUMA OPERATION AND  
MAINTENANCE BOARD  
3301 Laurel Canyon Road  
Santa Barbara, California 93105-2017  
Telephone (805) 687-4011 FAX (805)569-5825

August 7, 2014

Cecilia Boudreau  
Associate Environmental Planner  
Central Coast Environmental Management Branch  
California Department of Transportation  
50 Higuera Street  
San Luis Obispo, CA 93401  
Cecilia.boudreau@dot.ca.gov

Dear Cecilia,

Please accept our comments on the **Initial Study with Proposed Mitigated Negative Declaration** document that Caltrans prepared for the Salsipuedes Creek and Highway 1 Project (Project). I appreciate the opportunity to provide comments. If you have any questions on my comments, please be in touch with any questions.

Sincerely,

A handwritten signature in black ink that reads "Timothy H. Robinson".

Timothy H. Robinson  
Fisheries Division Manager

8/7/14

Page 1

**Comments from the Cachuma Operation and Maintenance Board  
on the  
Initial Study with Proposed Mitigated Negative Declaration  
Salsipuedes Creek and Highway 1 Bridge Replacement Project**

**August 7, 2014**

The current fish ladder under the Highway 1 Bridge was constructed and is maintained by the Cachuma Operation and Maintenance Board (COMB, Fisheries Division) on behalf of US Bureau of Reclamation (Reclamation) as a compliance measure for the 2000 Cachuma Project Biological Opinion (BO). Hence it is important that we are involved in the Caltrans bridge and fish passage replacement project to assure fish passage for juvenile and adult steelhead/rainbow trout (*Oncorhynchus mykiss*, *O. mykiss*) concurrent with the stated compliance measure in the BO for this site.

Barring continued drought sufficient to dry that scour pool out, there will be *O. mykiss* in that pool and most likely California red-legged frogs. Moving those fish and frogs will require ample take allocations and will not be easy hence it would be best to keep the pool in tact while under construction until the fish passage element is built, and maybe even then the habitat could stay wetted and fish in the pool. We have monitored that pool for years and it continuously and consistently holds *O. mykiss*. References to this regard can be found within our Annual Monitoring Reports (<http://fmp.cachuma-board.org/documents.htm>).

1

**Page 8 Section 1.5:** last 2 paragraphs briefly describe two options for fish passage; a fish ladder or a fish weir. You state that the fish weir is the only viable alternative yet in the last paragraph you dismiss that option. You need to clarify what you are doing and that you will provide juvenile and adult fish passage across the entire range of determined fish passage flows to comply with standard criteria of the National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW).

2

**Page 39 Steelhead Trout:** Southern California Coast Evolutionary Significant Unit is an old term. NMFS is currently using Southern California Steelhead Distinct Population Segment (DPS).

3

**Page 42 Avoidance, Minimization, and/or Mitigation Measures #7:** Herbicide use for exotic plant species should be prohibited in the aquatic environments and highly restricted in the terrestrial areas (or used as a last alternative).

4

**Page 43 Steelhead Trout #3:** NMFS oversees southern steelhead recovery, not USFWS.

5

**Page 46 Steelhead Trout:** On historical references, I suggest adding Peter Alagona's seminal paper on the history of steelhead in the Santa Ynez River (<http://www.peteralagona.com/articles-essays/>). You could use COMB references for current conditions (link listed above).

6

**Page 49 Environmental Consequences:** (2<sup>nd</sup> paragraph) Please look at one of our Annual Monitoring Reports (link above) to better describe the extensive monitoring and restoration

8/7/14

Page 2

effort being conducted by COMB. This is a long-term millions of dollar effort that deserved a bit more than this paragraph. (3<sup>rd</sup> bullet) Celite sold to Imerys Minerals California Inc and is the current property/mine owner. Celite shows up in several locations (Page 51 for example).

7

**Page 50 Steelhead Trout:** (2<sup>nd</sup> paragraph) I suggest adding references to 1<sup>st</sup> sentence (see COMB-FMP web site). (3<sup>rd</sup> paragraph), I am not aware of the 2<sup>nd</sup> project you list to reduce poaching; suggest removing. This non-existent project shows up on Page 53 3<sup>rd</sup> paragraph and Page 55 3<sup>rd</sup> paragraph. We did put a No Fishing sign up at that site. The other listed project is correct.

8

**Page 51 top of page:** I suggest including that you will be doing a fish passage project that will put elements in the stream; it's not just a remove concrete project and all is perfect for fish passage.

8/7/14

Page 3

*Response to Comments from Cachuma Operations and Maintenance Board.*

Thank you for your comments on this project.

**Response to comment 1.** Further clarification regarding fish passage mitigation has been included throughout the document. Please see added discussion about fish passage mitigation in Sections 1.5 and 1.6. More detailed discussion regarding fish passage mitigation can be found in Section 2.3.5 as well as in the National Marine Fisheries Service Biological Opinion issued for this project (Appendix F).

**Response to comment 2.** Southern California Coast Evolutionary Significant Unit has been changed to Southern California Steelhead Distinct Population Segment (DPS).

**Response to comment 3.** A measure has been included in Section 2.3.1 indicating that use of herbicide in the aquatic environment will be prohibited. Herbicide use outside of the aquatic environment will be restricted to the extent possible. Caltrans will implement herbicide application measures outlined in the U.S. Fish and Wildlife Service Programmatic Biological Opinion for California red-legged frog (Appendix G).

**Response to comment 4.** The National Marine Fisheries Service is referenced throughout the document as the agency overseeing southern California steelhead.

**Response to comment 5.** Please see added historical reference information from Peter Alagona's seminal paper on the history of steelhead in the Santa Ynez River in Section 2.4 (page 60).

**Response to comment 6.** Please see additional discussion in Section 2.4 (page 64) regarding the long-term effort being made by the Cachuma Operations and Maintenance Board to improve water quality and steelhead habitat throughout the lower Santa Ynez River. Additionally, please note change from Celite to Imerys Minerals California Inc. throughout Section 2.4.

**Response to comment 7.** A reference to the COMB-FMP web site has been added to Section 2.4 under the Environmental Consequences heading (page 66). The project described to reduce poaching in the vicinity of the Highway 1 bridge at Salsipuedes Creek has been removed from the document.

**Response to comment 8.** Discussion regarding construction of a roughened rock ramp consistent with the August 24, 2015 Biological Opinion from the National Marine Fisheries Service (Appendix F) has been included throughout the document.



July 16, 2014

Cecelia Boudreau  
California Department of Transportation  
50 Higuera Street  
San Luis Obispo, CA 93401

RE: SCH# 2014071009 Salsipuedes Creek Bridge Replacement Project, San Luis Obispo County.

Dear Ms. Boudreau:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Completion (NOC) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **USGS 7.5-minute quadrangle name, township, range, and section required**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) Guidelines §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered cultural items that are not burial associated, which are addressed in Public Resources Code (PRC) §5097.98, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, PRC §5097.98, and CEQA Guidelines §15064.5(e), address the process to be followed in the event of an accidental discovery of any human remains and associated grave goods in a location other than a dedicated cemetery.

Sincerely,

A handwritten signature in blue ink that reads "Katy Sanchez".

Katy Sanchez  
Associate Government Program Analyst

CC: State Clearinghouse

**Native American Contact List**  
 San Luis Obispo County  
 July 16, 2014

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 Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.  
 This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH # 2014071009 Salsipuedes Creek Bridge Replacement Project, San Luis Obispo County.

**Native American Contact List**  
 San Luis Obispo County  
 July 16, 2014

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Chumash

Santa Ynez Tribal Elders Council  
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 ksen\_sku\_mu@yahoo.com

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.  
 This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH # 2014071009 Salsipuedes Creek Bridge Replacement Project, San Luis Obispo County.

**Native American Contact List**  
San Luis Obispo County  
July 16, 2014

Santa Ynez Tribal Elders Council  
Freddie Romero, Cultural Preservation Consint  
P.O. Box 365 Chumash  
Santa Ynez , CA 93460  
freddyromero1959@yahoo.com  
(805) 688-7997, Ext 37

Barbareño Chumash  
Ms. Regina Unzueta  
125 West Carrillo Street Chumash  
Santa Barbara , CA 93101  
reginaUnzueta@gmail.com  
(805) 570-9530

Barbareno/Ventureno Band of Mission Indians  
Kathleen Pappo  
2762 Vista Mesa Drive Chumash  
Rancho Pales Verdes CA 90275  
(310) 831-5295

PeuYoKo Perez  
11465 Nardo Street Chumash  
Ventura , CA 93004  
grndowl4U@yahoo.com  
(805) 231-0229 Cell

Barbareno/Ventureno Band of Mission Indians  
Raudel Joe Banuelos, Jr.  
331 Mira Flores Court Chumash  
Camarillo , CA 93012  
(805) 987-5314

Coastal Band of the Chumash Nation  
Janet Darlene Garcia  
P.O. Box 4464 Chumash  
Santa Barbara , CA 93140  
(805) 689-9528

Coastal Band of the Chumash Nation  
Crystal Baker  
P.O. Box 723 Chumash  
Atascadero , CA 93423  
(805) 466-8406

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH # 2014071009 Salsipuedes Creek Bridge Replacement Project, San Luis Obispo County.

*Response to Comments from the Native American Heritage Commission.*  
Thank you for your comments on this project.

**Response to comment:** Previous work conducted for an operational improvement project along Highway 1 in Santa Barbara County included consultation and close coordination with the Chumash Tribal Elder's Council (Levulett and Mikkelsen 1993). The current Salsipuedes Creek Bridge Scour Mitigation Project is within the limits of this previous project. The Area of Potential Effect (APE) has never been identified as an area of concern by the Elder's Council, and studies of the current project area were negative for cultural resources. The Cultural Resource Review Screening memo (December 17, 2013; Updated July 6, 2015) concluded that no historic properties or archaeological resources would be affected by the proposed project. The memo is available upon request.



Edmund G. Brown Jr.  
Governor

STATE OF CALIFORNIA  
Governor's Office of Planning and Research  
State Clearinghouse and Planning Unit



Ken Alex  
Director

August 1, 2014

Cecilia Boudreau  
California Department of Transportation, District 5  
50 Higuera Street  
San Luis Obispo, CA 93401

Subject: Salsipuedes Creek Bridge Replacement Project  
SCH#: 2014071009

Dear Cecilia Boudreau:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on July 31, 2014, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan  
Director, State Clearinghouse

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044  
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

**Document Details Report  
State Clearinghouse Data Base**

**SCH#** 2014071009  
**Project Title** Salsipuedes Creek Bridge Replacement Project  
**Lead Agency** Caltrans #5

**Type** MND Mitigated Negative Declaration  
**Description** Caltrans proposes to replace the existing Salsipuedes Creek Bridge (Br. No. 51-95) on Highway 1 in Santa Barbara County. Highway 1 through the project area consists of a rural two-lane road passing through agricultural land. The Salsipuedes Creek Bridge is located at post mile 15.6, approximately 3.5 miles southeast of the city of Lompoc.

**Lead Agency Contact**

**Name** Cecilia Boudreau  
**Agency** California Department of Transportation, District 5  
**Phone** 805 549 3376 **Fax**  
**email**  
**Address** 50 Higuera Street  
**City** San Luis Obispo **State** CA **Zip** 93401

**Project Location**

**County** Santa Barbara  
**City** Lompoc  
**Region**  
**Lat / Long** 34° 30' 0" N / 120° 22' 30" W  
**Cross Streets** Jalama Road  
**Parcel No.** State Right of Way  
**Township** **Range** **Section** **Base**

**Proximity to:**

**Highways** Hwy 1  
**Airports**  
**Railways**  
**Waterways** Salsipuedes Creek  
**Schools**  
**Land Use** Rural Agricultural

**Project Issues** Aesthetic/Visual; Biological Resources; Public Services; Water Quality

**Reviewing Agencies** Resources Agency; California Coastal Commission; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; Resources, Recycling and Recovery; California Highway Patrol; Air Resources Board; Regional Water Quality Control Board, Region 3; Department of Toxic Substances Control; Native American Heritage Commission; State Lands Commission

**Date Received** 07/02/2014 **Start of Review** 07/02/2014 **End of Review** 07/31/2014

# Appendix E Biological Coordination



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Ventura Fish and Wildlife Office  
2493 PORTOLA ROAD, SUITE B  
VENTURA, CA 93003  
PHONE: (805)644-1766 FAX: (805)644-3958

Consultation Code: 08EVEN00-2015-SLI-0449

September 24, 2015

Event Code: 08EVEN00-2015-E-02000

Project Name: Salsipuedes Creek Bridge Scour Mitigation Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

### To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project\*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve

conflicts with respect to threatened or endangered species or their critical habitat prior to a written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between the action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[\*A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.]

Attachment



United States Department of Interior  
Fish and Wildlife Service

Project name: Salsipuedes Creek Bridge Scour Mitigation Project

## Official Species List

**Provided by:**

Ventura Fish and Wildlife Office  
2493 PORTOLA ROAD, SUITE B  
VENTURA, CA 93003  
(805) 644-1766

**Consultation Code:** 08EVEN00-2015-SLI-0449

**Event Code:** 08EVEN00-2015-E-02000

**Project Type:** TRANSPORTATION

**Project Name:** Salsipuedes Creek Bridge Scour Mitigation Project

**Project Description:** The California Department of Transportation (Caltrans) proposes to replace the existing Salsipuedes Creek Bridge (Br. No. 51-95) on State Route 1 in Santa Barbara County. The Salsipuedes Creek Bridge is located at post mile 15.6, approximately 6 miles southeast of the city of Lompoc. A new hydraulic designed roughened channel will be constructed within the creek to restore passage of juvenile and adult SC steelhead.

**Please Note:** The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

<http://ecos.fws.gov/ipac>, 09/24/2015 12:32 PM



United States Department of Interior  
Fish and Wildlife Service

Project name: Salsipuedes Creek Bridge Scour Mitigation Project

**Project Location Map:**



**Project Coordinates:** MULTIPOLYGON (((-120.41246704108505 34.59710519994835, -120.41232525099457 34.596988139556416, -120.41129818784319 34.59661026604774, -120.41165806957082 34.595944860052015, -120.41238394631934 34.596266653303935, -120.41255490429741 34.59629901777004, -120.41271680076761 34.59625955951449, -120.41304251163136 34.596283229954985, -120.41325218125378 34.59637524061631, -120.41330526404292 34.59651759037374, -120.41350349905407 34.596770895535414, -120.4139327643137 34.5969218406267, -120.41473241049246 34.59710998982561, -120.41455923512088 34.597582187427484, -120.41426758944843 34.597459217420884, -120.41324455066722 34.597154876994395, -120.413252988963 34.5973006578557, -120.4136060012806 34.59767784492793, -120.41337107763925 34.59797971791857, -120.41271064717779 34.59744473987253, -120.41246704108505 34.59710519994835)))

**Project Counties:** Santa Barbara, CA

<http://ecos.fws.gov/ipac>, 09/24/2015 12:32 PM



United States Department of Interior  
Fish and Wildlife Service

Project name: Salsipuedes Creek Bridge Scour Mitigation Project

## Endangered Species Act Species List

There are a total of 12 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	Status	Has Critical Habitat	Condition(s)
California red-legged frog ( <i>Rana draytonii</i> ) Population: Entire	Threatened	Final designated	
<b>Birds</b>			
Least Bell's vireo ( <i>Vireo bellii pusillus</i> ) Population: Entire	Endangered	Final designated	
Marbled murrelet ( <i>Brachyramphus marmoratus</i> ) Population: CA, OR, WA	Threatened	Final designated	
Southwestern Willow flycatcher ( <i>Empidonax traillii extimus</i> ) Population: Entire	Endangered	Final designated	
<b>Crustaceans</b>			
Vernal Pool fairy shrimp ( <i>Branchinecta lynchi</i> ) Population: Entire	Threatened	Final designated	
<b>Fishes</b>			

<http://ecos.fws.gov/ipac>, 09/24/2015 12:32 PM



United States Department of Interior  
Fish and Wildlife Service

Project name: Salsipuedes Creek Bridge Scour Mitigation Project

Tidewater goby ( <i>Eucyclogobius newberryi</i> ) Population: Entire	Endangered	Final designated	
<b>Flowering Plants</b>			
Gambel's watercress ( <i>Rorippa gambellii</i> )	Endangered		
Gaviota Tarplant ( <i>Deinandra increscens ssp. villosa</i> )	Endangered	Final designated	
Lompoc yerba santa ( <i>Eriodictyon capitatum</i> )	Endangered	Final designated	
Marsh Sandwort ( <i>Arenaria paludicola</i> )	Endangered		
Salt Marsh bird's-beak ( <i>Cordylanthus maritimus ssp. maritimus</i> )	Endangered		
<b>Insects</b>			
El Segundo Blue butterfly ( <i>Euphilotes battoides allyni</i> ) Population: Entire	Endangered		

<http://ecos.fws.gov/ipac>, 09/24/2015 12:32 PM



United States Department of Interior  
Fish and Wildlife Service

Project name: Salsipuedes Creek Bridge Scour Mitigation Project

### **Critical habitats that lie within your project area**

There are no critical habitats within your project area.

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5

# Appendix F National Marine Fisheries Service Biological Opinion



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
777 Sonoma Avenue, Room 325  
Santa Rosa, California 95404

AUG 24 2015

Refer to NMFS No: SWR-2013-9814

Jim Walth  
California Department of Transportation, District 5  
50 Higuera Street  
San Luis Obispo, California 93401-5415

Dear Mr. Walth:

Thank you for your letter of May 13, 2015, requesting initiation of formal consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 *et seq.*) for the California Department of Transportation's Salsipuedes Creek Bridge Scour Mitigation Project at State Route 1, Santa Barbara County. Enclosed with this letter is NMFS' biological opinion for the subject proposed action. This biological opinion addresses the effects of the proposed action on the federally endangered Southern California Coast (SCC) Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*) and its designated critical habitat in accordance with section (7)(a)(2) of the ESA.

The biological opinion concludes that the proposed action is not likely to jeopardize the continued existence of the endangered SCC DPS of steelhead, or destroy or adversely modify designated critical habitat for this species. NMFS believes the proposed action is likely to result in incidental take of endangered steelhead, and therefore the attached incidental take statement includes the amount and extent of anticipated incidental take with reasonable and prudent measures and non-discretionary terms and conditions that are necessary and appropriate to minimize and monitor incidental take of endangered steelhead.

Please contact Jay Ogawa at NMFS' Southern California Branch of the California Coastal Office in Long Beach, 562-980-4061 or at Jay.Ogawa@noaa.gov, if you have a question concerning this Section 7 consultation, or if you require additional information.

Sincerely,

William W. Stelle, Jr.  
Regional Administrator

Enclosure

cc: Administrative No. 151422-SWR-2010-PR00288  
Chris Dellith, USFWS, Ventura  
Mary Larson, CDFW, Los Alamitos  
Eric Shott, NMFS, Santa Rosa



**Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion**

Salsipuedes Creek Scour Mitigation Project

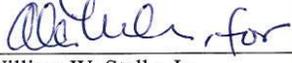
NMFS Consultation Number: 151422-SWR-2010-PR00288//PCTS SWR-2013-9814

Action Agency: California Department of Transportation

Affected Species and NMFS' Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species or Critical Habitat?	Is Action Likely To Jeopardize the Species?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
Southern California Coast steelhead ( <i>Oncorhynchus mykiss</i> )	Endangered	Yes	No	No

**Consultation Conducted By:** National Marine Fisheries Service, West Coast Region

**Issued By:**  for  
William W. Stelle, Jr.  
Regional Administrator

**Date:** AUG 24 2015

## 1. INTRODUCTION

This introduction provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3 below.

### 1.1 Background

NOAA's National Marine Fisheries Service (NMFS) prepared the biological opinion (opinion) and incidental take statement portions of this document in accordance with Section 7(b) of the Endangered Species Act (ESA) of 1973 (16 USC 1531 *et seq.*), and implementing regulations at 50 CFR 402.

A pre-dissemination review of this document was completed using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available through NMFS' Public Consultation Tracking System [<https://pcts.nmfs.noaa.gov/pcts-web/homepage.pcts>]. A complete record of this consultation is on file at NMFS' California Coastal Area Office, Southern California Branch in Long Beach, California.

### 1.2 Consultation History

On May 18, 2015, NMFS received from the California Department of Transportation's (Caltrans) office in San Luis Obispo, California, a written request for formal consultation under Section 7 of the U.S. Endangered Species Act (ESA). Caltrans' request concerns the Salsipuedes Creek Scour Mitigation Project (proposed action) at State Route 1 in Santa Barbara County. After reviewing Caltrans' request and biological assessment (BA), including supplemental geomorphology report and conceptual fish-passage design, NMFS determined the information was sufficient to initiate consultation on May 18, 2015. From 2009 to 2015, NMFS provided Caltrans with technical advice in letters, technical engineering reviews, and during site visits and teleconferences, for avoiding conflict between endangered steelhead and the proposed action. In this regard, NMFS offered recommendations that would improve the existing steelhead passage conditions within the action area to the maximum extent possible.

### 1.3 Proposed Action

"Action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies (50 CFR §402.02).

Overview of the Proposed Action: The existing State Route 1 Bridge over Salsipuedes Creek will be replaced with a new single-span bridge (150-foot long x 43-foot wide) and the abutments will be above the ordinary high-water mark. The concrete check dam, fish ladder, and sacked concrete beneath the existing bridge will be removed from the streambed. A roughened ramp will be constructed to improve existing steelhead passage conditions through the action area. Construction of the proposed action is expected to begin in 2016 and be completed over two seasons, with all instream work to occur between June 1 and October 31 in each season. Best-management practices

(BMP) are incorporated into the proposed action and will be implemented when bridge-construction activities are undertaken. The specific activities that make up the proposed action are as follows.

Proposed Activities to Prepare the Work Area for Construction: To prepare for construction in dry conditions, the work area will be temporarily isolated from surface flow and any steelhead within the affected area will be relocated. A coffer dam will be constructed across the channel immediately upstream of the proposed bridge and remain in place for the duration of each construction season. Surface flow will travel through the work area in a diversion comprised of a 36-inch diameter pipe and return to the creek approximately 450-feet downstream. After the immediate project area is dewatered and all steelhead have been removed and relocated, and the water diversion is functioning as designed, steelhead will be able to voluntarily migrate downstream through the action area.

Prior to the actual diversion of surface water, NMFS approved biologists will survey the entire work area for steelhead, which will be captured with seines or dipnets, then relocated to a predetermined location. Once the relocations are complete, streamflow will be diverted slowly and in stages to ensure the creek does not dewater suddenly. As flows are diverted, continual surveys of the dewatered area will be conducted and all steelhead in the dewatered area will be captured and relocated from residual wetted areas. Detailed records of relocated steelhead will be kept and reported to NMFS. Additional measures will be undertaken to minimize take of steelhead and adverse effects to aquatic habitat during the dewatering process and subsequent construction activities. If pumps are utilized during dewatering, water will be pumped to a settling tank to prevent suspended sediments from being discharged back into the creek. Pump intakes will be screened with wire-mesh no larger than 5-millimeters to prevent steelhead from entering the pump system. Upon completion of the proposed action and construction activities each season, barriers to surface flow will be removed and the streambed will be restored.

Proposed Construction Activities: After the work area is dewatered, Caltrans will begin demolishing the existing bridge. Once the demolished bridge has been removed, a new cast-in-place or pre-cast concrete bridge will be installed. New bridge abutments will be set on cast-in-drill-hole piles. During the second season, all manmade concrete structures beneath the bridge (*i.e.*, check dam, fish ladder, and sacked concrete) will be removed. Caltrans proposes to construct a roughened rock ramp at a 2% slope to improve steelhead passage conditions through the action area. The specific details of the roughened ramp and methods of construction have not been finalized. Currently, the roughened ramp will be about 250-feet in length and extend up each bank to the 2.3-year storm event. Concrete debris will be removed from the dewatered work area as necessary, and BMPs will be maintained throughout the demolition and construction periods to minimize erosion and sedimentation of the disturbed sections of the work area. These BMPs include, jute-netting, straw-wattles, silt-fencing, and hay bales. All vehicle and equipment maintenance and material storage will be located outside creek limits at least 70-feet from riparian or wetland areas.

Proposed Post-Construction Activities: Following construction of the proposed action, Caltrans proposes to implement a revegetation plan that includes native trees, grasses, and shrubs. The revegetation plan provides Caltrans' approach for the restoration, enhancement, and replacement of riparian habitat temporarily or permanently lost as a result of the proposed action. Planting of trees under 4-inch diameter-at-breast-height (DBH) and over 4-inch DBH will occur at a ratio of 1:1 and

3:1, respectively. Species of trees to be planted include white alder (*Alnus rhombifolia*), California sycamore (*Platanus racemosa*), western cottonwood (*Populus fremontii*), and big leaf maple (*Acer macrophyllum*). Temporarily disturbed slopes will be seeded with native grasses and shrubs. Additionally, arroyo willow (*Salix lasiolepis*) cuttings will be planted above the ordinary high water mark on the east and west banks. Caltrans proposes to implement a 5-year monitoring plan following completion of the proposed action to ensure biological resources are restored and enhanced.

“Interrelated actions” are those that are part of a larger action and depend on the larger action for their justification. “Interdependent actions” are those that have no independent utility apart from the action under consideration (50 CFR 402.02). There is no interrelated or interdependent action associated with the proposed action based on NMFS’ review of the consultation package.

#### **1.4 Action Area**

“Action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02).

The action area includes the linear extent (upstream and downstream) of the State Route 1 Bridge that crosses the Salsipuedes Creek and encompasses the riparian corridor to the top of bank. The action area extends about 180-feet upstream of the existing bridge centerline where the upper extent of the water diversion will be placed, and 350-feet downstream from the end of the diversion, where temporary construction effects such as elevated turbidity are anticipated to cease. The length of the Salsipuedes Creek within the action area is about 800 feet.

## **2. ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT**

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, Federal agencies must ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, Federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provides an opinion stating how the agency’s actions would affect listed species and their critical habitat. If incidental take is expected, Section 7(b)(4) requires NMFS to provide an incidental take statement (ITS) that specifies the impact of any incidental taking and includes non-discretionary reasonable and prudent measures and terms and conditions to minimize such impacts.

#### **2.1 Analytical Approach**

This biological opinion includes both a jeopardy analysis and an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of “to jeopardize the continued existence of a listed species,” which is “to engage in an action that would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species” (50 CFR §402.02). The

jeopardy analysis considers both survival and recovery of the species.

The adverse modification analysis considers the impacts of the Federal action on the conservation value of designated critical habitat. This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR §402.02. Instead, this biological opinion relies upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.<sup>1</sup>

The following approach is used to determine whether a proposed action is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- Identify the rangewide status of the species and critical habitat likely to be adversely affected by the proposed action.
- Describe the environmental baseline in the action area.
- Analyze the effects of the proposed action on both species and their habitat using an "exposure-response-risk" approach.
- Describe any cumulative effects in the action area.
- Integrate and synthesize the above factors to assess the risk that the proposed action poses to species and critical habitat.
- Reach conclusions regarding the jeopardy and adverse modification standards.
- If necessary, define a reasonable and prudent alternative to the proposed action.

Information submitted by Caltrans and reviewed by NMFS included the following documents: (1) the biological assessment (BA) for the proposed action; (2) bridge plans; (3) revegetation design plans; (4) River Geomorphology Study for Salsipuedes Creek at State Route 1; and (5) supplemental river geomorphology report, including conceptual fish-passage design alternatives. NMFS relied on relevant ecological literature, documented in the official record for the proposed action, to inform the assessment of potential effects on endangered steelhead and designated critical habitat.

## **2.2 Rangewide Status of the Species and Critical Habitat**

This opinion examines the status of endangered steelhead, as determined by the level of extinction risk that the listed species faces, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The species status section informs the description of the species' current "reproduction, numbers, or distribution" as described in 50 CFR §402.02.

**2.2.1 Status of the Species.** – *Oncorhynchus mykiss* is one of six Pacific salmon in the genus *Oncorhynchus* that are native to the North American coast. The natural history of this species dictates the terminology fisheries biologists and resource managers use when discussing *O. mykiss*, its habitat, and distribution. If the species remains in freshwater throughout their entire life cycle (and reside upstream of longstanding migration barriers), they are referred to as resident trout (non-

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<sup>1</sup> Memorandum from William T. Hogarth to Regional Administrators, Office of Protected Resources, NMFS (Application of the "Destruction or Adverse Modification" Standard Under Section 7(a)(2) of the Endangered Species Act) (November 7, 2005).

anadromous), or rainbow trout. The anadromous or ocean-going form of *O. mykiss*, and its progeny, are listed under the ESA (NMFS 2006) and is typically referred to as “steelhead.” Globally, steelhead are found in the western Pacific through the Kamchatka Peninsula in Asia, east to Alaska, south to southern California, and even reported in Baja California del Norte (Ruiz-Campos and Pister 1995).

The listed unit of anadromous *O. mykiss* is termed a “distinct population segment” or DPS (NMFS 2006), and the listed unit contains several individual or fish-bearing watersheds. The DPS recognizes only the anadromous *O. mykiss*. In accordance with the listing decision, this biological opinion solely uses the DPS terminology and provides NMFS’ conclusion as to the likelihood of jeopardy to the species based only on effects to the listed DPS. This biological opinion analyzes the effects of the proposed action on the following listed DPS and designated critical habitat, which occur in the action area:

Salmonid Species	ESU/DPS Name	Original Listing	Revised Listing(s)	Critical Habitat Designations
Steelhead ( <i>O. mykiss</i> )	Southern California Coast DPS	FR Notice: 62 FR 43937 Date: 08/18/1997	FR Notice: 71 FR 5248 Date: 01/05/2006	FR Notice: 70 FR 52488 Date: 09/02/2005

The geographic range of this DPS extends from the Santa Maria River, near Santa Maria, to the California–Mexico border (NMFS 1997, 2002, 2006), which represents the known southern geographic extent of the anadromous form of *O. mykiss*. NMFS described historical and recent steelhead abundance and distribution for the southern California coast through a population characterization (Boughton *et al.* 2006). Surveys in Boughton *et al.* (2006) indicate between 58 percent and 65 percent of the historical steelhead basins currently harbor *O. mykiss* populations at sites with connectivity to the ocean. Most of the apparent losses of steelhead were noted in the south, including Orange and San Diego counties (Boughton *et al.* 2005). The majority of losses (68 percent) of steelhead were associated with anthropogenic barriers to steelhead migration (*e.g.*, dams, flood-control structures, culverts, *etc.*). Additionally, the investigators found the barrier exclusions were statistically associated with highly-developed watersheds.

Steelhead in southern California are categorized as “winter run” because they can migrate into natal streams between December and April (Fukushima and Lesh 1998), arriving in reproductive condition and spawning shortly thereafter. Adults may migrate several miles, hundreds of miles in some watersheds, to reach their spawning grounds. Steelhead have evolved to migrate deep into the extreme fringes of a watershed to exploit the environmental conditions that favor production of young (Montgomery *et al.* 1999). Steelhead in southern California streams can be tolerant of warm water, remaining active and feeding at temperatures that are higher than the temperature preferences and heat tolerances reported for the species based on individuals from northern latitudes (Spina 2007). While 46 drainages support this DPS (Boughton *et al.* 2005), only 10 population units possess a high and biologically plausible likelihood of being viable and independent<sup>2</sup> (Boughton *et al.* 2006).

<sup>2</sup> Independent population: a collection of one or more local breeding units whose population dynamics or extinction risk over a 100-year time period is not substantially altered by exchanges of individuals with other populations (Boughton *et al.* 2006).

Although the geographic area of the DPS is broad, the individual population units are sparsely distributed throughout the DPS with extensive spatial breadth often existing between nearest-neighbor populations (Boughton *et al.* 2005; NMFS 2005a; Boughton *et al.* 2006). Extinction of some population units has been observed as well as contraction of the southern extent of the species' geographic range (Boughton *et al.* 2005; Gustafson *et al.* 2007).

One reason for the extensive spatial gaps between neighboring population units and the range contraction involves man-made barriers to steelhead migration (Boughton *et al.* 2005).

The small number of extant populations that make up this DPS are vulnerable to extirpation due to loss of accessibility to freshwater spawning and rearing habitat, low abundance, degraded estuarine habitats and watershed processes essential to maintain freshwater habitats (NMFS 2011). There is little new evidence to suggest that the status of the SCC DPS has changed appreciably in either direction since publication of the most recent collections of status reviews (Good *et al.* 2005; NMFS 2011; Williams *et al.* 2011). New information since the last review concerning the status of anadromous runs in the DPS is limited and does not suggest a change in extinction risk.

Population abundance trends can vary based on yearly rainfall within the range of the SCC DPS. A relatively large number of adult steelhead were observed in 2008, two years after an extended wet spring that presumably gave smolts ample opportunity to migrate to the ocean. Low rainfall appears to have caused many spawners to get trapped in freshwater, where they were observed during the summer; in addition, low rainfall probably improved conditions for viewing fish during snorkel surveys, and for trapping fish in weirs (Williams *et al.* 2011).

**2.2.2 General Life History of Steelhead.** – *O. mykiss* possesses an exceedingly complex life history (Behnke 1992). Distinctly different than other Pacific salmon, steelhead adults can survive their first spawning and return to the ocean to reside until the next year to reproduce again. For returning adults, the specific timing of spawning can vary by a month or more among rivers or streams within a region, occurring in winter and early spring. The spawning time frames depend on physical factors such as the magnitude and duration of instream flows and sand-bar breaching. Once they reach their spawning grounds, females will use their caudal fin to excavate a nest (redd) in streambed gravels where they deposit their eggs. Males will then fertilize the eggs and, afterwards, the females cover the redd with a layer of gravel, where the embryos (alevins) incubate within the gravel. Hatching time can vary from approximately three weeks to two months depending on surrounding water temperature. The young fish (fry) emerge from the redd two to six weeks after hatching. As steelhead begin to mature, juveniles or “parr” will rear in freshwater streams anywhere from 1-3 years. Juvenile steelhead can also rear in seasonal coastal lagoons or estuaries of their natal creek, providing over-summering habitat.

Juvenile steelhead emigrate to the ocean (as smolts) usually in late winter and spring and grow to reach maturity at age 2-4, but steelhead can reside in the ocean for an additional 2-3 years before returning to spawn. The timing of emigration is influenced by a variety of parameters such as photoperiod, temperature, breaching of sandbars at the river's mouth and streamflow. Extended droughts can cause juveniles to become landlocked, unable to reach the ocean (Boughton *et al.* 2006).

Through studying the otolith (small ear stone) microchemistry of *O. mykiss*, researchers further

understand the complex and intricate life history of steelhead. Specifically, resident rainbow trout can produce steelhead progeny; likewise, steelhead can yield resident rainbow trout progeny (Zimmerman and Reeves 2000). Additionally, evidence indicates that sequestered populations of steelhead (*e.g.*, above introduced migration barriers) can exhibit traits that are the same or similar to anadromous specimens with access to the ocean. Examples include inland resident fish exhibiting smolting characteristics and river systems producing smolts with no regular access for adult steelhead. This evidence suggests the ecological importance of the resident form to the viability of steelhead and the need to reconnect populations upstream and downstream of introduced migration barriers. The loss or reduction in anadromy and migration of juvenile steelhead to the estuary or ocean is expected to reduce gene flow, which strongly influences population diversity (McElhany *et al.* 2000). Evidence indicates genetic diversity in populations of southern California steelhead is low (Girman and Garza 2006).

**2.2.3 Steelhead Habitat Requirements.** – Habitat requirements of steelhead generally depend on the life history stage. Steelhead encounter several distinct habitats during their life cycle. Water discharge, water temperature, and water chemistry must be appropriate for adult and juvenile migration. Suitable water depth and velocity, and substrate composition are the primary requirements for spawning. Furthermore, dissolved oxygen concentration, pH, and water temperature are factors affecting survival of incubating embryos. The presence of interspatial spaces between large substrate particle types is important for maintaining water-flow through the nest as well as dissolved oxygen levels within the nest. These spaces can become filled with fine sediment, sand, and other small particles. Additionally, juveniles need abundant food sources, including insects, crustaceans, and other small fish. Habitat must also provide places to hide from predators, such as under logs, root wads and boulders in the stream, and beneath overhanging vegetation. Steelhead also need places to seek refuge from periodic high-flow events (side channels and off channel areas), and may occasionally benefit from the availability of cold-water springs or seeps and deep pools during summer. Estuarine habitats can be utilized during the seaward migration of steelhead, as these habitats have been shown to be nurseries for steelhead. Estuarine or lagoon habitats can vary significantly in their physical characteristics from one another, but remain an important habitat requirement as physiology begins to change while juvenile steelhead become acclimated to a saltwater environment.

**2.2.4 Status of Designated Critical Habitat.** – Within the process of designating critical habitat, NMFS developed a list of Primary Constituent Elements (PCEs) (NMFS 2005a) for habitat sites essential to support one or more life stages of the DPS, such as sites for spawning, rearing, and migration (Table 1). These sites in turn contain physical or biological features<sup>3</sup> essential to the conservation of the endangered SCC DPS of steelhead.

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<sup>3</sup> The essential features include water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, single or complex combination of habitat characteristics, and ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity (per proposed rule: Docket No. FWS-HQ-ES-2012-0096; Docket No. 120106025-3256-01; 4500030114 on May 12, 2014; 50 CFR 424 Vol. 79, No. 91. Page 27066-27077).

**Table 1. Physical or biological features which are critical to the conservation of sites determined essential to support one or more life stages of steelhead (NMFS 2005a).**

Primary Constituent Elements	Physical Characteristics	Essential to Conservation
Freshwater spawning sites	With water quantity and quality conditions and substrate supporting spawning, incubation and larval development.	Without these features the species cannot successfully spawn and produce offspring.
Freshwater rearing sites	With water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.	Without these features juveniles cannot access and use the areas needed to forage, grow, and develop behaviors (e.g., predator avoidance, competition) that help ensure their survival.
Freshwater migration corridors	Free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.	Without these features juveniles cannot use the variety of habitats that allow them to avoid high flows, avoid predators, successfully compete, begin the behavioral and physiological changes needed for life in the ocean, and reach the ocean in a timely manner; allow steelhead adults in a non-feeding condition to successfully swim upstream, avoid predators, and reach spawning areas on limited energy stores.
Estuarine areas	Free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.	Without these features juveniles cannot reach the ocean in a timely manner and use the variety of habitats that allow them to avoid predators, compete successfully, and complete the behavioral and physiological changes needed for life in the ocean; they provide a final source of abundant forage for adult steelhead that will provide the energy stores needed to make the physiological transition to fresh water, migrate upstream, avoid predators, and develop to maturity upon reaching spawning areas.
Near-shore marine areas	Free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels.	Without these features juveniles cannot successfully transition from natal streams to offshore marine areas.
Offshore marine areas	With water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.	Without them juveniles cannot forage and grow to adulthood.

Habitat for steelhead has suffered destruction and modification, and anthropogenic activities have reduced the amount of habitat available to steelhead (Nehlsen *et al.* 1991; NMFS 1997; Boughton *et al.* 2005; NMFS 2006). In many watersheds throughout the range of the SCC DPS, the damming of streams has precluded steelhead from hundreds of miles of historical spawning and rearing habitats (e.g., Twitchell Reservoir within the Santa Maria River watershed, Bradbury Dam within the Santa

Ynez River watershed, Matilija Dam within the Ventura River watershed, Rindge Dam within the Malibu Creek watershed, Pyramid Dam and Santa Felicia Dam on Piru Creek). These dams create physical barriers and hydrological impediments for adult and juvenile steelhead migrating to and from spawning and rearing habitats. Likewise, construction and ongoing impassable presence of highway projects have rendered habitats inaccessible to adult steelhead (Boughton *et al.* 2005). Within stream reaches that are accessible to this species (but that may currently contain no fish), urbanization (including effects due to water exploitation) has in many watersheds eliminated or dramatically reduced the quality and amount of living space for juvenile steelhead. The number of streams that historically supported steelhead has been dramatically reduced (Good *et al.* 2005). Groundwater pumping and diversion of surface water contribute to the loss of habitat for steelhead, particularly during the dry season (*e.g.*, NMFS 2005b; see also Spina *et al.* 2006). The extensive loss and degradation of habitat is one of the leading causes for the decline of steelhead abundance in southern California and listing of the species as endangered (NMFS 1997, 2006).

A significant amount of estuarine habitat has been lost across the range of the DPS with an average of only 22 percent of the original estuarine habitat remaining (NMFS 2011). The condition of these remaining wetland habitats is largely degraded, with many wetland areas at continued risk of loss or further degradation. Although many historically harmful practices have been halted, much of the historical damage remains to be addressed and the necessary restoration activities will likely require decades. Many of these threats are associated with the larger river systems such as the Santa Maria, Santa Ynez, Ventura, Santa Clara, Los Angeles, San Gabriel, Santa Ana, San Luis Rey, Santa Margarita, San Dieguito, and San Diego rivers, but they also apply to smaller coastal systems such as Malibu, San Juan, and San Mateo creeks. Overall, these threats have remained essentially unchanged for the DPS as determined by the last status review (Williams *et al.* 2011) though some individual, site specific threats have been reduced or eliminated as a result of conservation actions such as the removal of small fish passage barriers.

**2.2.5 Influence of a Changing Climate on the Species.** – One factor affecting the rangewide status of endangered steelhead, and aquatic habitat at large, is climate change. For the Southwest region (southern Rocky Mountains to the Pacific Coast), the average temperature has already increased roughly 1.5°F compared to a 1960-1979 baseline period. High temperatures will become more common, indicating that southern California steelhead may experience increased thermal stress even though this species has shown to endure higher than preferable body temperatures (Spina 2007).

Precipitation trends are also important to consider. The Southwest region, including California, showed a 16 percent increase in the number of days with heavy precipitation from 1958 to 2007. Potential impacts to southern California steelhead in freshwater streams include damage to spawning redds and washing away of incubating eggs due to higher winter stream flow (USGCRP 2009), and poor freshwater survival due to longer and warmer periods of drought (Hanak *et al.* 2011; Mastrandrea and Luers 2012), which may lead to lower host resistance of steelhead to more virulent parasitic and bacterial diseases (McCullough 1999; Marcogliese 2001). Snyder and Sloan (2005) projected mean annual precipitation in southwestern California to decrease by 2.0 cm (four percent) by the end of the 21st century.

Wildfires periodically burn large areas of chaparral and adjacent woodlands in autumn and winter in southern California (Westerling *et al.* 2004). Increased wildfire activity over recent decades

reflects sub-regional responses to changes in climate, specifically observations of warmer and earlier onset of spring along with longer summer-dry seasons (Westerling *et al.* 2006; Westerling and Bryant 2008).

Estuarine productivity is likely to change based on changes in freshwater flows, nutrient cycling, and sediment amounts (Scavia *et al.* 2002). Additionally, upper ocean temperature is the primary physical factor influencing the distribution of steelhead in the open ocean, and a warming climate may result in a north-ward shift in steelhead distribution, for example (Myers and Mantua 2013).

In summary, observed and predicted climate-change effects are generally detrimental to the species, given the unprecedented rate of change and uncertainty about the ability to adapt, so unless offset by improvements in other factors, status of the species and critical habitat is likely to decline over time. The climate change projections referenced above cover the time period between the present and approximately 2100. In general, climate change projections cannot be distinguished from annual and decadal climate variability for approximately the first 10 years of the projection period (see Cox and Stephenson 2007). While there is uncertainty associated with projections beyond 10 years, which increases over time, the direction of change is relatively certain (McClure *et al.* 2003).

### **2.3 Environmental Baseline**

The “environmental baseline” includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early Section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR §402.02).

**2.3.1 Status of Aquatic Habitat in the Action Area.** – Aquatic habitat within the action area of Salsipuedes Creek consists mainly of bedrock-controlled pools, runs, and short riffles. Streambed material through the action area ranges from cobble to fine-grained sand, with several bedrock outcrops. Beneath the bridge, a concrete check dam extends about two-thirds across the channel and into a fish ladder. Failed sacked concrete exists along the west bank below the bridge. The channel banks are nearly vertical and have incised about 30 to 50-feet into the terrace deposits of fine sediment. Although the channel is heavily incised, dense riparian vegetation composed of arroyo willow (*Salix lasioepris*) exists along a substantial portion of the channel. The creek experiences large intra- and inter-annual variations in streamflow of up to four orders in magnitude (Balance Hydrologics 2012). The creek within the action area is perennial, with streamflows being the lowest during the summer and fall months. Water quality monitoring in lower Salsipuedes Creek has shown maximum daily temperatures of 24°C and average daily temperatures above 20°C (Robinson 2009). North American beaver (*Castor canadensis*) dams upstream of the action area have caused chronic turbidity through the action area in recent years (S. Engblom personal communication 2015). Overall, suitable rearing habitat (*i.e.*, pools, water quality/quantity, and riparian) exists throughout the action area. Spawning habitat within the action area is degraded based on poor substrate conditions within the action area. Finally, adult and juvenile steelhead migration through the action area is impeded by the existing fish ladder and concrete check dam below the State Route 1 Bridge.

**2.3.2 Status of Steelhead in the Action Area.** – Juvenile steelhead abundance was surveyed within and upstream and downstream of the action area from 2008 to 2011 by COMB (BOR 2011, BOR 2012, BOR 2013a, BOR 2013b). Total numbers of juvenile steelhead observed via snorkeling ranged from 176 to 415 steelhead within 2.85-miles of habitat (*i.e.*, pools, glides, and runs). Based on the habitat conditions (*i.e.*, pools/runs and stream flow) within the action area and steelhead numbers observed during snorkel surveys, NMFS estimates that up to 250 juvenile steelhead may be present in the work area to be dewatered each construction season (or 500 juvenile steelhead total over 2 construction seasons), depending on flow conditions and overall production within the watershed during a given year. Adult steelhead are not expected to be present within the action area during the time of construction activities (June 1 to October 31).

### **2.3.3 Factors Affecting Species Environment in the Action Area and Vicinity**

#### Agricultural Development

Cultivated fields and open farmland exist in the vicinity of the action area. There is potential for increased turbidity or nutrient loading due to runoff from agriculture and livestock areas adjacent to the creek. High turbidity concentrations can cause fish mortality, reduce fish feeding efficiency and decrease food availability (Berg and Northcote 1985; McLeavy *et al.* 1987; Gregory and Northcote 1993; Velagic 1995). Agricultural runoff can transfer nutrients and pesticides to the creek, which can in turn lower dissolved oxygen levels by increasing algae growth in streams and decreasing forage for steelhead (Spence *et al.*, 1996). In addition, demands on water resources may occur from upstream agricultural activities. It is unknown to what extent water demands may affect the quantity and extent of surface water and essential features of steelhead habitat within the action area. Lowered streamflow or stream drying could result in a significant reduction or loss of habitat and even mortality to steelhead (Spence *et al.*, 1996). These impacts if occurring have the potential to adversely impair steelhead survival within Salsipuedes Creek.

#### Road Encroachment

State Route 1 traverses Salsipuedes Creek within the action area, and the location of the road likely results in runoff from the road surface entering the creek during rainstorms, which reduces the water quality within the action area to an unknown degree. The effects on water quality from road surface runoff are most likely to occur during the winter when there is runoff during rainstorms. Runoff from road surfaces contains dirt, oils, automotive fluids, and petrochemicals that are harmful to aquatic life, including steelhead (Spence *et al.* 1996). Additionally, the crossing has contributed to the confinement of the stream channel and diminished riparian vegetation.

#### Migration Barrier

An impediment to upstream steelhead migration within the action area is located under the State Route 1 Bridge as it traverses Salsipuedes Creek. The concrete check dam and fish ladder below the bridge limit upstream steelhead passage under certain flow conditions (Balance Hydrologics 2012, ICF 2015) and thereby reduce opportunities for steelhead to access additional spawning and rearing areas higher in the watershed. As a result, overall steelhead productivity and rearing capacity has the potential to be reduced in Salsipuedes Creek including the action area.

## 2.4 Effects of the Action

Under the ESA, “effects of the action” means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR §402.02). Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. The expected effects of the action on endangered steelhead and designated critical habitat for this species are described as follows.

**2.4.1 Alteration of Aquatic Habitat.** – Dewatering the immediate work area is expected to temporarily disrupt steelhead behavior patterns (*i.e.*, rearing, migrating), cause temporary loss of aquatic habitat, as well as loss of invertebrate forage for steelhead within the dewatered work area. About 450-linear feet of Salsipuedes Creek will be dewatered 2 times for up to 5-months during the dry season (June 1 through October 31) to allow construction work to proceed in dry conditions.

Dewatering will temporarily preclude the action area from serving as a freshwater rearing site and a freshwater migration corridor for endangered steelhead. The ability of juvenile steelhead to migrate upstream through the action area will be hindered for several months while the diversion is in place. Downstream migration of juvenile steelhead from reaches upstream of the action area is not expected to be significantly affected by the diversion because downstream migrants would be able to migrate from upstream to downstream of the action area through the diversion pipes or channel. Adult steelhead are not expected in the river and, therefore, are not likely to be affected by construction activities.

Aquatic macroinvertebrate forage will be temporarily reduced or eliminated within the action area as a result of isolating the workspace from flowing water. Aquatic insects provide a source of food for instream fish populations, and may represent a substantial portion of food items consumed by juvenile steelhead. Effects to aquatic macroinvertebrates resulting from stream flow diversions and dewatering will be temporary because construction activities will be temporary, and rapid recolonization (about one to two months) of the restored channel area by macroinvertebrates is expected following re-watering (Cushman 1985, Thomas 1985, Harvey 1986). In addition, the effect of macroinvertebrate loss on juvenile steelhead is expected to be negligible because food from upstream sources would be available downstream of the dewatered area via drift. Based on the foregoing, the temporary loss of aquatic macroinvertebrates as a result of dewatering activities is not expected to adversely affect steelhead.

Ultimately, the loss of aquatic habitat associated with dewatering, and the impedance of migration through the action area will be temporary and is not expected to result in lethal effects, as relocated steelhead will be able to use all aquatic habitat downstream of the dewatered portion of the creek, which appears to be of similar quality as the reach subject to dewatering (J.Ogawa, NMFS, 2014, personal observation). Connectivity between the upstream and downstream stream reaches will be restored after the water diversion is removed and river flows are returned to the dewatered area, and no long-term diminishment in the physical capacity of the habitat to serve the intended functional role for steelhead will result from the proposed action. Overall, effects to steelhead and designated critical habitat for this species from water diversion are expected to be non-lethal and temporary.

**2.4.2 Capture and Relocation of Steelhead.** – During the dewatering process, the water diversion could harm rearing juvenile steelhead by concentrating or stranding them in residual wetted areas before they are relocated and rearing juvenile steelhead could be killed if they become stranded and are not moved out of the diversion area. In addition, steelhead are expected to move to adjacent areas of aquatic habitat during water diversion (Clothier 1953, Clothier 1954, Kraft 1972, Campbell and Scott 1984).

Protocols are proposed to reduce the likelihood of harm and mortality to juvenile steelhead within the area to be dewatered. Biologists will capture and relocate steelhead to the nearest suitable habitat within the creek, though suitable habitat is not described by Caltrans. Biologists will survey beneath small boulders and areas where juvenile steelhead can hide to the maximum extent practicable in order to relocate steelhead out of the work area. In the event one or more steelhead are missed by the biologists and stranded in the diversion area, steelhead mortality may be observed. Caltrans' proposed action does not identify the number of NMFS approved biologists to be used during dewatering, the specific qualifications and expertise of the biologists, and whether the biologists would be empowered to halt construction activities for the benefit of reducing harm or mortality of steelhead. Additionally, the proposed action does not include a provision to notify NMFS of the number of steelhead that may be harmed or injured as a result of the construction activities including the dewatering.

Sites selected for relocating juvenile steelhead should have ample habitat, but relocated fish may compete with other fish, potentially increasing competition for available food and habitat (Keeley 2003). Stress from crowding, including increased competition for food among juvenile steelhead in the relocation areas is expected to be temporary, because when the proposed action is finished steelhead will be able to redistribute in the action area. Once the proposed action is completed and the water diversion is removed, living space for juvenile steelhead will return to the dewatered action area.

Based on steelhead survey results in Salsipuedes Creek provided by COMB (BOR 2011, 2012, 2013a, 2013b), and habitat conditions in the action area, NMFS expects no more than 250 juvenile steelhead will need to be relocated each construction season (no more than 500 juveniles over 2 seasons). NMFS expects that 25 juvenile steelhead may be injured or killed as a result of the proposed action each construction season (no more than 50 juveniles over 2 construction seasons). This estimated mortality is based on NMFS' experience and knowledge gained on similar projects in Santa Barbara County during the last several years. Based on NMFS' general familiarity of steelhead abundance in southern California in general, and Santa Barbara County streams in particular, the anticipated number of juvenile steelhead that may be injured or killed as a result of the proposed action is likely to represent a small fraction of the overall watershed-specific populations and the entire SCC DPS of endangered steelhead. Therefore, the effects of the relocation on steelhead are not expected to give rise to population-level effects.

**2.4.3 Disturbance to the Streambed.** – Manipulation and disturbance of the streambed can result in changes to channel morphology and hydraulic conditions that may create impediments to steelhead migration and alter juvenile rearing habitat. The proposed action is expected to result in improved steelhead passage conditions through the project reach by removing the manmade concrete structures below the State Route 1 Bridge and constructing a roughened ramp. The roughened ramp will be constructed of boulder bars which are expected create shallow pools for

juvenile steelhead. However, the design is conceptual and methods of construction have not been submitted and there are uncertainties as to how the final project conditions will function. Hence, there exists a need to review the draft design plans and methods of construction to ensure the final design would promote attainment of NMFS' fish-passage criteria.

Roughened ramp stability analysis (*i.e.*, sizing calculations for the engineered-streambed material [ESM]), a geomorphic assessment, and two-dimensional (2-D) hydraulic model simulations were used as a basis of the conceptual design. The 2-D model was used to assess ramp stability and to estimate potential post-project hydraulic conditions through the project reach. The results of the model showed that the proposed action will likely improve steelhead-passage conditions by providing a wide range of depths and velocities and without substantial impacts to the scour and depositional regime immediately upstream of the ramp. However, NMFS recognizes that the 2-D model results are preliminary and several variables that will impact the hydraulic conditions in the post-project reach have not been finalized. These variables include the size and depth of ESM, total length of project, and upstream (start) and downstream (end) elevations. Further, the AutoCad Civil 3D program used to develop bathymetry data for the 2-D model does not depict the proposed boulder bars expected to provide juvenile steelhead rearing habitat and resting areas within the low-flow channel. Finally, the high adult steelhead-passage design flow of 200 cfs (1% of the annual exceedance) was used in the 2-D model, however a discharge equal to 50% of the 2-year storm event may provide greater opportunities for adult steelhead passage through the project reach. Therefore, the current modeling results may not be an accurate representation of the final steelhead-passage conditions. For this reason, monitoring of the action area following implementation of the proposed action is warranted and would assess whether a steelhead-passage problem exists, and inform maintenance efforts to remediate such a problem. In this regard, this effects assessment assumes the following: (1) Caltrans will coordinate with NMFS on details regarding the draft design plans, 2-D model and input data, methods of construction, and monitoring and maintenance plan; including submission of the subject information to NMFS for review and comment; and (2) Caltrans will revise or modify the design plans, 2-D model and input data, construction methods, and monitoring and maintenance plan according to NMFS guidance when such revisions are necessary to ensure that the provisions for steelhead passage are commensurate with NMFS' passage criteria. Based on these assumptions, the proposed action is expected to improve steelhead migration conditions through the project reach and maintain the functional value of the action area as a freshwater rearing site and migration corridor.

**2.4.4 Alteration of Water Quality.** – Short-term increases in turbidity are anticipated to occur during water diversion and dewatering activities, during the first flush of the stream channel when re-watered, and during the first rainstorms which may mobilize disturbed sediments within the action area. This could affect water quality up to 350-feet downstream from the end of the diversion, and is a concern to NMFS because water quality is an important feature of steelhead critical habitat (NMFS 2005a) and can affect steelhead by a variety of mechanisms. High concentrations of suspended sediment can disrupt normal feeding behavior, reduce feeding efficiency, and decrease food availability (Cordone and Kelly 1961, Bjornn *et al.* 1977, Berg and Northcote 1985). Chronic elevated sedimentation and turbidity can also reduce salmonid growth rates (Crouse *et al.* 1981), increase salmonid plasma cortisol levels (Servizi and Martens 1992), cause salmonid mortality (Cordone and Kelly 1961, Sigler *et al.* 1984), and reduce the survival and emergence of salmonid eggs and fry (Chapman 1988). Even small pulses of turbid water can

displace salmonids from established territories to less suitable habitat and increase competition and predation, thereby reducing survival (Waters 1995).

However, NMFS does not expect acute or chronic effects on aquatic habitat or steelhead in Salsipuedes Creek because increases in sedimentation and turbidity levels resulting from construction activities are expected to be minimal and temporary (*i.e.*, a few hours during dewatering, and a few hours after rewatering to about one day during the first storm). This is because the area where the construction will take place is relatively small. Also, much of the research mentioned above was carried out in a laboratory setting with turbidity levels significantly higher than those expected to result from project activities. BMPs and sediment control devices (*e.g.*, jute-netting, straw-fiber rolls, silt-fencing, hay bales, and settling basins) should be deployed prior to construction and thus are expected to minimize the effects of sedimentation and turbidity on water quality. The success of these measures has been documented during other similar projects (M. Larson, CDFG, 2012, personal communication), though the efficacy of the proposed measures should be verified in the field at the time of the proposed action. NMFS expects that the disturbance within the stream channel will not result in increased sedimentation within the creek in the long term.

**2.4.5 Disturbance to Streamside Vegetation.** – Riparian vegetation provides numerous functional values to fish that may benefit migrating, rearing, or spawning steelhead. Riparian vegetation enhances stream habitat by providing shade, cover, and shelter for stream fish in the form of overhanging branches, large-woody debris such as rootwads, undercut banks, and scour pools (Wesche *et al.* 1987, Platts 1991, Wang *et al.* 1997, Bilby and Bisson 1998, Naiman *et al.* 2000). Riparian zones enhance water quality by reducing the input of fine sediments and pollutants into streams (Karr and Schlosser 1978, Lowrance *et al.* 1985). Riparian vegetation also provides a source of drift forage for juvenile steelhead (Wesche *et al.* 1987).

The proposed action has the potential to temporarily affect these elements of aquatic habitat within the action area of Salsipuedes Creek due to a loss of some shade and cover where riparian vegetation is currently present along the active channel. Indirect effects associated with the removal of riparian vegetation can result in increased water temperatures (Mitchell 1999, Opperman and Merenlender 2004) and decreased water quality (Lowrance *et al.* 1985, Welsch 1991) attributable to a loss of shade and cover over the active channel. However, the loss of vegetation as a result of the proposed action is expected to be confined to a small localized area and temporary, because riparian vegetation will be replanted throughout the disturbed areas to minimize impacts from project construction. Species of trees (4-inch DBH) to be planted at a ratio of 3:1 include white alder, California sycamore, western cottonwood, and big leaf maple. Based on NMFS' experience observing the response of riparian vegetation to human-made disturbances (M. McGoogan, NMFS 2013, personal communication), the riparian zone is expected to recover from the project 1 to 2 years following the completion of construction. Overall, the amount of riparian vegetation affected by the proposed action is not expected to diminish the overall functional value of the migratory corridor and freshwater rearing sites within the action area. This is expected to be verified through the findings obtained from Caltrans' proposed vegetation-monitoring program under the proposed action.

## **2.5 Cumulative Effects**

“Cumulative effects” are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

NMFS is generally familiar with activities occurring in the action area, and at this time is unaware of such actions that would be reasonably certain to occur. Consequently, NMFS believes no cumulative effect, beyond the continuing effects of present land uses as described in the Environmental Baseline (Section 2.3), is likely.

## **2.6 Integration and Synthesis**

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action (Section 2.4) to the environmental baseline (Section 2.3) and the cumulative effects (Section 2.5), taking into account the status of the species and critical habitat (Section 2.2), to formulate the agency’s biological opinion as to whether the proposed action is likely to: (1) appreciably reduce the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) reduce the value of designated or proposed critical habitat for the conservation of the species.

Juvenile steelhead are expected to be present in the action area during the time the proposed action will be implemented and, therefore, subject to direct and indirect effects associated with aspects of the proposed action. The main risk to individual steelhead involves effects due to capture and relocation. The adverse effects include potential injury or mortality during the process of capture and relocation during dewatering activities, but precautions are in place to minimize, if not eliminate, the risk of injury and mortality, and adjacent instream habitats are expected to suitably harbor the relocated steelhead. Because the habitat alteration due to the dewatering is short lived and localized, the proposed action is not expected to result in adverse modification to designated critical habitat.

Based on the steelhead surveys conducted by COMB within and upstream and downstream of the action area (BOR 2011, 2012, 2013a, 2013b), NMFS concludes non-lethal take of no more than 250 juvenile steelhead that may be captured and relocated as a result of dewatering within the action area during each construction season (no more than 500 individuals over 2 construction seasons), with a potential lethal take of no more than 25 out of the 250 (total of 50 individuals), thus the risk of mortality is low. Any juvenile steelhead present in the action area likely make up a small proportion of the SCC DPS of steelhead.

Overall, the impacts to critical habitat are expected to be temporary and not translate into a reduction in the functional value of the habitat in the long term. The replanted areas are expected to create a functional riparian zone that provides cover and shelter for steelhead within the action area of Salsipuedes Creek. The impacts from disturbing the streambed are not expected to adversely

affect the quality or quantity of aquatic habitat; rather, the proposed action is expected to improve steelhead passage conditions within the localized area. Maintained rearing habitat and improved steelhead passage conditions within the action area of Salsipuedes Creek are expected to favor the viability of the endangered SCC DPS of steelhead and not reduce the value of critical habitat for the species.

## **2.7 Conclusion**

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, any effects of interrelated and interdependent activities, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of the endangered SCC DPS of steelhead or destroy or adversely modify its designated critical habitat.

## **2.8 Incidental Take Statement**

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and Section 7(o)(2) provide that a taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this incidental take statement.

### **2.8.1 Amount or Extent of Take**

Based on steelhead surveys within and in the vicinity of the action area, and the depth, size, and amount of instream cover within the action area, the biological opinion anticipates the following amount of incidental take: All steelhead in the action area, expected to be no more than 250 juveniles that are captured or harassed during project activities each construction season (no more than 500 juveniles over 2 seasons). No more than 25 juvenile steelhead are expected to be injured or killed as a result of dewatering the action area and relocating the species each construction season (total of 50 juvenile steelhead). No other incidental take is anticipated as a result of the proposed action. The accompanying biological opinion does not anticipate any form of take that is not incidental to the proposed action.

### **2.8.2 Effect of the Take**

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species.

### **2.8.3 Reasonable and Prudent Measures**

“Reasonable and prudent measures” are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02). NMFS believes following reasonable and prudent measures are necessary and appropriate to minimize and monitor incidental take of steelhead. The results of the effect analysis provide the basis for the following reasonable and prudent measures:

1. Avoid and minimize harm and mortality of steelhead during the relocation activities.
2. Avoid and minimize impacts to steelhead and designated critical habitat from construction activities.
3. Minimize the amount and extent of temporary and permanent changes in the quality and quantity of instream and riparian habitat for steelhead.
4. Submit draft design plans, findings from project analyses, and methods of construction for NMFS’ review and agreement to ensure fish-passage criteria are met within the area affected by the proposed action.
5. Develop and implement a monitoring plan to ensure the roughened rock-ramp does not result in reduced steelhead-passage opportunities within the area affected of the proposed action.

### **2.8.4 Terms and Conditions**

The terms and conditions described below are non-discretionary, and Caltrans or any applicant must comply with the terms and conditions, which implement the reasonable and prudent measures (50 CFR §402.14). Caltrans or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this incidental take statement (50 CFR §402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action may lapse.

1. The following terms and conditions implement reasonable and prudent measure 1:
  - A. Caltrans shall retain at least 2 biologists with expertise in the areas of resident or anadromous salmonid biology and ecology, fish/habitat relationships, biological monitoring, and handling, collecting, and retaining salmonid species. The names and credentials of the biologists should be sent to NMFS (Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213) for review and potential approval 15 days prior to the start of dewatering activities.
  - B. Caltrans’ biologists shall identify and evaluate the suitability of downstream and upstream steelhead relocation habitat(s) prior to undertaking the dewatering activities that are required to isolate the work area from flowing water. The biologists shall evaluate potential relocation sites based on attributes such as adequate water quality (a minimum dissolved oxygen level of 5 mg/L and suitable water temperature), cover (instream and over-hanging

vegetation or woody debris), and living space. Multiple relocation habitats may be necessary to prevent overcrowding of a single habitat depending on the number of steelhead captured, current number of steelhead already occupying the relocation habitat(s), and the size of the receiving habitat(s).

- C. Caltrans' biological monitor shall provide a written steelhead-relocation report to NMFS within 30 working days following completion of the proposed action. The report shall include the number and size of all steelhead relocated during the proposed action; 2) the date and time of the collection and relocation; 3) a description of any problem encountered during the project or when implementing terms and conditions; and 4) any effect of the proposed action on steelhead that was not previously considered. The report shall be sent to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213.
  - D. Caltrans' biologist shall contact NMFS (Jay Ogawa, 562-980-4061) immediately if one or more steelhead are found dead or injured. The purpose of the contact shall be to review the activities resulting in take and to determine if additional protective measures are required. All steelhead mortalities shall be retained, frozen as soon as practical, and placed in an appropriate-sized sealable bag that is labeled with the date and location of the collection and fork length and weight of the specimen(s). Frozen samples shall be retained by the biologist until additional instructions are provided by NMFS. Subsequent notification must also be made in writing to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213 within five days of noting dead or injured steelhead. The written notification shall include 1) the date, time, and location of the carcass or injured specimen; 2) a color photograph of the steelhead; 3) cause of injury or death; and 4) name and affiliation of the person whom found the specimen.
2. The following terms and conditions implements reasonable and prudent measure 2:
- A. Caltrans' biologist shall monitor all construction activities, instream habitat, and performance of sediment-control devices for the purpose of identifying and reconciling any condition that could adversely affect steelhead or their habitat. The biologist shall be empowered to halt work activity and to recommend measures for avoiding adverse effects to steelhead and their habitat. The biological monitor shall immediately contact NMFS (Jay Ogawa, 562-980-4061) upon making a determination that unforeseen effects have occurred, which could have an adverse effect on steelhead or aquatic habitat not previously considered.
  - B. Erosion control or sediment-detention devices (*e.g.*, settling tank) shall be installed prior to the time of construction activities and incorporated into Caltrans' maintenance activities. These devices shall be in place during construction activities for the purpose of minimizing sediment and sediment-water slurry input to flowing water. Sediment collected in the devices shall be disposed off-site and not allowed to enter the creek channel.
3. The following terms and conditions implements reasonable and prudent measure 4:
- A. Caltrans shall provide a revegetation report that is to include a description of the locations seeded or planted, the area revegetated, proposed methods to monitor and maintain the

revegetated area, criteria used to determine the success of the plantings, and pre- and post-planting color photographs of the revegetated area. The revegetation report shall be sent to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213, within 30 calendar days following completion of the proposed action.

- B. Caltrans shall provide the results of the vegetation monitoring within 30 calendar days following completion of each annual site inspection for the 5 years following completion of the project as described in the BA. The 5 reports shall include color photographs taken of the project area during each inspection and before implementation of the proposed action. The vegetation monitoring results shall be sent to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213.
4. The following terms and conditions implements reasonable and prudent measure 5:
- A. Caltrans shall provide 30, 60, 90, and 100% design plans of the roughened ramp, to NMFS for review and comment to increase the likelihood that NMFS' fish-passage criteria would be incorporated in the completed project. At a minimum Caltrans shall provide to NMFS: plan, profile, cross-sections, and all relevant construction detail drawings of the roughened ramp. Caltrans shall revise the design according to NMFS' comments for the purpose of ensuring the final design would promote attainment of NMFS' fish-passage criteria. Caltrans shall provide NMFS a minimum of 45 calendar days to review and develop comments regarding the draft design plans. Draft design plans should be sent to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213.
- B. Prior to implementation of the proposed action, Caltrans shall conduct further engineering analyses to finalize the 2-D model used to evaluate post-project hydraulic conditions through the action area. The findings obtained from Caltrans' analyses shall be provided to NMFS (Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213) for review and potential NMFS agreement prior to running the next iteration of the 2-D model. Issues that must be resolved include: ramp stability concerns, the size and depth of ESM and related roughness coefficients, how the ramp cross section and boulder bar bathymetry may affect the creation of resting and rearing pools and a low-flow channel, individual elevations (*i.e.*, upstream [project start] and downstream [project end]), high adult steelhead-passage design flow, and total linear length of the project. Caltrans must receive NMFS written agreement with the findings before the proposed action is implemented
- C. Caltrans shall provide to NMFS (Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802-4213) a written description of the construction methods used to install the roughened ramp design to ensure the project is stable and provides suitable steelhead-passage conditions. Measures should be taken to prevent the project from being flanked, undermined, mobilized during high-flow events (*e.g.*, framework and habitat feature rocks), localized erosion or deposition, and having piping and sub-surface flow. Caltrans must receive NMFS written agreement for the methods of construction before the proposed action is implemented.

5. The following terms and conditions implements reasonable and prudent measure 6:

- A. Caltrans shall collaborate with NMFS to develop and implement a monitoring and maintenance plan that is appropriate for the assessment of post-project hydraulic and geomorphic conditions resulting from the steelhead-passage project. This collaboration is necessary to ensure the roughened rock-ramp design meets passage requirements of steelhead immediately after construction as well as after significant high-flow events, which validate the long-term stability of the ramp. Monitoring results would support any potential maintenance efforts required from Caltrans. At a minimum, the monitoring and maintenance plan shall address such items as presented in No. 5B below. Prior to implementing the plan, Caltrans shall submit the plan to Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802 for review and potential approval. Caltrans must receive NMFS written agreement for the plan before the proposed action is implemented.
- B. Following construction of the proposed action, Caltrans shall obtain a topographical survey of the channel thalweg, and then submit the results of the survey to NMFS within 30 calendar days of completion of the survey (Jay Ogawa, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California, 90802). The survey shall start slightly downstream of the ramp and end slightly upstream where the ramp intersects the existing grade. The topographic survey shall possess sufficient detail to quantify pool depths, hydraulic drops, headcuts, key rock framework and cross sections, and any other information NMFS believes is necessary to further an understanding of the implications of the project for endangered steelhead and critical habitat for this species. Caltrans shall periodically monitor the project site (particularly after major storm events) at a frequency agreeable to NMFS for the purpose of ensuring NMFS' steelhead-passage guidelines are attained over time and potential maintenance of the project is addressed. Items to be monitored include:
  - i. The formation and maintenance of a low-flow fish-passage channel throughout the action area.
  - ii. Steelhead-passage conditions through the roughened ramp (*e.g.*, depth, velocity, flow patterns, formation of resting pools, *etc.*).
  - iii. The amount and extent of erosion and deposition within or immediately upstream or downstream of the action area.
  - iv. The stability of the boulder bars/bands (*i.e.*, boulder bars/bands are maintaining the stream grade and not being undermined) and effectiveness for creating and maintaining a low-flow fish passage channel and resting pools.
  - v. The condition of the project site over time through the establishment of photo-reference sites.

## 2.9 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical

habitat or regarding the development of information (50 CFR §402.02).

NMFS has no conservation recommendation related to the proposed action considered in this biological opinion.

#### **2.10 Reinitiation of Consultation**

This concludes formal consultation for Caltrans. As 50 CFR §402.16 states, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) the amount or extent of incidental taking specified in the incidental take statement is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

### **5. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW**

The Data Quality Act (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these DQA components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

#### **5.1 Utility**

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended user of this opinion is Caltrans. Other interested users could include the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service. Individual copies of this opinion were provided to Caltrans. This opinion will be posted on the Public Consultation Tracking System web site (<https://pcts.nmfs.noaa.gov/pcts-web/homepage.pcts>). The format and naming adheres to conventional standards for style.

#### **5.2 Integrity**

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

#### **5.3 Objectivity**

Information Product Category: Natural Resource Plan

**Standards:** This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR

402.01 et seq., and the MSA implementing regulations regarding EFH, 50 CFR 600.

**Best Available Information:** This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion contain more background on information sources and quality.

**Referencing:** All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

**Review Process:** This consultation was drafted by NMFS staff with training in ESA, and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

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# Appendix G U.S Fish and Wildlife Service Programmatic Biological Opinion



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Ventura Fish and Wildlife Office  
2493 Portola Road, Suite B  
Ventura, California 93003



IN REPLY REFER TO:  
81440-2010-F-0382

May 4, 2011

Rich Krumholz, District Director  
California Department of Transportation  
50 Higuera Street  
San Luis Obispo, California 93401-5415

Subject: Programmatic Biological Opinion for Projects Funded or Approved under the  
Federal Highway Administration's Federal Aid Program (8-8-10-F-58)

Dear Mr. Krumholz:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding projects funded under the Federal Highway Administration's (FHWA) Federal Aid Program that are likely to adversely affect the federally threatened California red-legged frog (*Rana draytonii*) and its designated critical habitat. This document also contains our programmatic concurrence for projects conducted under the Federal Aid Program that are not likely to adversely affect the California red-legged frog or its critical habitat. The development of this programmatic biological opinion and concurrence are the result of a collaborative effort between the California Department of Transportation (Caltrans) and the Service.

Pursuant to the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the FHWA assigned and Caltrans assumed responsibilities for consultation and coordination with resource agencies for most projects within the state of California (FHWA 2007). The delegation of authority stipulates that correspondence regarding consultations be addressed to Caltrans, even if the FHWA initiated the consultation. Consequently, we have developed this biological opinion in accordance with this direction.

This biological opinion, which has been prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), evaluates the effects of certain activities, authorized by Caltrans, on the California red-legged frog and its critical habitat, within the Ventura Fish and Wildlife Office's area of responsibility in San Benito, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara, Counties, California. We believe that California red-legged frog populations in Ventura and Los Angeles Counties are so isolated from other California red-legged frog populations, that they do not meet the eligibility criteria described in the Description of the Proposed Action section of this biological opinion (Criterion 4.).



This biological opinion and programmatic concurrence were prepared primarily with information provided by the California Department of Transportation and information in our files. A complete record of this consultation can be made available upon request.

#### CONSULTATION HISTORY

Since the listing of the California red-legged frog in 1996, the FHWA, in conjunction with Caltrans, consulted with the Service's Ventura Fish and Wildlife Office on numerous projects that the FHWA determined were likely to adversely affect the California red-legged frog. The FHWA, Caltrans, and the Service recognized that many of these projects resulted in minor effects to the California red-legged frog and its habitat. Additionally, many of the protective measures included in our previous biological opinions were very similar. Consequently, the Service, FHWA, and Caltrans determined that a programmatic approach to the consultation process was appropriate. Staff from the Service's Ventura Fish and Wildlife Office, FHWA, and Caltrans coordinated extensively during the preparation of a programmatic biological opinion we issued to FHWA in 2003 (Service 2003).

The Service designated critical habitat for the California red-legged frog, on March 17, 2010, (75 Federal Register (FR) 12816). The 2003 programmatic biological opinion does not address critical habitat for the California red-legged frog, so any biological opinion tiered from the 2003 programmatic and issued after critical habitat was designated must include a complete analysis of the effects of the proposed action on critical habitat for the California red-legged frog. Therefore, to further streamline the consultation process achieved with the 2003 programmatic, a complete analysis of the effects of the proposed actions on critical habitat for the California red-legged frog is included in this biological opinion.

Since 2003, we have issued 26 biological opinions that are tiered off of our programmatic biological opinion (Service 2003). Construction on 16 of those projects is complete and we have included additional information on those projects in the Environmental Baseline section of this biological opinion. Caltrans and the Service consider this biological opinion a reinitiation of formal consultation on the 14 projects that have not been completed, or where the proposed action would adversely affect critical habitat for the California red-legged frog.

Although we have strived to issue biological opinions tiered from the 2003 programmatic in a much shorter timeframe than required by Federal regulation (50 CFR 402), at times the large number of formal consultations to be completed has limited our ability to provide these documents within expedited timeframes. Therefore, Caltrans and the Service recognize that we could further streamline the 2003 programmatic by avoiding tiered biological opinions, resulting in a more efficient process.

#### ADMINISTRATION OF THE PROGRAMMATIC BIOLOGICAL OPINION

Caltrans will prepare all required environmental documents for individual projects that would be conducted pursuant to this biological opinion, including those needed to satisfy its

responsibilities under the Act, the National Environmental Policy Act, and the California Environmental Quality Act.

For all proposed actions that Caltrans determine are likely to adversely affect the California red-legged frog or its critical habitat, Caltrans will consider whether the action:

1. Meets the suitability criteria, as described in the Description of the Proposed Action section of this biological opinion; and
2. Whether the proposed activities and anticipated effects to California red-legged frogs fall within the scope of this biological opinion.

At least 90 days prior to conducting any activities that it determines are likely to adversely affect the California red-legged frog or its critical habitat, Caltrans will notify the Ventura Fish and Wildlife Office, in writing, of projects they propose to conduct under the auspices of this biological opinion. If the Service determines that use of this programmatic biological opinion is not appropriate for the proposed action, we will notify Caltrans in writing within 30 days, and the standard provisions for section 7 consultation will apply. The regulations which implement section 7 allow the Service up to 90 days to conclude formal consultation and an additional 45 days to prepare our biological opinion. If we require additional information to complete our biological opinion, we will describe our needs in our letter; if additional information is not required, we will consider consultation to have been initiated on the date we received the original notification of Caltrans' intent to conduct their proposed project pursuant to the programmatic consultation.

At a minimum, the following information will accompany Caltrans' project notification to the Service:

1. A 7.5-minute topographic map (and aerial photographs if possible) of the proposed project site, as well as photographs of the project site;
2. A written description of the activity, including, but not limited to, construction methods, time of year the work would occur, a habitat restoration plan, and a construction monitoring plan;
3. One cross-section and a minimum of one plan view indicating water bodies, vegetation types, work areas, roads (including temporary construction access roads), restoration sites, refueling and staging areas that will be located within the existing or proposed public right-of-way or temporary construction easements, and environmentally sensitive areas proposed to protect habitat of the California red-legged frog;
4. The names and credentials of biologists who will conduct surveys for, monitor, and handle California red-legged frogs will be provided to the Service 30 days prior to the start of construction. Once the Service approves a biologist, Caltrans would not need to

provide their credentials for subsequent projects conducted pursuant to this consultation;  
and

5. Information resulting from any site visits, surveys, or habitat assessments conducted for the proposed action.

By January 31 of each year this consultation is in effect, Caltrans will provide to the Service's Ventura Fish and Wildlife Office, a list of projects for which it used this consultation. Caltrans will provide sufficient information on the list to identify the projects that occurred in the previous year under the provisions of this biological opinion. The annual list will assist the Ventura Fish and Wildlife Office in ensuring that it has received the required Project Completion Reports that are described later in this document. Caltrans may also use the occasion of providing the list to recommend changes to the consultation that are more protective of the California red-legged frog and its habitat while simplifying compliance with the Act.

#### ADMINISTRATION OF THE PROGRAMMATIC INFORMAL CONSULTATION

For all proposed actions that Caltrans determines may affect, but are not likely to adversely affect, the California red-legged frog or its critical habitat, Caltrans will determine if the proposed action meets the suitability criteria for our programmatic concurrence, as described in the Description of the Proposed Action section of this biological opinion. If Caltrans determines the proposed action meets the suitability criteria for concurrence, it will notify our office in writing, at least 30 days prior to the start of construction. We will review Caltrans' notification and respond in writing, or via electronic mail, if we have concerns or questions regarding the proposed action, or if we have any additional information that we believe may influence Caltrans' determination.

At a minimum the following information will accompany the notification:

1. Caltrans must include a rationale in its notification to us, as to how adverse effects to the California red-legged frog and its critical habitat will be avoided.
2. A 7.5-minute topographic map and aerial photographs of the project site, as well as photographs of the project site. The location of the project, any restoration sites, and all known locations of California red-legged frogs within 2 miles of the project site will be identified on the map and photographs;
3. A written description of the activity, including, but not limited to, construction methods, avoidance measures in addition to those required under this programmatic biological opinion, time of year the work would occur, habitat restoration plans, and construction monitoring plans;
4. One cross-section and a minimum of one plan view indicating water bodies, vegetation types, work areas, roads (including temporary construction access roads), restoration

sites, refueling and staging areas that will be located within the existing or proposed public right-of-way or temporary construction easements, and Environmentally Sensitive Areas proposed to protect habitat of the California red-legged frog; and

5. The results of information gathered by following the procedures in the Service's guidance for assessing habitat quality and field surveys for the California red-legged frog.

Staff from the Service's Ventura Fish and Wildlife Office will be available to provide technical assistance during all phases of consultation. Technical assistance can include assisting Caltrans with determinations of effects, development of project-specific designs and protective measures, modifications of survey protocols, and any other issues that may arise. Technical assistance may be transmitted by the Service in the form of telephone calls, electronic mail, or written correspondence.

#### BIOLOGICAL OPINION

#### ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

##### Jeopardy Determination

The jeopardy analysis in this biological opinion relies on four components: (1) the *Status of the Species*, which evaluates the range-wide condition of the California red-legged frog, the factors responsible for that condition, and the species' survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of the California red-legged frog in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the California red-legged frog; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the California red-legged frog; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the California red-legged frog.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the California red-legged frog, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the California red-legged frog.

The jeopardy analysis in this biological opinion places an emphasis on consideration of the range-wide survival and recovery needs of the California red-legged frog and the role of the action area in the survival and recovery of the subspecies as the context for evaluation of the significance of the effects of the proposed federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

#### Adverse Modification Determination

This biological opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied on the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this biological opinion relies on four components: (1) the *Status of Critical Habitat*, which evaluates the range-wide condition of designated critical habitat for the California red-legged frog in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall; (2) the *Environmental Baseline*, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated and interdependent activities on the PCEs and how that will influence the recovery role of the affected critical habitat units; and (4) *Cumulative Effects*, which evaluates the effects of future non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed federal action on the critical habitat of the California red-legged frog are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the California red-legged frog.

The analysis in this biological opinion places an emphasis on using the intended range-wide recovery function of critical habitat for the California red-legged frog and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

#### DESCRIPTION OF THE PROPOSED ACTION

##### **Eligibility Criteria for the Programmatic Biological Opinion**

To make use of this programmatic biological opinion, the Caltrans must ensure that a proposed project satisfies the following criteria:

**Criterion 1:** Actions that would be appropriately considered in this biological opinion are likely to result in adverse effects to the California red-legged frog and its critical habitat, but would not affect the long-term viability of the population in the action area. Caltrans and the Service have previously consulted on numerous projects that met these criteria. These projects include: retrofitting of bridges to reduce damage that may be caused by earthquakes; repair, widening,

and replacement of bridges; repair of stream bank protection; replacement of low-flow stream crossings with bridges; small-scale stabilization of stream slopes; minor improvement of drainage; replacement of culverts; rehabilitation of highway surfaces; and improvement of the safety and operation of highways.

**Criterion 2:** To qualify for use of this programmatic biological opinion, the measures to reduce or avoid adverse effects to the California red-legged frog and its critical habitat, provided herein, must be implemented; these measures may be modified on a project-specific basis upon the agreement of the Caltrans and the Service.

**Criterion 3:** The projects must be single and complete, and not part of larger actions or associated with other development projects including, but not limited to, housing subdivisions, commercial or industrial developments, or golf courses.

**Criterion 4:** The projects must not, in the Service's view, take place in areas where populations of California red-legged frogs are so isolated that even the small effects described in this biological opinion may have substantial impacts.

#### **Minimization of Adverse Effects**

Caltrans will ensure that projects implemented in accordance with this biological opinion will be designed to avoid or minimize adverse effects to the California red-legged frog and its critical habitat. At a minimum, the following measures will be incorporated into the projects:

1. Only Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. Biologists authorized under this biological opinion do not need to re-submit their qualifications for subsequent projects conducted pursuant to this biological opinion, unless we have revoked their approval at any time during the life of this biological opinion.
2. Ground disturbance will not begin until written approval is received from the Service that the biologist is qualified to conduct the work, unless the individual(s) has/have been approved previously and the Service has not revoked that approval.
3. A Service-approved biologist will survey the project site no more than 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 begins. The Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and that will not be affected by activities associated with the proposed project. The relocation site should be in the same drainage to the extent practicable. Caltrans will coordinate with the Service on the relocation site prior to the capture of any California red-legged frogs.

4. Before any activities begin on a project, a 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 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 Service-approved biologist will be present at the work site until all California red-legged frogs have been relocated out of harm's way, workers have been instructed, and disturbance of habitat has been completed. After this time, the State or local sponsoring agency will designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist will ensure that this monitor receives the training outlined in measure 4 above and in the identification of California red-legged frogs. If the monitor or the Service-approved biologist recommends that work be stopped because California red-legged frogs would be affected in a manner not anticipated by Caltrans and the Service during review of the proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the adverse effect immediately or require that all actions causing these effects be halted. If work is stopped, the Service will be notified as soon as possible.
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.
7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water). The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans 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.
8. 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 the Service and Caltrans determine that it is not feasible or modification of original contours would benefit the California red-legged frog.
9. 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 goals. Environmentally Sensitive Areas will be delineated 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.
10. Caltrans will 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 California red-legged frogs 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 coordination between Caltrans and the Service during project planning will be used to assist in scheduling work activities to avoid sensitive habitats during key times of the year.
  11. To control sedimentation during and after project implementation, Caltrans, and the sponsoring agency 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, Caltrans will attempt to remedy the situation immediately, in coordination with the Service.
  12. 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. 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.
  13. Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs.
  14. A Service-approved biologist will permanently remove any individuals of non-native species, such as bullfrogs (*Rana catesbeiana*), signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkii*), and centrarchid fishes from the project area, to the maximum extent possible. The Service-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.
  15. If Caltrans demonstrates that disturbed areas have been restored to conditions that allow them to function as habitat for the California red-legged frog, these areas will not be included in the amount of total habitat permanently disturbed.

16. To ensure that diseases are not conveyed between work sites by the Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times. A copy of the code of practice is enclosed.
17. Project sites will be re-vegetated 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 plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless the Service and Caltrans determine that it is not feasible or practical.
18. Caltrans will not use herbicides as the primary method used to control invasive, exotic plants. However, if Caltrans determines the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, it will implement the following additional protective measures for the California red-legged frog:
  - a. Caltrans will not use herbicides during the breeding season for the California red-legged frog;
  - b. Caltrans will conduct surveys for the California red-legged frog immediately prior to the start of any herbicide use. If found, California red-legged frogs will be relocated to suitable habitat far enough from the project area that no direct contact with herbicides would occur;
  - c. Giant reed and other invasive plants will be cut and hauled out by hand and the painted with glyphosate or glyphosate-based products, such as Aquamaster® or Rodeo®;
  - d. Licensed and experienced Caltrans staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site;
  - e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.
  - f. Herbicides will not be applied on or near open water surfaces (no closer than 60 feet from open water).
  - g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 miles per hour.
  - h. No herbicides will be applied within 24 hours of forecasted rain.

- i. Application of all herbicides will be done by a qualified Caltrans staff or contractors to ensure that overspray is minimized, that all application is made in accordance with label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins.
- j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. Caltrans will ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

19. Upon completion of any project for which this programmatic consultation is used, Caltrans will ensure that a Project Completion Report is completed and provided to the Ventura Fish and Wildlife Office. A copy of the form is enclosed. Caltrans should include recommended modifications of the protective measures if alternative measures would facilitate compliance with the provisions of this consultation. In addition, Caltrans will reinitiate formal consultation in the event any of the following thresholds are reached as a result of projects conducted under the provisions of this consultation:

Caltrans will reinitiate consultation when, as a result of projects conducted under the provisions of this consultation:

- a. 10 California red-legged frog adults or juveniles have been killed or injured in any given year. (For this and all other standards, an egg mass is considered to be one California red-legged frog.);
- b. 50 California red-legged frogs have been killed or injured in total;
- c. 20 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in any given year;
- d. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in total;
- e. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in any given year; or

- f. 500 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in total.

Total acreages of dispersal habitat that may be adversely affected would be confined to the Caltrans or County rights-of-way that occur adjacent to roads, and would be linear in nature. Dispersal habitat for the California red-legged frog adjacent to roads and highways, within these rights-of-way, is generally less ecologically valuable to the California red-legged frog than larger blocks of habitat. Road corridors and associated disturbances may lead to reduced habitat quality resulting in decreased abundance or density of breeding individuals (Forman et al. 2003).

#### PROGRAMMATIC INFORMAL CONSULTATION

In addition to the numerous formal consultations we have conducted with Caltrans, we have also conducted many informal consultations and concurred that many of Caltrans' proposed projects are not likely to adversely affect the California red-legged frog or its critical habitat. Many of these projects are very similar to the type of projects we are considering in the subject formal consultation (e.g., bridge and culvert replacements). Because many of the avoidance measures associated with our previous concurrences are very similar, and we are often working on multiple concurrence letters simultaneously, Caltrans and the Service believe a programmatic approach to projects that are not likely to adversely affect the California red-legged frog or its critical habitat is appropriate.

#### Criteria for the Programmatic Concurrence

Projects that are not likely to adversely affect the California red-legged frog, or its critical habitat, must have only discountable, insignificant, or completely beneficial effects to the subspecies and its critical habitat. The Services (1998) defines the term discountable as extremely unlikely and unexpected; the term insignificant relates to the size of the impact (i.e., unable to meaningfully measure, detect, or evaluate). To make use of this programmatic informal consultation for actions that may affect, but are not likely to adversely affect the California red-legged frog or its critical habitat, Caltrans must demonstrate that the project satisfies the following criteria:

**Criterion 1:** California red-legged frogs are not known to occur at the proposed project site and were not found during surveys following the Guidelines for surveys and habitat assessments (Service 2007); however, the potential may exist for individuals to occur at the proposed project site because no barriers exist to preclude dispersal of California red-legged frog from nearby suitable habitat.

**Criterion 2:** Any effects to critical habitat must be discountable, insignificant, or completely beneficial to the California red-legged frog.

**Criterion 3:** The measures to avoid adverse effects to the California red-legged frog and its critical habitat, provided herein, must be implemented; these measures may be modified on a

project-specific basis to achieve avoidance of adverse effects upon the agreement of Caltrans and the Service.

#### **Measures to Avoid Adverse Effects**

For projects to qualify for the programmatic concurrence, at a minimum Caltrans will ensure that the following measures are implemented to avoid adverse effects to the California red-legged frog and its critical habitat:

1. A biologist with experience in the identification of all life stages of the California red-legged frog, and its critical habitat (75 FR 12816), will survey the project site no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is detected the Service will be notified prior to the start of construction. If Caltrans and the Service determine that adverse effects to the California red-legged frog or its critical habitat cannot be avoided, the proposed project will not commence until the Caltrans completes the appropriate level of consultation with the Service.

2. Work activities will take place during the dry season, between April 1 and November 1, when water levels are typically at their lowest, and California red-legged frogs are likely to be more detectable. Should activities need to be conducted outside of this period, Caltrans may conduct or authorize such activities after obtaining the Service's written approval.

3. Before work begins on any proposed project, a biologist with experience in the ecology of the California red-legged frog, as well as the identification of all its life stages, will conduct a training session for all construction personnel, which will include a description of the California red-legged frog, its critical habitat, and specific measures that are being implemented to avoid adverse effects to the subspecies during the proposed project.

4. If any life stage of the California red-legged frog is detected in the project area during construction, work will cease immediately and the resident engineer, authorized biologist, or biological monitor will notify the Ventura Fish and Wildlife Office via telephone or electronic mail. If Caltrans and the Service determine that adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until Caltrans and the Service complete the appropriate level of consultation.

5. 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.

6. Prior to the onset of work, Caltrans 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 implement should a spill occur.

7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from aquatic or riparian habitat and not in a location from where a spill would drain directly toward aquatic habitat. The monitor will ensure contamination of aquatic or riparian habitat does not occur during such operations by implementing the spill response plan described in measure 6.

8. Plants used in re-vegetation will consist of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless Caltrans and the Service determine that it is not feasible or practical.

9. Habitat contours will be returned to their original configuration at the end of project activities in all areas that have been temporarily disturbed by activities associated with the project, unless Caltrans and the Service 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 will be limited to the minimum necessary to achieve the project goals. Environmentally Sensitive Areas will be delineated to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to habitat for the California red-legged frog; this goal includes locating access routes and construction areas outside of aquatic habitat and riparian areas to the maximum extent practicable.

11. To control sedimentation during and after project implementation, Caltrans 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, Caltrans will attempt to remedy the situation immediately, in coordination with the Service.

12. If a work site is to be temporarily dewatered by pumping, the intake will be screened with wire mesh not larger than 0.2 inch to prevent any California red-legged frogs not initially detected from entering the pump system. If California red-legged frogs are detected during dewatering, and adverse effects to California red-legged frogs cannot be avoided, construction activities will remain suspended until Caltrans and the Service complete the appropriate level of consultation.

13. 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 creek bed will be minimized to the maximum extent possible; any imported material will be removed from the stream bed upon completion of the project.

14. Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs.

15. A qualified 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 biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

16. To ensure that diseases are not conveyed between work sites by the Service-approved biologist, the enclosed fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.

This concurrence is based on the proposed avoidance measures, as well as the other criteria that a specific project must meet to qualify for use of this informal consultation. This concurrence does not authorize capture, handling, or relocation of California red-legged frogs. If at any time Caltrans determines: 1) their proposed action is likely to adversely affect the California red-legged frog or its critical habitat; and 2) the proposed project meets criteria for the programmatic biological opinion, Caltrans should notify our office immediately. If Caltrans is able to adhere to the protective measures described previously in the programmatic biological opinion, the work may continue and Caltrans will notify the Service in writing that they are proceeding with the project under the programmatic biological opinion. If at any time Caltrans or the Service conclude that the proposed action does not meet the suitability criteria for the programmatic biological opinion, all work must cease until the appropriate level of consultation has been completed.

#### STATUS OF THE SPECIES/CRITICAL HABITAT

##### **California red-legged frog**

The California red-legged frog was federally listed as threatened on May 23, 1996 (61 FR 25813). The Service has published a recovery plan (Service 2002).

The historical range of the California red-legged frog extended coastally from southern Mendocino County and inland from the vicinity of Redding, California, southward to northwestern Baja California, Mexico (Jennings and Hayes 1985; Storer 1925). The California red-legged frog has been extirpated or nearly extirpated from 70 percent of its former range. Historically, this species was found throughout the Central Valley and Sierra Nevada foothills. Four additional occurrences have been recorded in the Sierra Nevada foothills since listing, bringing the total to five extant populations, compared to approximately 26 historical records (71 FR 19244). Currently, California red-legged frogs are only known from 3 disjunct regions in 26 California counties and 1 disjunct region in Baja California, Mexico (Grismer 2002; Fidenci 2004; R. Smith and D. Krofta, in litt. 2005).

California red-legged frogs have been found at elevations that range from sea level to about 5,000 feet. In the Sierra Nevada Mountains, California red-legged frogs typically occur below 4,000 feet and occurrences above this elevation are atypical for the subspecies (71 FR 19244).

The California red-legged frog uses a variety of habitat types, including various aquatic systems, riparian, and upland habitats. The diet of California red-legged frogs is highly variable. Hayes and Tennant (1985) found invertebrates to be the most common food item of adults. Vertebrates, such as Pacific chorus frogs (*Pseudacris regilla*) and California mice (*Peromyscus californicus*), represented over half of the prey mass eaten by larger frogs (Hayes and Tennant 1985). Feeding activity occurs along the shoreline and on the surface of the water. Hayes and Tennant (1985) found juveniles to be active diurnally and nocturnally, whereas adults were largely nocturnal.

California red-legged frogs breed from November through March; earlier breeding has been recorded in southern localities (Storer 1925). Males appear at breeding sites from 2 to 4 weeks before females (Storer 1925). Female California red-legged frogs deposit egg masses on emergent vegetation so that the masses float on the surface of the water (Hayes and Miyamoto 1984). Egg masses contain about 2,000 to 5,000 moderate-sized, dark reddish brown eggs (Storer 1925; Jennings and Hayes 1985). Eggs hatch in 6 to 14 days (Storer 1925). Larvae undergo metamorphosis 3.5 to 7 months after hatching (Storer 1925; Wright and Wright 1949). Sexual maturity can be attained at 2 years of age by males and 3 years of age by females (Jennings and Hayes 1985); adults may live 8 to 10 years (Jennings et al. 1992) although the average life span is considered to be much lower. The California red-legged frog is a relatively large aquatic frog ranging from 1.5 to 5 inches from the tip of the snout to the vent (Stebbins 1985).

California red-legged frogs breed in aquatic habitats. Larvae, juveniles and adults have been collected from streams, creeks, ponds, marshes, plunge pools and backwaters within streams, dune ponds, lagoons, and estuaries. California red-legged frogs frequently breed in artificial impoundments, such as stock ponds, if conditions are appropriate. Although California red-legged frogs successfully breed in streams and riparian systems, high spring flows and cold temperatures in streams often make these sites risky environments for eggs and tadpoles. The importance of riparian vegetation for this species is not well understood. When riparian vegetation is present, California red-legged frogs spend considerable time resting and feeding in it; the moisture and camouflage provided by the riparian plant community likely provide good foraging habitat and may facilitate dispersal in addition to providing pools and backwater aquatic areas for breeding.

Juvenile and adult California red-legged frogs may disperse long distances from breeding sites throughout the year. They can be encountered living within streams at distances exceeding 1.8 miles from the nearest breeding site, and have been found up to 400 feet from water in adjacent dense riparian vegetation (Bulger et al 2003). During periods of wet weather, starting with the first rains of fall, some individuals may make overland excursions through upland habitats. Most of these overland movements occur at night. Bulger et al. (2003) found marked California red-legged frogs in Santa Cruz County making overland movements of up to 2 miles over the course

of a wet season. These individual frogs were observed to make long-distance movements that are straight-line, point to point migrations over variable upland terrain rather than using riparian corridors for movement between habitats. For the California red-legged frog, suitable habitat is potentially all aquatic and riparian areas within the range of the species and includes any landscape features that provide cover and moisture (61 FR 25813).

Habitat loss and alteration, combined with over-exploitation and introduction of exotic predators, were important factors in the decline of the California red-legged frog in the early to mid-1900s. Continuing threats to the California red-legged frog include direct habitat loss due to stream alteration and loss of aquatic habitat, indirect effects of expanding urbanization, competition or predation from non-native species including the bullfrog, catfish (*Ictalurus* spp.), bass (*Micropterus* spp.), mosquito fish (*Gambusia affinis*), red swamp crayfish, and signal crayfish. Chytrid fungus (*Batrachochytrium dendrobatidis*) is a waterborne fungus that can decimate amphibian populations, and is considered a threat to California red-legged frog populations.

#### **Critical Habitat for the California Red-legged Frog**

On March 17, 2010, the Service designated critical habitat for the California red-legged frog (75 FR 12816). In total, 1,636,609 million acres was designated as critical habitat for the California red-legged frog in 27 California counties. The current designation better reflects the lands containing those essential habitat features necessary for the conservation of the California red-legged frog than did earlier designations that had been subject to litigation. A detailed discussion of the methods used in developing proposed critical habitat can be found in the final rule (75 FR 12816).

We have identified the physical or biological features essential to the conservation of the species, the Primary Constituent Elements (PCEs), that may require special management considerations or protection. Because not all life-history functions require all the PCEs, not all areas designated as critical habitat will contain all the PCEs. Based on our current knowledge of the life-history, biology, and ecology of the California red-legged frog, we determined the California red-legged frog's PCEs to consist of: 1) aquatic breeding habitat; 2) aquatic non-breeding habitat; 3) upland habitat, and 4) dispersal habitat. Detailed descriptions of these PCEs can be found in the final rule (75 FR 12816). The following is a brief summary of the PCEs:

- 1) Aquatic breeding habitat consists of standing bodies of fresh water (with salinities less than 4.5 part per thousand), including natural and manmade (stock) ponds, slow moving streams or pools within streams and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years.
- 2) Aquatic non-breeding habitat consists of the freshwater habitats as described for aquatic breeding habitat but which may or may not hold water long enough for the subspecies to complete the aquatic portion of its lifecycle but which provide for shelter, foraging,

predator avoidance, and aquatic dispersal habitat of juvenile and adult California red-legged frogs.

- 3) Upland habitat consists of upland areas adjacent to or surrounding breeding and non-breeding aquatic and riparian habitat up to a distance of one mile in most cases (i.e., depending on surrounding landscape and dispersal barriers) including various vegetation types such as grassland, woodland, forest, wetland, or riparian areas that provide shelter, forage, and predator avoidance for the California red-legged frog. Upland habitat should include structural features such as boulders, rocks and organic debris (e.g., downed trees, logs), small mammal burrows, or moist leaf litter.
- 4) Dispersal habitat consists of accessible upland or riparian habitat within and between occupied or previously occupied sites that are located within one mile of each other, and that support movement between such sites. Dispersal habitat includes various natural habitats, and altered habitats such as agricultural fields, that do not contain barriers (e.g., heavily traveled roads without bridges or culverts) to dispersal. Dispersal habitat does not include moderate- to high-density urban or industrial developments with large expanses of asphalt or concrete, nor does it include large lakes or reservoirs over 50 acres in size, or other areas that do not contain those features identified in PCE 1, 2, or 3 as essential to the conservation of the species.

#### ENVIRONMENTAL BASELINE

The implementing regulations for section 7(a)(2) of the Act define the “action area” as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). For the purposes of this biological opinion, we consider the action area to include the areas within Santa Cruz, San Benito, Monterey, San Luis Obispo, Santa Barbara Counties that support the California red-legged frog, or its critical habitat, and that have the potential to be affected directly or indirectly by federally-funded projects. Caltrans projects that would be appropriately conducted pursuant to this biological opinion would occur within the Caltrans or County rights-of-way. Based on the anticipated impacts of the 26 projects we have consulted on and the documented effects of the 15 projects that Caltrans has completed under our previous programmatic biological opinion (Service 2003), we are not aware of any indirect effects which extend beyond the Caltrans or County right-of-way. Therefore, we assume the area within the right-of-way of each of the projects conducted pursuant to this programmatic biological opinion will encompass the direct and indirect effects of the proposed action.

All or portions of the following three recovery units (as defined in the Recovery Plan for the California red-legged frog (Service 2002) are included in the action area:

The Central Coast Recovery Unit includes, generally, the coastal portions of Santa Cruz, Monterey, and San Luis Obispo Counties. This recovery unit supports the greatest number of drainages currently occupied by the California red-legged frog.

The Diablo Range and Salinas Valley Recovery Unit includes, generally, San Benito County and the inland portions of Santa Cruz, Monterey, and San Luis Obispo Counties. This recovery unit supports “no more than 10 percent of the historic localities (of the California red-legged frog) within the Salinas basin and inner Coast Ranges” (Service 2002). Santa Barbara County and portions of San Luis Obispo Counties are within the Northern Transverse Ranges and Tehachapi Mountains Recovery Unit. California red-legged frogs are patchily distributed in the interior portion of this recovery unit and occur in numerous coastal streams in Santa Barbara County.

From April 2003 through June 2010, we issued 26 biological opinions that were tiered off of our previous programmatic biological opinion with FHWA (Service 2003). Under those 26 biological opinions we authorized the incidental take of 34 California red-legged frogs in the form of injury or mortality. Five tiered biological opinions authorized the incidental take of two California red-legged frogs, one biological opinion authorized the incidental take of four California red-legged frogs, and 20 biological opinions authorized the incidental take of one California red-legged frog.

Based on the information contained in the requests for consultation, we calculated the amount of aquatic and upland habitats that we estimate will be permanently lost and temporarily disturbed when construction of these projects has been completed (Appendix 1).

Construction has been completed on 15 projects (Appendix 2) that were conducted under the programmatic biological opinion (Service 2003). No California red-legged frogs were injured or killed during construction of these 15 projects. Five of the Project Completion Reports for these 15 projects did not include the amount of wetland or upland habitat impacts. Of the 10 other completed projects, none exceeded the reinitiation thresholds identified in our 2003 programmatic biological opinion (Service 2003).

### **Critical Habitat**

Because our previous programmatic biological opinion (Service 2003) did not address critical habitat, the Project Completion Reports associated with that biological opinion do not include the amount of critical habitat affected by each completed project in terms of the PCEs. Instead, the Project Completion Reports require that the amount of wetland and riparian habitat temporarily and permanently affected by a project be reported. We interpret the amount of wetland habitat affected by a project to include either breeding, non-breeding habitat, or both, and the riparian habitat component to include upland habitat and/or dispersal habitat. The amount of critical habitat for the California red-legged frog that has been adversely affected as a result of the 15 completed projects consists of: 0.033-acre of aquatic habitat for the California red-legged frog that was permanently lost and 0.1-acre that was temporarily disturbed; 0.20-acre of upland habitat that were permanently lost and 0.12-acre that were temporarily disturbed.

Nineteen critical habitat units may be adversely affected by actions conducted pursuant to this biological opinion. These critical habitat units occur in Santa Cruz, San Benito, Monterey, San Luis Obispo, and Santa Barbara Counties. The physical and biological features important to the

conservation of the California red-legged frog are included in the following descriptions from the final rule 75(FR) 12816:

#### **SCZ-1, North Coastal Santa Cruz County**

This unit consists of approximately 72,249 acres of land and is located along the coastline of northern Santa Cruz County, plus a small area in southern San Mateo County, from approximately Green Oaks Creek to Wilder Creek. The unit includes the following watersheds: Green Oaks Creek, Waddell Creek, East Waddell Creek, Scott Creek, Big Creek, Little Creek, San Vicente Creek, Laguna Creek, and Majors Creek. The unit is mapped from occurrences recorded at the time of listing and subsequent to the time of listing and is currently occupied. SCZ-1 contains the features that are essential for the conservation of the species. The unit also contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SCZ-1 provides connectivity between occupied sites along the coast and farther inland. In addition, it contains high-quality habitat, indicated by high density of extant occurrences, permanent and ephemeral aquatic habitat suitable for breeding, and accessible upland areas for dispersal, shelter, and food. The unit represents one of two areas designated for critical habitat in Santa Cruz County and is the northern extent of the central coast recovery unit.

The physical and biological features essential to the conservation of California red-legged frog in the SCZ-1 unit may require special management considerations or protection due to water diversions, which may alter aquatic habitats and thereby result in the direct or indirect loss of egg masses, juveniles, or adults.

#### **SCZ-2, Watsonville Slough**

This unit consists of approximately 4,057 acres of land and is located along the coastal plain in southern Santa Cruz County, north of the mouth of the Pajaro River and seaward of California Highway 1. It includes locations in the Watsonville Slough system, including all or portions of Gallighan, Hanson, Harkins, Watsonville, Struve, and the West Branch of Struve sloughs. The unit includes portions of the Corralitos Lagoon and Mouth of the Pajaro River watersheds. The unit is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. SCZ-2 contains the features that are essential for the conservation of the species. This unit is currently occupied, and contains permanent and ephemeral aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and contains upland habitat for foraging, dispersal activities, and shelter (PCE 3 and PCE 4). SCZ-2 also provides connectivity between occupied sites along the coast and farther inland.

The physical and biological features essential to the conservation of California red-legged frog in the SCZ-2 unit may require special management considerations or protection due to predation by nonnative species, and due to urbanization and the presence of introduced invasive plants, both of which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**MNT-1, Elkhorn Slough**

This unit consists of approximately 519 acres of land and is located along the coastal plain in northern Monterey County, inland from the town of Moss Landing, and it is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. This unit is currently occupied. The unit includes the eastern edge of the Elkhorn Slough watershed and the western edge of the Strawberry Canyon watershed. MNT-1 contains the features that are essential for the conservation of the species. This unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). The designation of MNT-1 is expected to prevent further fragmentation of habitat in this portion of the species' range, contains permanent and ephemeral aquatic habitats suitable for breeding, and contains upland areas for dispersal, shelter, and food. We have determined that these attributes are essential to the conservation of the species. Elkhorn Slough is unique in that it is a large estuary/freshwater slough system not typically found on the California coast. The unit consists entirely of private land.

The physical and biological features essential to the conservation of California red-legged frog in the MNT-1 unit may require special management considerations or protection due to pesticide exposure, trematode infestation, disease, and predation by nonnative species, which may affect aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**MNT-2, Carmel River**

This unit consists of approximately 119,492 acres of land, is located south and southeast of the city of Monterey, and includes locations in the Carmel River drainage and nearby San Jose Creek. The unit includes the following watersheds and portions of watersheds: the southern portion of Carmel Bay, Carmel Valley, Robinson Canyon, San Jose Creek, Las Garces Creek, Hitchcock Canyon, the western portion of Lower Tularcitos Creek, Klondike Canyon, Black Rock Creek, Pine Creek, Danish Creek, Cachagua Creek, Lower Finch Creek, Bear Canyon, Bruce Fork, and Miller Canyon. It is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. MNT-2 contains the features that are essential for the conservation of the species. The unit is currently occupied and contains permanent and ephemeral aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging, dispersal activities, and shelter (PCE 3 and PCE 4). The unit is the largest designated within Monterey County.

The physical and biological features essential to the conservation of California red-legged frog in the MNT-2 unit may require special management considerations or protection due to predation by nonnative species, urbanization, and water pumping and diversions, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**MNT-3, Big Sur Coast**

This unit consists of approximately 27,542 acres of land; is located along the Big Sur coastline in Monterey County, approximately from the mouth of the Little Sur River south to McWay Canyon; and includes locations in and around the Big Sur River drainage. The unit includes the following watersheds: Point Sur, Big Sur River, Ventana Creek, Sycamore Canyon, and Partington Creek. This unit was not known to be occupied at the time of listing, but surveys conducted subsequent to the time of listing show that this unit is currently occupied. Based on life history and population dynamics of the species we have determined that the area was most likely occupied at the time of listing. MNT-3 is essential for the conservation of the species because it contains the largest coastal habitat within Monterey Bay region and provides for connectivity to more interior units further north. MNT-3 also contains permanent and ephemeral aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging, dispersal activities, and shelter (PCE 3 and PCE 4). MNT-3 is currently occupied by the species.

The physical and biological features essential to the conservation of California red-legged frog in the MNT-3 unit may require special management considerations or protection due to predation by non-native species, urbanization, and water pumping and diversions, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**SNB-1, Hollister Hills/San Benito River**

This unit consists of approximately 36,294 acres of land and is located in northwestern San Benito County in the San Benito River drainage. The unit includes the following watersheds and portions of watersheds: the southern portions of San Justo Reservoir, Northeast Hollister Hills, and Upper Bird Creek; Left Fork Bird Creek; Sulfur Canyon; and the western portions of Arroyo Hondo, Willow Grove School, Paicines Ranch, and Lower Pescadero Creek. It is mapped from occurrences recorded at the time of listing and subsequent to the time of listing near Saint Frances Retreat, San Juan Oaks, Azalea Canyon, Bird Creek, Hollister Hills State Vehicle Recreation Area, Paicines Reservoir, and Tres Pinos Creek. SNB-1 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SNB-1 also provides essential connectivity between sites on the coast plain and inner Coast Range. SNB-1 is occupied by the species, is expected to prevent further fragmentation of habitat in this portion of the species' range, and contains permanent and ephemeral aquatic habitats suitable for breeding and accessible upland areas for dispersal, shelter, and food.

The physical and biological features essential to the conservation of California red-legged frog in the SNB-1 unit may require special management considerations or protection due to predation by nonnative species, and habitat disturbance, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**SNB-2, Antelope Creek/Upper Tres Pinos Creek**

This unit consists of approximately 17,356 acres of land and is located in central San Benito County along the Tres Pinos Creek drainage within the Antelope Creek watershed. This unit was not known to be occupied at the time of listing, but surveys conducted subsequent to the time of listing show that this unit is currently occupied, and based on life history and population dynamics of the species we have determined that the area was most likely occupied at the time of listing. It is mapped from occurrence records in and along Tres Pinos Creek between the confluences of Boulder and Willow Springs Creeks. SNB-2 is essential for the conservation of the species because it provides aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SNB-2 is occupied by the species, is expected to prevent fragmentation of habitat in this portion of the species' range, and contains permanent and ephemeral aquatic habitats suitable for breeding and accessible upland areas for dispersal, shelter, and food. The unit consists entirely of private land. The physical and biological features essential to the conservation of California red-legged frog in the SNB-2 unit may require special management considerations or protection due to predation by nonnative species, overgrazing and trampling of aquatic and upland habitat by feral pigs, and recreational activities, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**SNB-3, Pinnacles National Monument**

This unit consists of approximately 63,753 acres of land; is located in the Gabilan Range at Pinnacles National Monument, about 3.5 miles west of the town of San Benito in southern San Benito County; and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the following watersheds: Gloria Lake, Bickmore Canyon, Sulfur Creek, and George Hansen Canyon. SNB-3 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SNB-3 is expected to prevent further fragmentation of habitat in this portion of the species' range; contains permanent and ephemeral aquatic habitat suitable for breeding; contains accessible upland areas for dispersal, shelter, and food; and is occupied by the species.

The physical and biological features essential to the conservation of California red-legged frog in the SNB-3 unit may require special management considerations or protection due to predation by nonnative species, overgrazing and trampling of aquatic and upland habitat by feral pigs, and recreational activities, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**SLO-1, Cholame**

This unit consists of approximately 18,018 acres of land; and is located in northeastern San Luis Obispo, northwestern Kern, and southwestern Kings Counties; includes locations in the Cholame Creek drainage; and is mapped from occurrences recorded at time of listing and subsequent to

the time of listing. The unit includes portions of the following watersheds: the southern portion of Blue Point, the western portion of Jack Canyon, and the eastern portion of Palo Prieto Canyon. SLO-1 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SLO-1 contains permanent and ephemeral aquatic habitats suitable for breeding; contains accessible upland areas for dispersal, shelter, and food; and is occupied by the species.

The physical and biological features essential to the conservation of California red-legged frog in the SLO-1 unit may require special management considerations or protection due to highway construction, overgrazing, and water diversions, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

#### **SLO-2, Piedras Blancas to Cayucos Creek**

This unit consists of approximately 82,673 acres of land and is located along the coast in northwestern San Luis Obispo County from approximately Arroyo de Los Chinos southward to just before but not including Whale Rock Reservoir. The unit includes the following watersheds: Arroyo de los Chinos, Lower Arroyo de la Cruz, Arroyo del Corral, Oak Knoll Creek, Broken Bridge Creek, Pico Creek, Upper San Simeon Creek, Lower San Simeon Creek, Steiner Creek, Upper Santa Rosa Creek, Lower Santa Rosa Creek, and Lower Green Valley Creek. The unit is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. SLO-2 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). SLO-2 provides connectivity within the Santa Lucia Range, and between this range and the inner Coast Range in San Luis Obispo County. This unit is occupied by the species. The unit contains high-quality habitat, indicated by high density of extant occurrences, permanent and ephemeral aquatic habitats suitable for breeding, and accessible upland areas for dispersal, shelter, and food.

The physical and biological features essential to the conservation of California red-legged frog in the SLO-2 unit may require special management considerations or protection due to predation by nonnative species, water diversion, overgrazing, and urbanization, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults due to habitat modification.

#### **SLO-3, Willow and Toro Creeks to San Luis Obispo**

This unit consists of approximately 116,517 acres of land and is located near the coast in central San Luis Obispo County and extends about 1.9 miles north of the town of Morro Bay southward to just north and east of the city of San Luis Obispo. The unit includes the following watersheds: Old Creek, Whale Rock Reservoir, the southern portion of Hale Creek, Morro Bay, San Luisito Creek, the western and southern portions of Santa Margarita Creek, Choro Reservoir, Stenner Lake, Reservoir Canyon, Trout Creek, and Big Falls Canyon. The unit is mapped from

occurrences recorded at the time of listing and subsequent to the time of listing. SLO-3 contains the features that are essential for the conservation of the species. The unit is currently occupied and contains permanent and ephemeral aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging, dispersal, and shelter (PCE 3 and PCE 4). SLO-3 provides connectivity within the Santa Lucia Range, and between this range and the inner Coast Range in San Luis Obispo County.

The physical and biological features essential to the conservation of California red-legged frog in the SLO-3 unit may require special management considerations or protection due to predation by nonnative species, water diversion, overgrazing, and urbanization, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults due to habitat modification.

#### **SLO-4, Upper Salinas River**

This unit consists of approximately 34,463 acres of land, is located at the base of Garcia Mountain about 17 miles east of the City of San Luis Obispo, is mapped from occurrences recorded subsequent to the time of listing, and is currently occupied by the species. Based on the life history and population dynamics of the species we have determined that the area was most likely occupied at the time of listing. The unit includes the following watersheds: Horse Mesa, Douglas Canyon, American Canyon, and Coyote Hole. This unit is essential for the conservation of the species because it is the only unit in San Luis Obispo County entirely within the interior Coast Range and provides connectivity between populations in the coastal areas and populations farther inland. SLO-4 also contains permanent and ephemeral aquatic habitats consisting of natural and manmade ponds surrounded by emergent vegetation and marshland with upland dispersal habitat comprised of riparian areas for dispersal, shelter, and foraging.

The physical and biological features essential to the conservation of California red-legged frog in the SLO-4 unit may require special management considerations or protection due to predation by nonnative species, and due to water diversion, overgrazing, and urbanization, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults due to habitat modification.

#### **STB-1, La Brea Creek**

This unit consists of approximately 25,164 acres of land, is located in Los Padres National Forest in northern Santa Barbara County, and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the following watersheds: Bear Canyon, the southern portion of Smith Canyon, Rattlesnake Canyon, Lower South Fork La Brea Creek, and the eastern portion of Lower La Brea Creek. STB-1 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4).

The physical and biological features essential to the conservation of California red-legged frog in the STB-1 unit may require special management considerations or protection due to recreational activities, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

#### **STB-2, San Antonio Terrace**

This unit consists of approximately 12,066 acres of land, is located in northwestern Santa Barbara County near the coast, extends from about Casmalia south to the Santa Lucia Canyon near the Purisima Hills, and is mapped from occurrences recorded subsequent to the time of listing. Based on the life history and population dynamics of the species we have determined that the area was most likely occupied at the time of listing. The unit includes the following watersheds: Graciosa Canyon and Lions Head. STB-2 provides connectivity between coastal populations and populations in the Transverse Ranges. STB-2 also contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). This unit is currently occupied by the species.

The physical and biological features essential to the conservation of California red-legged frog in the STB-2 unit may require special management considerations or protection due to recreational activities, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

#### **STB-3, Sisquoc River**

This unit consists of approximately 47,559 acres of land and is located in northern Santa Barbara County and includes locations in the Sisquoc River drainage and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit contains the following watersheds: the southern portion of Tunnel Canyon, Burro Canyon, Sulphur Creek, Lower Manzano Creek, Middle Manzano Creek, Fir Canyon, Upper Cachuma Creek, and the northern portion of Happy Canyon. STB-3 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). STB-3 is occupied by the species, provides connectivity between locations along the coast and the Transverse Ranges, and is essential in stabilizing populations of the species in tributaries to the Santa Ynez River.

The physical and biological features essential to the conservation of California red-legged frog in the STB-3 unit may require special management considerations or protection due to predation by nonnative species, recreational activities, and poor water management practices which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**STB-4, Jalama Creek**

This unit consists of approximately 7,685 acres of land and is located along the coast in southwestern Santa Barbara County about 4.4 miles south of the City of Lompoc, and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the Casper Creek watershed. STB-4 contains the features that are essential for the conservation of the species. The unit includes aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). STB-4 is occupied by the species and provides connectivity between locations along the coast and the Santa Ynez River watershed.

The physical and biological features essential to the conservation of California red-legged frog in the STB-4 unit may require special management considerations or protection due to predation by nonnative species and habitat disturbance, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or adults.

**STB-5, Gaviota Creek**

This unit consists of approximately 12,888 acres of land, is located along the coast in southern Santa Barbara County about 3 miles southwest of the town of Buellton, and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the following watersheds: Cañada de las Cruces and Cañada de la Gavota. STB-5 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for shelter, foraging and dispersal activities (PCE 3 and PCE 4). STB-5 is occupied by the species and provides connectivity between locations along the coast and the Santa Ynez River watershed.

The physical and biological features essential to the conservation of California red-legged frog in the STB-5 unit may require special management considerations or protection due to predation by nonnative species and poor water management practices, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults. Populations in this unit may also require special management or protection due to their potential importance in stabilizing California red-legged frog populations in tributaries to the Santa Ynez River.

**STB-6, Arroyo Quemado to Refugio Creek**

This unit consists of approximately 11,985 acres of land, is located along the coast in southern Santa Barbara County about 5 miles south of the town of Solvang, and is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the Tajiguas Creek watershed. STB-6 contains the features that are essential for the conservation of the species. The unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). STB-6 is occupied by the species, provides connectivity between locations along the

coast and the Santa Ynez River watershed, and contains permanent and ephemeral aquatic habitats suitable for breeding, and upland areas for dispersal, shelter, and food.

The physical and biological features essential to the conservation of California red-legged frog in the STB-6 unit may require special management considerations or protection due to predation by nonnative species and poor water management practices, which may alter aquatic or upland habitats and thereby result in the direct or indirect loss of egg masses or adults. Populations in this unit may also require special management or protection due to their potential importance in stabilizing California red-legged frog populations in tributaries to the Santa Ynez River.

#### **STB-7, Upper Santa Ynez River and Matilija Creek**

This unit consists of approximately 145,121 acres of land, is located in southeastern Santa Barbara County about 5 miles north of the City of Santa Barbara, and extends into western Ventura County at Matilija Creek. It is mapped from occurrences recorded at the time of listing and subsequent to the time of listing. The unit includes the following watersheds: Los Lauveles Canyon, Redrock Canyon, Oso Canyon, Buckhorn Creek, Camuesa Creek, Devils Canyon, Indian Creek Campground, Upper Mono Creek, Lower Mono Creek, Blue Canyon Upper Agua Caliente Canyon, Diablo Canyon, Lower Agua Caliente Canyon, Juncal Canyon, Lower Matilija Creek, North Fork Matilija Creek, and Cozy Dell Canyon. STB-7 contains the features that are essential for the conservation of the species. This unit contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2), and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). STB-7 is occupied by the species and provides connectivity between locations along the coast, in the Sierra Madre Mountains, and in the Ventura River watershed. It is important to species conservation and the persistence of the species in the Matilija watershed because it contains permanent and ephemeral aquatic habitats suitable for breeding, and upland areas for dispersal, shelter, and food in that portion of the unit, which will provide connectivity between populations within the Transverse Ranges and will prevent further isolation of breeding locations near the limit of the geographic range of the species. The unit as a whole contains high-quality habitat, indicated by the high density of extant occurrences, permanent and ephemeral aquatic habitat suitable for breeding, and accessible upland areas for dispersal, shelter, and food.

The physical and biological features essential to the conservation of California red-legged frog in the STB-7 unit may require special management considerations or protection due to predation by nonnative species, flood control activities, road maintenance, and recreational activities, which may alter aquatic and upland habitats and thereby result in the direct or indirect loss of egg masses or direct death of adults.

## EFFECTS OF THE ACTION

**California Red-legged Frog**

Activities that are evaluated under this biological opinion are those that would not cause ecosystem-scale changes and are not likely to contribute to the decline of the California red-legged frog. These activities would also not preclude any of the potentially affected critical habitat units from providing the primary constituent elements necessary to support the essential life history functions (i.e., reproduction, feeding, and sheltering) of the California red-legged frog.

Direct impacts to adults, sub-adults, tadpoles, and eggs of the California red-legged frog in the footprint of projects evaluated by this biological opinion may include injury or mortality from being crushed by earth moving equipment, construction debris, and worker foot traffic. These impacts will be reduced by minimizing and clearly demarcating the boundaries of the project areas and equipment access routes and locating staging areas outside of riparian areas or other water bodies. Scheduling work activities to avoid sensitive areas, such as breeding pools during the breeding season and isolated aquatic refuges during dry periods, as proposed by Caltrans, would substantially reduce adverse effects.

The capture and handling of California red-legged frogs to move them from a work area may result in injury or mortality. Mortality may occur as a result of improper handling, containment, or transport of individuals or from releasing them into unsuitable habitat. Improper handling, containment, or transport of individuals would be reduced or prevented by use of a Service-approved biologist. California red-legged frogs may attempt to return to the capture site, especially if it contains suitable breeding habitat and the relocation site is a different pond or creek than the capture site. California red-legged frogs attempting to return to capture sites are likely to be more susceptible to predation, exposure to the elements, and vehicle strikes if they attempt to return to the original capture site. Relocating California red-legged frogs within the same drainage or water body, if possible, will reduce this threat. Overall, relocation as proposed by Caltrans is intended to reduce the risk of injury or mortality from the direct effects described above.

Construction activities, including noise and vibration, may cause California red-legged frogs to temporarily abandon habitat adjacent to work areas. This disturbance may increase the potential for predation and desiccation when California red-legged frogs leave shelter sites.

Tadpoles may be entrained by pump intakes if such devices are used to dry out work areas. However, Caltrans will ensure that pump intakes are covered with wire mesh not larger than 0.2 inch to preclude juvenile California red-legged frogs and tadpoles from entering pump intakes.

Some potential also exists for disturbance of habitat to cause the spread or establishment of non-native invasive species, such as giant reed (*Arundo donax*) or salt cedar (*Tamarix* spp.). Once established, these species degrade habitat values through several mechanisms (Service 1999).

Breeding pools surrounded by large amounts of salt cedar and giant reed may dry faster because their rates of evapotranspiration are generally greater than those of native riparian species. The abundance and diversity of prey species are generally less in dense stands of giant reed and salt cedar than in areas dominated by native plants. Additionally, these invasive species can eventually out-compete native plant species and displace them; dense aggregations of salt cedar can cause soils to become hypersaline because these plants concentrate salt from water and then excrete it onto the surrounding ground. Caltrans has proposed measures to prevent the spread or introduction of these species, such as minimizing the number of access routes, size of staging areas, and the total area of the activity; restoring disturbed areas with native species. These measures should reduce or eliminate this adverse effect.

Some actions proposed by Caltrans may involve the use of herbicides to control or eliminate non-native plant species. There are currently 66 pesticides are not approved for use in habitat for the California red-legged frog (Center for Biological Diversity v. Johnson and Nastri; case number C-02-1580-JSW). Caltrans has been exempted from this injunction for upland and riparian projects and projects that are 60 feet or more from bodies of water (G. Ruggerone pers. comm. 2007). However because California red-legged frogs may occur in upland habitat up to one mile from suitable aquatic habitat, there is still a potential for California red-legged frogs to be adversely affected by Caltrans' use of herbicides in uplands.

If Caltrans uses herbicides, Glyphosate (formulated as Rodeo<sup>®</sup> or Aquamaster<sup>®</sup>) is probably the most likely herbicide to be used. Glyphosate is the active ingredient in a variety of herbicides including Roundup<sup>®</sup>, Rodeo<sup>®</sup>, Aquamaster<sup>®</sup>, Buccaneer<sup>®</sup>, Glyfos<sup>®</sup>, Honcho<sup>®</sup>, Touchdown<sup>®</sup>, Vision<sup>®</sup>, Duramax<sup>®</sup>, Rattler<sup>®</sup>, and others. Glyphosate is a systemic herbicide that will kill broadleaf and grass species by inhibiting the production of aromatic amino acids in plants and some microorganisms that are necessary to build proteins (Devine et al. 1993). Because many animals lack the synthesis pathway that glyphosate disrupts, it is considered to have low potential to cause toxicity in animals (Devine et al. 1993). Most glyphosate products are formulated to contain surfactants that allow the active ingredients to spread over and penetrate the plant cuticles. Surfactants can be the most toxic portion of a pesticide product. The surfactant associated with many glyphosate products is a polyethoxylated tallowamine (POEA) surfactant.

California red-legged frog eggs, tadpoles, juveniles and adults can be exposed to glyphosate products and POEA surfactants in aquatic habitats through direct overspray of wetlands, drift from treated areas, or contaminated runoff from treated areas. The half-life of glyphosate in pond water ranges between 12 days and 10 weeks (Exttoxnet 1996). Additionally, juvenile and adult California red-legged frogs can also be exposed to glyphosate in terrestrial habitats that have been treated. Glyphosate and POEA readily binds to soil particles and can be degraded by microbes in 7 to 70 days depending on soil conditions (Giesy et al. 2000). The half-life of glyphosate in soil can range from three to 249 days and the POEA surfactant in Roundup has a soil half-life of less than one week (Forest Service 1997).

No information is available regarding the toxicity of glyphosate products specifically to California red-legged frogs. Studies exploring the lethal and sublethal effects of glyphosate products on other amphibians, including similar frog species classified in the same genus as the California red-legged frog (*Rana*) are available but are largely focused on aquatic life stages of the species and formulations of glyphosate that include surfactants. Roundup Original Max<sup>®</sup>, a glyphosate product with POEA surfactant, was demonstrated to be moderately to highly toxic to nine species of frog and toad tadpoles including five *Rana* species: wood frog (*Rana sylvatica*), leopard frog (*Rana pipiens*), Cascades frog (*Rana cascadae*), green frog (*Rana clamitans*), and American bullfrog (*Rana catesbeiana*) (Relyea and Jones 2009). Because the biology of these species is very similar to the California red-legged frog, we assume the effects of POEA surfactants and glyphosate formulations containing POEA, would be the same on the California red-legged frog. Mann and Bidwell (1999) also found evidence of acute toxicity to four Australian frog species exposed to Roundup<sup>®</sup> while the isopropylamine (IPA) salt of glyphosate (the active constituent in Roundup<sup>®</sup>) was found to be non-toxic. The mortality of tadpoles is hypothesized to be caused by the lysis of gill cells from exposure to surfactants (Lajmanovich et al. 2003, Edington et al. 2004) resulting in either to asphyxiation or loss of osmotic stability (Able 1974) indicating that the life stage during which frogs and toads have gills may be particularly vulnerable. Glyphosate products containing POEA surfactants have also been shown to have sub-lethal effects to amphibians including decreased size, increased time to metamorphosis, tail malformations, and gonadal abnormalities (Govindarajulu 2008, Howe et al. 2004).

Several studies suggest that the toxicity of glyphosate products is linked with the surfactant, and not the glyphosate. Howe et al. (2004) compared the toxicity of glyphosate alone, to glyphosate with POEA surfactant, and POEA alone, on green frogs. Results indicated that the toxicity of glyphosate with POEA surfactant was similar to the POEA surfactant alone, which was much greater than glyphosate alone, indicating that the POEA was responsible for the toxic effects. In a comprehensive review of studies involving the effects of glyphosate on amphibians Govindarajulu (2008) concluded that the toxic effect of glyphosate products containing POEA are due to the POEA rather than the active glyphosate ingredient.

These studies indicate that glyphosate products formulated with POEA surfactants will likely kill or injure California red-legged frogs in aquatic habitats, with tadpoles being particularly vulnerable. Because glyphosate and POEA readily bind to soil and sediments, these chemicals may be less available to California red-legged frogs in terrestrial habitats; however, research is needed to determine toxicity mechanisms and thresholds from terrestrial exposure. Based on the literature (Howe 2004, Govindarajulu 2008), adverse effects to California red-legged frogs from the use of glyphosate products can be minimized through the use of products that do not contain a surfactant. Formulations that lack a surfactant include Rodeo and Aquamaster, which have been approved by the Environmental Protection Agency, through their registration process, for aquatic use.

A low-toxicity, non-POEA surfactant that works well with Rodeo<sup>®</sup> or Aquamaster<sup>®</sup> is Agri-Dex<sup>®</sup>, produced by Helena Chemicals. We are not aware of any information regarding the

toxicity of Agri-Dex<sup>®</sup> on amphibians, but based on the data available, Monheit et al. (2004) concluded crop oil-based surfactants (i.e. Agri-Dex<sup>®</sup>) are probably less acutely toxic to fish, aquatic invertebrates and one frog species tested, than some other types of surfactants. The amount of Agri-Dex<sup>®</sup> that resulted in acute toxicity (i.e., >1000 parts per million (ppm) (Helena Chemical Company 2004, Washington State Department of Ecology and Agriculture 2004) was levels of magnitude higher than other surfactants tested including POEA (1.6 to 0.65ppm in Haller and Stocker 2003, Giesy et al. 2000, Folmar et al. 1979). It is important to note that so called crop oil-based surfactants, which suggest these products are vegetable-based, are actually petroleum products (Forest Service 1997). There could be sub-lethal adverse effects or long-term adverse effects to California red-legged frogs, from chronic exposure to these chemicals, that have not been documented. Overall, Agri-Dex<sup>®</sup> may be less toxic than other surfactants, but the use of glyphosate without a surfactant is probably even less toxic to the California red-legged frog.

The protective measures proposed by Caltrans, including surveys prior to the application of herbicides, capture and relocation of California red-legged frogs out of harm's way and restricting the use of herbicides to the non-breeding season (dry summer months) will greatly reduce the potential for injury or mortality of the California red-legged frog as a result of herbicide use.

If water that is impounded during or after work activities creates favorable habitat conditions for non-native predators, such as bullfrogs, crayfish, and centrarchid fishes, California red-legged frogs may suffer abnormally high rates of predation. Additionally, any time California red-legged frogs are concentrated in a small area at unusually high densities, native predators such as herons, egrets, opossums (*Didelphis virginiana*), and raccoons (*Procyon lotor*) may feed on them opportunistically. Finally, if impoundments occupied by California red-legged frogs were to dry out as a result of construction activity, California red-legged frogs may die of desiccation or be eaten by predators as they attempt to find other suitable habitat. Caltrans' proposal to avoid creating impoundments of water within project areas is likely to reduce these effects.

Trash left during or after project activities could attract predators to work sites, which could, in turn, prey on California red-legged frogs. For example, raccoons are attracted to trash and also prey opportunistically on California red-legged frogs. This potential impact will be reduced or avoided by careful control of waste products at all work sites as proposed by Caltrans.

Chytridiomycosis is an infectious disease that affects amphibians worldwide, and is caused by the chytrid fungus. Chytrid fungus is a water-borne fungus that can be spread through direct contact between aquatic animals and by a spore that can move short distances through the water. The fungus only attacks the parts of a frog's skin that have keratin (thickened skin), such as the mouthparts of tadpoles and the tougher parts of adults' skin, such as the toes. The fungus can decimate amphibian populations, causing fungal dermatitis which usually results in death in 1 to 2 weeks, but not before infected animals may have spread the fungal spores to other ponds and streams. Once a pond or waterway has become infected with chytrid fungus, the fungus stays in the water for an undetermined amount of time. Chytrid fungus could be spread if infected

California red-legged frogs are relocated and introduced into areas with healthy California red-legged frogs. It is also possible during the relocation of California red-legged frogs that infected equipment or clothing could introduce chytrid fungus into areas where it did not previously occur. Caltrans proposes to implement the fieldwork code of practice developed by the Declining Amphibian Populations Task Force which should reduce or eliminate the potential for movement of chytrid fungus.

Accidental spills of hazardous materials or careless fueling or oiling of vehicles or equipment could degrade aquatic or upland habitat to a degree where California red-legged frogs are adversely affected or killed. The potential for this impact to occur will be reduced by Caltrans' proposal to require: all refueling, maintenance, and staging of equipment and vehicles to occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat; the monitor to ensure contamination of habitat does not occur during such operations; that a plan is in place for prompt and effective response to any accidental spills; and all workers to be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Workers may intentionally or unintentionally disturb, injure, or kill California red-legged frogs. The potential for this impact to occur will be reduced by Caltrans' proposal to conduct pre-construction training informing workers of the presence and protected status of this species and the measures that are being implemented to protect it during project activities.

Work in streams or in floodplains could cause unusually high levels of siltation downstream. This siltation could smother eggs of the California red-legged frog and alter the quality of habitat to the extent that use by individuals of the species is precluded. Implementing best management practices and reducing the area to be disturbed to the minimum necessary, as proposed by Caltrans, will likely assist in reducing the amount of sediment that is washed downstream, as a result of project activities.

Caltrans has proposed that consultation would be reinitiated if 10 California red-legged frogs or 20 tadpoles are killed or injured in any given year, or if 50 California red-legged frogs are killed or injured in total. However, because of the measures that Caltrans has proposed to reduce the level of injury or mortality, we expect that few California red-legged frogs would be killed or injured in any given year. Additionally, based on reproductive biology the subspecies, loss of 10 California red-legged frogs or 20 tadpoles in any given year, throughout the seven counties covered by this consultation, is not likely to compromise the conservation of the subspecies because this number represents a very small portion of the total breeding individuals assumed to be present in this region.

#### **Critical Habitat for the California Red-legged Frog**

Actions conducted pursuant to this biological opinion may be located within any one of the 19 aforementioned critical habitat units in five counties. The PCEs of critical habitat for the

California red-legged frog include: (1) aquatic breeding habitat, (2) aquatic non-breeding habitat, (3) upland habitat, and (4) dispersal habitat.

The PCEs associated with individual project sites may be permanently or temporarily altered as a result of projects conducted pursuant to this biological opinion. However, we anticipate that the effects of those projects, which must meet the criteria for use of this biological opinion, will be of such a small scale that they will not preclude the PCEs from supporting the essential life history functions of the California red-legged frog. For example, a bridge retrofitted for earthquake safety may have slightly larger footings as a result of the project. Such a minor permanent loss of aquatic habitat is not likely to compromise the ability of a stream to support the aquatic life stages of the California red-legged frog.

The reinitiation thresholds that Caltrans has proposed will ensure that the conservation of the California red-legged frog is not compromised within the affected critical habitat units. These upper limits for permanent loss of aquatic, upland, and dispersal habitat (20 acres in any given year or 100 acres in total) and upland habitat (20 acres in any given year or 100 acres in total), and temporary disturbance (100 in any given year, or 500 acre total over the life of the biological opinion) would be spread across the 19 critical habitat units, in which the activities covered by this biological opinion would be implemented. Given the wide distribution of a relatively minor amount of disturbance or loss of aquatic, upland, and dispersal habitat, and the high potential that most disturbance would recover within a few years, we expect the PCEs in each of the affected critical habitat units to continue to provide the life history functions essential to the conservation of the California red-legged frog.

The protective measures included in the Description of the Proposed Action section of this biological opinion would minimize adverse effects to the PCEs of critical habitat for the California red-legged frog. Based on the suitability criteria to qualify for use of this biological opinion, and the protective measures Caltrans would implement, we anticipate that any effects to critical habitat for the California red-legged frog would be temporary or minor. We do not expect such minor or temporary effects to preclude a critical habitat unit from supporting the PCEs and associated life history functions (i.e., reproduction, dispersal, feeding, and sheltering) of critical habitat for the California red-legged frog.

#### CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

At this time, we do not know the specific locations of future projects that may be conducted pursuant to this biological opinion, other than that they would be sited within the Caltrans rights-of-way in San Benito, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties. We

are unaware of any future non-Federal actions that are reasonably certain to occur within the action area.

#### CONCLUSION

After reviewing the current status of the California red-legged frog, its critical habitat, the environmental baseline, the effects of the action, projects that could be authorized under the provisions of this programmatic biological opinion, and the cumulative effects, it is the Service's biological opinion that the Caltrans' proposed action is not likely to jeopardize the continued existence of the California red-legged frog or destroy or adversely modify its critical habitat.

We have reached this conclusion because:

1. The notification process described previously allows us to review each proposed action to determine if it meets falls within the scope of this programmatic biological opinion, and to ensure the effects are not likely to be outside of the limited levels we anticipate;
2. Few California red-legged frogs are likely to be killed or injured during project activities;
3. Caltrans has established a threshold that will trigger reinitiation of formal consultation (based on a finite number of California red-legged frogs that would be injured or killed), which would not result in population level impacts to this species;
4. In comparison with the amount of critical habitat available to the California red-legged frog in San Benito, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties, a relatively small amount of critical habitat would be permanently lost within each critical habitat unit and relative to the entire critical habitat designation;
5. Although we anticipate that some minor or temporary adverse effects to the PCEs in each of the 19 affected critical habitat units may occur, we do not anticipate effects of this nature to preclude those PCEs from providing the essential life history functions (i.e., reproduction, dispersal, feeding, and sheltering) necessary to ensure the conservation of the California red-legged frog because Caltrans has established a threshold of affected acres of habitat types that comprise the PCEs, that will trigger reinitiation of formal consultation; and
6. Caltrans has proposed numerous measures to reduce the adverse effects of the proposed activities on the California red-legged frog and its critical habitat.

#### INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat

modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of an incidental take statement contained in a biological opinion.

The measures described below are non-discretionary and Caltrans must make them binding conditions of any contract, permit, or funding to contractors or County Governments for the exemption in 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activities covered by this incidental take statement. If Caltrans fails to adhere to the terms and conditions of the incidental take statement, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

This biological opinion evaluates the effects of a certain scope and scale of actions that Caltrans may undertake in San Benito, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties on the California red-legged frog, and its critical habitat. Because of the protective measures that Caltrans has proposed, we expect that few California red-legged frogs would be killed in any given year. All California red-legged frogs found within project areas that meet the suitability criteria described in this biological opinion may be captured and relocated. However, because capture and relocation is intended to reduce the potential for injury or mortality, and Caltrans will use biologists experienced in the capture and handling of California red-legged frogs, we anticipate that few, if any, California red-legged frogs will be injured or killed as a result of capture and relocation efforts. Finally, there is a potential for a number of California red-legged frogs to be taken as a result of exposure to herbicides, during which some may be killed or injured. The protective measures Caltrans has proposed, including conducting surveys prior to the application of herbicides, capture and relocating California red-legged frogs out of harm's way, and restricting the use of herbicides to the non-breeding season (dry summer months) of the California red-legged frog will greatly reduce the potential for injury or mortality as a result of herbicide use.

Based on the triggers for reinitiation of formal consultation that Caltrans has identified in their proposed action, we anticipate that no more than 10 adult or subadult California red-legged frogs, 10 egg masses, or 20 tadpoles would be injured or killed in a given year, or 50 California red-legged frogs during the life of this biological opinion, will be injured or killed as a result of the proposed action.

Incidental take of California red-legged frog adults, subadults, or tadpoles may be difficult to detect for the following reasons: (1) the California red-legged frog is generally difficult to detect

due to its small body size; (2) finding a dead or impaired specimen is unlikely; (3) losses may be masked by seasonal fluctuations in hydrology unrelated to the project. However, the maximum number of individuals proposed to be killed or injured each year is a relatively small portion of the population of California red-legged frogs in the action area. We do not expect the loss of these few California red-legged frog adults, subadults, egg masses, or tadpoles to compromise the ability of the species to survive and recover. Given the reproductive biology of the species, described in the Status of the Species section of this biological opinion, this number also represents a very small portion of the total number of individuals assumed to be present throughout the sub species' range. Given the wide distribution of a relatively minor amount of disturbance or temporary loss of habitat, the high potential that most disturbed areas would recover within a few years, and the ability of the California red-legged frog to survive in varying conditions, we expect the overall effect on the habitat of the California red-legged frog by the proposed activities to be minor.

This biological opinion does not exempt any activity from the prohibitions against take contained in section 9 of the Act that is not incidental to the action as described in this biological opinion. Take that occurs outside of demarcated work areas or from any activity not described in this biological opinion is not exempted from the prohibitions against take described in section 9 of the Act.

#### REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the take of California red-legged frogs:

1. Biologists must be authorized by the Service before they survey for, capture, and relocate California red-legged frogs from work areas.
2. Caltrans must further minimize the potential for transmitting Chytrid fungus to new locations.

The Service's evaluation of the effects of the proposed action includes consideration of the measures to minimize the adverse effects of the proposed action on the California red-legged frog that were developed by Caltrans and the Service and repeated in the Description of the Proposed Action portion of this biological opinion. Any subsequent changes in these measures proposed by Caltrans may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to supplement the protective measures that were proposed by Caltrans as part of the proposed action.

## TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, Caltrans must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. The following terms and conditions implement reasonable and prudent measure 1:
  - 1.1 Chuck Cesena, Mitch Dallas, Tom Edell, Jennifer Moonjian, Morgan Robertson, Lisa Schicker, Nancy Siepel, Jim Walth, Lisa Schicker, Cathy Stettler, and Sarah Paulson are authorized to capture, handle, relocate, survey and monitor for California red-legged frogs. Paul Holmes is authorized to independently survey and monitor for California red-legged frogs, and may capture, handle, and relocate California red-legged frogs under the direct supervision of the biologists authorized above. If Caltrans wishes to use additional biologists, it must provide their qualifications to the Service at least 30 days before they are to begin work. Additional biologists must not capture, handle, or monitor California red-legged frogs (unless under the direct, on-site supervision of the biologists authorized above) without written approval from the Service.
  - 1.2 Prior to the onset of grading and construction activities, Service-approved biologists must identify appropriate areas to receive translocated California red-legged frog adults and tadpoles in the action area. These areas must be in proximity to the capture site, outside of any area likely to be adversely impacted by construction activities, provide suitable habitat, and be free of exotic predatory species (e.g., bullfrogs, crayfish) to the best of the Service-approved biologist's knowledge.
  - 1.3 If the affected aquatic habitat includes a creek or river system, the relocation site must be within the same drainage.
  - 1.4 If the affected aquatic habitat includes a pond or other isolated water body, Caltrans must receive the Services approval, in writing, prior to relocating any California red-legged frogs.

If Chytrid fungus is known to occur in the drainage or pond where the proposed action would occur, California red-legged frogs must not be relocated into different drainages or ponds, without prior written approval from the Service.

## REPORTING REQUIREMENTS

In addition to the pre-project notification, Caltrans must submit an annual list of projects they conducted under this programmatic concurrence and programmatic biological opinion, as described in the Description of the Proposed Action section of this document. In addition, the

enclosed Project Completion form describes the information that Caltrans must provide to the Ventura Fish and Wildlife Office upon the completion of each specific project conducted under this programmatic concurrence and programmatic biological opinion.

#### DISPOSITION OF DEAD OR INJURED SPECIMENS

Within 3 days of locating any dead or injured California red-legged frogs, Caltrans must notify the Ventura Fish and Wildlife Office by telephone [(805) 644-1766] and in writing (2493 Portola Road, Suite B, Ventura, California 93003). The report must include the date, time, and location of the carcass, a photograph, cause of death, if known, and any other pertinent information.

Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Should any injured California red-legged frogs survive, the Service must be contacted regarding their final disposition.

The remains of California red-legged frogs found in San Benito, Santa Cruz, or Monterey Counties must be placed with the California Academy of Sciences Herpetology Department (Contact: Jens Vindum, Senior Collections Manager, California Academy of Sciences Herpetology Department (herpetology@calacademy.org), 55 Music Concourse Drive, San Francisco, California 94118).

The remains of California red-legged frogs found in San Luis Obispo, Santa Barbara, Ventura, or Los Angeles Counties must be placed with the Santa Barbara Natural History Museum (Contact: Paul Collins, Santa Barbara Natural History Museum, Vertebrate Zoology Department, 2559 Puesta Del Sol, Santa Barbara, California 93460, (805) 682-4711, extension 321). Caltrans must make arrangements regarding proper disposition of potential museum specimens prior to implementation of any actions conducted pursuant to this biological opinion.

#### CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that Caltrans expand its regional planning efforts for the California red-legged frog to further facilitate an ecosystem approach to conservation while attempting to recognize, at an early stage of planning, where conflicts between conservation of the California red-legged frog and future transportation projects may arise.
2. We encourage Caltrans, biological consultants, and/or other researchers to participate in research on California red-legged frogs. Research topics could include, but are not limited to: metapopulation dynamics, dispersal and migration studies, and the effects of

predation and habitat quality on California red-legged frogs. We encourage Caltrans to coordinate with the Service and the California Department of Fish and Game to develop research proposals under the Service's Endangered Species Conservation Grants (Section 6 Traditional) Program.

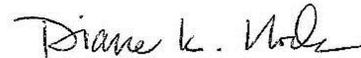
The Service requests notification of the implementation of any conservation recommendations, so we may be kept informed of actions that minimize or avoid adverse effects to or benefit the California red-legged frog and its habitat.

#### REINITIATION NOTICE

This concludes formal consultation on projects funded under the Federal Highway Administration's Federal Aid program that are likely to adversely affect the California red-legged frog, its critical habitat, or its proposed critical habitat. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law), and if (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on listed species or critical habitat that was not considered in this opinion, or (4) a new species is listed or critical habitat is designated that may be affected by the action.

If you have any questions, please contact Steve Kirkland of my staff at (805) 644-1766, extension 267.

Sincerely,



Diane K. Noda  
Field Supervisor

Enclosures  
Caltrans Project Completion Report  
The Declining Amphibian Populations Task Force Fieldwork Code of Practice

Project	Biological Opinion	Permanent Aquatic	Permanent Upland	Temp Aquatic	Temp Upland	Critical Habitat
Picachio Road Bridge	2006	.5	0.18		.39	no
Bob Jones Bike	2007	0	0		0.39	no
Chittendon Pass	2006	0	0.27	0	0.25	no
Harkin Slough Br. Over Struve slough	2006	0.004	0.12	.08	1.16	no
Harkin Slough Br. Over Watsonville Slough	2004	0.25	0.22	0	0.71	no
Cienega Rd. Bridge	2006	0.404	0.404	0	1.19	no
San Benito River Bridge	2006	0	0	0.002	0.159	no
Salinas Rd. Interchange	2006	0.9	0.09	0	0.43	no
Pfeifer Big Sur Left Turn Lane	2006	0.002	0.26	0.002	1.2	no
Hwy 101 widening-SR 135-166	2006	0	0.22	0.25	0	no
San Simeon Creek Bridges	2006	0.3	1.8	0.4	0.25	yes*
San Luis Bay Drive	2005	0	0.25	0.005	3	no
Hollister Ave. Interchange	2005	0	0.21	0	0.084	no
Lone Tree Rd. Bridge	2005	0.005	0.19	0.005	0.27	no
Breaker Point CURE	2004	0.06	0	0.006	0	no
Jalama Creek Bridge	2004	0	0	0.24	0	yes*
Murphy Rd. Bridge	2004	0	0	0	0.22	no
Paulsen-Whiting Bridge	2004	0	0.09	0.06	0.03	no
Hollister Road Bridge	2004	0.04	0.03	0.16	0.3	yes(proposed)
Amesti Road Repair (lost funding)	2003	0.04	0.03	0.16	0.323	no
Main Street Bridge Replacement, Cambria	2007	0.19	1.13	.03	0.03	yes*
Harmony Left turn lane	2007	0.1	0.8	0.029	0.28	no
Gilardi Road Bridge Replacement	2009	0	0.1	0.035	0.333	yes*
Los Osos Valley Road Widening	2008	0.35	1.75	0.5	4.2	yes*
California Coastal Trail Gaviota Segment	2009	0	0.15	0	0.5	yes*
Guadalupe Ditches Project	2010	0	0	3.42	0	no

Appendix I. Amount of California red-legged frog habitat anticipated to be permanently lost and temporarily disturbed.  
\*Construction not completed and project within March 17, 2010 critical habitat designation

Project	Biological Opinion	Construction completed	Perm. Aquatic	Temp. Aquatic	Perm. Upland	Temp. Upland
Picachio Road Bridge	2006	2007	Not reported	Not reported	Not reported	Not reported
Bob Jones Bike Path #3	2007	2008	None reported	None reported	None reported	0.138
Chittendon Pass	2006	2009	None reported	Not reported	Not reported	Not reported
Harkin Slough Road over Struve slough	2006	2008	0.004	0.61	0.44	0.71
Harkin Slough Road over Watsonville Slough	2004	2007	0.007	2.88	0	0
Cienega Rd. Bridge	2006	2007	0.032	None reported	0.404	0.159
Pfiefer Big Sur Left Turn Lane	2006	2009	Not reported	Not reported	Not reported	Not reported
Lone Tree Rd. Bridge	2005	2008	0.005	0.005	0.19	None reported
Breaker Point CURE	2004	2006	0.138	0.219	(Included in acres of riparian)	1.33
Murphy Rd. Bridge	2004	2006	Not reported	Not reported	Not reported	Not reported
Paulsen-Whiting Bridge	2004	2006	Not reported	Not reported	Not reported	0.3
San Luis Bay Drive Bridge	2005	2007	0.002	0.034	0.238	0.562
Hollister Road Bridge	2004	2009	0.033	0.15	0.20	0.12
Harmony Left turn lane	2007	2008	0.37	.014	0.016	0.10
San Benito River Bridge Seismic Retrofit	2006	2007	Not reported	Not reported	Not reported	Not reported

Appendix 2. Amount of California red-legged frog habitat permanently lost and temporarily disturbed as a result of the completed project.

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PERSONAL COMMUNICATIONS

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Project Completion Report for Caltrans projects that may affect California red-legged frogs

Caltrans must ensure that this form is completed or that the requested information is provided in a written report upon completion of the project and restoration activities.

Mail completed form or report to: U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003

1.	Project title and location:
2.	Project Completion Dates A. Construction: B. Restoration:
3.	Type of actions that occurred:
4.	
5.	
6.	
7.	
8.	
9.	Habitat type and number of acres affected (e.g., upland, riparian)
10.	
11.	
12.	
13.	
14.	
15.	Linear feet of work in a stream:
16.	How the site was restored and a description of the area after completion of the action:
17.	
18.	
19.	
20.	
21.	
22.	If no restoration occurred, the justification for not conducting this work:
23.	
24.	
25.	
26.	
27.	
28.	Which measures were employed to protect California red-legged frogs:
29.	
30.	
31.	
32.	
33.	
34.	The number of California red-legged frogs taken and the form of take:
35.	
36.	
37.	
38.	
39.	
I.	The number of California red-legged frogs removed from work areas to nearby undisturbed habitat and the location of that habitat:
II.	
III.	
IV.	
V.	
VI.	Recommendations of any modifications to future measures to enhance protection of the California red-legged frog while simplifying compliance with the Endangered Species Act:
VII.	
VIII.	
IX.	

### **The Declining Amphibian Populations Task Force Fieldwork Code of Practice**

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each study site.
2. Scrub boots, nets, traps, and other types of equipment used in the aquatic environment with 70 percent ethanol solution or a bleach solution of one-half to one cup of bleach in one gallon of water and rinse clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond, wetland, or riparian area.
3. In remote locations, clean all equipment with 70 percent ethanol or a bleach solution, and rinse with sterile water upon return to the lab or a "base camp." Elsewhere, when laundry facilities are available, remove nets from poles and wash (in a protective mesh laundry bag) with bleach on a "delicate" cycle.
4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable vinyl<sup>1</sup> gloves and change them between handling each animal. Dedicate separate sets of nets, boots, traps, and other equipment to each site being visited. Clean and store them separately at the end of each field day.
5. Safely dispose of used cleaning materials and fluids. Do not dispose of cleaning materials and fluids in or near ponds, wetland, and riparian areas; if necessary, return them to the lab for proper disposal. Safely dispose of used disposable gloves in sealed bags.
6. When amphibians are collected, ensure the separation of animals from different sites and take great care to avoid indirect contact (e.g., via handling or reuse of containers) between them or with other captive animals. Do not expose animals to unsterilized vegetation or soils which have been taken from other sites. Always use disinfected and disposable husbandry equipment.
7. If a dead amphibian is found, place it in a sealable plastic bag and refrigerate (do not freeze). If any captured live amphibians appear unhealthy, retain each animal in a separate plastic container that allows air circulation and provides a moist environment from a damp sponge or sphagnum moss. For each collection of live or dead animals, record the date and time collected, location of collection, name of collector, condition of animal upon collection, and any other relevant environmental conditions observed at the time of collection. Immediately contact the Ventura Fish and Wildlife Office at (805) 644-1766 for further instructions.

The Fieldwork Code of Practice has been produced by the Declining Amphibian Populations Task Force with valuable assistance from Begona Arano, Andrew Cunningham, Tom Langton, Jamie Reaser, and Stan Sessions.

For further information on this Code, or on the Declining Amphibian Populations Task Force, contact John Wilkinson, Biology Department, the Open University, Walton Hall, Milton Keynes, MK7 6AA, UK. Email: [DAPTF@open.ac.uk](mailto:DAPTF@open.ac.uk). Fax: +44 (0) 1908-65416

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<sup>1</sup> Do not use latex gloves. Latex is toxic to amphibians.

## **List of Technical Studies**

Air Quality Report Memorandum, January 10, 2014

Noise Study Report Addendum, January 10, 2014

Water Quality Assessment Report, January 9, 2014

Natural Environment Study, May, 2014

Natural Environment Study Addendum, April 2015

Location Hydraulic Study, November 6, 2013

River Geomorphology Study, August 2012

Preliminary Supplemental Geotechnical Report, November 7, 2012

Cultural Resource Review Memo, December 17, 2013

Hazardous Waste Initial Site Assessment, August 8, 2013

Visual Impact Study, December 2013

Paleontology Assessment, July 31, 2013