

Route 1/9 Intersection Improvement Project

City of Santa Cruz, Santa Cruz County, California

05-SCr-1 PM 17.5/17.7 and 05-SCr-9 PM 0.0/0.2

EA 05-465800

Project ID 05-0002-0105

Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation

May 2014



General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of the proposed project in Santa Cruz County, California. The document describes why the project is being proposed, the existing environment that could be affected by the project, potential project impacts, and proposed avoidance, minimization, and/or mitigation measures. This document has been prepared in coordination with the City of Santa Cruz and in compliance with the California Environmental Quality Act (CEQA) and CEQA Guidelines (Title 14 California Code of Regulations section 15000 et seq).

What should you do?

- Please read this document. Additional copies of this document as well as the technical studies are available for review at the Caltrans district office at 50 Higuera Street, San Luis Obispo, California 93401 and at the City of Santa Cruz Central Library at 224 Church Street, Santa Cruz, California 95060-3873. This document can also be accessed electronically at the City of Santa Cruz website (www.cityofsantacruz.com) under “Latest News”, and at the Caltrans District 5 website (www.dot.ca.gov/dist05/projects) under “Santa Cruz County”.
- We welcome your comments. If you have any concerns about the proposed project, please send your written comments to Caltrans by **July 1, 2014**. Submit comments via U.S. mail to Caltrans at the following address or via email to matt.c.fowler@dot.ca.gov.

Matt Fowler, Senior Environmental Planner
District 5 Environmental Analysis Branch
California Department of Transportation
50 Higuera Street
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What happens next?

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

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Matt Fowler, Caltrans District 5 Environmental Analysis Branch, 50 Higuera Street, San Luis Obispo, California, 93401; (805) 542-4603 Voice, or use the California Relay Service TTY number, 1-800-735-2922.

Improve traffic operations at the Route 1/9 intersection in the City of Santa Cruz

**INITIAL STUDY
with Proposed Mitigated Negative Declaration**

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

THE STATE OF CALIFORNIA
Department of Transportation

05/13/14

Date of Approval



Matt Fowler

Senior Environmental Planner
District 5 Analysis Branch
California Department of Transportation

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Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to widen the intersection at Route 1 and Route 9 in the City of Santa Cruz in Santa Cruz County, California, to accommodate additional vehicle turn lanes, bicycle lanes, and shoulders.

Determination

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

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

- The project would have no effect on farmlands, forestlands, mineral resources, community cohesion, cultural resources, schools, or parks/recreational facilities since these resources or features are not present in the project area.
- The project would have no significant effect related to hazardous materials, air quality, geology and soils, hydrology, water quality, land uses, noise, growth, displacement of people, traffic and transportation, utilities, and emergency services with incorporation of the project features and avoidance and minimization measures identified in the Initial Study for these environmental resource topics, as applicable.

In addition, the proposed project would have no significantly adverse effect on natural communities, special-status species, or visual resources because the following mitigation measures would reduce potential effects to insignificance:

- To mitigate impacts on natural habitats, barrier fencing around sensitive habitat areas would be installed and a U.S. Fish and Wildlife Service-approved biologist would be retained to conduct environmental awareness training for the construction crew and to monitor construction activities in and adjacent to sensitive habitats.
- To mitigate impacts on riparian habitat, the project would avoid and minimize disturbance to riparian habitat, implement Best Management Practices to maintain water quality, and include replanting of disturbed riparian areas with native species.

Negative Declaration

- To mitigate impacts on the channel in the Arroyo de San Pedro Regalado, portions of the creek channel temporarily disturbed would be restored to original grade following construction, and the riparian area along the arroyo would be replanted.
- To mitigate impacts to the California red-legged frog, the project would include conducting pre-construction surveys 48 hours before construction begins, having an onsite biological monitor, and using water quality protection measures. Construction would also be scheduled during the time of year when impacts to the California red-legged frog are minimal. To protect listed fish species, in-water construction activities would be limited to between July 1 and October 1, and the construction area would be isolated from the flow in the Arroyo de San Pedro Regalado drainage before doing any construction activities in the arroyo.
- To mitigate impacts on the white-tailed kite and other non-special-status migratory birds, vegetation removal associated with construction would be restricted to the non-breeding season (October 1–January 31) to the extent feasible and construction activities would begin before the nesting season (February 1–September 30). If construction cannot begin before this time, nesting surveys would be conducted and a no-disturbance buffer would be established if an active nest is found.
- To mitigate impacts on foothill yellow-legged frog and western pond turtle, pre-construction surveys would be conducted and frogs and/or turtles would be relocated outside the construction area.
- To mitigate visual resource impacts, retaining walls would be built with aesthetic treatments to the extent feasible, and loss of landscaping would be replaced where space allows or owners would be compensated for their loss of landscaping. The River Street gateway sign would be moved to the reconstructed median on River Street.

Senior Environmental Planner
District 5 Environmental Analysis Branch
California Department of Transportation

Date

Table of Contents

Proposed Mitigated Negative Declaration.....	iii
Table of Contents	v
List of Figures.....	vii
List of Tables.....	viii
List of Abbreviated Terms.....	ix
Chapter 1 Proposed Project	1
1.1 Introduction.....	1
1.2 Purpose and Need	2
1.2.1 Purpose	2
1.2.2 Need.....	2
1.3 Project Description	9
1.4 Alternatives.....	9
1.4.1 Proposed Build Alternative	9
1.4.2 No-Project Alternative.....	14
1.4.3 Alternatives Considered but Eliminated from Further Consideration.....	14
1.5 Permits and Approvals Needed.....	15
Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures	17
2.1 Human Environment.....	18
2.1.1 Land Use.....	18
2.1.2 Community Impacts	27
2.1.3 Utilities/Emergency Services	31
2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities	32
2.1.5 Visual/Aesthetics	50
2.2 Physical Environment	60
2.2.1 Hydrology and Floodplain.....	60
2.2.2 Water Quality and Storm Water Runoff.....	63
2.2.3 Geology/Soils/Seismic/Topography	68
2.2.4 Hazardous Waste or Materials.....	75
2.2.5 Air Quality	78
Climate Change	88
2.2.6 Noise and Vibration.....	88
2.3 Biological Environment.....	92
2.3.1 Natural Communities.....	92
2.3.2 Wetlands and Other Waters.....	98
2.3.3 Plant Species.....	100
2.3.4 Animal Species.....	101
2.3.5 Threatened and Endangered Species	103
2.4 Climate Change.....	110
Chapter 3 Comments and Coordination	131
Chapter 4 List of Preparers.....	133
4.1 Caltrans	133
4.2 City of Santa Cruz.....	135

4.3	Consultant Team	135
4.3.1	BKF	135
4.3.2	Parikh Consultants, Inc.....	136
4.3.3	Geocon Consultants, Inc.....	136
4.3.4	ICF International	136
Appendix A	California Environmental Quality Act Checklist.....	139
Appendix B	Title VI Policy Statement.....	149
Appendix C	Summary of Relocation Benefits	151
Appendix D	Minimization and/or Mitigation Summary	193
Appendix E	U.S. Fish and Wildlife Service Correspondence.....	211
Appendix F	National Marine Fisheries Service Correspondence	309
Appendix G	State Historic Preservation Officer Correspondence	321
Appendix H	2014 Species List	323
	List of Technical Studies that are Bound Separately.....	331

List of Figures

Figure 1-1 Project Vicinity Map.....	3
Figure 1-2 Project Location Map.....	5
Figure 1-3 Project Area Map	7
Figure 2-1 Existing Land Uses in Project Vicinity	19
Figure 2-2 General Plan Land Use Designations.....	21
Figure 2-3 Traffic Study Area and Study Intersections	35
Figure 2-4 San Lorenzo River Multipurpose Path.....	39
Figure 2-5 Location Map of Representative Photos	51
Figure 2-6 Representative Photos (1 and 2).....	53
Figure 2-6 Representative Photos (3 and 4).....	54
Figure 2-6 Representative Photos (5 and 6).....	55
Figure 2-6 Representative Photos (7 and 8).....	56
Figure 2-7 Flood Rate Insurance Map for the Project Area.....	61
Figure 2-8 Geology of Project Area.....	71
Figure 2-9 Faults in Project Area.....	73
Figure 2-10 Temporary and Permanent Impacts to Natural Communities.....	93
Figure 2-11 California Greenhouse Gas Forecast.....	115
Figure 2-12 Possible Effect of Traffic Operation Strategies in Reducing On-Road CO ₂ Emission.....	116
Figure 2-13 Cascade of Uncertainties.....	121
Figure 2-14 Mobility Pyramid	123

List of Tables

Table 2-1 Planned Development in the Vicinity of the Proposed Project, as of December 2011	24
Table 2-2 Total Area Converted under the Proposed Project	24
Table 2-3 Proposed Right-of-Way Acquisition and Temporary Construction Easements	29
Table 2-4 Baseline Intersection Delay	33
Table 2-5 Year 2030 Delay for No-Project and Project Conditions	41
Table 2-6 Demand Versus Peak Hour Volume Served	46
Table 2-7 Total System Delay and Network Performance	47
Table 2-8 Ambient Air Quality Standards Applicable in California and the Attainment Status of Santa Cruz County	82
Table 2-9 Monterey Bay Unified Air Pollution Control District Thresholds of Significance.....	85
Table 2-10 Operational Emission Estimates.....	86
Table 2-11 Construction Emission Estimates (pounds per day).....	87
Table 2-12 Construction Equipment Noise Emission Levels	90
Table 2-13 Estimated Construction Noise in the Vicinity of an Active Construction Site	91
Table 2-14 Total Area of Natural Communities in the Study Area.....	92
Table 2-15 Operational Greenhouse Gas Emission Estimates Based on Peak-Hour Traffic Estimates (metric tons per year)	117
Table 2-16 Average Required Fuel Economy(Miles Per Gallon) by Alternative ...	119
Table 2-17 Climate Change/CO ₂ Reduction Strategies	125

List of Abbreviated Terms

AB 32	Assembly Bill 32
ARB	California Air Resources Board
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂	carbon dioxide
dBA	A-weighted decibels
FCAA	Federal Clean Air Act
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHGs	greenhouse gases
H ₂ S	hydrogen sulfide
HFC-134a	s, s, s, 2 –tetrafluoroethane
HFC-152a	difluoroethane
HFC-23	fluoroform
L _{dn}	day-night sound level
L _{eq}	equivalent sound level
M _{max}	Maximum Moment Magnitude
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO ₂	nitrogen dioxide
O ₃	ozone
Pb	lead
PM	post mile
PM	particulate matter
PM10	particles of 10 micrometers or smaller
PM2.5	particles of 2.5 micrometers and smaller
Resources Agency	California Natural Resources Agency
Route 1/9 intersection	intersection at Route 1 and Route 9/River Street
RTPs	Regional Transportation Plans
SB 375	Senate Bill 375
SIP	State Implementation Plan
SO ₂	sulfur dioxide
TIPs	Federal Transportation Improvement Programs
U.S. EPA	U.S. Environmental Protection Agency
USDOT	U.S. Department of Transportation

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to make improvements to the intersection at Route 1 and Route 9/River Street (called the Route 1/9 intersection in this document) in the City of Santa Cruz in Santa Cruz County, California. These roadways are under Caltrans' jurisdiction. The City of Santa Cruz is the project proponent. Figure 1-1 shows the regional vicinity of the project location, and Figure 1-2 shows the project location in the City of Santa Cruz.

The project would improve traffic operations at the existing Route 1/9 intersection by widening the existing intersection to accommodate additional vehicle turn lanes, bicycle lanes, and shoulders (see Figure 1-3). The additional turning lanes would improve traffic operations and better accommodate existing and projected traffic volumes. The project would be funded by three potential funding sources: local traffic impact fees, State Transportation Improvement Program funds, and Federal Transportation Improvement Program funds.

The project is listed in the recently updated 2014 Regional Transportation Plan prepared by the Santa Cruz County Regional Transportation Commission in coordination with the Association of Monterey Bay Area Governments and the Transportation Agency for Monterey County. The final 2014 Regional Transportation Plan is scheduled to be adopted in June 2014. The project is also listed in the 2012 Santa Cruz County Regional Transportation Improvement Program, adopted on December 5, 2013.

Because federal funds may be used, the project is also subject to the requirements of the National Environmental Policy Act (NEPA). However, it has been determined that the project falls under a Categorical Exclusion. Therefore, this document only pertains to the California Environmental Quality Act (CEQA).

1.2 Purpose and Need

1.2.1 Purpose

The purposes of the project are to:

- Improve traffic operations at the Route 1/9 intersection, and
- Better accommodate existing and projected traffic volumes at the Route 1/9 intersection.

1.2.2 Need

Improve Traffic Operations

During the morning peak hour, long vehicle queues—lines of backed up traffic—have been observed on Route 1 at the Route 1/9 intersection in both the east and west directions extending beyond both the left- and right-turn lanes and blocking access to the turn lanes; these queues typically are able to clear the intersection during one green light phase. During the afternoon peak, a similar queuing has been observed on Route 1. However, the two southbound Route 9 left-turn queues frequently spill out of the turn lanes and queue back to Fern Street and occasionally as far as back as Encinal Street (see Figure 1-3). The queues in these lanes cleared the intersection in a single green light phase, but the remaining queues of vehicles outside the lanes were unable to clear the intersection. The northbound River Street through movement often backs up to Potrero Street to the south. The eastbound River Street left-turn lane does not clear in one signal phase, and the northbound Route 9 accepting lane often backs up into the intersection.

Better Accommodate Existing and Projected Traffic Volumes

With general growth in the project area, development of the Harvey West area on Route 9 north of the intersection, and continued growth of the University of California at Santa Cruz campus, increased trip generation will exacerbate an already congested Route 1/9 intersection. The University of California at Santa Cruz's Draft Long Range Development Plan (2005–2020) estimates a future population of 19,500 full-time students. The recent construction of the Rebele Family Shelter on the corner of Route 9/Coral Street will also contribute to increasing congestion at the Route 1/9 intersection. With the continued development of planned industrial and office space and increased university-related traffic, the operation of the Route 1/9 intersection will continue to deteriorate.

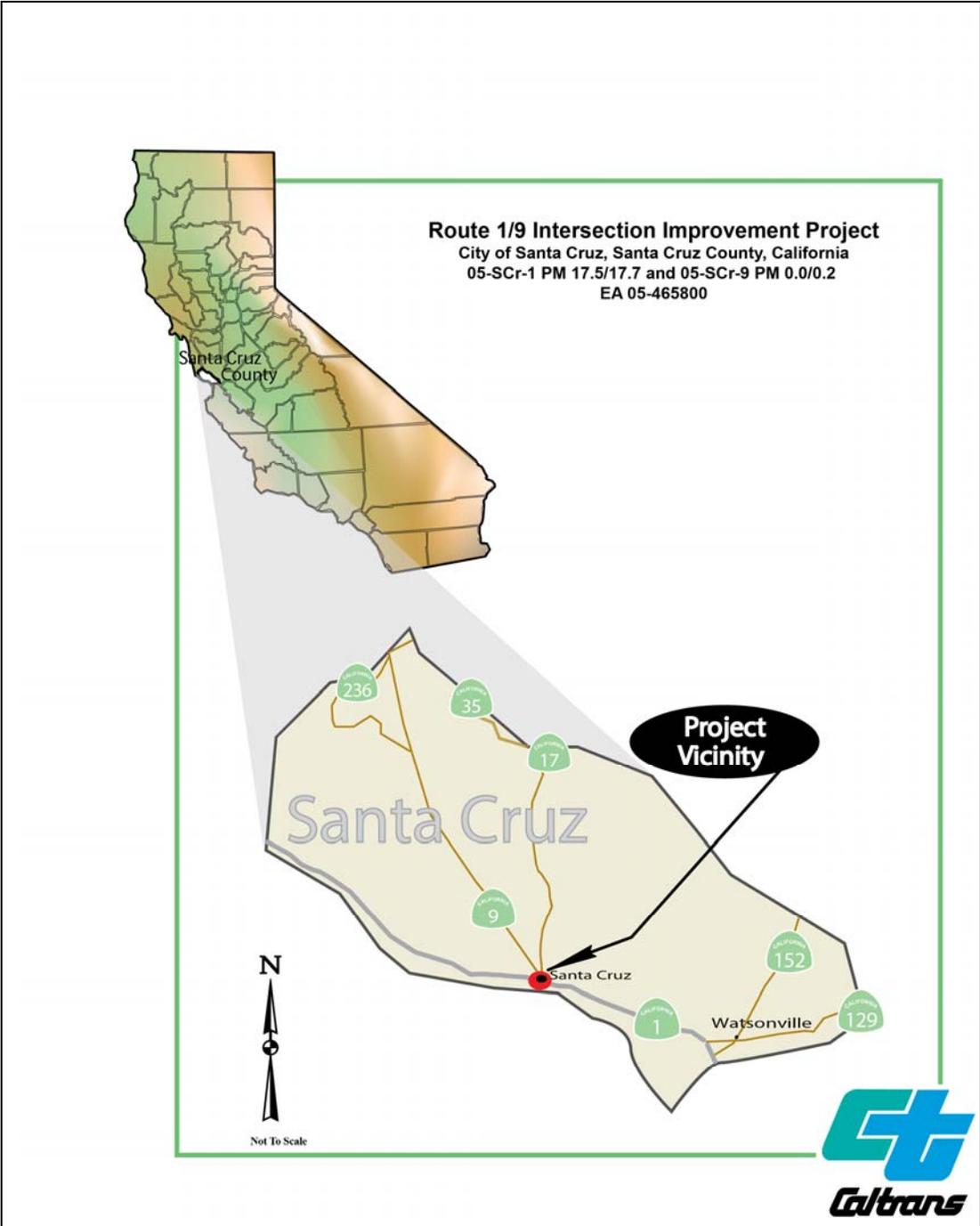


Figure 1-1 Project Vicinity Map

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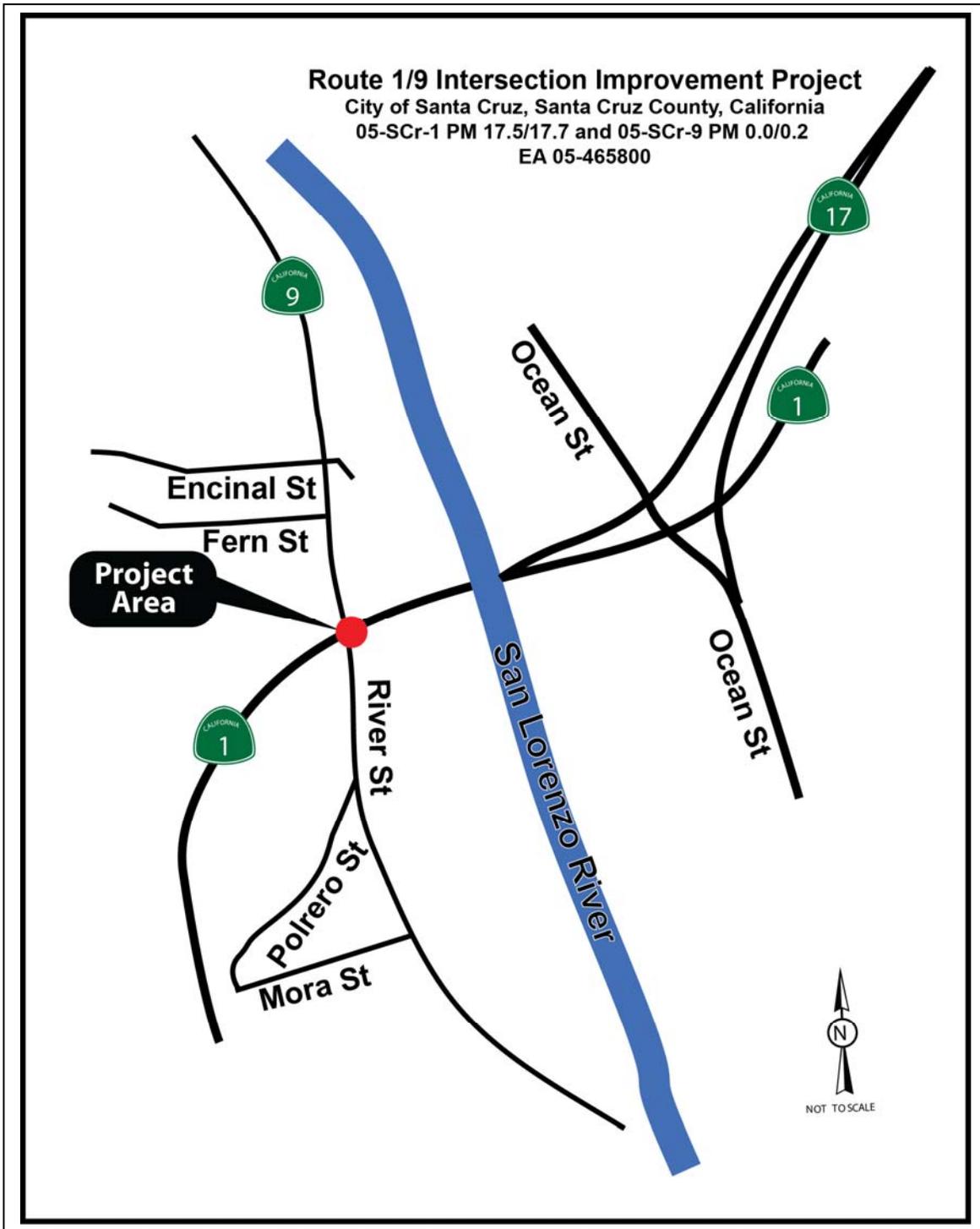


Figure 1-2 Project Location Map

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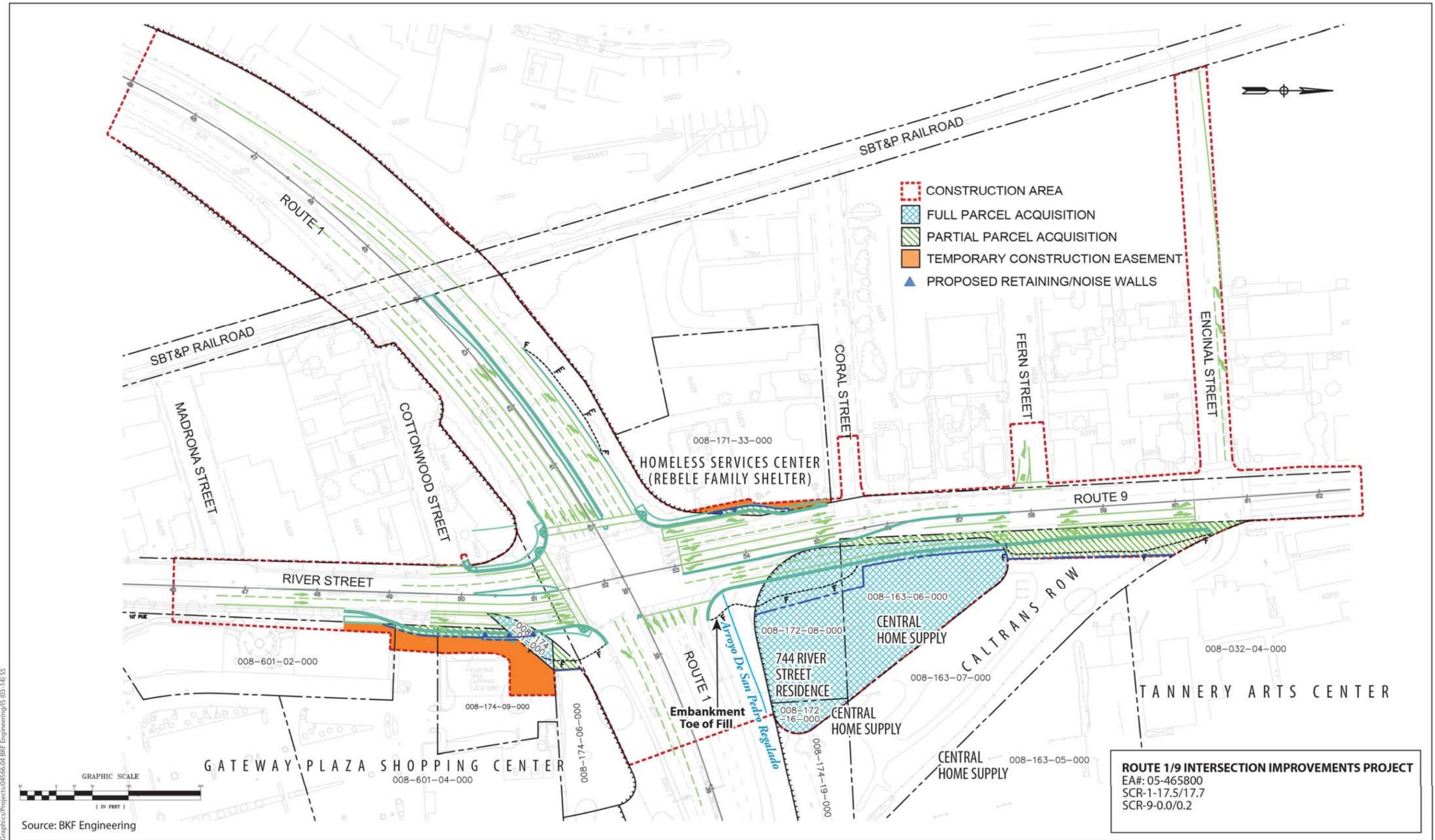


Figure 1-3 Project Area Map

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1.3 Project Description

Caltrans proposes to widen the Route 1/9 intersection by adding additional turn lanes, bicycle lanes, and shoulders to address the existing long vehicle queues that occur there. Due to the limited right-of-way that is available at this intersection, one design alternative is proposed, as described in Section 1.4.

The Route 1/9 intersection is located in the City of Santa Cruz in Santa Cruz County (Figure 1-2). The existing intersection, with traffic signals for all movements through the intersection, has the following lane configurations:

- Route 9 southbound: One right-turn lane, one through lane, and two left-turn lanes. The left-turn lanes continue past Coral Street.
- Route 1 westbound: One right-turn lane, three through lanes, and two left-turn lanes.
- River Street northbound: Two right-turn lanes, one through lane, and one left-turn lane.
- Route 1 eastbound: One shared through/right-turn lane, two through lanes, and one left-turn lane.

The proposed modifications are described in detail in Section 1.4.1 below.

1.4 Alternatives

1.4.1 Proposed Build Alternative

The following improvements (listed below by segment) are proposed at the Route 1/9 intersection. The project design plan, including potential retaining walls and the construction area, is identified in Figure 1-3. Although both Route 1 and Route 9 are regionally considered north-south thoroughfares, in the project area, Route 1 runs in an east-west orientation and Route 9 runs north-south. So, travel lanes on Route 1 are referred to as running in an “eastbound” or “westbound” direction, and travel lanes on Route 9 are referred to as running in a “northbound” or “southbound” direction in the discussion below.

Route 9 (North of the Route 1/9 Intersection)

Northbound Route 9

- Add a second northbound 12-foot through lane and an 8-foot shoulder on northbound Route 9, from Route 1 to Fern Street, to receive vehicular and bicycle traffic from both the new left-turn lane on Route 1 and the converted shared left/through lane from northbound River Street.
- Add a 4-foot through bike lane, 12-foot right-turn lane, and 4-foot shoulder on northbound Route 9, between Fern Street and Encinal Street, to accommodate bicycle through traffic, and vehicular traffic turning into the Tannery Arts Center.
- Replace channelizers with a 2-foot raised concrete median along Route 9 from Route 1 to south of Fern Street.

These improvements would require widening the existing roadway. Curb and gutter (at locations noted above) would be constructed along Route 9 from the Route 1/9 intersection to the south side of the Route 9/Encinal Street intersection.

An earthen embankment would be constructed to support the roadway widening over the drainage culvert (known as Arroyo de San Pedro Regalado) at the northeast corner of the Route 1/9 intersection. The embankment would have a 2:1 slope with the toe of the embankment extending about 40 feet beyond the existing roadway. The existing culvert would be extended about 25 feet. The existing concrete apron and cutoff wall that extend about 25 feet from the existing culvert would remain in place or reconstructed “in-kind.” All in-water construction activities would be conducted during the dry season. Minor excavation would be needed for the proposed embankment; this excavation would be minor and would occur within the existing embankment and culvert areas that were backfilled following construction of the original culvert. Dewatering would be accomplished by using small check dams and bypass pipes.

An earthen embankment would be constructed to support the roadway widening from just south of Fern Street to Encinal Street. The embankment would have a 4:1 slope with the toe of the embankment extending about 35 feet beyond the existing roadway. The area of the 4:1 embankment along Central Home Supply is currently within Caltrans right of way and is being leased by Central Home Supply.

Southbound Route 9

- Add a new shared 12-foot through/left-turn lane on southbound Route 9 to permit a triple left onto eastbound Route 1.
- Add a new 4-foot through bike lane to accommodate bicycle through traffic.
- Reconstruct a masonry block wall at the corner just south of the Homeless Services Center. Reconstruction of the masonry wall would not likely involve footings that are deeper than the existing footings.

These improvements would require widening the existing roadway along Route 9. Curb, gutter, and a minimum 6.5-foot sidewalk would be reconstructed from the Route 1/9 intersection to just south of Coral Street. Road widening could also require relocating various road signs; an ornamental metal picket fence; electrical power poles; light poles along the sidewalk between Route 1 and Coral Street; an existing storm drain inlet; and an electrical box near the northwest quadrant of the Route 1/9 intersection. Excavation required for the installation of poles, storm drain inlets, and other utilities would be up to about 6 feet deep and would occur within the existing roadway prism where excavation and embankment work occurred previously with the original roadway construction and utilities installation.

River Street (South of the Route 1/9 Intersection)

Northbound River Street

- Modify the left-turn lane to provide a shared 12-foot through/left-turn lane so that two northbound lanes to Route 9 are provided.
- Extend the queuing length for the two 12-foot right-turn lanes onto eastbound Route 1.

These improvements would require widening the existing roadway along River Street. Curb, gutter, and sidewalk would be reconstructed from the Route 1/9 intersection to a point about 300 feet south of the intersection. To accommodate curb, gutter, and sidewalk (including curb returns), the existing landscape strip would be removed, and the sidewalk would be narrowed from 8 feet to 5 feet; sidewalk in State right of way would measure a minimum of 6.5 feet. Due to the elevation difference between the roadway and the existing grade just southeast of the intersection, a retaining wall may be necessary to minimize impacts to the adjacent properties. Where there is sufficient room to grade, the embankment slope would be graded to a 2:1 (horizontal: vertical) maximum slope. Minor excavation up to 2 feet deep would be required for the retaining wall footing; additional excavation or drilling may also

be needed for small-diameter/shallow retaining wall piles if, based on the geotechnical surveys, it is determined that piles are needed. These details related to the design of the wall will be determined during final design.

Road widening would result in the relocation of a utility joint trench located beneath the existing sidewalk, including utility boxes, vaults, backflow preventers, roadside signs, and street lights. The widening would also result in reconstruction of the pedestrian and bicycle access to the Gateway Plaza shopping center. The widening would affect the driveway to the commercial office building at 700/720 River Street; this could require reconstruction of the driveway and the retaining wall (including hand railing) immediately adjacent to the commercial office and result in the loss of one to two onsite parking spaces along the driveway.

Additionally, the narrow concrete raised median in the middle of River Street, between Madrone Street and Cottonwood Street, would be removed and replaced with a double-yellow median stripe. The median surrounding the existing River Street gateway sign would be reconstructed to accommodate the new alignment, and the gateway sign would be moved to the new median.

Excavation required for the improvements and construction activities described above would be up to about 6 feet deep and would occur within the existing roadway prism where excavation and embankment work occurred previously with the original roadway construction and utilities installation.

Southbound River Street

- Realign the two 12-foot through lanes and 6-foot bike lane to receive traffic from the bike lane and two through lanes on southbound Route 9.

These improvements would require widening southbound River Street from the Route 1/9 intersection to the River Street/Cottonwood Street intersection. To accommodate curb, gutter, and sidewalk (including curb returns), the existing landscape strip would be removed, and the sidewalk would be narrowed from 8 feet to 5 feet; sidewalk in State right of way would measure a minimum of 6.5 feet. The existing street light poles and other utility facilities would be relocated due to the widening. Excavation required for these improvements would be up to about 6 feet deep and would occur within the existing roadway prism where excavation and embankment work occurred previously with the original roadway construction and utilities installation.

Route 1 (West of Route 1/9 Intersection)

Eastbound Route 1

- Add a new 12-foot left-turn lane on eastbound Route 1 so that two lanes turn onto northbound Route 9.
- Remove the existing traffic signal mast arm and “pork chop” island between the right-turn lane and through lane. A new signal mast arm would be installed at the curb return at the southwest corner of the intersection of Route 1/River Street, just south of the curb ramps.
- Reconstruct the median and restripe eastbound Route 1 lanes from the Route 1/9 intersection to the Santa Cruz Big Trees & Pacific Railway tracks, to accommodate the additional left-turn lane.

These improvements would not require road widening along eastbound Route 1. The crosswalk would be restriped to align with the reconstructed median.

Westbound Route 1

- Minor widening and striping realignment of westbound Route 1 due to widening associated with the second left-turn lane along eastbound Route 1. The widening would occur within the Caltrans right-of-way along westbound Route 1.

Route 1 (East of Route 1/9 Intersection)

Eastbound Route 1

- Minor change to the median nose to accommodate Route 1/9 intersection improvements, including receiving the triple left-turn movement from southbound Route 9.
- Restripe eastbound Route 1 lanes from the Route 1/9 intersection to about 185 feet south of the San Lorenzo River Bridge to accommodate the transition to the improved intersection.

These improvements would not require road widening along eastbound Route 1.

Westbound Route 1

There are no improvements proposed on westbound Route 1 east of the Route 1/9 intersection.

1.4.2 No-Project Alternative

Under the No-Project Alternative, improvements to the Route 1/9 intersection would not be constructed. The Route 1/9 intersection would continue to be heavily congested. With continued development of planned industrial and office space and increased University of California at Santa Cruz traffic, the operation and level of service of the Route 1/9 intersection would continue to deteriorate.

1.4.3 Alternatives Considered but Eliminated from Further Consideration

Alternative 1 was considered during the 2006 preliminary scoping exercise and was based on Alternative 2 included in the Preliminary Scoping Report. This alternative would have added a southbound left-turn lane on Route 1 and a 12-foot through lane along with an 8-foot shoulder on northbound Route 9 from the Route 1/Route 9 intersection to Encinal Street. A park-and-ride lot in the northeast quadrant of the intersection was also part of Alternative 1. The project development team determined the alternative did not adequately improve the operational capacity of the intersection and thus did not meet the project purpose and need. Alternative 1 was considered but rejected from further consideration.

The following design features were also considered but rejected from further consideration:

Non-standard lane and shoulder widths were considered as a way to minimize impacts to the drainage known as Arroyo de San Pedro Regalado and to reduce right-of-way impacts. However, reducing these widths required design exceptions that could not be approved because the reduced widths could affect safety at the intersection.

A retaining wall was considered for the northeast quadrant of the Route 1/9 intersection as a way to support the roadway widening over the Arroyo de San Pedro Regalado drainage. The retaining wall design option was eliminated from consideration because it was determined that it would be more expensive, take longer to construct, and require greater maintenance than the earthen embankment design.

1.5 Permits and Approvals Needed

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

Agency	Permit/Approval	Status
City of Santa Cruz	Approval of project design	To be obtained after California Environmental Quality Act (CEQA) certification
	Heritage Tree Ordinance Permit	To be obtained prior to construction
U.S. Fish and Wildlife Service	Section 7 Biological Opinion for California red-legged frog and tidewater goby	Biological Opinion received from U.S. Fish and Wildlife Service on October 29, 2012 (see Appendix E for relevant correspondence)
National Marine Fisheries Service	Section 7 concurrence related to Central California Coast steelhead and Central California Coast coho salmon	Letter of concurrence for a Not Likely to Adversely Affect conclusion received from National Marine Fisheries Service on February 22, 2012 (see Appendix F for relevant correspondence)
U.S. Army Corps of Engineers	Section 404 Nationwide Permit	To be obtained during the final design phase of the project
State Historic Preservation Officer	None required as Caltrans concluded No Historic Properties Affected under Section 106	Historic Properties Survey Report approved by Caltrans on February 21, 2012
California Department of Fish and Wildlife	Streambed Alteration Agreement	To be obtained during the final design phase of the project
Regional Water Quality Control Board	Section 401 Water Quality Certification	To be obtained during the final design phase of the project

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

This chapter explains the impacts that the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project, potential impacts from the project, and proposed avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

As part of the scoping and environmental analysis for the project, the following environmental issues were considered, but no adverse impacts were identified and/or the issues were determined to not be relevant. Consequently, there is no further discussion of these issues in this document.

- Coastal Zone—The project area is not in the Coastal Zone.
- Wild and Scenic Rivers—No designated Wild and Scenic Rivers are in or near the project area.
- Parks and Recreational Facilities—The project would not directly affect any parks or recreational facilities. The closest park is Harvey West Park at 326 Evergreen Street, about a quarter-mile west of the Route 1/9 intersection.
- Farmlands/Timberlands—The project is in an urban area. No farmland or timberland lies in the project area.
- Community Character and Cohesion—The project would not change or divide an established community. The project would widen an existing intersection.
- Paleontology—The project area is underlain by Quaternary alluvium that has been disturbed with previous construction activities and has a low potential to contain sensitive paleontological resources.
- Mineral Resources—The project would not affect availability of resources.
- Cultural Resources—No historic properties were identified within the proposed project limits. The State Historic Preservation Officer concurred with that finding on March 26, 2012 (refer to Appendix G).

- Growth—The project would not induce population growth, either directly or indirectly, within or outside of the City of Santa Cruz. The project would not add capacity to Route 1 or 9, nor would it provide new access to undeveloped areas that would accelerate or shift planned or unplanned growth. The project would accommodate growth that has already occurred. As such, the project would not generate a need for or impact public services and utilities such as schools, water supply, wastewater treatment, and solid waste collection and disposal. Additionally, the project would not displace a substantial number of housing units or people, necessitating construction of replacement housing elsewhere.

2.1 Human Environment

2.1.1 Land Use

Existing and Future Land Use

Affected Environment

Existing land uses near the project include a mix of residential, public facility, and commercial uses (see Figure 2-1). North of the Route 1/9 intersection, land uses west of Route 9 include three residential properties, five commercial properties, and the Rebele Family Shelter and Homeless Services Center. Land uses east of Route 9 consist of the Tannery Arts Center, a landscaping and building supply business (Central Home Supply), a vacant parcel owned by Caltrans and leased to the building supply business for storing materials, a residential property (744 River Street), and a drainage culvert (Arroyo De San Pedro Regalado). South of the Route 1/9 intersection, land uses west of River Street consist of a hot tub business, an auto repair shop, and a commercial warehouse. East of River Street, land uses include two City-owned vacant parcels, a commercial building (office and medical) and a shopping center (Gateway Plaza).

The City of Santa Cruz adopted an update to its General Plan in July 2012 to direct and manage development in the city through the year 2030. A review of the General Plan Land Use map (see Figure 2-2) found three land use designations next to the project: Community Facilities, Industrial, and Community Commercial. The area north of Route 1 is designated with all three of these land use designations, and the area south of the Route 1 corridor is designated Community Commercial.

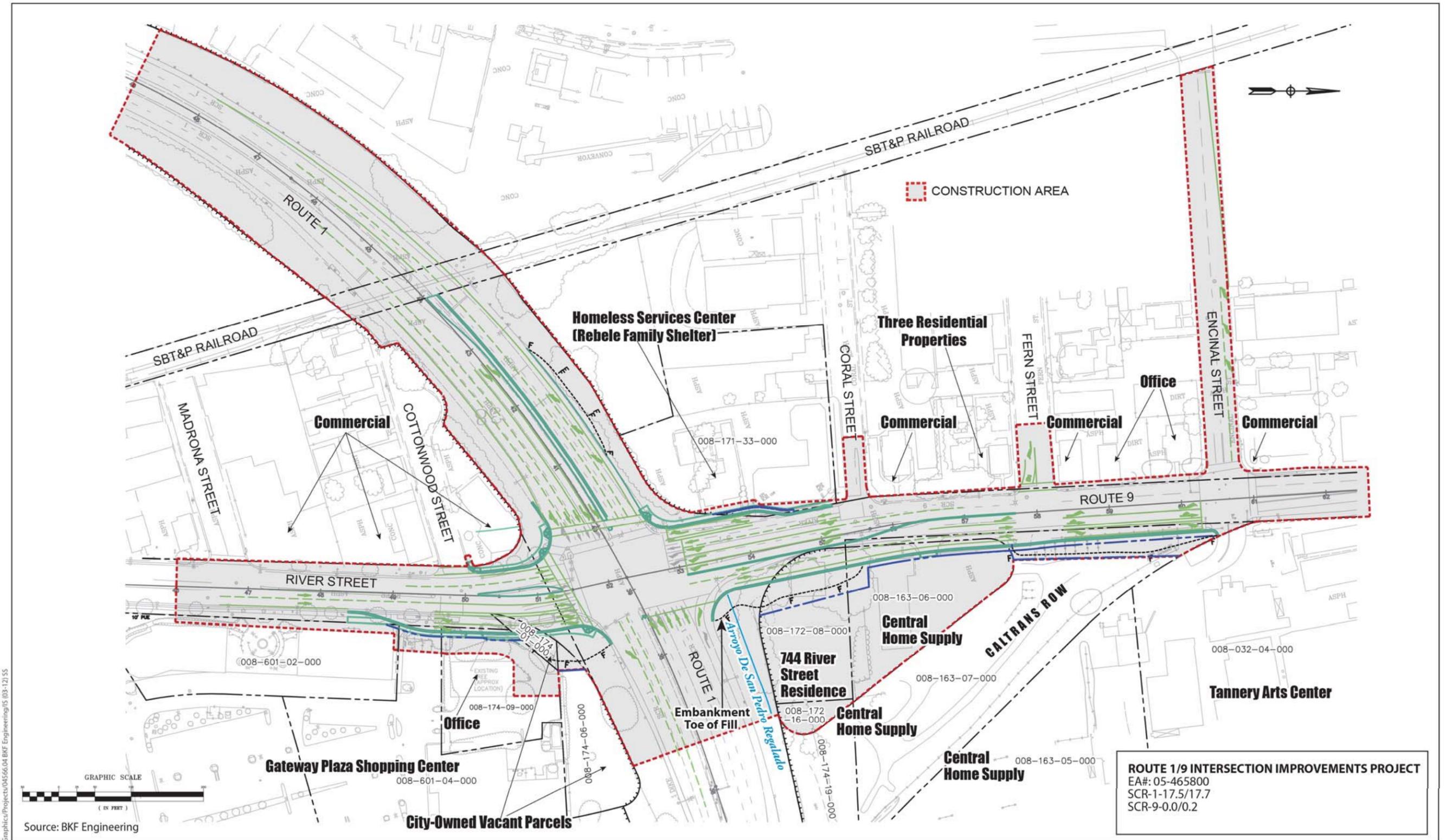


Figure 2-1 Existing Land Uses in Project Vicinity

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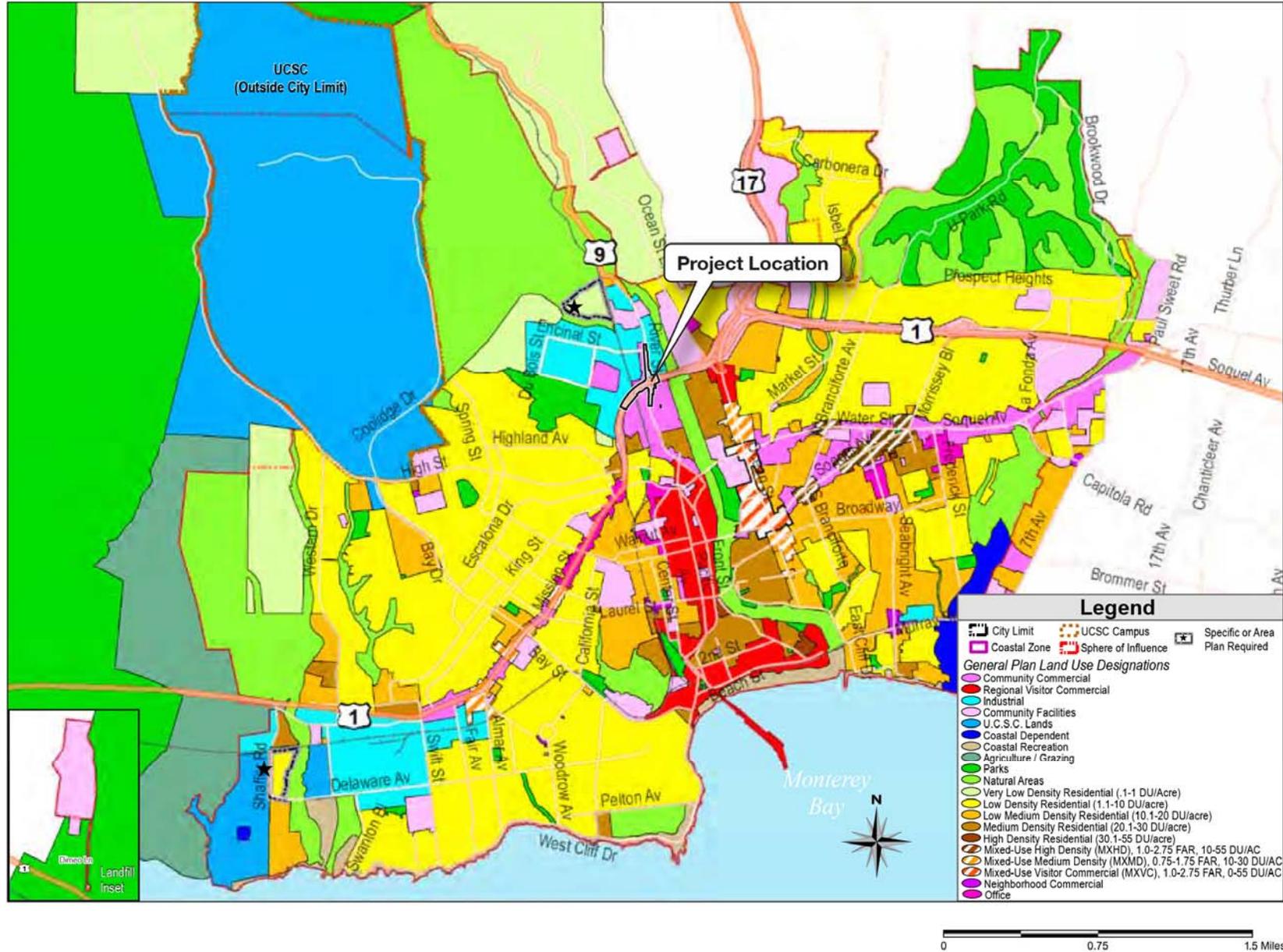


Figure 2-2 General Plan Land Use Designations

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Zoning designations for the project area include General Industrial, Thoroughfare Commercial, and Community Commercial. The area north of Route 1 is zoned General Industrial except for the area between the railway and Route 9, which is zoned Community Commercial and extends north to just beyond Encinal Street west of Route 9. The area south of Route 1 is zoned Thoroughfare Commercial west of River Street and Community Commercial east of River Street.

Although there is limited developable land within the city limits, demand for housing is high due to Santa Cruz's desirable location and climate and the presence of the University of California at Santa Cruz. The city is largely built-out; any future growth would occur in the downtown area and along major transportation corridors. The City of Santa Cruz promotes industrial and large regional retail uses within the Harvey West area, which is west of the project limits.

Route 1 experiences a substantial amount of commuter traffic as workers travel to jobs outside of or in the city. As described in the General Plan 2030, in 2007 more than half of the jobs in the city were held by workers who lived outside the city. Many of these jobs were in retail, lodging, or other services with lower wages. At that time, there was also a 27% surplus in jobs compared to employed residents, and local businesses had to hire workers from outside the city to fill the positions. In addition, close to half of city residents commuted to jobs outside the city.

According to the 2008 Association of Monterey Bay Area Governments projections, in 2010, the City of Santa Cruz's jobs-to-housing ratio was approximately 1.4. This ratio is expected to reach 1.6 in 2035 and corresponds to an increase in jobs of 23% while housing units are projected to increase by 11%. This reinforces the north-south commute pattern in the city. As described in the General Plan 2030, the City would like to balance the jobs-to-housing ratio so residents can live in housing that they can afford and that will be close to their jobs.

Planned development located within a 1-mile radius of the Route 1/9 intersection is listed in Table 2-1. For projects with a residential component, only those with more than 10 residential units are listed. Ten residential projects, two hotels, an arts center, and five projects with a commercial component are planned.

**Table 2-1 Planned Development in the Vicinity of the Proposed Project,
as of December 2011**

Name	Jurisdiction	Proposed Uses	Status
224 Laurel Street	City of Santa Cruz	16 multi-family dwellings and 10,150 sq. ft. commercial	Approved
517 Cedar Street	City of Santa Cruz	17 single-room occupancy units	Under Construction
Tannery Arts Center	City of Santa Cruz	120,000 sq. ft. arts center	Under Construction
Branciforte Creek Subdivision	City of Santa Cruz	32 single-family dwellings	Under Construction
1314 Ocean Street	City of Santa Cruz	14 condominiums, 4 townhouses, 1 single-family dwelling, and 1,591 sq. ft. commercial	Approved
710 Soquel Avenue	City of Santa Cruz	9 apartment units and 5,300 sq. ft. commercial	Approved
110 Lindberg Street	City of Santa Cruz	21 multi-family dwellings	Approved
1547 Pacific Avenue	City of Santa Cruz	66 residential units and 4,500 sq. ft. commercial	Approved
407 Broadway	City of Santa Cruz	111-room hotel	Approved
1930 Ocean Street Extension	City of Santa Cruz	40 condominium units	Pending Application
433 Ocean Street	City of Santa Cruz	45 hotel rooms with restaurant (demolish gas station)	Pending Application
350 Ocean Street	City of Santa Cruz	58 multi-family dwellings (demolish existing 20 multi-family and 2 single-family dwellings) and 5,269 sq. ft. commercial	Pending Application
1013 Pacific Avenue	City of Santa Cruz	17 condominiums (demolish existing mixed-use building)	Pending Application

Source: Eric Marlatt. Principal Planner. City of Santa Cruz. March 12, 2012.

Environmental Consequences

Improving the Route 1/9 intersection would affect land uses, as shown in Table 2-2 and Figure 1-3.

Table 2-2 Total Area Converted under the Proposed Project

	Acres Affected	
	Right-of-Way Acquisition	Converted to Transportation Use
Commercial	0.83	0.18
Public Facility	0.02	0.02
Residential	0.53	0.16
Vacant	0.27	0.27
Total	1.65	0.63

Source: Route 1/9 Intersection Improvement Project Relocation Impact Memorandum, June 11, 2011.

A total of 0.63 acre would be converted to transportation uses with construction of the proposed improvements, and 1.65 acres of land would be acquired, assuming a worst-case estimate (the 0.63-acre estimate is included in the 1.65-acre estimate). The estimate of 1.65 acres assumes that all of Assessor's Parcel Numbers 008-163-06-000

and 008-172-16-000 would be acquired for this project. These two parcels are not needed for the proposed roadway right-of-way, but full acquisition of these parcels is assumed as a worst-case scenario (see the Relocations and Real Property Acquisition section below for further details on these two parcels).

Avoidance, Minimization, and/or Mitigation Measures

Because the proposed improvements to the Route 1/9 intersection would require relocations and have visual resource impacts, see the Avoidance, Minimization, and/or Mitigation Measures in the following sections: 2.1.3.1, Relocations and Real Property Acquisition and 2.1.5, Visual/Aesthetics. Measures proposed include providing relocation benefits, using aesthetic wall treatments, and replacing landscaping where space allows or compensating owners for their loss of landscaping.

Consistency with State, Regional, and Local Plans

Affected Environment

Land use planning and development in the vicinity of the proposed project is governed by the City of Santa Cruz. The regional planning agency for the area is the Santa Cruz County Regional Transportation Commission.

Santa Cruz County Regional Transportation Plan

The Route 1/9 Intersection Improvement project is identified in the 2010 Regional Transportation Plan as being to maintain and improve the existing transportation system through 2035. The project is also identified in the 2012 Santa Cruz County Regional Transportation Improvement Program (adopted in December 2011) to receive funding through fiscal year 2016/2017. The projects in the Transportation Improvement Program include those that preserve existing transportation facilities, reduce congestion, and increase safety.

City of Santa Cruz Cumulative Development Traffic Study

The proposed project is identified in the City of Santa Cruz's April 2005 Cumulative Development Traffic Study. This study quantifies total cumulative trips that are expected to be added in the city from new development. Based on the findings of the study, the City of Santa Cruz identified a per-trip traffic impact fee. The impact fee was calculated by dividing the total cost of all new projects by the additional trips added by new development. The current city-wide fee is \$405 per trip.

City of Santa Cruz General Plan 2030

The General Plan 2030, adopted on July 26, 2012, includes goals, policies and programs for development in the City of Santa Cruz. Many of the goals and policies in the general plan relate to improving mobility. Mobility Element Goal M3 is to provide a safe, efficient, and adaptive road system. Under Goal M3, Action M3.1.13 calls for improved access to and from the Harvey West area as well as a better connection to the downtown area. In addition, Policy M3.2 is to ensure road safety for all users by improving the condition, safety and efficiency of the Route 1/9 intersection for motorists as well as for pedestrians and bicyclists.

City of Santa Cruz Noise Element and Noise Ordinance

Policy 3.2.1 of the City of Santa Cruz General Plan Hazards, Safety, and Noise Element establishes an L_{dn} noise level target of 65 dBA for outdoor activity areas in new multi-family residential developments. It also requires that interior noise in all new multi-family housing not exceed an L_{dn} of 45 dBA with windows and doors closed.

The City Noise Ordinance does not specify explicit noise level standards. However, Section 9.36.010 prohibits any offensive noise within 100 feet of any building or place regularly used for sleeping purposes between the hours of 10:00 p.m. and 8:00 a.m. This prohibition may be changed to the hours between 10:00 p.m. and 7:00 a.m. for any activity performed under contract awarded by the City of Santa Cruz where the Director of Public Works determines the following:

- that the project has the potential to disrupt traffic and that this disruption could be alleviated by authorizing construction work to start at 7:00 a.m., or
- that due to time constraints on project completion, it is necessary to allow the contractor to begin work at 7:00 a.m.

In addition, these prohibitions do not apply to activities undertaken by, or pursuant to contract with, the City of Santa Cruz, or apply to any other activity undertaken by the City, another governmental agency, or City contractor, for public health and safety purposes. The proposed project would fall under this exemption.

Environmental Consequences

The project is consistent with the 2010 Santa Cruz County Regional Transportation Plan because it is included in the plan. The project is also consistent with the relevant goals and policies in the Circulation Element of the General Plan 1990–2005 that are

aimed at maximizing the efficiency and safety of the existing road system while ensuring that it accommodates all modes of travel, operates at an acceptable level of service, and is not expanded unnecessarily.

The proposed project is also consistent with the Mobility Element Goal M3 of the General Plan 2030 to provide a safe, efficient, and adaptive road system. Action M3.1.13, listed under Goal M3, calls for improved access to and from the Harvey West area as well as a better connection to the downtown area. The proposed project would improve access to these areas by reducing congestion and improving safety. In addition, the project would be consistent with Policy M3.2 to ensure road safety for all users by improving the condition, safety and efficiency of the Route 1/9 intersection for motorists as well as for pedestrians and bicyclists.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

2.1.2 Community Impacts

Relocations and Real Property Acquisition

Regulatory Setting

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

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

Affected Environment

This section is based on the Relocation Impact Memorandum (June 11, 2011) prepared for this project.

The project area consists of about one-quarter mile of roadway right-of-way at the Route 1/9 intersection through a developed urban/suburban area in Santa Cruz. In the project vicinity, the primary land uses are commercial in the southwest and southeast quadrants of the Route 1/9 intersection; a homeless services center in the northwest quadrant; and a residence, landscape and building supply business (Central Home Supply), and arts center (Tannery Arts Center) in the northeast quadrant.

Environmental Consequences

The road widening would displace a private residence (744 River Street, Assessor's Parcel Number 008-172-08-000) on the east side of Route 9 and Central Home Supply (808 River Street, Assessor's Parcel Number 008-163-06-000), a landscape and building supply business, both owned by the same property owner. The road widening would also result in loss of unofficial parking in front of Central Home Supply and would displace a portion of the Central Home Supply's showroom; the entire Central Home Supply parcel is not needed to accommodate the additional right-of-way needed for the project.

Although full acquisition of Assessor's Parcel Number 008-163-06-000 is not required to accommodate the proposed right-of-way, full acquisition of this parcel is assumed for the purposes of the environmental analysis conducted for this project as a worst-case assumption. Since full acquisition of the parcel that houses the Central Home Supply buildings may be required, full acquisition of Assessor's Parcel Number 008-172-16-000, also owned by the property owner of Assessor's Parcel Number 008-172-08-000 and 008-163-06-000, is also assumed. This parcel is used by Central Home Supply for materials storage. The disposition of these properties will be determined during final design. See Figure 1-3 and Table 2-3.

The building housing the Rebele Family Shelter (Assessor's Parcel Number 008-171-33-000) would not be directly affected by the project. However, with the proposed intersection improvements, the travel lane on Route 9 would be closer to the southeast corner of the building. The nearest lane on southbound Route 9 is currently about 28 feet from the shelter building and, with the project, the new right-turn lane would be about 19 feet from the building. Due to the standardization of the lane widths, the upstream lane that contributes to this right-turn lane would be 7 feet farther away from the building. A temporary construction easement would also be needed on this parcel for construction of the intersection improvements.

No-Project Alternative

No relocations would occur under the No-Project Alternative. Therefore, no avoidance or minimization measures would be required.

**Table 2-3 Proposed Right-of-Way Acquisition and
Temporary Construction Easements**

Assessor's Parcel Number	Property Owner	Land Use	Square Footage			Comments
			Right-of-Way Acquisition	Excess on Full Property Acquisitions ^a	Temporary Construction Easement	
Northwest Quadrant of SR 1/9 Intersection						
008-171-33-000	City of Santa Cruz	Homeless Services Center	903	0	1,427	
Northeast Quadrant of SR 1/9 Intersection						
008-163-06-000	Santee	Central Home Supply Business (landscaping and building supply)	30,709	24,879	0	Entire parcel is not needed for roadway right-of-way. A number of options will be evaluated during final design. Full acquisition of this parcel is assumed for this analysis.
008-172-16-000	Santee	Materials Storage for Central Home Supply	3,253	3,253	0	Parcel not needed for roadway right-of-way. However, full acquisition is assumed since the owner of this parcel also owns Assessor's Parcel Number 008-163-06-000.
008-172-08-000	Santee	Residence at 744 River Street	23,013	15,850	0	
008-163-07-000	State of California	Undeveloped	8,579	0	1,397	
Southeast Quadrant of SR 1/9 Intersection						
008-174-01-000	City of Santa Cruz	Undeveloped	2,278	0	0	
008-174-06-000	City of Santa Cruz	Undeveloped	845	0	0	
008-174-09-000	Tedesco	Gateway Plaza Shopping Center	1,387	0	6,012	
008-601-02-000	SPG Associates	Gateway Plaza Shopping Center	47	0	988	
008-601-04-000	Gateway Plaza Associates	Gateway Plaza Shopping Center	650	0	1,499	

Source: Route 1/9 Intersection Improvement Project Relocation Impact Memorandum, June 11, 2011.

^a Square footage that is not directly needed for the proposed roadway right-of-way.

Avoidance, Minimization, and/or Mitigation Measures

Online reviews of a rental website (www.apartmenthunterz.com) and classified advertisements in the *Santa Cruz Sentinel* (<http://www.santacruzsentinel.com/>) showed that an ample supply of properties similar to the renter-occupied home potentially displaced by the project was available for rent in the 95060 zip code area. The residential replacement area, located in the same zip code as the project area, includes neighborhoods within and surrounding the project area and can be characterized as having similar or better street usage, accessibility, composition, utilities, landscaping, and proximity to transportation.

An April 2011 online review of the rental website showed that houses were available for rent in the 95060 zip code area. A May 2011 review of classified advertisements in the *Santa Cruz Sentinel* showed 34 apartments, units in multiplex buildings, condos/townhouses, and houses available for rent within a 10-mile radius of zip code 95060. Of these, two were studios, 13 were 1-bedroom units, 15 were 2-bedroom units, 3 were 3-bedroom units, and one was a 4-bedroom unit. Nine units were single-family homes. Prices ranged from \$2,495 per month for a 2-bedroom, 2-bath beachfront condominium to \$650 per month for a studio house in Boulder Creek.

The City of Santa Cruz offers a First-Time Homebuyer Program, designed to fill the gap between what a first-time homebuyer can borrow from a mortgage lender and the purchase price of the home. This program could assist potentially displaced renters in purchasing housing equal to the home that is being displaced by the project.

The residential replacement dwelling would be in equal or better neighborhoods, at prices within the financial means of the individuals and family displaced, and reasonably accessible to their places of employment. Before any displacement occurs, affected individuals would be offered a comparable replacement dwelling that is open to all persons regardless of race, color, religion, sex, or national origin, consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance would also include supplying information concerning federal- and state-assisted housing programs, and any other known services being offered by public and private agencies in the area. This assistance would be led by the City of Santa Cruz (not Caltrans). Specific policies on relocation benefits are described in Appendix C.

Ample replacement resources are expected to be available on the market to relocate the business potentially displaced by the project. A May 2011 online review of the retail rental website (www.loopnet.com) showed that five retail properties and three

vacant land properties were available for sale in the 95060 zip code. In addition, a May 2011 review of classified advertisements in the *Santa Cruz Sentinel* showed six commercial properties available for lease and one lot available for sale within a 10-mile radius of zip code 95060. The business being displaced would receive information on comparable properties for lease or purchase. This assistance would be led by the City of Santa Cruz (not Caltrans). Specific policies on relocation benefits are described in Appendix C.

2.1.3 Utilities/Emergency Services

Affected Environment

Utility facilities in the project vicinity include the following:

- Overhead electric and telephone/communication wires
- Underground electric, gas, sanitary sewer, water, telephone, and fiber optics

Pacific Gas & Electric is the provider of gas and electricity service in the project area. The City of Santa Cruz provides sanitary sewer service and water service. There are several telephone/communication providers.

The City of Santa Cruz Fire Department provides fire protection services and emergency response to the city. Of the three fire stations maintained by the department, Station 2 at 1103 Soquel Avenue is closest to the project site. The City of Santa Cruz Police Department, the Santa Cruz County Sheriff's Office, and the California Highway Patrol provide police protection and traffic enforcement in the project area.

Environmental Consequences

The following utility systems would be affected by the project improvements:

- Street lighting along Route 9 and River Street would need to be relocated.
- Traffic signals would need to be modified including relocating/replacing poles and the signal boxes at the Route 1/9 and Route 9/Encinal Street intersections.
- Overhead telephone poles at Route 9/Encinal Street would be relocated.
- Overhead joint pole for telephone and electrical at Route 9/Coral Street would be relocated.

- Underground joint trenches and related facilities for gas and electric on River Street would be adjusted/relocated, as needed, due to possible underground conflicts.
- The water fire hydrant on River Street would be relocated.

Implementation of the project is expected to alleviate congestion within the project area, thereby decreasing the number of accidents that emergency service providers would need to respond to. Plus, when police and fire personnel need to use Routes 1 and 9 as a response route, the reduction in congestion would help rescue crews reach their destinations more quickly. Construction of the project may result in a slight increase in congestion during peak hours within the project construction area, but these impacts would be temporary.

No-Project Alternative

Utilities would remain unchanged under the No-Project Alternative. Therefore, no avoidance or minimization measures would be required.

Avoidance, Minimization, and/or Mitigation Measures

The relocation or reconfiguration of any utilities affected by the project would be coordinated with the affected utility owner/company. Coordination efforts would include planning for utility re-routes, identifying any other potential conflicts, and formulating strategies for overcoming problems that could arise to ensure minimum disruption of utility service or operation during the utility work and project construction.

No mitigation is required.

2.1.4 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

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

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. Department of Transportation regulations (49 CFR Part 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

This section is based on the Traffic Operations Report (February 8, 2011) prepared for this project.

Key Intersections

The traffic analysis for the project evaluated baseline and future (2030) traffic conditions at the intersection of Route 1/9 and three other closely spaced intersections along Route 9 as follows (see Figure 2-3):

1. Route 9 and Route 1 (signals)
2. Route 9 and Coral Street (no signals)
3. Route 9 and Fern Street (no signals)
4. Route 9 and Encinal Street (signals)

Baseline peak hour delays at the studied intersections are presented in Table 2-4.

Table 2-4 Baseline Intersection Delay

Intersection		Intersection Control	Delay (seconds) ^a	
			Morning	Afternoon
1.	Route 1/9	Signal	64.0	152.6
2.	Route 9/Coral Street	No signal	2.1	27.2
3.	Route 9/Fern Street	No signal	2.1	77.6
4.	Route 9/Encinal Street	Signal	9.1	19.7

Source: Highway 1 and Highway 9 Intersection Modification Traffic Operations Report, February 8, 2011.

^a The delay reported at intersections with and without signals is the average for all movements approaching the intersection.

Baseline conditions are based on 2005 traffic counts conducted in the field. With the economic downturn and rising gas prices over the past 8 years (specifically 2008/2009), the City has noticed reduced traffic volumes on all corridors and less development than originally modeled. The economic downturn not only affected traffic conditions in 2008/2009, but in subsequent years. Therefore, traffic counts in 2010 (or 20 years before the project traffic forecast of 2030) generally have been lower than they were in 2005. It is probable that the analysis in this section presents a worst-case analysis because the actual change in traffic volumes between 2005 and 2030 may be greater than or equal to the change between 2010 and 2030. The 2030 traffic forecast used in this analysis incorporates the most up-to-date land use assumptions in the project vicinity.

Each intersection is described below:

1. Route 1/9: During the morning peak hour at this intersection with signals, long through vehicle queues occur on Route 1 in both the northbound and southbound directions. The queues often extend beyond the left-turn and right-turn lanes, blocking access to the turn lanes. During the afternoon peak hour, long through queues occur in the northbound and southbound directions on Route 1. As in the morning peak hour, these queues often extend beyond the left-turn and right-turn lanes, blocking access to the turn lanes. The two southbound left-turn queues on Route 9 frequently spill out of the turn lanes and queue back to Fern Street and occasionally as far as Encinal Street. The northbound through movement on River Street occasionally queues past Cottonwood Street to the south.
2. Route 9/Coral Street: About 300 feet north of Route 1, Coral Street intersects with Route 9. At this T-intersection, traffic on Coral Street is controlled with a stop sign. Northbound left turns on Route 9 and eastbound left turns on Coral Street are not allowed. The only conflicting movements at this intersection are southbound through traffic (on Route 9) and the eastbound right turns on Coral Street. During the morning peak hour, vehicle queues in the two southbound left-turn lanes at the Route 1/9 intersection occasionally spill back past Coral Street. However, in general, this intersection functions well during the morning peak hour. During the afternoon peak hour, eastbound traffic on Coral Street has difficulty accessing southbound Route 9 due to the long queues from the Route 1/9 intersection that continuously block the intersection. Queuing on Coral Street occasionally blocks the driveway to the Rebele Family Shelter.



Figure 2-3 Traffic Study Area and Study Intersections

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3. Route 9/Fern Street: This T-intersection with no signal operates well during the morning peak hour. During the afternoon peak hour, the southbound queue from the Route 1/9 intersection typically extends through this intersection. The intersection is marked “Keep Clear” to allow northbound left-turn vehicles access to Fern Street. The northbound left-turn lane frequently spills beyond the lane, blocking the northbound through lane on Route 9.
4. Route 9/Encinal Street: At this intersection with signals, northbound left-turn queues frequently spill back past Fern Street during both peak hours. However, the queues are typically able to clear the intersection in one signal cycle.

Accident data show that a total of 56 accidents occurred at the Route 1/9 intersection between January 2006 and December 2008, or 18.7 accidents per year. During this same period, six accidents occurred at the Route 9/Coral Street intersection (or 2 accidents per year), two accidents at the Route 9/Fern Street intersection (or 0.7 accidents per year), and 11 accidents at the Route 9/Encinal Street intersection (or 3.7 accidents per year). Based on a comparison of these measured accident rates against “expected accident rates” (accident occurrences at similar locations subjected to similar traffic flows), the analysis found that:

- The Route 1/9 intersection accident rate of 0.68 accidents per million vehicles entering the intersection is above the expected accident rate of 0.43 accidents per million vehicles.
- The Route 9/Coral Street intersection accident rate of 0.30 accidents per million vehicles entering the intersection is above the expected accident rate of 0.14 accidents per million vehicles.
- The Route 9/Fern Street intersection accident rate of 0.11 accidents per million vehicles entering the intersection is below the expected accident rate of 0.14 accidents per million vehicles.
- The Route 9/Encinal Avenue intersection accident rate of 0.63 accidents per million vehicles entering the intersection is above the expected accident rate of 0.43 accidents per million vehicles.

Existing Pedestrian and Bicycle Facilities

The City recently completed a bicycle and pedestrian bridge, called the San Lorenzo River Multipurpose Path, across the San Lorenzo River just south of the Route 1 bridge and 600 feet east of the Route 1/9 intersection. The San Lorenzo River

Multipurpose Path provides a direct pedestrian and bicycle connection between Gateway Plaza and Encinal Street and provides an alternative to pedestrian/bicycle travel on River Street and Route 9 (see Figure 2-4). This path is part of the Santa Cruz County Regional Transportation Commission's bikeway system and is now considered the primary north-south pedestrian and bicycle corridor along the San Lorenzo River. River Street and Route 9 are identified as part of the city and county's bikeway system. Bicycle access is prohibited on Route 1.

A sidewalk for pedestrians is available along Route 9 between Encinal Street and Route 1. Pedestrian access along River Street is available south of Route 1 on both sides of the street. Pedestrians are permitted to cross Route 1 only at the westerly leg of the intersection (with signals) at Route 9. Pedestrians are permitted to cross Route 9 at the northerly leg of the intersection (with signals) at Encinal Street and the southerly leg of the intersection (with signals) at Route 1. Pedestrian access on the east side of Route 9 is not available other than via the San Lorenzo River Multipurpose Path along the San Lorenzo River. Along Route 1, pedestrian access is prohibited.

Environmental Consequences

2030 Peak Hour Traffic Volumes and Delay

Peak hour turns for both the morning and afternoon peak hour were provided in the Association of Monterey Bay Area Government's travel forecasting model. Turns in the morning and afternoon peak hours were provided for the years 2000 and 2030. Design turn volumes were developed from the traffic counts, and traffic projections were forecasted from the model. The future design volumes were calculated by adding 83% (25/30) of the modeled estimated increase in traffic between 2000 and 2030 to the 2005 traffic counts. Design turns at the three downstream intersections were developed from the design volumes at the Route 1/9 intersection. The turn volumes at these intersections were calculated proportionally to the increase in traffic on Route 9.

Also included in the 2030 turn volumes were morning and afternoon peak hour volumes from the Tannery Arts Center on the east side of Route 9 across from Encinal Street. These traffic volumes were obtained from the Tannery Arts Center Traffic Impact Analysis Final Draft Report (November 7, 2004).

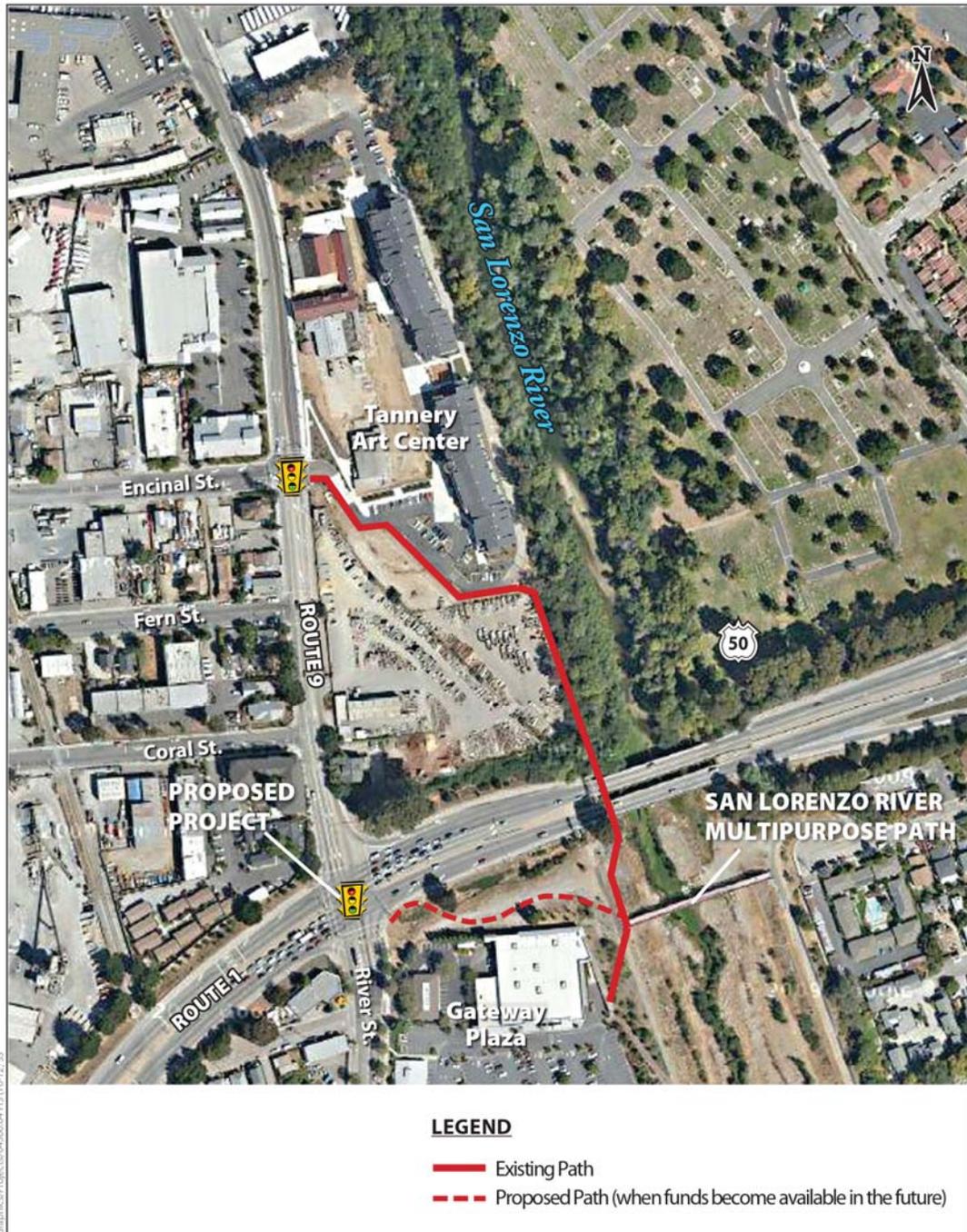


Figure 2-4 San Lorenzo River Multipurpose Path

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The model projects significant increases in traffic along Route 1 in both directions. The combined (northbound and southbound) through movements on Route 1 at the intersection with Route 9 are projected to increase by approximately 33% during the morning peak hour and 29% during the afternoon peak hour by 2030. Traffic volumes on Route 9, west of Route 1, are forecasted to increase by about 36% during the morning peak and about 18% during the afternoon peak hour.

Based on the 2030 design volumes, delay was calculated for “No-Project” and “Project” future scenarios (Table 2-5).

Table 2-5 Year 2030 Delay for No-Project and Project Conditions

Intersection	Intersection Control	Hr.	2005 Delay (sec) ^a	2030 No-Build Delay (sec) ^a	2030 Project Delay (sec) ^a	Change in Delay (2030 Project Minus Baseline)	Change In Delay (2030 Project Minus 2030 No-Project)
1. Route 1/9	Signals	AM	64.0	77.3	66.6	2.6	-10.7
		PM	152.6	164.7	100.4	52.2	-64.3
2. Route 9/ Coral Street	No signals	AM	2.1	4.0	2.9	0.8	-1.1
		PM	27.2	30.3	78.4	51.2	48.1
3. Route 9/ Fern Street	No signals	AM	2.1	3.0	2.5	0.4	-0.5
		PM	77.6	154.3	132.7	55.1	-21.6
4. Route 9/ Encinal Street	Signals	AM	9.1	13.1	13.4	4.3	0.3
		PM	19.7	43.2	48.8	29.1	5.6

Source: Highway 1 and Highway 9 Intersection Modification Traffic Operations Report, February 8, 2011.

^a The delay reported at intersections with and without signals is the average per vehicle for all movements.

Route 1/9 Intersection

2030 No-Project Conditions: Under no-project conditions, the average delay per vehicle is expected to be 77.3 seconds during the morning peak hour and 164.7 seconds during the afternoon peak hour, respectively. The long delays in the morning and afternoon peak hours are due to the high volumes at the intersection of Route 1/9 as well as the delay caused by northbound vehicles waiting to turn left from Route 9 onto Fern Street. Under these conditions, the northbound left-turn volume from Route 9 onto Fern Street and the conflicting southbound through volume on Route 9 are projected to increase significantly. This situation will result in fewer gaps for traffic turning left from Route 9 onto Fern Street causing a spillover of left-turning traffic into the through lane. This spillover would cause significant delays to the southbound left-turn traffic and northbound right-turn traffic from Route 1 onto Route 9 and the northbound through traffic on River Street.

2030 Project Conditions: With the proposed construction of the project, the delay reduces to 66.6 seconds during the morning peak hour and 100.4 seconds during the afternoon peak hour. The project improvements, which include an additional left-turn lane from Route 1 onto northbound Route 9 and widening the northbound roadway segment of Route 9 between Route 1 and Fern Street to two lanes, contribute to the decrease in average delay at this intersection in the morning and afternoon peak hour periods. Southbound left-turn traffic from Route 1 to Route 9, the northbound right-turn traffic from Route 1 to Route 9, and the northbound through traffic on River Street toward Encinal Street would be able to take advantage of the additional northbound through lane. Although the delays in the morning and afternoon peak hour are reduced, the problem of spillover of left-turn traffic from Route 9 onto Fern Street and spillback of this traffic into the Route 1/9 intersection would continue to exist.

Baseline Conditions versus 2030 Project Conditions: Under baseline conditions along Route 1 during the morning and afternoon peak periods, long vehicle queues repeatedly extended beyond both the left- and right-turn lanes in both the northbound and southbound direction, blocking access to the turn lanes. Similarly, along southbound Route 9, similar excessive queuing conditions occurred for the two left-turn lanes, often spilling out of the turn lanes and backing up to Fern Street and occasionally as far as Encinal. This resulted in significant delay and required multiple signal cycles for vehicles to pass through the intersection; delay for the intersection was 64.0 seconds and 152.6 seconds in the morning and afternoon peak hours, respectively.

Under 2030 with-project conditions, the morning and afternoon peak hour level of service for the intersection remains the same compared to baseline conditions (E and F, respectively), but the average delay would be significantly reduced by 52.2 seconds in the afternoon peak hour compared to baseline conditions. The project improvements, which include an additional left-turn lane from Route 1 onto northbound Route 9 and widening the northbound roadway segment of Route 9 between Route 1 and Fern Street to two lanes, contribute to the significant decrease in average delay at this intersection in the afternoon peak hour period. Southbound left-turn traffic from Route 1 to Route 9, the northbound right-turn traffic from Route 1 to Route 9, and the northbound through traffic on River Street toward Encinal Street would be able to take advantage of the additional northbound through lane.

Route 9/Coral Street Intersection

2030 No-Project Conditions: Under no-project conditions, this intersection is expected to operate with 4.0 seconds of delay during the morning peak hour and with 30.3 seconds of delay during the afternoon peak hour. Excessive delay is experienced by right-turning vehicles on Coral Street that eventually turn left at the downstream intersection of Route 1/9. These vehicles need to find gaps in the southbound traffic on Route 9 to merge into the innermost lane to make a left-turn at the downstream intersection of Route 1/9.

2030 Project Conditions: With the project improvements in place, the delay is expected to decrease to 2.9 seconds during the morning peak hour and increase to 78.4 seconds during the afternoon peak hour. Under no-build conditions, the southbound right-turn lane at the Route 1/9 intersection extends all the way back to Coral Street, which works better for traffic from Coral Street that is turning right at the Route 1/9 intersection. Under project conditions, this right-turn lane would be converted to a through lane and a separate right-turn lane of about 125 feet would be provided. This alignment makes it more difficult for right-turning traffic from Coral Street because these vehicles would have to find gaps in the southbound Route 9 traffic, resulting in greater delays for this movement. In addition, the queue from southbound Route 9 through traffic at the Route 1/9 intersection sometimes extends beyond Coral Street, so there are no gaps for right-turning traffic from Coral Street. With the project, the delay for Coral Street traffic would increase, but the delay for traffic on Route 9 would decrease. In addition, the number of vehicles able to cross this intersection would increase under project conditions.

Baseline Conditions versus 2030 Project Conditions: During the morning peak hour, vehicle queues in the two southbound left-turn lanes at the Route 1/9 intersection occasionally spilled back past Coral Street. Overall, this intersection functioned well during the morning peak hour. During the afternoon peak hour, eastbound vehicle traffic on Coral Street had difficulty accessing southbound Route 9 due to the long vehicle queues from the Route 1/9 intersection that continuously blocked the intersection, resulting in an average delay of 27.2 seconds.

Under 2030 project conditions, the morning peak hour level of service delay decreases. However, the average delay in the afternoon peak hour increases by 51.2 seconds. The increase in average delay is largely due to background growth that is expected to occur by 2030. Therefore, with the project, the delay for Coral Street traffic would increase, but the delay for traffic on Route 9 would decrease. In

addition, the number of vehicles able to cross this intersection (absolute volume of traffic served) would increase under project conditions.

Route 9/Fern Street Intersection

2030 No-Build Conditions: This intersection is projected to operate with 3.0 seconds of delay during the morning peak hour and 154.3 seconds of delay during the afternoon peak hour. Right-turning vehicles on Fern Street that eventually turn left at the downstream intersection of Route 1/9 would experience significant delays. These vehicles would need to find gaps in the southbound traffic to merge into the innermost lane to make a left turn at the Route 1/9 intersection.

2030 Project Conditions: With the project improvements in place, delay during the morning peak hour is slightly reduced by 0.5 second. In the afternoon peak hour, delay is expected to be reduced by about 21.6 seconds. The right-turning vehicles on Fern Street would benefit from the project as both the receiving lanes on southbound Route 9 would provide access to left-turn lanes at the Route 1/9 intersection (whereas under no-project conditions, only the innermost through lane is aligned to accommodate the left-turning vehicles).

Baseline Conditions and 2030 Project Conditions: During the morning peak hour, the intersection operated well with an average delay of 2.1 seconds under baseline conditions. During the afternoon peak hour with an average delay of 77.6 seconds, the southbound vehicle queue from the Route 1/9 intersection frequently extended through the intersection. The northbound left-turn traffic frequently spilled beyond the left-turn lane, blocking the northbound through lane. Traffic flow was affected by the eastbound approach on Fern Street.

Under 2030 project conditions, the average delay in the afternoon peak hour increases by approximately 55.1 seconds (from 77.6 to 132.7 seconds). The increase in average delay is largely due to background growth that is expected to occur by 2030. The right-turning vehicles on Fern Street would benefit from the project because both of the receiving lanes on southbound Route 9 would provide access to left-turn lanes at the Route 1/9 intersection (whereas under no-project conditions, only the innermost through lane is aligned to accommodate the left-turning vehicles). With the project, although the delay for Fern Street traffic would increase, the delay for traffic on Route 9 would decrease. In addition, the number of vehicles able to cross this intersection (absolute volume of traffic served) would increase under project conditions.

Route 9/Encinal Street Intersection

2030 No-Build Conditions: This intersection is expected to operate with 13.1 seconds of delay during the morning peak hour and 43.2 seconds of delay during the afternoon peak hour under no-project conditions.

2030 Project Conditions: With construction of the project, this intersection is expected to operate with 13.4 seconds of delay during the morning peak hour and 48.8 seconds of delay during the afternoon peak hour. The increase in delay is related to the increase in the number of vehicles being served at this intersection. The throughput at this intersection is expected to increase by 10% in the afternoon peak hour due to the upstream widening of Route 9 from one lane to two lanes.

Baseline Conditions and 2030 Project Conditions: This intersection operated well during both peak hours. No major operational problems were seen except that, during both peak hours, northbound left-turn vehicle queues spilled back past Fern Street; the queues were able to clear the intersection in one signal cycle.

Under the 2030 project scenario, the average delay in the morning peak hour increases slightly by 4.3 seconds. The average delay in the afternoon peak hour increases by 29.1 seconds. The increase in average delay is largely due to background growth that is expected to occur by 2030. However, the absolute volume of traffic served will increase in both the morning and afternoon peak hour in 2030 with the project compared to baseline conditions due to the upstream widening of Route 9 from one lane to two lanes. Therefore, with the project, the delay for Encinal Street traffic would increase, but the delay for traffic on Route 9 would decrease.

Demand Versus Volume Served

In addition to the average delay at the intersections, the number of vehicles that the four study intersections would serve (the number of vehicles that are expected to exit an intersection) was compared to the demand at these intersections under baseline conditions.

Table 2-6 shows the throughput (volume that is being served) compared to the demand under baseline, 2030 no-project, and 2030 project conditions.

Table 2-6 Demand Versus Peak Hour Volume Served

Intersection	Intersection Control	Peak Hour	Baseline Traffic Served		2030 No-Project Traffic Served		2030 Project Traffic Served		2030 Project Minus Baseline		2030 Project Minus 2030 No-Project		
			Peak Hour Volume	% of Demand	Peak Hour Volume	% of Demand	Peak Hour Volume	% of Demand	Peak Hour Volume	Change in % of Demand Served	Peak Hour Volume	Change in % of Demand Served	
1.	Route 1/9	Signals	AM	4,607	95%	4,697	71%	5,044	77%	437	-18%	347	6%
			PM	4,638	73%	4,806	63%	5,448	71%	810	-2%	642	8%
2.	Route 9/ Coral Street	No signals	AM	1,588	97%	1,810	81%	1,934	87%	346	-10%	124	6%
			PM	1,939	78%	1,996	68%	2,221	75%	292	-3%	225	7%
3.	Route 9/ Fern Street	No signals	AM	1,491	99%	1,679	81%	1,793	86%	302	-13%	114	5%
			PM	1,675	74%	1,754	65%	2,022	75%	347	1%	268	10%
4.	Route 9/ Encinal Street	Signals	AM	1,160	96%	1,384	85%	1,449	89%	289	-7%	65	4%
			PM	1,411	86%	1,462	75%	1,659	86%	248	0	197	11%

Source: Highway 1 and Highway 9 Intersection Modification Traffic Operations Report, February 8, 2011.

As shown in Table 2-6, under baseline conditions, the Route 1/9 intersection could accommodate 95% of the morning peak hour traffic demand and 73% of the afternoon peak hour traffic demand. Under 2030 no-project conditions with traffic volumes increasing by approximately 30%, the Route 1/9 intersection is projected to serve only 71% of the morning peak hour traffic demand and 63% of the afternoon peak hour traffic demand. With project improvements, the traffic volume served at this intersection is projected to increase to 77% of the morning peak hour traffic demand and 71% of the afternoon peak hour traffic demand.

Traffic served at the other three study intersections is also projected to increase with the project. In general, during the morning peak hour, 4% to 6% more traffic would be able to travel through the intersections. The benefits of the project are much greater during the afternoon peak hour, with 8% to 10% more serving capacity than under no-project conditions. This means that although congestion would continue to occur in the future, the duration of the congestion would be shorter with the project improvements.

Total Network Performance and System Delay

The systemwide average delay and the total number of vehicles served through the system were also assessed to evaluate the benefits of the project. “Systemwide delay” is the delay associated with all the vehicles entering and exiting the study corridor network. “Total vehicles served” is the total number of vehicles expected to be able to travel through the study corridor during the peak hour. As shown in Table 2-7, the total delay under project conditions would decrease by 156 hours in the morning peak hour and 260 hours in the afternoon peak hour, compared to no-project conditions. With the project improvements, the network would be able to accommodate 331 more vehicles in the morning peak hour and 620 more vehicles in the afternoon peak hour.

Table 2-7 Total System Delay and Network Performance

Measure of Effectiveness	Peak Hour	Baseline	2030 No-Project	2030 Project	2030 No-Project Minus Baseline	2030 Project Minus Baseline	2030 Project Minus 2030 No-Project
Total Delay (hours)	AM	231	1,034	878	803	647	-156
	PM	612	1,526	1,266	914	654	-260
Vehicles Served	AM	4,688	4,853	5,184	165	496	331
	PM	4,869	5,049	5,669	180	800	620

Source: Highway 1 and Highway 9 Intersection Modification Traffic Operations Report, February 8, 2011.

Based on the traffic analysis, implementation of project improvements would result in significant improvements in reducing systemwide average delay and accommodating more travelers within the corridor. As noted in Table 2-5, the project improvements would reduce delay, compared to no-project conditions, at the Route 1/9 and Route 9/Fern Street intersections, but increase delay at certain movements at the Route 9/Encinal Street and Route 9/Coral Street intersections. At the Route 9/Encinal Street intersection, the increase in delay is related to the expected increase in throughput at this intersection. With the widening of Route 9 from one lane to two lanes, the intersection would serve a greater number of vehicles. At the Route 9/Coral Street intersection, the project would increase the delay for the Coral Street movement, but would decrease delay for the Route 9 movement.

Pedestrian and Bicycle Facilities

With the project, the current crosswalks at the Route 1/9 and Route 9/Encinal Street intersections would be unchanged. A widened 8-foot shoulder accessible to bicycles would be provided on northbound Route 9 between Route 1 and Fern Street; a 4-foot-wide shoulder would continue north of Fern Street to Encinal Street. Additionally, 4-foot bike lanes would be provided to the northern and southern legs of the Route 1/9 intersection and the southern leg of the Route 9/Encinal Street intersection. Curb ramps that comply with the Americans with Disabilities Act (ADA) would be provided at all appropriate pedestrian crossings. Additionally, changes to intersections with signals would include installation of bicycle detection devices for the bike lanes.

Construction Impacts

The project is expected to consist of four stages of construction to maintain flow through the intersection during construction of the project:

- Stage one would consist of construction of the roadway widening along northbound Route 9 and River Street, including shoulder, curb and gutter and drainage improvements.
- Stage two would shift all Route 9 traffic to the constructed portion of northbound Route 9 and River Street to free up southbound Route 9 and River Street for demolition and construction of the proposed median and associated drainage improvements. Once the median is in place, pavement delineation would be laid out to open both directions of Route 9 and River Street.

- Stage three would consist of roadway construction of the north side of Route 1 where widening occurs as well as the curb return and sidewalk at the northwest quadrant.
- Stage four would consist of construction of the Route 1 proposed median and associated drainage features, and reconstruction of the median nose on the east side of the intersection.

Cumulative Impacts

The impact analysis described above is a cumulative analysis since future traffic conditions are evaluated based on anticipated future growth in 2030, as proposed by the City of Santa Cruz General Plan, compared to baseline conditions. The project's incremental contribution to cumulative traffic operations is not expected to be cumulatively considerable as the project is designed to decrease delays and increase throughput through the intersection.

No-Project Alternative

A comparison of existing conditions to no-project conditions shows that traffic is expected to increase between baseline conditions and 2030 whether or not the project is constructed. Delays are also expected to be greater in 2030 than they are under baseline conditions due to background growth in the area.

The analysis above shows that project improvements would result in significant improvements in reducing systemwide average delay within the corridor in 2030 compared to 2030 conditions without the project. The total number of vehicles served throughout the system would also increase with the project.

Avoidance, Minimization, and/or Mitigation Measures

1. The City would develop a Traffic Management Plan to assess stage construction and traffic handling, to minimize impacts to vehicular, bicycle, and pedestrian traffic during project construction. To prepare the plan, the City would coordinate with affected local entities to develop necessary strategies to maintain efficient and safe movement of vehicles through the construction zone. Measures that may be included in the plan are a public awareness campaign, portable changeable message signs, and a Construction Zone Enhanced Enforcement Program.
2. Pedestrian and bicycle access during construction would be staged to preserve existing or similar access points and travel routes to the maximum extent. The San Lorenzo River Multipurpose Path along the San Lorenzo River would also be

available as an alternative route to bypass the construction area along River Street and Route 9.

2.1.5 Visual/Aesthetics

Regulatory Setting

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

Affected Environment

The project area is largely characterized by commercial development. One permanent residence that is tenant-occupied sits in the northeast quadrant of the Route 1/9 intersection. Route 1/9 and River Street are not State- or City-designated scenic routes, and there are no scenic vistas associated with the project. Route 9, heading north from the intersection, serves as an entry to the redwoods through Pogonip, which is City-designated open space, and Henry Cowell Redwoods State Park, which is just beyond Pogonip.

Figure 2-5 is a location map showing where representative photos of the proposed project were taken, and Figure 2-6 includes the corresponding photos. The views are described below:

- Mature trees and landscaping surround the residence, and mature riparian vegetation lines the drainage in the northeast corner of the intersection (Figure 2-6, Photo 1).
- Central Home Supply is a landscaping and building supply store whose showroom and several parking spaces front Route 9 (Figure 2-6, Photo 2).
- The residence at 744 River Street in the northeast quadrant of the Route 1/9 intersection is next to Arroyo de San Pedro Regalado. The residence is barely visible behind the fencing and existing vegetation (Figure 2-6, Photo 3).
- Vegetation in the northeast quadrant of the Route 1/9 intersection is associated with Arroyo de San Pedro Regalado. In the southeast quadrant, landscaping fronts commercial uses (Figure 2-6, Photo 4).

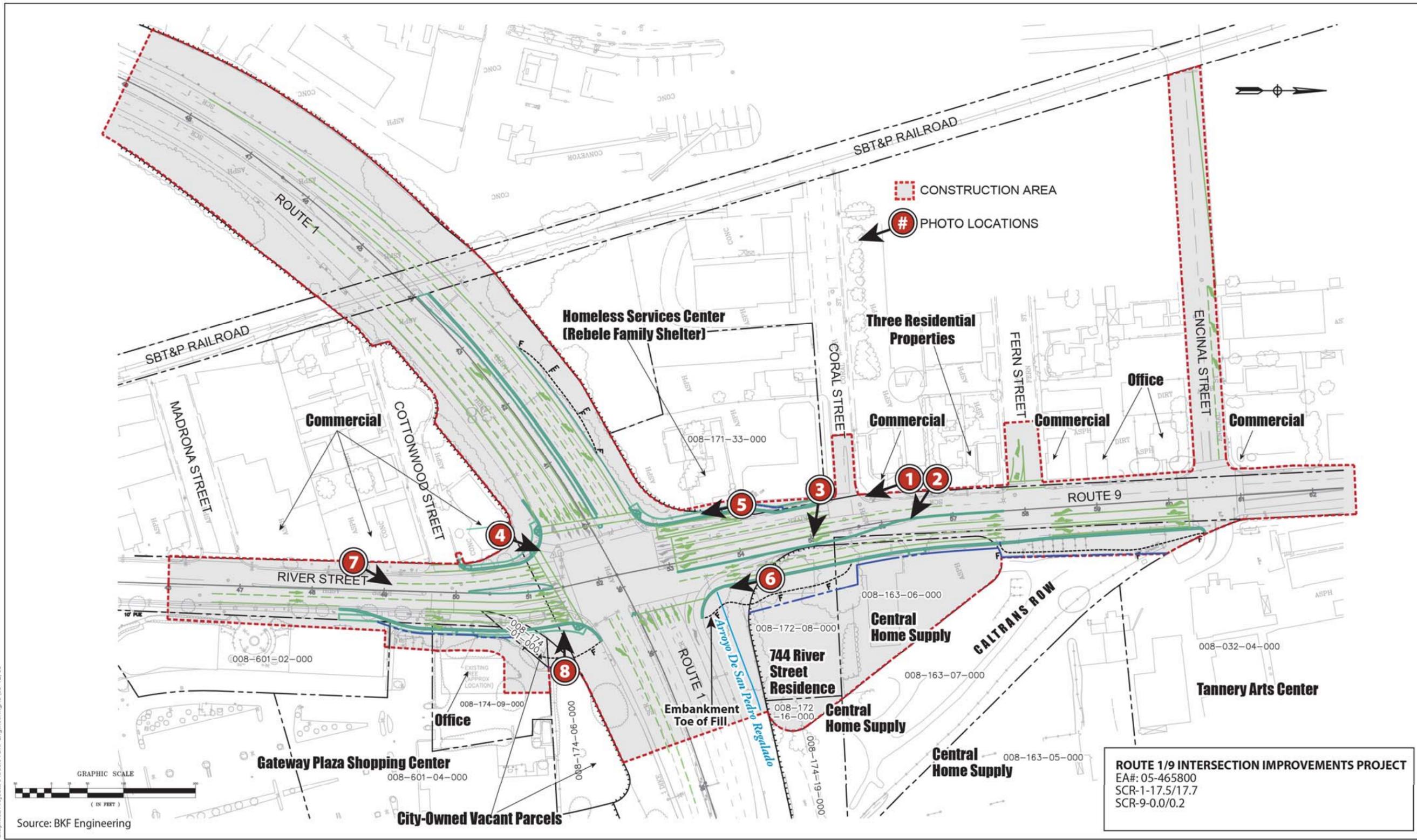


Figure 2-5 Location Map of Representative Photos

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Photo 1: Looking south down Route 9, north of Coral Street, toward the Route 1/9 and River Street intersection.



Photo 2: Looking southeast across Route 9, north of Coral Street, toward Central Home Supply.

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Figure 2-6 Representative Photos (1 and 2)



Photo 3: Looking southeast across Route 9, south of Coral Street, toward the residence at 744 River Street.



Photo 4: Looking northeast from the southwest corner of the Route 1/9 intersection toward Arroyo de San Pedro Regalado and Route 1.

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Figure 2-6 Representative Photos (3 and 4)



Photo 5: Looking south down River Street, adjacent to the Rebele Family Shelter and Homeless Services Center, toward the Route 1/9 intersection.



Photo 6: Looking south from the northeast corner of the Route 1/9 intersection toward River Street.

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Figure 2-6 Representative Photos (5 and 6)

- This view looks south down River Street toward the landscaping and fencing in front of the Rebele Family Shelter and Homeless Services Center (Figure 2-6, Photo 5).
- River Street contains a medical office complex and commercial uses south of Route 1. Landscaping along River Street is provided by street trees and one heritage redwood tree; there are also ornamental and overhead cobra streetlights near the intersection (Figure 2-6, Photo 6).
- The southeast corner of the intersection contains a medical office complex and commercial uses. Landscaping along River Street is provided by street trees and one heritage redwood tree; there are also ornamental streetlights along the roadway (Figure 2-6, Photo 7).
- Between the northwest and southwest corners, the median contains a decorative, lighted sign that reads “River Street–Welcome to Downtown Santa Cruz.” The City’s General Plan identifies River Street as one of the nine entrances to the city’s downtown (Figure 2-6, Photo 8).

Just outside of the project area, but in close proximity to the east, lies the San Lorenzo River and the San Lorenzo River Multipurpose Path. The more natural river corridor and recreational trail provide a visual contrast to the more urbanized setting of the Route 1/9 intersection.

Viewers who would see the proposed project include those traveling in vehicles along Routes 1 and 9, River Street, and adjacent local streets. These viewers would have low sensitivity to visual changes resulting from the proposed project due to the short periods of time they view the project site and their focus on driving. Viewers associated with adjacent businesses would have moderately high sensitivity to visual changes resulting from the proposed project because they have semi-permanent views from their respective facilities, but they are also not focused on views of the roadways.

Recreationists such as cyclists, walkers, runners, and joggers traveling on project roadways would also be moderately sensitive to visual changes because, while they are likely to regard the outdoor environment as a holistic visual experience, they are often only transient viewers seeing the proposed project for a short time as they pass through the area.

Environmental Consequences

The project would generally increase the urbanized feel and look of the Route 1/9 intersection with the following changes:

- Removal of the residence at 744 River Street (see Photo 3 in Figure 2-6) and Central Home Supply (see Photo 2). As noted in the project description in Chapter 1, although full acquisition of the parcel that contains Central Home Supply is not required to accommodate the proposed right-of-way, full acquisition of this parcel is assumed for the purposes of the environmental analysis done for this project as a worst-case assumption.
- Potential construction of a new retaining wall near the medical office complex in the southeast quadrant of the Route 1/9 intersection that would be visible to viewers at the medical office complex.
- Removal of ornamental trees and shrubs in front of the Rebele Family Shelter and Homeless Services Center in the northwest quadrant of the Route 1/9 intersection (see Photo 5).
- Removal of about 5 street trees, landscaping, and 2 redwood trees (including 1 of heritage size) in the southeast quadrant of the Route 1/9 intersection.
- Removal of riparian trees and woody understory plants, including Himalayan blackberry, next to the roadway in the Arroyo de San Pedro Regalado (northeast) quadrant of the intersection (see Photo 3). See the “Embankment Toe of Fill” in the northeast quadrant of Figure 2-5.
- Additional pavement with widening of the intersection.

Because the River Street median would be changed during construction of the project, the River Street sign would be affected.

Traffic signals at the intersection would be relocated or changed, and street lights along Route 9 and River Street and overhead poles at Route 9/Encinal Street and Route 9/Coral Street would be relocated. These are existing elements in the landscape, and their relocation would not introduce new visual elements into the landscape. The project would reduce the amount of lighting in the project area; with the removal of Central Home Supply and the rental home, those sources of light would no longer be present. However, removal of vegetation, buildings associated with Central Home Supply, and the rental home, and an increase in the amount of

pavement in the project area would increase the amount of glare by increasing reflective paved surfaces and removing sources of shade.

No-Project Alternative

The No-Project Alternative would not result in any aesthetic/visual impacts. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

1. Loss of landscaping would be replaced where space allows, or owners would be compensated for their loss of landscaping. Project landscaping would adhere to the following:
 - Seventy-five percent of the plants would be species that are native and indigenous to the project area and California.
 - Invasive plant species would not be used at any location.
 - Vegetation would be planted within the first year following project completion.
 - Irrigation for the replanted areas would use a smart watering system that evaluates the existing site conditions and plant material along with weather conditions in order to avoid overwatering. Broken spray head, pipes, or other components would be repaired within 1 to 2 days or shut down to avoid wasteful watering practices.
2. Any retaining walls that would be visible to viewers would be treated with aesthetic treatments, to the extent feasible, in order for the walls to blend with the surroundings. Aesthetics and color would be context sensitive. Walls would be matte and roughened. Low-sheen and non-reflective surface materials would be used to avoid the potential for glare.
3. The River Street gateway sign would be moved to the rebuilt River Street median.

Avoidance, minimization, and/or mitigation measures provided under Section 2.3.1, Natural Communities, would also benefit visual resources. Specifically, measure 6 would require that Caltrans/City “compensate for temporary construction-related loss of riparian vegetation by replanting disturbed areas with the native species including coast live oak and arroyo willow.”

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

This section is based on the Location Hydraulics Memorandum (March 5, 2012) prepared for this project.

Affected Environment

The project is next to the 100-year inundation area of the San Lorenzo River (see Figure 1-2). Figure 2-7 shows the Federal Emergency Management Agency Flood Insurance Rate Map for the San Lorenzo River. The flood map shows that the project area has a substantial overbank area identified as Hazard Zone A. Runoff from the San Lorenzo River overtops the river banks, but does not overtop the existing Route 1 Bridge.

The U.S. Geological Survey reports a total drainage area of 115 square miles at the Santa Cruz gage of the San Lorenzo River. The peak recorded flow at the Santa Cruz gage is 30,400 cubic feet per second on December 23, 1955. The highest reading for the 1988 through current period is 19,000 cubic feet per second. Flood control improvements were made along the San Lorenzo River through downtown Santa Cruz following the 1955 floods and then improved again in the 1990s and early 2000s when the river levees were raised and bridges over the river were replaced.

Environmental Consequences

Except for a limited area of fill in the Arroyo De San Pedro Regalado drainage, upstream of the Route 1 Bridge, the project would be outside the Federal Emergency Management Agency 100-year inundation area of the San Lorenzo River. The fill is proposed downstream of two existing buildings that block flows through the project area making the zone where the fill would be placed ineffective for conveying river flow. The fill needed for roadway widening would not affect 100-year water levels in the San Lorenzo River.

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No increase in flooding risk is expected with construction of the project. The project would fill a small portion of the San Lorenzo River overbank, reducing total overbank flow area by less than 1%. The grading would occur above the 10-year water level and would not change hydraulics for storms more frequent than a 10-year event. The fill would occur outside the effective flow path of the bridge and would not affect flow velocities and friction losses.

No-Project Alternative

This alternative would not result in any drainage impacts. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

2.2.2 Water Quality and Storm Water Runoff

Regulatory Setting

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the Clean Water Act and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Also, 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 on water quality standards in a project area are contained in the applicable Regional Water Quality Control Board Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions 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, the State Water Resources Control Board 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 or non-point source controls (National Pollutant Discharge Elimination System permits or Waste Discharge Requirements), the Clean Water Act requires the establishment of Total Maximum Daily Loads. Total Maximum Daily Loads specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, plus oversees water quality functions throughout the state by approving Basin Plans, Total Maximum Daily Loads, and National Pollutant Discharge Elimination System permits. 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.

Affected Environment

This section is based on the Water Quality Technical Memorandum (September 13, 2011) prepared for the project.

The project lies in the San Lorenzo Hydrologic Unit. The drainage channel, historically known as the Arroyo de San Pedro Regalado Creek (Figure 1-3), extends from a 72-inch reinforced concrete pipe storm drain beneath Route 9 east to the San Lorenzo River. The channel drains an industrial area of about 200 acres on the west side of Route 9. The size of the drainage channel ranges from 6 feet to 9 feet wide and 2 feet to 3 feet deep. The channel is about 500 feet long between the culvert opening and the San Lorenzo River.

The Central Coast Regional Water Quality Control Board has set water quality objectives for surface waters in its region. Specific objectives for concentrations of chemical constituents are identified for bodies of water based on the surface water's designated "beneficial uses" that are established to preserve existing and potential future uses of the water bodies. These objectives, consisting of both narrative and numerical goals are listed in the region's basin plan. The Beneficial Uses of the San

Lorenzo River include municipal, agricultural, industrial, groundwater recharge, recreation, wildlife habitat, cold freshwater habitat, migration of aquatic organisms, spawning habitat, biological habitats of special significance, rare or endangered species, freshwater replenishment, and commercial fishing.

The State Water Board developed a statewide 2010 California Integrated Report based on the Integrated Reports from each of the nine Regional Water Quality Control Boards that was approved by the U.S. Environmental Protection Agency on November 12, 2010. According to the 2010 Integrated Report, the San Lorenzo River is impaired for pathogens, chlordane, chlorpyrifos, nutrients, polychlorinated biphenyls (PCBs), and sedimentation/siltation. Potential sources of the pathogen impairment are considered to be natural sources, urban runoff, onsite wastewater systems (septic tanks), transient encampments, and unknown nonpoint sources. The sources of chlordane and chlorpyrifos are unknown according to the list, but chlorpyrifos is typically associated with agricultural operations. Nutrients are sourced to pasture grazing - riparian and/or upland, natural sources, septage disposal, and nonpoint sources. The source of polychlorinated biphenyls is unknown, and the sedimentation impairment can be sourced to construction/land development, silviculture, and urban runoff/storm sewers. The San Lorenzo River watershed has TMDLs set for nutrients, pathogens, and sedimentation siltation. Caltrans is a named stakeholder in the sediment/siltation TMDL. As such, Caltrans District 5 submits a Work Plan, which contains all the NPDES Permit related goals, to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) annually. In accordance with the Work Plan, all projects within the San Lorenzo River watershed will consider incorporation of design pollution prevention best management practices (BMPs) to reduce or eliminate the potential for sediment loading to the San Lorenzo River or its tributaries.

Environmental Consequences

The project would require work within the Arroyo de San Pedro Regalado drainage channel by extending the channel's outfall. In-water construction would occur during the dry season (July 1 through October 15). Since the creek appears to be perennial, water may still be present. Although in-water construction activities would occur during the dry season, dewatering of the portion of the channel to be filled may be implemented through small check dams and bypass pipes to stop sedimentation.

With implementation of the project, the increase in impervious surface area is expected to be 0.34 acre. (The current impervious area is approximately 4.03 acres,

and after construction the impervious area would be approximately 4.37 acres). The total disturbed soil area for construction of the project is estimated to be 0.81 acres. Potential effects of the project are limited to construction-related impacts such as erosion, sedimentation, and the potential release of hazardous construction-related materials. Grading activities could result in sedimentation of nearby surface waters, and trenching and excavation may expose the groundwater table and provide a direct path for contamination of groundwater. Also, improper use of fuels, oils, and other construction-related hazardous materials may pose a threat to surface or groundwater quality.

No-Project Alternative

The No-Project Alternative would not result in any water quality impacts. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

1. To minimize the mobilization of sediment and construction-related contaminants to the adjacent water body, Caltrans/City would require that erosion and sediment control measures be specified in the construction and project performance specifications based on standard Caltrans/City requirements. These may include, but are not be limited to, the following:
 - To prevent fertilizers used on landscaped areas from contributing nutrients to the impaired San Lorenzo River, contain runoff from onsite landscaped areas. This containment can be achieved by irrigating at a rate that does not cause substantial runoff.
 - Develop a hazardous material spill prevention control and countermeasure plan before construction begins that would minimize the potential for and the effects of hazardous or toxic substances spills during construction. The plan would include storage and containment procedures to prevent and respond to spills, and would identify the parties responsible for monitoring the spill response. During construction, any spills would be cleaned up immediately according to the spill prevention and countermeasure plan. The City/Caltrans would review and approve the contractors' toxic materials spill prevention control and countermeasure plan before allowing construction to begin. The City/Caltrans would routinely inspect the construction site to verify that Best Management Practices specified in the plan are properly implemented and maintained. The City/Caltrans would notify the contractor immediately if there is a noncompliance issue and would require compliance.

- Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways.
- Contain soil and filter runoff from disturbed areas by berms, vegetated filters, sediment control BMPs, straw wattle, catch basins, or other means necessary to prevent the escape of sediment from the disturbed area.
- Use other temporary sediment control measures (such as large sediment barriers, staked straw wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes), and install permanent erosion control or other ground cover as soon as soil disturbing activities are complete to control erosion from disturbed areas as necessary.
- Avoid earth or organic material from being deposited or placed where it may be directly carried into the channel.
- Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete; solvents and adhesives; thinners; paints; fuels; sawdust; dirt; gasoline; asphalt and concrete saw slurry and wash water; heavily chlorinated water.
- Measure baseline turbidity, pH, specific conductance, and temperatures in the channel when flow is present, and sample water from dewatering activities. As required by the Regional Water Quality Control Board, avoid exceeding water quality standards specified in the Basin Plan standards over the natural conditions.
- The following temporary construction site BMPs, that will address the above concerns, to be included as contract bid items are anticipated to be: Prepare Water Pollution Control Program (WPCP), Job Site Management, Temporary Check Dam, Temporary Gravel Bag Berm, Temporary Drainage Inlet Protection, Temporary Hydraulic Mulch (BFM), Temporary Large Sediment Barrier, Street Sweeping, Temporary Concrete Washout, and Temporary Fence (type ESA). The City/Caltrans shall perform routine inspections of the construction area to verify that the BMPs are properly implemented and maintained. The City/Caltrans will notify contractors immediately if there is a noncompliance issue and will require compliance.

2. As this project does not add an acre or more of net new impervious surfaces, it is not required to consider incorporation of permanent storm water treatment BMPs. As per the Caltrans Work Plan for compliance with the San Lorenzo River TMDLs, the project will incorporate design pollution prevention BMPs (DPPBMPs) to reduce or eliminate the potential for sediment discharge to the San Lorenzo River and its tributaries. DPPBMPs under consideration are: compost based soil modification to reduce run-off and increase infiltration, reduction of paved surfaces as much as is feasible, utilization of an open vegetated storm water conveyance system wherever feasible, flared culvert end sections, outlet protection/velocity dissipation devices, preservation of existing vegetation, and stabilization of disturbed soil with erosion and sediment control BMPs when soil disturbing activities cease.

2.2.3 Geology/Soils/Seismic/Topography

Regulatory Setting

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

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

Affected Environment

This section is based on the Preliminary Geotechnical Information Memorandum (March 13, 2012) prepared for this project.

Geology and Subsurface Conditions

A geologic map of the project area is shown in Figure 2-8. Subsoils at the project site sit on alluvial deposits (undifferentiated Holocene [Qal] in Figure 2-8) from the San Lorenzo River. These deposits are generally overbank deposits of clay, silt, and fine sand intermixed with unconsolidated coarse sands and gravel to a depth of about 25

feet. Based on borings drilled about 600 feet east of the project site, the subsurface conditions consist of mostly medium dense to very dense sand and gravel. Groundwater near the projects site is encountered at depths ranging from 12 feet to 14 feet and flows southeasterly toward the San Lorenzo River.

Topography and Drainage

The project sits along the northern coast of Monterey Bay. The regional terrain trends toward the south. The terrain slopes downward from the crest of the Santa Cruz Mountains to the northern coast of Monterey Bay. Surface water runoff is collected through local drainage systems and flows toward Monterey Bay.

Earthquake Considerations

The site is about 7.1 miles northeast of the nearest active fault, the Monterey Bay-Tularcitos (Monterey Bay section) fault with a Maximum Moment Magnitude (M_{\max}) of 7.3 (see Figure 2-9). The site is also about 9.1 miles west of the Zayante-Vergales fault zone ($M_{\max}=7.0$), 10.3 miles east of the San Gregorio fault zone (San Gregorio section) ($M_{\max}=7.0$), and 10.7 miles west of the San Andreas fault zone (Santa Cruz Mountains section) ($M_{\max}=7.9$).

The project site lies in a seismically active part of Northern California. The San Andreas Fault has a 21% probability of one or more major earthquakes over the next 30 years. There is a 62% probability of at least one magnitude 6.7 or greater earthquake striking the San Francisco Bay region before 2031.

Liquefaction

Liquefaction is a phenomenon in which saturated sediments are subject to a temporary but essentially total loss of shear strength under the reversing, cyclic shear stresses associated with earthquake shaking; in such a situation, the soil turns jellylike. Submerged, cohesionless sands and non-plastic silts of low to medium density are the types of soils susceptible to liquefaction.

Environmental Consequences

Potential seismic hazards may arise from three sources: surface fault rupture, ground shaking and liquefaction. The site is not located within the Alquist-Priolo Earthquake Fault Zone. Therefore, fault rupture is not considered a substantial hazard and should have no impact on the project. Many faults in the area are capable of producing earthquakes that may cause strong ground shaking at the site. Liquefaction potential at the project site is moderate.

No-Project Alternative

Under this alternative, site geology would not be altered. Therefore, avoidance, minimization, and mitigation measures are not needed.

Avoidance, Minimization, and/or Mitigation Measures

1. Normal maintenance of surface drainage and slope maintenance would be incorporated into the project plans. Sloped areas that would be disturbed during construction would be revegetated after completion of construction. New sloped areas would also be planted. Construction of sediment ponds or siltation basins would be considered to retain water during heavy rainfall periods. These basins would be connected to the storm drainage system.
2. The project design would incorporate Caltrans standards and construction methods to minimize the potential risks associated with strong ground shaking.
3. The project design would incorporate Caltrans standards and construction methods to minimize the potential risks associated with potential liquefaction hazards.

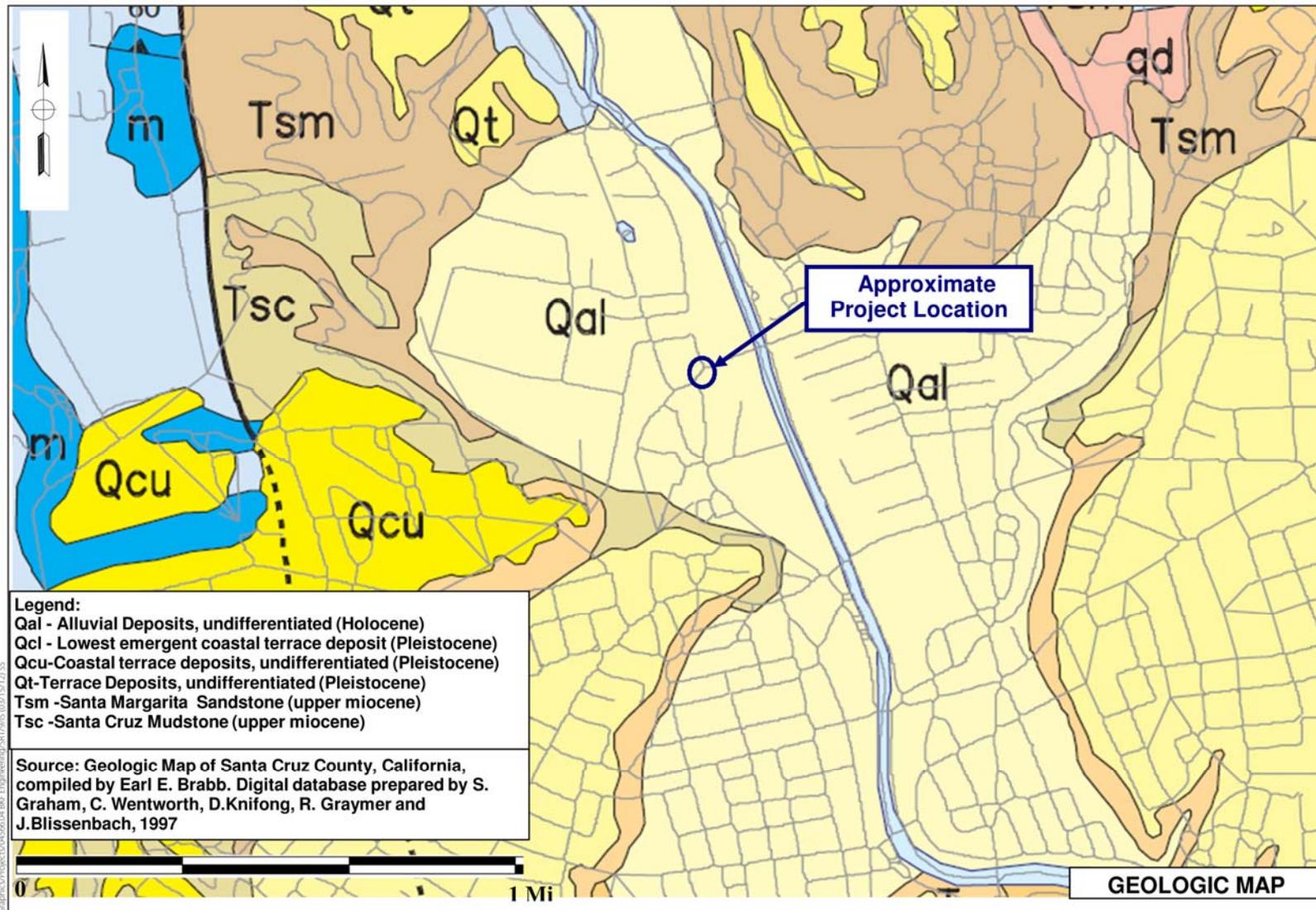


Figure 2-8 Geology of Project Area

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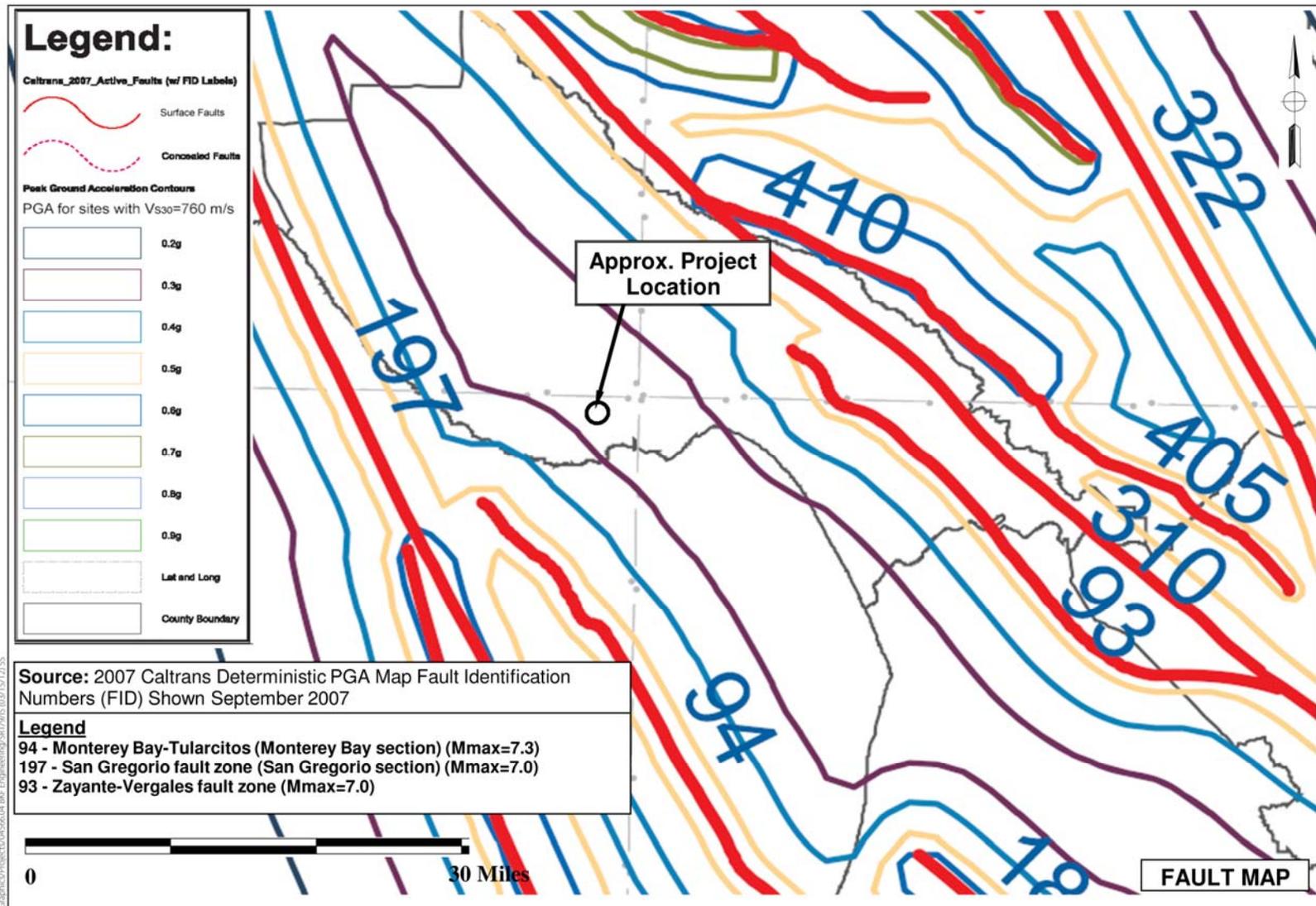


Figure 2-9 Faults in Project Area

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2.2.4 Hazardous Waste or Materials

Regulatory Setting

Hazardous materials, including hazardous substances and wastes are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

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

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

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

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement the Resource Conservation and Recovery Act in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The

Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could affect groundwater and surface water quality. California regulations that address waste management and prevention and cleanup contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is encountered, disturbed or generated during project construction.

Affected Environment

This section is based on the Initial Site Assessment (March 13, 2012) prepared for this project.

An Initial Site Assessment was done in March 2008 and updated in March 2012. This assessment included a review of the historical land uses at the project site.

The site and vicinity, including the Route 9 roadway, have been developed since at least the mid-1800s. The area of the current Route 1/9 intersection was developed with residences from at least 1905 until about 1955. The current Route 1/9 alignment was constructed in about 1956. Adjacent properties have been developed for residential and commercial uses since at least 1902. The Salz Leathers, Inc. property at 1040 River Street, northeast of the site, operated as a leather manufacturing facility/tannery from 1855 until 2001. A portion of the Union Pacific Railroad crossed the western portion of the area since at least 1902. The residential property at 744 River Street was built prior to 1931, and the Central Home Supply office/warehouse building was built in 1970.

The site sits next to the former Salz Leathers, Inc. facility, which had well-documented impacts to soil, groundwater, surface water, and sediment resulting from historical tannery operations. The California Department of Toxic Substances issued a No Further Action Required letter for the property on July 27, 2007. The letter stated that response actions other than long-term operations and maintenance activities have been completed.

Three properties with open leaking underground storage tank cases were identified in the site vicinity. Environmental conditions found at the properties present a low risk

for affecting project construction activities. These conditions include distance from the project site, the extent of affected groundwater collected near the storage tanks, and groundwater flow directions from the storage tanks.

Environmental Consequences

The Initial Site Assessment indicated the following potential impacts related to the proposed project:

- Shallow soil within the Route 1 and Route 9 right-of-way within the project footprint may be affected by aerially deposited lead from historical vehicle emissions and traffic.
- Shallow soil next to the existing Union Pacific Railroad tracks may be affected by metals, herbicides, and polycyclic aromatic hydrocarbons from historical railroad operations.
- Structures on properties proposed for partial acquisition may contain asbestos-containing material and lead-containing paint.
- Construction workers may encounter thermoplastic paint striping that may have special handling and disposal requirements unless combined with sufficient asphalt grindings per Caltrans' Special Provisions.
- Results of the site reconnaissance, historical and regulatory file research, and prior field investigations have indicated the potential presence of closed underground storage tanks at and near the properties proposed for partial acquisition (see Figure 1-3).

No-Project Alternative

This alternative would not expose people to hazardous materials.

Avoidance, Minimization, and/or Mitigation Measures

1. A soil investigation would be performed to determine the potential presence of lead in site soils in the vicinity of any project improvement excavations. Also, if the project requires soil excavation at the existing Union Pacific Railroad right-of-way, a soil investigation would be conducted to determine the presence of metals, herbicides, and polycyclic aromatic hydrocarbons in site soil. If proposed construction activities extend to the depth of groundwater, sampling of groundwater would be included in the environmental investigation. These investigations would be conducted to evaluate potential environmental

impairments, and soil and groundwater material management and possible disposal requirements.

2. An asbestos-containing material and lead-containing paint survey would be conducted at buildings proposed for demolition as part of the project to satisfy Monterey Bay Unified Air Pollution Control District requirements (asbestos) and demolition waste disposal characterization (asbestos and lead).
3. If construction workers encounter thermoplastic paint striping during construction, Caltrans' Special Provisions for handling this material would be implemented.
4. If encountered during construction activities, undocumented underground storage tanks, septic systems and domestic/agricultural/oil wells would be properly removed or abandoned in accordance with Santa Cruz County requirements.

2.2.5 Air Quality

Regulatory Setting

The Federal Clean Air Act (FCAA), as amended in 1990 is the federal law that governs air quality, while the California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency (U.S. EPA) and California Air Resources Board (ARB), set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS).

National ambient air quality standards and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), lead (Pb), and sulfur dioxide (SO₂), and particulate matter (PM), broken down for regulatory purposes into particles of 10 micrometers or smaller (PM₁₀) and particles of 2.5 micrometers and smaller (PM_{2.5}). In addition, state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride.

The National Ambient Air Quality Standards and state standards are set at a level that protects public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics). Some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and state air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). In addition to this type of environmental analysis, a parallel “conformity” requirement under the Federal Clean Air Act also applies.

Conformity

The conformity requirement is based on the Federal Clean Air Act Section 176(c). The Federal Clean Air Act Section 176(c) prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs or projects that are not first found to conform to State Implementation Plan (SIP) for achieving the goals of Clean Air Act requirements related to the National Ambient Air Quality Standards. “Transportation conformity” takes place on two levels: the regional—or, planning and programming—level and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the National Ambient Air Quality Standards, and only for the specific National Ambient Air Quality Standards that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and in some areas sulfur dioxide (SO₂). California has attainment or maintenance areas for all of these transportation-related “criteria pollutants” except SO₂, and also has a nonattainment area for lead (Pb). However, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis.

Regional conformity is based on Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (TIPs) that include all of the transportation projects planned for a region over a period of at least 20 years for the Regional Transportation Plan) and 4 years (for the Federal Transportation Improvement Program). Regional Transportation Plan and Federal Transportation Improvement Program conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and

the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration, and Federal Transit Administration (FTA), make determinations that the Regional Transportation Plan and Federal Transportation Improvement Program are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Program must be modified until conformity is attained. If the design concept, scope, and “open to traffic” schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and Federal Transportation Improvement Program, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires “hot spot” analysis if an area is “nonattainment” or “maintenance” for carbon monoxide (CO) and/or particulate matter (PM₁₀ or PM_{2.5}). A region is “nonattainment” if one or more of the monitoring stations in the region measures violation of the relevant standard and F officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by U.S. EPA and are then called “maintenance” areas.

“Hot spot” analysis is essentially the same, for technical purposes, as carbon monoxide or particulate matter analysis performed for National Environmental Policy Act purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot spot analysis. In general, projects must not cause the hot spot-related standard to be violated and must not cause any increase in the number and severity of violations in nonattainment areas. If a known carbon monoxide or particulate matter violation is in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Affected Environment

This section is based on the Air Quality Technical Memorandum (August 30, 2011) prepared for this project.

The U.S. Environmental Protection Agency has classified Santa Cruz County as an unclassified/attainment area for the 1-hour ozone, carbon monoxide, particulate matter 10 microns or less in diameter, and particulate matter 2.5 microns or less in diameter standards. The California Air Resources Board has classified Santa Cruz County as a moderate nonattainment area for the 8-hour ozone standard. For the carbon monoxide standard, the California Air Resources Board has classified Santa Cruz County as an unclassified area. The California Air Resources Board has classified Santa Cruz County as a nonattainment area for the particulate matter 10 microns or less in diameter standard and an attainment area for the particulate matter 2.5 microns or less in diameter standard.

Santa Cruz County's attainment status for each of these pollutants relative to the National Ambient Air Quality Standards and California Ambient Air Quality Standards is summarized in Table 2-8.

Table 2-8 Ambient Air Quality Standards Applicable in California and the Attainment Status of Santa Cruz County

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria		Attainment Status of Santa Cruz County	
			California	National	California	National	California	National	California	National
Ozone	O ₃	1 hour	0.09	–	180	–	If exceeded	–	Moderate Nonattainment	NA
		8 hours	0.070	0.075	137	147	If exceeded	If fourth-highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area	Nonattainment	Unclassified/attainment
Carbon monoxide (Lake Tahoe only)	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year	Unclassified	Unclassified/attainment
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year	Unclassified	Unclassified/attainment
		8 hours	6	–	7,000	–	If equaled or exceeded	–	–	–
Nitrogen dioxide	NO ₂	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year	Attainment	Attainment
		1 hour	0.18	0.100	339	188	If exceeded	–	Attainment	Attainment
Sulfur dioxide	SO ₂	24 hours	0.04	0.14	105	–	If exceeded	If exceeded on more than 1 day per year	Attainment	–
		1 hour	0.25	0.075	655	196	If exceeded	–	Attainment	Unclassified/attainment
		3 hour	–	0.5 ^a	–	1,300 ^a	If exceeded	–	–	–
		Annual arithmetic mean	–	0.030	–	–	–	If exceeded on more than 1 day per year	–	–
Hydrogen sulfide	H ₂ S	1 hour	0.03	–	42	–	If equaled or exceeded	–	Unclassified	–
Vinyl chloride	C ₂ H ₃ Cl	24 hours	0.01	–	26	–	If equaled or exceeded	–	No designation	–

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

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria		Attainment Status of Santa Cruz County	
			California	National	California	National	California	National	California	National
Inhalable particulate matter	PM10	Annual arithmetic mean	–	–	20	–	–	–	Nonattainment	–
		24 hours	–	–	50	150	If exceeded	If exceeded on more than 1 day per year	Nonattainment	Unclassified/attainment
	PM2.5	Annual arithmetic mean	–	–	12	15	–	If 3-year average from single or multiple community-oriented monitors is exceeded	Attainment	Unclassified/attainment
		24 hours	–	–	–	35	–	If 3-year average of 98 th percentile at each population-oriented monitor within an area is exceeded	–	Unclassified/attainment
Sulfate particles	SO ₄	24 hours	–	–	25	–	If equaled or exceeded	–	Attainment	–
Lead particles	Pb	Calendar quarter	–	–	–	1.5	–	If exceeded no more than 1 day per year	–	Unclassified/attainment
		30-day average	–	–	1.5	–	If equaled or exceeded	–	Attainment	–
		Rolling 3-month average	–	–	–	0.15	If equaled or exceeded	Averaged over a rolling 3-month period	–	–

Source: California Air Resources Board 2012 and 2010a; U.S. Environmental Protection Agency 2010a.

^a Refers to a secondary standard only.

The project site is in Santa Cruz County, within the North Central Coast Air Basin, which includes 5,159 square miles along the Central Coast and includes Monterey, Santa Cruz, and San Benito counties. A semi-permanent high-pressure cell is the main controlling factor in the climate there.

In summer, the high-pressure cell is dominant and causes persistent west and northwest winds over the entire California coast and a stable temperature inversion of hot air over a cool coastal layer of air. Onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. Warmer air aloft acts as a lid to inhibit vertical air movement.

In fall, surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. The airflow sometimes reverses in a weak offshore flow, and the relatively stationary air mass is held in place by the high-pressure cell, which allows pollutants to build up over a period of a few days. It is usually during this season that north or east winds develop to transport pollutants from either the San Francisco Bay area or the Central Valley into the air basin. In winter, the general absence of deep, persistent inversions and the occasional storm systems usually result in good air quality for the basin as a whole through winter and early spring.

Sensitive receptors in the project area include a single-family residence (at 744 River Street) in the northeast quadrant of the intersection. But this residence would be removed as part of the project. The northwest quadrant contains the Homeless Services Center complex, including the Rebele Family Shelter at the corner of Route 9/Coral Street that contains emergency housing for the homeless. Refer to Figure 2-5.

Environmental Consequences

Regional Conformity

The project is included in the Association of Monterey Bay Area Government's (AMBAG's) 2010 Metropolitan Transportation Plan (MTP), *Monterey Bay Area Mobility 2035*, and AMBAG's 2012-2013 to 2015-2016 Metropolitan Transportation Improvement Plan (MTIP) (ID #SC025). The MTP (as amended) and the MTIP were found to conform by the Federal Highway Administration and Federal Transit Administration on December 14, 2012. Air quality modeling showed that emissions associated with the MTIP are within the allowable emission budgets for ozone precursors. Therefore, the proposed project is considered a conforming transportation project for this regional pollutant.

Ozone Precursors, Carbon Monoxide, and Particulate Matter Operation-Related Emissions

The Monterey Bay Unified Air Pollution Control District has established significance thresholds within its California Environmental Quality Act Air Quality Guidelines (2008) to determine whether project-related air quality impacts need mitigation. Table 2-9 shows the applicable thresholds used in the analysis of significant air quality impacts.

Table 2-9 Monterey Bay Unified Air Pollution Control District Thresholds of Significance

Pollutant	Construction (pounds per day)	Operation (pounds per day)
Reactive organic gases	NA	137
Nitrogen oxides	NA	137
Carbon monoxide	NA	550
Particulate matter 10 microns or less in diameter	82	82
Particulate matter 2.5 microns or less in diameter	NA	NA
Sulfur oxides	NA	150

Source: Monterey Bay Unified Air Pollution Control District, 2008.

The project’s long-term effects on air quality are associated with motor vehicles operating on the roadway network, predominantly in the project vicinity. The main operational emissions associated with the project are reactive organic gases, oxides of nitrogen, carbon monoxide, particulate matter 10 microns or less in diameter, and particulate matter 2.5 microns or less in diameter.

Table 2-10 summarizes the modeled yearly emissions based on peak hour traffic estimates for the study area intersections. The estimates in the Project minus No-Project row represent emissions generated directly by the project.

Table 2-10 Operational Emission Estimates

Condition	Daily Vehicle Miles Traveled	Reactive Organic Gases (pounds per day)	Nitrogen Oxides (pounds per day)	Carbon Monoxide (pounds per day)	Particulate Matter 10 Microns or Less in Diameter (pounds per day)	Particulate Matter 2.5 Microns or Less in Diameter (pounds per day)
Baseline	173,497	559	814	5,735	26	24
No-Project (2030)	178,769	64	130	676	6	6
Project (2030)	197,331	70	142	745	7	6
<i>Project Minus No-Project</i>	<i>18,562</i>	<i>6</i>	<i>12</i>	<i>69</i>	<i>1</i>	<i>1</i>
Monterey Bay Unified Air Pollution Control District Thresholds	–	137	137	550	82	–

Source: Santa Cruz Route 1/9 Intersection Improvement Project, Air Quality Technical Memorandum, August 30, 2011.

Notes: Vehicular emission rates, in general, are anticipated to decrease in future years due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

Daily vehicle miles traveled was calculated by multiplying peak hour volumes in Table 2-6 by 4.5 and then by the total length of each intersection (sum of north-south and east-west segments). The conversion factor is based on the ratio of peak to off-peak traffic.

Emissions are based on morning peak hour speeds. Because vehicle emissions decrease as a function of speed and peak hours are typically the most congested periods, this assumption likely overestimates daily emissions.

Implementation of the project would result in improved traffic operations that would decrease congestion. The project may attract vehicles from the surrounding network to the study intersections that would have otherwise used alternative travel routes. As shown in Table 2-10, vehicle miles traveled would increase with the project, relative to no-project, resulting in slight increases in all criteria pollutants. Note that the emissions results presented in Table 2-10 represent a worst-case scenario as they are based on peak hour traffic estimates for study area intersections. The emissions results do not capture potential improved traffic operations and decreased congestion on local roadways in the project area that experience less traffic that is diverted to the study intersections. Regardless, the emissions increases would not be in excess of Monterey Bay Unified Air Pollution Control District standards.

Construction Impacts

Implementation of the project would result in construction of a widened intersection and construction of an embankment to accommodate the widened roadways.

Temporary construction emissions would result from grubbing and land clearing; grading and excavation; drainage, utilities, subgrade, and paving activities; and construction worker commuting patterns. Pollutant emissions would vary daily, depending on the level of activity, specific operations, and prevailing weather.

Construction activities are expected to begin in 2015 and take 9 months.

The Road Construction Emissions Model (Version 6.3) was used to estimate construction-related ozone precursors (reactive organic gases and nitric oxides), carbon monoxide, and particulate matter emissions from construction activities assuming a total of 4,200 cubic yards of soil would be imported and exported and about 58 cubic yards would be moved daily. The results of modeling for construction activities are summarized in Table 2-11. Table 2-11 indicates construction activities would not exceed Monterey Bay Unified Air Pollution Control District standards of 82 pounds per day of particulate matter less than or equal to 10 microns.

Table 2-11 Construction Emission Estimates (pounds per day)

	Reactive Organic Gases	Carbon Monoxide	Nitrogen Oxides	Particulate Matter 10 Microns or Less in Diameter			Particulate Matter 2.5 Microns or Less in Diameter			Carbon Dioxide ^a
				Total	Exhaust	Dust	Total	Exhaust	Dust	
Grubbing/land clearing	3.3	14.2	28.1	3.6	1.1	2.5	1.6	1.0	0.5	26
Grading/excavation	3.9	20.6	31.7	4.0	1.5	2.5	1.9	1.4	0.5	129
Drainage/utilities/sub-grade	3.2	14.0	25.5	3.8	1.3	2.5	1.7	1.2	0.5	84
Paving	1.9	7.9	11.4	1.0	1.0	–	0.9	0.9	–	14

Source: Santa Cruz Route 1/9 Intersection Improvement Project, Air Quality Technical Memorandum, August 30, 2011.

Note: Emissions calculations based on Road Construction Emissions Model (Version 6.3).

^a Emissions presented in metric tons per phase.

Cumulative Impacts

The impact analysis above is a cumulative analysis because future traffic conditions are evaluated based on expected future growth in 2030, as adopted by the City of Santa Cruz General Plan. The project would not result in a cumulatively considerable impact on air quality because the project is not expected to exceed Monterey Bay Unified Air Pollution Control District standards.

No-Project Alternative

The No-Project Alternative would not result in the congestion-relief benefits of the project. Congestion would worsen, and related emissions benefits would not occur.

Avoidance, Minimization, and/or Mitigation Measures

Construction activities are subject to Caltrans Standard Specifications, Section 14-9.01, “Air Pollution Control,” and Section 14.02, “Dust Control.” The following measures would be used:

14-9.01 Air Pollution Control:

- Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the contract, including air pollution control rules, regulations, ordinances, and statutes provided in Government Code § 11017 (Pub Cont Code 10231).
- Do not burn material to be disposed of.

14-9.02 Dust Control:

- Prevent and alleviate dust by applying water, dust palliative, or both under Section 14-9.01.
- Apply water under Section 17, “Watering.”
- Apply dust palliative under Section 18, “Dust Palliative.”
- If ordered, apply water, dust palliative, or both to control dust caused by public traffic. This work would be paid for as extra work as specified in Section 4-1.03D, “Extra Work.”

Climate Change

Refer to Section 2.4, Climate Change, at the end of this chapter.

2.2.6 Noise and Vibration

Regulatory Setting

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

Affected Environment

The existing noise environment in the study area is dominated by noise from traffic traveling on Routes 1 and 9, occasional trains on the nearby railroad tracks, and activities from the adjacent industrial and commercial land uses.

Figure 1-3 shows land uses in the project area. Land uses south of Route 1 in the project area are commercial. A single-family residence (at 744 River Street) sits in the northeast quadrant of the intersection, but this residence would be removed as part of the project. The northwest quadrant contains the Homeless Services Center complex, including the Rebele Family Shelter at the corner of Route 9/Coral Street that contains emergency housing for the homeless.

Environmental Consequences

Operational Impacts

The project would construct a right-turn lane on southbound Route 9. The roadway curb would move from 22 feet from the building to 11 feet from the building. Due to the standardization of the lane widths, the upstream lane that contributes to this right-turn lane would actually be 7 feet farther away from the Rebele Family Shelter. Near the southeast corner of the shelter building, the new turn lane would place a traffic lane closer to the shelter. The nearest lane is currently about 28 feet from the shelter, and the new lane would be about 19 feet from the shelter.

Based on the projected 2030 traffic volumes shown in Table 2-6 and the 9-foot shift in the lane geometry, noise at the shelter could increase by as much as about 3 dB. However, the increase would likely be less because of existing ambient noise created by the other five adjacent traffic lanes.

The potential change in operational noise is so small that it would not be perceivable, and it is well below the Caltrans definition of a substantial change in noise (12 dB).

Construction Impacts

Noise and vibration from construction activities (mainly operation of heavy equipment) may intermittently dominate the noise environment in the immediate area of construction. Table 2-12 shows the noise levels produced by construction equipment commonly used on roadway construction projects.

A reasonable worst-case assumption is that the three loudest pieces of equipment anticipated for use on the project (paver, loader, and a truck) would operate simultaneously and continuously for at least a 1-hour period. At 50 feet from the source, the combined sound level would be 92 dBA.

Table 2-12 Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane, derrick	88
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Impact wrench	85
Jack hammer	88
Loader	85
Paver	89
Pile driver (impact)	101
Pile driver (sonic)	96
Pneumatic tool	85
Pump	76
Rock drill	98
Roller/sheep's foot	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Truck	88

Source: Federal Transit Administration 2006.

Table 2-13 shows the estimated noise levels at various distances from an active construction site, assuming this combined source level, distance attenuation (6 dB per doubling of distance), and attenuation from ground absorption (1 to 2 dB per doubling of distance).

**Table 2-13 Estimated Construction Noise in the Vicinity of an
Active Construction Site**

Entered Data:			
Construction Condition: Site leveling			
Source 1: Scraper - Sound level (dBA) at 50 feet =			89
Source 2: Dozer - Sound level (dBA) at 50 feet =			85
Source 3: Truck - Sound level (dBA) at 50 feet =			88
Average Height of Sources - Hs (ft) =			10
Average Height of Receiver - Hr (ft.) =			5
Ground Type (soft or hard) =			soft
Calculated Data:			
All Sources Combined - Sound level (dBA) at 50 feet =			92
Effective Height (Hs+Hr)/2 =			7.5
Ground factor (G) =			0.0
Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Sound Level (dBA)
50	0	0	92
100	-6	-2	85
200	-12	-4	77
300	-16	-5	72
400	-18	-6	69
500	-20	-6	66
600	-22	-7	64
700	-23	-7	62
800	-24	-7	61
900	-25	-8	60
1000	-26	-8	58
1200	-28	-9	56
1400	-29	-9	55
1600	-30	-9	53
1800	-31	-10	52
2000	-32	-10	50
2500	-34	-10	48
3000	-36	-11	46

Nighttime construction activities may be needed to minimize traffic disruptions. No adverse noise impacts from construction are expected because construction noise would be short term, intermittent, and overshadowed by local traffic noise and because construction would be done in accordance with Caltrans Standard Specifications Section 14-8.02, which states:

Do not exceed 86 dBA L_{max} at 50 feet from the job site activities from 9 p.m. to 6 a.m.

Equip internal combustion engines with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.

With this restriction in place, high vibration work would not be allowed at night near the shelter.

No-Project Alternative

This alternative would not result in any noise impacts. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Noise Abatement

No avoidance or minimization measures are required.

2.3 Biological Environment

This section is based on the Natural Environment Study (July 2011) prepared for this project.

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 Threatened and Endangered Species, Section 2.3.5. Wetlands and other waters are discussed in Section 2.3.2.

Affected Environment

Three natural communities—creek channel, riparian, and ruderal grassland—are present in the study area (Table 2-14). Figure 2-10 shows the locations of natural communities and other biological resources in the study area. In addition, a number of trees that meet the City’s definition of a “heritage tree” occur in the study area.

Table 2-14 Total Area of Natural Communities in the Study Area

Natural Communities	Extent within Study Area (acres)
Creek channel	0.1
Coast Live Oak-Arroyo Willow Riparian Forest	0.3
Ruderal and Landscaped	1.9
Total^a	2.3

^a Total area does not include 8 acres of development, including roads, sidewalks, road shoulders, and buildings.

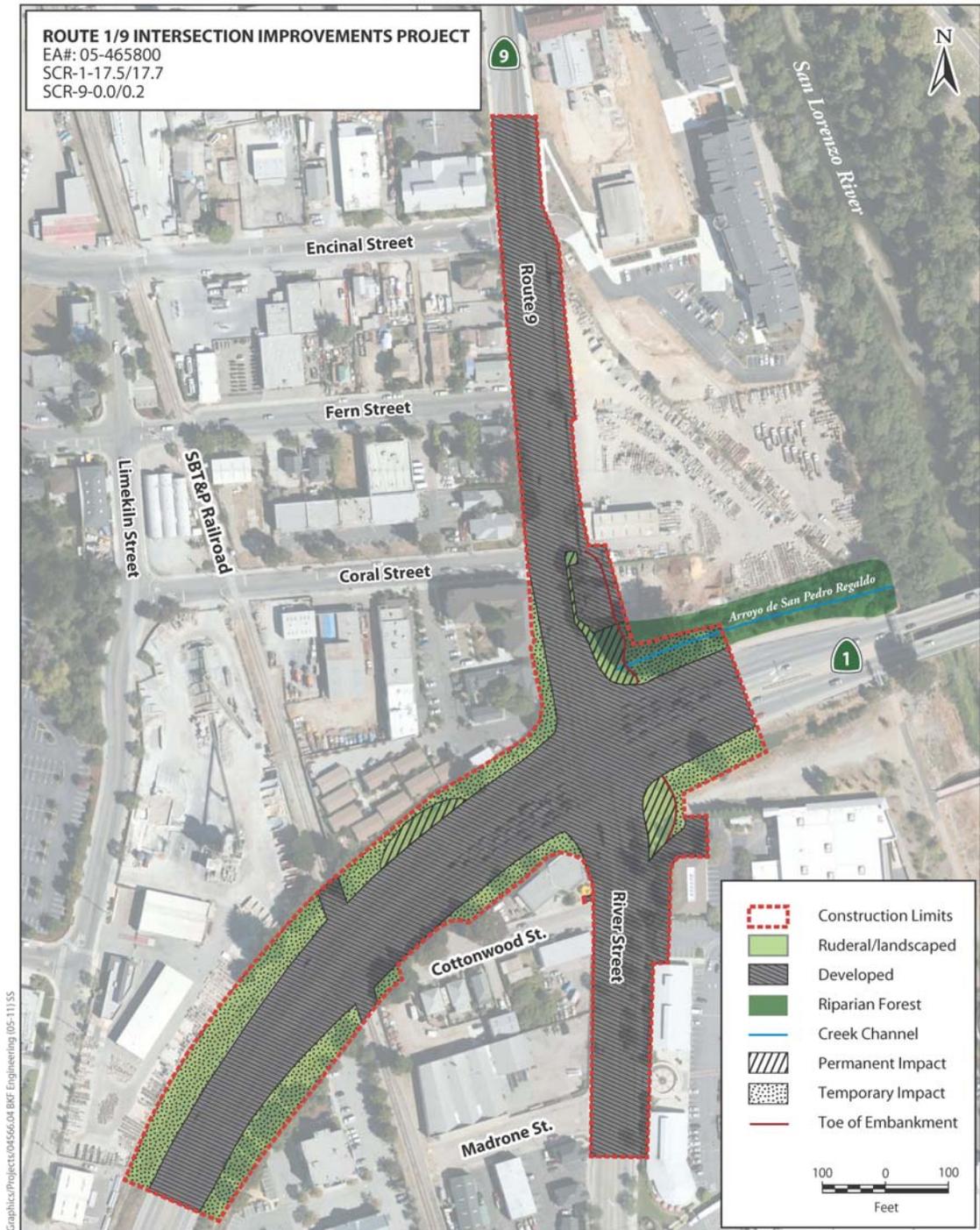


Figure 2-10 Temporary and Permanent Impacts to Natural Communities

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Creek Channel

The ordinary high water mark of the Arroyo de San Pedro Regalado ranges from 6 feet to 12 feet wide, and the water was 2 feet to 3 feet deep at the time of the summer season site visits, indicating that it is likely to be perennial. Coast live oak-arroyo willow riparian forest grows in a narrow band on the creek banks. The arroyo in the project area provides lower quality habitat for wildlife due to its proximity to urban development.

Coast Live Oak-Arroyo Willow Riparian Forest

Riparian trees, including coast live oak and arroyo willow, grow on the south bank of the creek, but most of the dominant trees are eucalyptus. The understory of the riparian forest is dominated by non-native species. Riparian habitat in the study area is heavily disturbed from foot traffic along the creek associated with an abandoned homeless encampment near the intersection. The riparian habitat includes more native species downstream of the project area.

Ruderal and Landscaped Areas

Ruderal areas are dominated by non-native plant species. Because ruderal and landscaped areas typically are disturbed on a regular basis by human activity, they provide low-quality habitat for wildlife.

Heritage Trees

Heritage trees include all species of trees with a circumference of 44 inches or more (equivalent to a diameter of about 14 inches or more) measured at 54 inches above the existing grade. About 25 trees in the study area meet the heritage tree size criterion, including a coast redwood tree with a diameter at breast height greater than 14 inches that stands in the southeast quadrant of the Route 1/9 intersection near the driveway to the medical offices.

Environmental Consequences

Creek Channel

Construction of the project would extend the existing toe of the embankment by about 40 feet beyond the existing roadway to support the intersection widening. The project would also extend the existing culvert by about 25 feet. These extensions would result in the permanent loss of 0.01 acre of creek channel within the project area and a temporary loss of 0.01 acre (see Figure 2-10). The existing concrete apron and cutoff wall that extend about 25 feet from the existing culvert would remain in place or be reconstructed “in-kind.”

All in-water construction activities would be done during the dry season, but the creek is a perennial waterway and would require some dewatering for construction. Dewatering would be accomplished by using small check dams and bypass pipes, which would be considered temporary impacts.

Coast Live Oak-Arroyo Willow Riparian Forest

Construction would result in a permanent loss of 0.03 acre of riparian forest in the study area. The permanent impact area would include riparian trees and woody understory plants such as young trees and Himalayan blackberry. Approximately 0.04 acre of riparian forest vegetation would be temporarily disturbed during construction. This impact would include the probable removal of additional trees and understory vegetation to provide equipment access to the creek.

Heritage Trees

The exact number of heritage trees to be removed or trimmed will be determined during final project design. Removal of heritage trees would be subject to the permit and mitigation requirements of the City.

No-Project Alternative

Under this alternative, natural communities in the project area would not be affected. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

1. Caltrans/City or its contractor would install orange construction barrier fencing to identify environmentally sensitive areas including the creek channel and riparian areas. A qualified biologist would identify sensitive biological resources adjacent to the construction area before the final design plans are prepared so that the areas to be fenced can be included in the plans. Before construction begins, stakes would be placed around the sensitive resource sites to indicate these locations. The fencing would be maintained throughout the construction period and removed after completion of construction.
2. Caltrans/City would retain a U.S. Fish and Wildlife Service-approved biologist to develop and conduct environmental awareness training for construction employees on the importance of onsite biological resources, including sensitive natural communities; trees to be retained; special-status wildlife habitats; and nests of special-status birds. In addition, construction employees would be educated about invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations.

3. Caltrans/City would retain a qualified biologist to conduct construction monitoring in and adjacent to all sensitive habitats in the construction area. The frequency of monitoring would range from daily to weekly depending on the biological resource. The monitor, as part of the overall monitoring duties, would inspect the fencing once a week along the creek and riparian vegetation in the construction area, surrounding trees, and special-status wildlife habitats. The biological monitor would assist the construction crew as needed to comply with all project implementation restrictions and guidelines.
4. Caltrans/City would avoid and minimize potential disturbance of riparian communities by implementing the following measures:
 - The potential for long-term loss of riparian vegetation would be minimized by trimming vegetation, where possible, rather than removing entire shrubs or trees. Shrubs that need to be trimmed would be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting would be limited to the minimum area necessary within the construction zone. To protect nesting birds, Caltrans/City would not allow pruning or removal of woody riparian vegetation between February 1 and September 30 without preconstruction surveys.
 - A certified arborist would be retained to perform any necessary pruning or root cutting of retained riparian trees.
 - The areas that undergo vegetative pruning and tree removal would be inspected immediately before construction, immediately after construction, and 1 year after construction to determine the amount of existing vegetative cover, cover that has been removed, and cover that resprouts. If, after 1 year, these areas have not resprouted sufficiently to return the cover to the pre-project level, Caltrans/City would replant the areas with the same species (or native species if existing vegetation removed was non-native) to reestablish the cover to the pre-project condition.
5. Caltrans/City would implement Best Management Practices to maintain water quality. The practices are described in the Avoidance, Minimization, and/or Mitigation Measures subsection of Section 2.2.2, Water Quality and Storm Water Runoff.
6. Caltrans/City would compensate for temporary construction-related loss of riparian vegetation by replanting disturbed areas with the native species including coast live oak and arroyo willow. A mitigation planting plan that includes a

species list and number of each species, planting locations, timing for planting, maintenance requirements, and success criteria would be prepared and implemented for the replanting. Caltrans/City would also compensate for the permanent loss of riparian vegetation by restoring the riparian forest adjacent to the permanent impact area along the Arroyo de San Pedro Regalado at a minimum ratio of 1:1 (1 acre restored for every 1 acre permanently affected); this ratio would be confirmed through coordination with state and federal agencies as part of the permitting process for the proposed project.

7. Caltrans/ City would comply with the City's ordinance for the preservation of heritage trees and heritage shrubs (City of Santa Cruz Municipal Code Section 9.56). Under this ordinance, a tree permit from the City Parks and Recreation Department is required for trimming or removing any heritage tree or shrub. Mitigation is required for heritage tree removal, with the option of either paying a \$250.00 bond for each tree to be removed and then replanting onsite or making a \$150.00 donation to the City's Tree Trust fund for each tree to be removed. The replanting option requires the applicant to plant three 15-gallon trees or one 24-inch-box-size specimen tree for each approved tree removal.

Additionally, Caltrans/City would implement best management practices to control discharge of construction-related pollutants to surface waters (Measure 6 from the NES). Refer to Section 2.2.2, *Water Quality and Stormwater Runoff*, Measure #1.

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act [Clean Water Act (33 USC 1344)] is the main law regulating wetlands and surface waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the U.S. including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material must be permitted by the U.S. Army Corps of Engineers. The U.S. Army Corps of Engineers issues two types of 404 permits: Standard and General permits. The proposed project would fall under a nationwide

permit, a type of General permit issued to authorize a variety of minor project activities with no more than minimal effects.

At the state level, wetlands and waters are regulated mainly by the California Department of Fish and Wildlife, the State Water Resources Control Board, and the Regional Water Quality Control Boards. If the 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. Department of Fish and Wildlife's jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider.

The Regional Water Quality Control Boards issue water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the Clean Water Act.

Affected Environment

The Arroyo de San Pedro Regalado is considered a water of the U.S. as defined by the U.S. Army Corps of Engineers. See Section 2.3.1, Natural Communities, for additional information on the arroyo. Based on surveys done in the project area, the study area does not contain wetlands.

Environmental Consequences

As described in Section 2.3.1, Natural Communities, construction of the project would result in the permanent loss of 0.01 acre of creek channel within the project area and a temporary loss of 0.01 acre (see Figure 2-10).

No-Project Alternative

Under this alternative, the Arroyo de San Pedro Regalado would not be affected. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

1. Caltrans/City would restore portions of the creek channel temporarily disturbed by construction to original grade and preconstruction conditions following construction.
2. Caltrans/City would compensate for the permanent fill of other waters of the U.S. in creek channel habitat based on the requirements specified by the U.S. Army Corps of Engineers in the Nationwide Permit that is issued for this project by implementing one or a combination of the following options:

- Purchase credits for created riparian stream channel at a locally approved mitigation bank.
- Replant temporarily disturbed areas with native species and restore the riparian forest adjacent to the permanent impact area along the Arroyo de San Pedro Regalado as described above in Section 2.3.1, Natural Communities.

2.3.3 Plant Species

Regulatory Setting

“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. See Threatened and Endangered Species, Section 2.3.5, in this document for information on these species.

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

Affected Environment

Potential habitat for two sensitive plant species (California bottlebrush grass and Loma Prieta hoita) is present in the study area, but the habitat is marginal due to the level of disturbance within the riparian community. Surveys of the study area done in August 2005 and May 2011 determined that these species were not present. Therefore, the study area does not support sensitive plant species, and the proposed project would not result in impacts on sensitive plant species.

Environmental Consequences

Based on surveys done in the project area, the study area does not support sensitive plant species. The project would not result in impacts to any sensitive plant species.

No-Project Alternative

This alternative would not result in any impacts on plant species. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required.

2.3.4 Animal Species

Regulatory Setting

This section discusses potential impacts and permit requirements for wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and the U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Fisheries Service candidate species.

Affected Environment

Surveys of the study area done in August 2005 and November 2010 indicated that suitable habitat is present for the following special-status species:

- The foothill yellow-legged frog is designated as a state species of special concern. The species can occur from sea level to 6,000 feet in rocky streams in valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types of habitat. The streambeds where they are found are usually gravelly or sandy, and the stream gradient is generally not steep.
- The western pond turtle is a state species of special concern. It occurs throughout much of California except for east of the Sierra-Cascade crest and desert regions. Aquatic habitats used by western pond turtles include ponds, lakes, marshes, rivers, streams, and irrigation ditches with a muddy or rocky bottom in grassland, woodland, and open forest areas. Western pond turtles move to upland areas next to watercourses to deposit eggs and overwinter.
- The white-tailed kite (*Elanus leucurus*) is fully protected under the California Fish and Game Code. The white-tailed kite occurs in coastal and valley lowlands in California. White-tailed kites generally inhabit low-elevation grassland, savannah, oak woodland, wetland, agricultural, and riparian habitats.

Environmental Consequences

Movement of construction equipment on the creek banks and placement of fill in the Arroyo de San Pedro Regalado could result in the injury or death of foothill yellow-

legged frogs and western pond turtles. In-water construction activities would occur during the dry season (July 1 through October 15); because the creek appears to be perennial, water may still be present. Construction activities along the creek banks that do not involve in-water work would be restricted to May 1 through October 15. Construction of the earthen embankment and extension of the existing culvert within the creek channel would result in the permanent loss of 0.01 acre of creek channel and 0.03 acre of riparian forest that provides suitable habitat for the foothill yellow-legged frog and western pond turtle. There would also be a temporary loss of 0.01 acre of creek channel and 0.04 acre of riparian forest habitats. Removal and temporary loss of these small amounts of habitat would not substantially affect the foothill yellow-legged frog or western pond turtle.

Construction activities may occur during the nesting season (February 1 through September 30) of the white-tailed kite and other migratory birds and could result in the disturbance of nesting birds. Removal of nests or construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment.

No-Project Alternative

This alternative would not result in any impacts on animal species. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

1. Within 48 hours of the start of work within or along the Arroyo de San Pedro Regalado, a qualified biologist would conduct a preconstruction survey for foothill yellow-legged frogs and western pond turtles in the construction area and 500 feet upstream and downstream of the construction area. If the biologist discovers any frogs, tadpoles, or egg masses or western pond turtles in or near the construction area, a biological monitor would monitor construction activities within the Arroyo de San Pedro Regalado. If any foothill yellow-legged frogs or western pond turtles are found during monitoring, a biologist with authorization from the California Department of Fish and Wildlife would relocate frogs and/or turtles outside of the construction area.
2. Vegetation removal would occur during the non-breeding season for most migratory birds (generally between October 1 and January 31) to the extent feasible. If possible, construction activities would begin before the nesting season for most birds (generally February 1 through September 30) to discourage noise-

sensitive raptors and other birds from attempting to nest within or near the study area.

If beginning construction activities (including vegetation removal) before the breeding season is not possible, Caltrans/City would retain a qualified wildlife biologist to conduct nesting surveys before the start of construction. If an active nest is found in the survey area, a no-disturbance buffer would be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (September 30) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area.

2.3.5 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies 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 is a Biological Opinion and/or an Incidental Take statement. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code, Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and 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 Department of Fish and Wildlife.

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

Surveys of the study area in August 2005 and November 2010 indicated that suitable habitat is present for the following species:

- The California red-legged frog is federally listed as threatened and is a California species of special concern. The species occurs in isolated locations in the Sierra Nevada, North Coast, and northern Transverse Ranges. California red-legged frogs use a variety of habitat types, including various aquatic systems as well as riparian and upland habitats.

On February 3, 2012, Caltrans, as the federal lead agency under the National Environmental Policy Act for the project, requested that formal consultation be initiated with the U.S. Fish and Wildlife Service for the California red-legged frog under the May 4, 2011 Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (File number 8-8-10-F-58). On October 29, 2012, the U.S. Fish and Wildlife Service issued a Biological Opinion for the project. See Appendix E for related correspondence.

- The Central California Coast steelhead trout is listed as threatened by the National Marine Fisheries Service. Steelhead trout populations inhabit coastal California streams from the Russian River to Aptos Creek and several tributaries of the San Francisco, San Pablo, and Suisun bays. The National Marine Fisheries Service has also designated critical habitat for steelhead trout in the San Lorenzo River within the study area.

The steelhead trout is an anadromous fish species that spends one to two years in the ocean before returning to its natal streams. Unlike other salmonids, the steelhead trout is capable of spawning more than once before dying. Steelhead trout spawning in the San Lorenzo River system typically begins in December and continues into April with a peak between late December and March.

On February 22, 2012, Caltrans received a letter of concurrence from the National Marine Fisheries Service that the project would not likely adversely affect the Central California Coast steelhead trout or its designated critical habitat (see Appendix F for related correspondence).

- The Central California Coast coho salmon is federally and state listed as endangered. Populations occur from Punta Gorda in Humboldt County to and including the San Lorenzo River in Santa Cruz County, along with populations in tributaries to San Francisco Bay (excluding the Sacramento-San Joaquin River system). Critical habitat for the coho salmon, designated by the National Marine Fisheries Service, includes the San Lorenzo River within the study area.

The coho salmon is an anadromous fish species that spends the first 12–18 months of life in freshwater and up to two years in the ocean, returning to spawn in its natal stream in the third year. Because this 3-year cycle is fairly rigid, spawning runs with relatively poor reproductive success can result in poor spawning runs three years later. The upstream migration of adult coho in the San Lorenzo River system usually occurs in November and December, with peak times of entry in December. The coho salmon usually spawns at the heads of riffles, just below a pool, with gravel substrate. Following spawning, the adult coho dies.

On February 22, 2012, Caltrans received a letter of concurrence from the National Marine Fisheries Service that the project would not likely adversely affect the Central California Coast coho salmon or its designated critical habitat (see Appendix F for relevant correspondence).

- The tidewater goby is federally listed as endangered throughout its range. The San Lorenzo River is not designated as critical habitat for the tidewater goby, but is part of the U.S. Fish and Wildlife Service’s Recovery Plan for the Tidewater Goby. The tidewater goby, a species endemic to California, occurs in coastal lagoons, estuaries, and marshes at the mouths of major stream drainages. Important habitats include stable lagoons formed by sandbars at the stream mouths during the later spring, summer, and fall. Available tidewater goby habitat in the San Lorenzo River encompasses 66 acres of the lower river. Evidence of

gobies has not been found above the Water Street Bridge about half a mile downstream of the mouth of the Arroyo de San Pedro Regalado.

On October 29, 2012, the U.S. Fish and Wildlife Service issued a Biological Opinion for the tidewater goby for the project (see Appendix E for related correspondence).

Environmental Consequences

Movement of construction equipment on the banks of the channel and placement of fill in the channel could result in the injury or death of California red-legged frogs. In-water construction activities would occur during the dry season (July 1 through October 15); because the creek appears to be perennial, water may still be present. Construction activities along the creek banks that do not involve in-water work would be restricted to May 1 through October 15.

Project specifications would minimize impacts to the California red-legged frog. Although accidental spills could still occur, contamination of aquatic habitat from vehicle refueling and operation of vehicles and equipment next to the Arroyo de San Pedro Regalado and subsequent injury or death of California red-legged frogs would be minimized through implementation of mitigation measure specified below. Construction of the earthen embankment and extension of the existing culvert within the creek channel would result in the permanent loss of 0.01 acre of creek channel and 0.03 acre of riparian forest that provides suitable habitat for the California red-legged frog (see Figure 2-10).

There would also be a temporary loss of 0.01 acre of creek channel and 0.04 acre of riparian forest habitats (see Figure 2-10). Removal and temporary loss of these small amounts of aquatic and riparian habitat would not substantially affect the California red-legged frog.

Project impacts to the steelhead trout and coho salmon and their designated critical habitats include temporary increases in turbidity and sedimentation and potential discharges of contaminants into the San Lorenzo River. Construction activities would result in small temporary and permanent losses of riparian vegetation and aquatic habitat in the Arroyo de San Pedro Regalado. Riparian vegetation bordering the channel of the Arroyo de San Pedro Regalado contributes to aquatic habitat values in the San Lorenzo River by providing shade (reducing the amount of solar heating of the stream), stabilizing the channel and bank (reducing erosion and sediment inputs), and providing inputs of woody material, nutrients, and food (aquatic insects) for fish.

Because the tidewater goby is likely restricted to the San Lorenzo River and lagoon downstream of the Water Street Bridge, project effects on this species would be limited to potential water quality effects resulting from temporary increases in turbidity and sedimentation and potential discharges of contaminants into the San Lorenzo River during construction.

No-Project Alternative

This alternative would not result in any impacts on threatened or endangered species. Therefore, no avoidance or minimization measures are required.

Avoidance, Minimization, and/or Mitigation Measures

California Red-Legged Frog

To ensure that the project is done in accordance with the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program, Caltrans/City would implement the avoidance and minimization measures from the Programmatic Biological Opinion prior to and during construction at the Arroyo de San Pedro Regalado. The measures are summarized below.

1. Only U.S. Fish and Wildlife Service-approved biologists would participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.
2. Ground disturbance would not begin until written approval is received from the U.S. Fish and Wildlife Service that the biologist is qualified to conduct the work.
3. The approved biologist would survey the project site 48 hours before the onset of work activities. If any life stage of California red-legged frog is found, the approved biologist would relocate the California red-legged frog the shortest distance possible to a location that would not be affected by project activities.
4. Before any activities begin, the approved biologist would conduct a training session for all construction personnel. At a minimum, the training would include a description of the California red-legged frog and its habitat, the specific measures that are being implemented, and the boundaries within which the project may be accomplished.
5. The approved biologist would be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of habitat has been completed. After this time, Caltrans/City would designate a person to monitor compliance with all minimization measures. If the monitor or approved biologist recommends that work be stopped, he or she would notify the

resident engineer, who would eliminate the effect or halt actions causing the effect. If work is stopped, U.S. Fish and Wildlife Service would be notified as soon as possible.

6. During project activities, all trash that may attract predators would be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris would be removed from work areas.
7. All refueling, maintenance, and staging of equipment and vehicles would occur at least 60 feet from riparian habitat and water bodies, and in a location where a spill would not drain directly toward aquatic habitat. The monitor would ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the contractor would ensure that a plan is in place for prompt and effective response to accidental spills. All workers would be informed of the importance of preventing spills and of the appropriate measures to take if a spill occurs.
8. Habitat contours that are temporarily disturbed during construction would be returned to their original configuration at the end of project activities, unless determined to be infeasible by the U.S. Fish and Wildlife Service and Caltrans.
9. The number of access routes, size of staging areas, and total area of the activity would be limited to the minimum necessary to achieve the project. Environmentally sensitive areas would be established to confine access routes and construction areas.
10. Work would be scheduled during the time of the year when impacts to the California red-legged frog would be minimal. In-water construction activities would occur during the dry season (July 1 through October 15), and construction activities along the creek banks that do not involve in-water work would be restricted to May 1 through October 15.
11. Best management practices outlined in any authorizations or permits would be implemented to control sedimentation during and after project implementation.
12. If a work site is to be temporarily dewatered by pumping, intakes would be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water would be released or pumped downstream at an appropriate rate to maintain downstream flows during construction.

13. Unless approved by the U.S. Fish and Wildlife Service, water would not be impounded in a manner that may attract California red-legged frogs.
14. The approved biologist would permanently remove any individuals of exotic species such as bullfrogs, crayfish, and centrarchid fishes from the project area to the maximum extent possible. The biologist would 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 would not be included in the amount of total habitat permanently disturbed.
16. To ensure that diseases are not conveyed between work sites by the U.S. Fish and Wildlife Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force would be followed at all times.
17. Project sites would be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area.
18. Caltrans would not use herbicides as the primary method used to control invasive, exotic plants.
19. Upon completion of the project, the U.S. Fish and Wildlife Service project completion form would be completed and sent to the Ventura Fish and Wildlife Office.

Central California Coast Steelhead Trout, Coho Salmon and Tidewater Goby

1. Caltrans/City would conduct in-water construction activities during the dry season (July 1–October 15) to avoid the main migration seasons of adult and juvenile salmonids and minimize the potential for adverse effects on water quality and aquatic habitat in the San Lorenzo River resulting from temporary increases in suspended sediment and turbidity.
2. Caltrans/City would require the contractor to bypass the flow of the creek around the construction area and isolate the construction area from the live stream to minimize downstream water quality effects during construction. A pump and/or gravity would be used to bypass the flow through a pipe (large enough to accommodate the entire flow of the creek) to a point downstream of the construction area. Temporary cofferdams would be constructed as needed to isolate the construction area from the live stream and would be constructed of clean imported gravel, impermeable liners (e.g., plastic), water bladders, and/or sandbags.

3. During dewatering operations, water would be pumped out of the isolated construction area to water storage containers or a temporary detention or filtration basin away from the stream channel to prevent direct discharge of this water to the creek. All gravel, sandbags, liners, pipes, concrete debris, and other materials would be removed from the channel before stream flow is restored to the dewatered area.

The measures described above for creek channel, coast live oak-arroyo willow riparian forest, and wetlands and other waters also contribute to minimization and avoidance of impacts to the Central California Coast steelhead trout and coho salmon.

2.4 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 (GHG) 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 (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are mainly concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG 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 GHG-emitting sources. The dominant GHG emitted is CO₂, 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 GHG 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).¹

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

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 GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the 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 (EO) S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80% below the year 1990 levels by the year 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: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB 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 (Cal/EPA) and state agencies with regard to climate change.

¹ http://climatechange.transportation.org/ghg_mitigation/

² http://www.fhwa.dot.gov/environment/climate_change/mitigation/

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

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the CEQA Guidelines for addressing GHG 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 (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) 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 U.S. Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level GHG analysis.³ 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 easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

³ 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.

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 also direct 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 2010.⁴

The U.S. EPA and 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,

⁴ <http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq>

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 years 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.

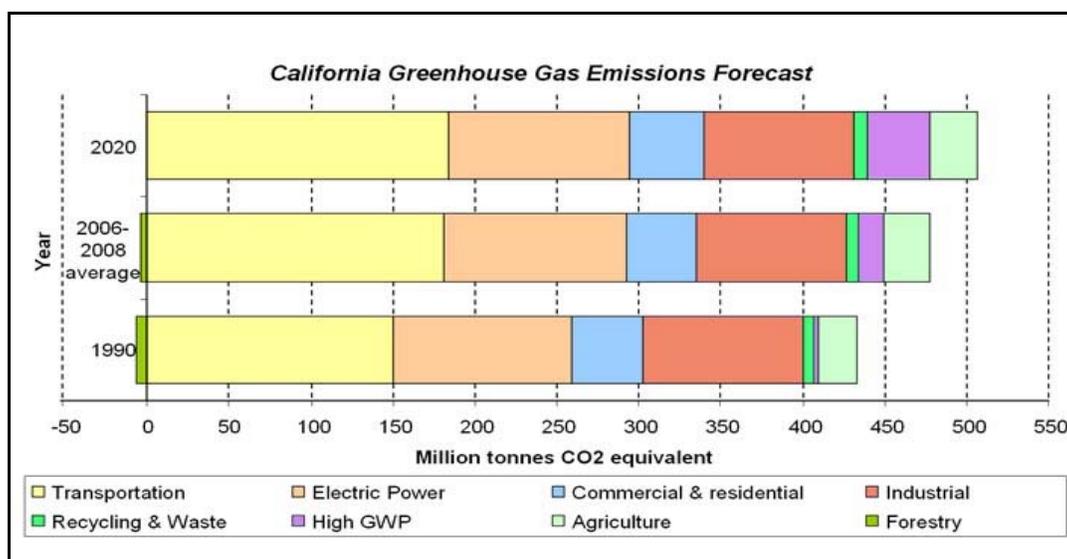
The complementary U.S. EPA and NHTSA standards that make up the Heavy-Duty National Program apply to combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions 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 CO₂ 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 greenhouse gas 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 GHG.⁵ In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA 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 in order to make this determination is a difficult, if not impossible, task.

⁵ 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

The AB 32 Scoping Plan mandated by AB 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 ARB released the GHG 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 GHG inventory for 2006, 2007, and 2008. See Figure 2-11.



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

Figure 2-11 California Greenhouse Gas Forecast

Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98% of California’s GHG emissions are from the burning of fossil fuels and 40% of all human-made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.⁶

District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

⁶ 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

One of the main strategies in Caltrans' Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of CO₂ from mobile sources, such as automobiles, occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 2-12). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, GHG emissions, particularly CO₂, may be reduced.

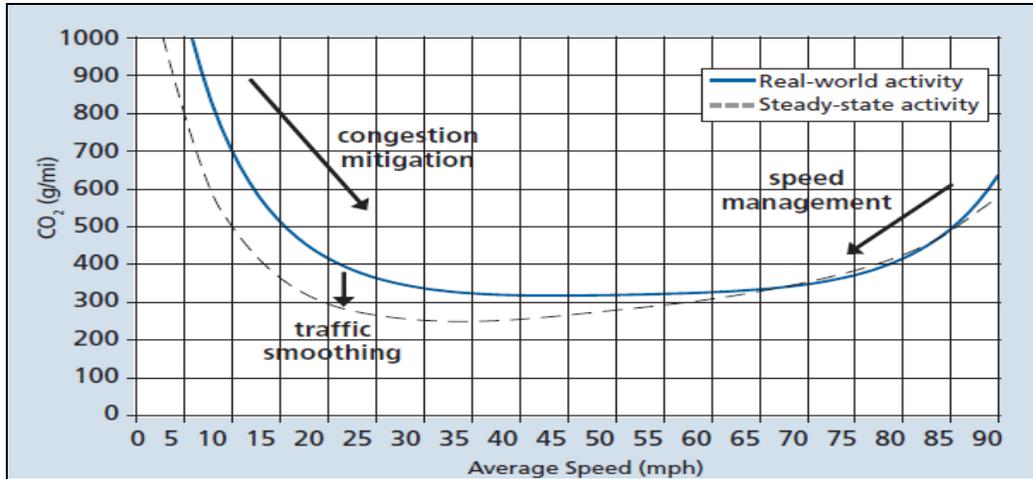


Figure 2-12 Possible Effect of Traffic Operation Strategies in Reducing On-Road CO₂ Emission⁷

In addition to affecting carbon monoxide, methane, and nitrogen oxide vehicle exhaust emissions of automobiles traveling through the study intersections, the project would also affect greenhouse gas emissions. As shown in Table 2-10, criteria pollutants were quantified for baseline (2005) and design-year (2030) with- and without-project conditions using the project traffic data (see Table 2-6 in Section 2.1.4, “Traffic and Transportation/Pedestrian and Bicycle Facilities”) and EMFAC. A similar analysis was done for annual CO₂, CH₄, and N₂O emissions here.

As described in Section 2.2.5, “Air Quality,” peak hour fuel consumption was generated by the SIMTRAFFIC model default vehicle profiles, and emission factors for Santa Cruz County were assumed in the emissions modeling. Based on this analysis, annual 2030 carbon dioxide emissions equivalents are expected to increase with implementation of the project relative to the 2030 no-project.

⁷ Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010) <http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>

Table 2-15 shows the modeled yearly emissions.

Table 2-15 Operational Greenhouse Gas Emission Estimates Based on Peak-Hour Traffic Estimates (metric tons per year)

Condition	Carbon Dioxide	Methane	Nitrous Oxide	Carbon Dioxide Equivalent ^a
Baseline (2005)	84,942	4	4	86,311
No-Project (2030)	84,707	5	6	86,758
Project (2030)	93,255	5	7	95,518
<i>Project Minus No-Project</i>	<i>8,548</i>	<i>1</i>	<i>1</i>	<i>8,760</i>

^a A measure for quantifying the potential impact a greenhouse gas may have on global warming using the equivalent amount or concentration of carbon dioxide as a reference.

Vehicular emission rates, in general, are anticipated to decrease in future years due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

Daily vehicle miles traveled was calculated by multiplying peak hour volumes specified in Table 2-6 by 4.5 and then by the total length of each intersection (sum of north-south and east-west segments). The conversion factor is based on the ratio of peak to off-peak traffic.

Emissions are based on morning peak hour speeds. Because vehicle emissions decrease as a function of speed and peak hours are typically the most congested periods, this assumption likely overestimates annual emissions.

Table 2-15 shows a project-related increase of 8,760 metric tons of carbon dioxide equivalents relative to the 2030 no-project condition. This estimate represents a worst-case analysis as it is based on peak hour traffic volumes for study area intersections rather than daily vehicle miles traveled. These emission results do not reflect the improvements in traffic operations and reduced delay expected with construction of the proposed improvements (see the Traffic and Transportation/ Pedestrian and Bicycle Facilities section and Table 2-5 for a discussion of the expected reduction in delays projected to occur at study intersections with construction of the project). Because the project would decrease delay, it is expected to result in lower GHG emissions than shown in Table 2-15.

Greenhouse gas emissions are normally estimated based on the distribution of traffic at various speeds, rather than average speeds at specific intersections because vehicular emissions tend to follow a bell curve. This means that as traffic speeds increase from the lowest speeds (0–45 miles per hour), GHG emissions tend to decrease with the lowest emissions occurring around 45 miles per hour. The highest pollutant emission rates occur at stop-and-go speeds (0–25 miles per hour) and speeds greater than 65 miles per hour.

The project would add bicycle lanes to Route 9. Improving the pedestrian and bicycle network provides alternatives to single-occupancy vehicles; this may reduce vehicle

miles traveled. Because vehicle miles traveled and greenhouse gas emissions are directly related, reducing vehicle miles traveled would reduce GHG emissions.

Limitations and Uncertainties with Modeling

EMFAC

Although EMFAC can calculate CO₂ emissions from mobile sources, the model does have limitations when it comes to accurately reflecting CO₂ emissions due to impacts on traffic. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008) and a 2009 University of California study⁸, brief but rapid accelerations, such as those occurring during congestion, can contribute significantly to a vehicle's CO₂ emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idling) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by EPA and the CARB is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to do this more accurate modeling.

CARB currently is not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the CARB has made this decision. Their website only states:

REVISION: Both the EMFAC and OFFROAD Models develop CO₂ and CH₄ [methane] emission estimates; however, they are not currently used as the basis for [CARB's] official [greenhouse gas] inventory which is based on fuel usage information. . . However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models. (California Air Resources Board 2010)

Other Variables

With the current science, project-level analysis of GHG emissions has limitations. Although a GHG analysis is included for this project, there are numerous key greenhouse gas variables that are likely to change dramatically during the design life

⁸ Barth, M., and Boriboonsomsin, K. 2009. Energy and emissions impacts of a freeway-based dynamic eco-driving system. *Transportation Research Part D*, 14, 6, 400-410.

of the proposed project and would thus dramatically change the projected CO₂ emissions.

First, vehicle fuel economy is increasing. The EPA’s annual report, “Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2012,” which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy has improved each year beginning in 2005, and is now at a record high.⁹ Corporate Average Fuel Economy (CAFE) standards remained the same between model years 1995 and 2003 and subsequently began setting increasingly higher fuel economy standards for future vehicle model years. The EPA estimates that light duty fuel economy rose by 16% from 2007 to 2012. Table 2-16 shows the increases in required fuel economy standards for cars and trucks between Model Years 2012 and 2025 as available from the National Highway Traffic Safety Administration for the 2012-2016 and 2017-2025 CAFÉ standards.

Table 2-16 Average Required Fuel Economy (Miles Per Gallon)

	2012	2013	2014	2015	2016	2018	2020	2025
Passenger Cars	33.3	34.2	34.9	36.2	37.8	41.1 to 41.6	44.2 to 44.8	55.3 to 56.2
Light Trucks	25.4	26	26.6	27.5	28.8	29.6 to 30.0	30.6 to 31.2	39.3 to 40.3
Combined	29.7	30.5	31.3	32.6	34.1	36.1 to 36.5	38.3 to 38.9	48.7 to 49.7
Source: U.S. Environmental Protection Agency 2013c ⁹								

Second, near-zero carbon vehicles will come into the market during the design life of this project. According to the 2013 Annual Energy Outlook:

“LDVs that use diesel, other alternative fuels, hybrid-electric, or all-electric systems play a significant role in meeting more stringent GHG emissions and CAFE standards over the projection period. Sales of such vehicles increase from 20% of all new LDV sales in 2011 to 49 % in 2040 in the AEO2013 Reference case.” (U.S. Energy Information Administration 2013)¹⁰

⁹ U.S. EPA 2013c. Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 Through 2012. Available:<
<http://www.epa.gov/fueleconomy/fetrends/1975-2012/420r13001.pdf>>. Accessed: February 12, 2014.

The greater percentage of alternative fuel vehicles on the road in the future will reduce overall GHG emissions as compared to scenarios in which vehicle technologies and fuel efficiencies do not change.

Third, California recently adopted a low-carbon transportation fuel standard in 2009 to reduce the carbon intensity of transportation fuels by 10% by 2020. The regulation became effective on January 12, 2010 (codified in title 17, California Code of Regulations, Sections 95480-95490). Beginning January 1, 2011, transportation fuel producers and importers must meet specified average carbon intensity requirements for fuel in each calendar year.

Lastly, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, “Effects of Gasoline Prices on Driving Behavior and Vehicle Market, the Congressional Budget Office found the following results based on data collected from California (U.S. Congressional Budget Office 2008):¹¹

1. Freeway motorists have adjusted to higher gas prices by making fewer trips and driving more slowly;
2. The market share of sports utility vehicles is declining; and
3. The average prices for larger, less-fuel-efficient models declined from 2003 to 2008 as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel-efficient vehicles.

More recent reports from the Energy Information Agency and Bureau of Economic Analysis also show slowing re-growth of vehicle sales in the years since its dramatic drop in 2009 due to the Great Recession as gasoline prices continue to climb to \$4 per gallon and beyond (U.S. Energy Information Administration 2013: Table 53, U.S. Bureau of Economic Analysis 2014).^{12,13}

¹⁰ U.S. Energy Information Administration. 2013. Annual Energy Outlook 2013. Available:< [http://www.eia.gov/forecasts/aeo/pdf/0383\(2013\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf)>. Accessed: February 12, 2014.

¹¹ U.S. Congressional Budget Office. 2008. Effects of Gasoline Prices on Driving Behavior and Vehicle Market. January 2008. Available: < <http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/88xx/doc8893/01-14-gasolineprices.pdf>>. Accessed: February 12, 2014.

¹² U.S. Energy Information Administration. 2013. Annual Energy Outlook 2013. Available:< [http://www.eia.gov/forecasts/aeo/pdf/0383\(2013\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf)>. Accessed: February 12, 2014.

¹³ U.S. Bureau of Economic Analysis. 2014. National Economic Accounts: Supplemental Estimates. Excel Spreadsheet. Available:< <http://bea.gov/national/>>. Accessed: February 12, 2014.

Limitations and Uncertainties with Impact Assessment

Taken from p. 5-22 of the National Highway Traffic Safety Administration Final EIS for MY2017-2025 CAFE Standards (July 2012), Figure 2-13 shows how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

“Moss and Schneider (2000) characterize the “cascade of uncertainty” in climate change simulations **Error! Reference source not found.** [shown as Figure 2-13 below]. As indicated in **Error! Reference source not found.**, the emission estimates used in this EIS have narrower bands of uncertainty than the global climate effects, which are less uncertain than regional climate change effects. The effects on climate are, in turn, less uncertain than the impacts of climate change on affected resources (such as terrestrial and coastal ecosystems, human health, and other resources [...]) Although the uncertainty bands broaden with each successive step in the analytic chain, all values within the bands are not equally likely; the mid-range values have the highest likelihood.”(National Highway Traffic Safety Administration 2012:5-21).¹⁴

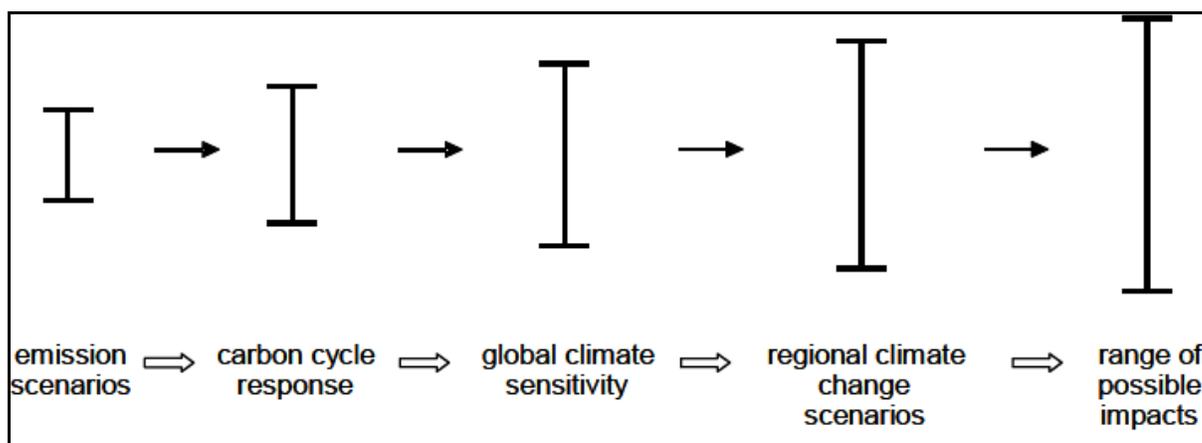


Figure 2-13 Cascade of Uncertainties

Much of the uncertainty in assessing an individual project’s impact on climate change surrounds the global nature of the climate change. Even assuming that the target of

¹⁴ National Highway Traffic Safety Administration. 2012. Corporate Average Fuel Economy Standards: Passenger Cars and Light Trucks Model Years 2017-2025. Final Environmental Impact Statement. July 2012. Docket No. NHTSA-2011-0056. Available:<http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FINAL_EIS.pdf>. Accessed: February 12, 2014.

meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in CO₂ emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of CO₂ equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons CO₂ from 2000 to 2030, which represents an increase of between 25 and 90 percent. (Intergovernmental Panel on Climate Change 2007b)¹⁵

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing “new” greenhouse gas emissions. It is difficult to assess the extent to which any project level increase in CO₂ emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

CEQA Conclusion

As discussed above, both the future with-project and future no-project scenarios show increases in CO₂ emissions over the baseline levels; the future project CO₂ emissions are higher than the future no-project emissions. In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given CO₂ emissions increase means for climate change. Therefore, 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 determination regarding significance of the project’s direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

¹⁵ IPCC 2007b. Mitigation of Climate Change In: Climate Change 2007: Working Group III: The Physical Science Basis: Fourth Assessment Report. Available: http://www.ipcc.ch/publications_and_data/ar4/wg3/en/spmsspm-b.html. Accessed: February 12, 2014.

Greenhouse Gas Reduction Strategies

AB 32 Compliance

Caltrans continues to be involved on the Governor’s Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 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 GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO₂ reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 2-14: Mobility Pyramid.

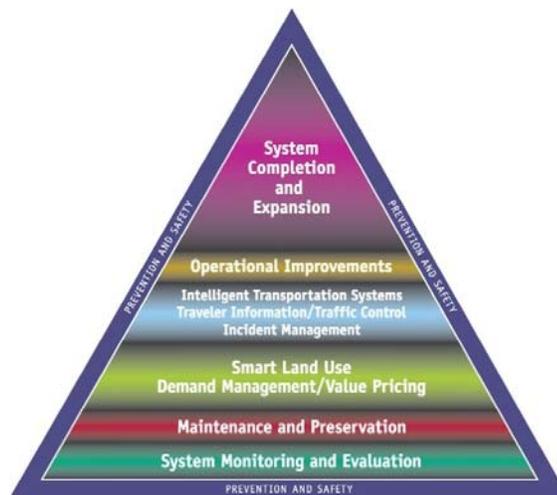


Figure 2-14 Mobility Pyramid

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 trucks 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 U.S. EPA and ARB.

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 (SB) 375 (Steinberg 2008), SB 391 (Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP 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 CTP 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 CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs.

Table 2-17 summarizes the Departmental and statewide efforts that Caltrans is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)¹⁶ provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

Table 2-17 Climate Change/CO₂ Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. 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, CARB, 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, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

¹⁶ http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

The following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

1. Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. ITS commonly consists of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
2. In addition, the Santa Cruz County Regional Transportation Commission provides ridesharing services and park-and-ride facilities to help manage the growth in demand for highway capacity.
3. The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost \$60 to \$70 each, but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves consume 10% of the electricity of traditional lights, which will also help reduce the project's CO₂ emissions.¹⁷
4. According to Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions.

Adaptation Strategies

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

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

¹⁷ Knoxville Business Journal, “LED Lights Pay for Themselves,” May 19, 2008 at <http://www.knoxnews.com/news/2008/may/19/led-traffic-lights-pay-themselves/>.

Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011¹⁸ 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 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 concerns 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)¹⁹, which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and 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 EPA; Business, Transportation and Housing;

¹⁸ <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>

¹⁹ <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

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 Report²⁰ 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.

All state agencies 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.

All projects that have filed a Notice of Preparation as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning

²⁰ *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.

guidelines. The project is located in the coastal region, and sea-level rise estimates from CalAdapt show 100-year flood inundations over Highway 1 east of the intersection. However, according to the same maps sea level rise will not trespass project boundaries.

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. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change impacts, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able to review its current design standards to determine what changes, if any, may be warranted 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; increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans 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

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods including project development team meetings, stakeholder meetings, and City staff presentations at Santa Cruz City Council meetings. The following summarizes coordination efforts that were undertaken to identify, address, and resolve project-related issues through early and continuing coordination.

- City staff presentations on project status at City of Santa Cruz City Council meetings (November 14, 2005; January 10, 2006, April 25, 2006; and February 13, 2007)
- City of Santa Cruz meetings with Central Home Supply (June 9, 2010 and June 24, 2010)
- City staff presentations on project status at City's Redevelopment Agency's Annual Report meetings (The former Redevelopment Agency was working with the Harvey West Business Association on transportation access in this area and was working on the Salz Tannery redevelopment.)

The project Natural Environment Study contains a summary of coordination efforts with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Coordination with the USFWS included obtaining the list of species for Santa Cruz County and several telephone conversations with staff regarding the California red-legged frog surveys, site assessment, and potential impacts to the California red-legged frog, tidewater goby and other species. Coordination with NMFS included telephone conversation with staff regarding the potential impacts to Central California Coast steelhead and Central California Coast coho salmon and their designated critical habitat.

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Chapter 4 List of Preparers

The Initial Study was prepared by ICF International for the City of Santa Cruz and Caltrans District 5. Staff members who prepared this Initial Study and supporting technical studies are identified below.

4.1 Caltrans

Allam Alhabaly, Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 12 years of experience in environmental technical studies with emphasis on noise studies. Contribution: Oversight review of the Noise Study Report.

Paula Juelke Carr, 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; more than 25 years of experience in California history. Contribution: Review of the Historical Property Survey Report.

Abdulrahim N. Chafi, P.E., INCE. Ph.D., Environmental Engineering Management, California Coast University; B.S. and M.S., Chemistry, California State University, Fresno; M.S., Civil/Environmental Engineer, California State University, Fresno. Over 15 years of experience performing transportation analysis studies for air quality, noise impact, and water quality. Contribution: Review of the Air Quality Analysis.

Rajeev Dwivedi, Engineering Geologist. Ph.D., Environmental Science, Oklahoma State University; M.S., Civil Engineering, Oklahoma State University; M.S., Geology, Wichita State University; 25 years of environmental technical studies experience. Contribution: Review of the Water Quality Assessment Report.

Matt C. Fowler, Senior Environmental Planner. B.A., Geographic Analysis, San Diego State University; 10 years experience environmental planning. Contribution: Oversight of the Initial Study.

Yvonne Hoffmann, Associate Environmental Planner. B.S., Natural Resources Planning, Humboldt State University; 12 years of experience preparing environmental documentation and 12 years of experience in city planning. Contribution: Oversight of the Initial Study.

Krista Kiaha, Associate Environmental Planner. M.S., Anthropology, Idaho State University; B.A., Anthropology, University of California, Santa Cruz; 15 years of cultural resources experience. Contribution: Oversight review of the cultural resource documents.

Valerie A. Levulett, Senior Environmental Planner, Ph.D. and M.A., Anthropology, University of California, Davis; 40 years of experience in environmental planning. Contribution: Oversight review of the Cultural Resources and Hazardous Waste studies.

Bryan D. Parker, Associate Landscape Architect, Registered. B.S., Landscape Architecture, California Polytechnic State University, San Luis Obispo; 22 years of experience in project development and design. Contribution: Oversight of the Initial Study.

Jane Sellers, Research Writer. B.A., Journalism, California State University, Fresno; more than 25 years of writing/editing, media, corporate communications and public relations experience. Contribution: Edited Initial Study.

James Tkach, Transportation Engineer. B.S., Soil Science, California Polytechnic State University, San Luis Obispo; Certificate in Hazardous Materials Management, University of California, Santa Barbara; Registered Environmental Assessor; 5 years of experience in project design and construction; more than 22 years of experience in hazardous waste management. Contribution: Oversight review of the Initial Site Assessment, Preliminary Site Investigation.

Sam Toh, Transportation Engineer. M.S., Civil Engineering and Environmental Engineering; B.S., Engineering Science, California Polytechnic State University, San Luis Obispo; 12 years of experience in traffic engineering and 5 years of experience in structural and design. Contribution: Oversight review of the Traffic Study.

Jim Walth, Associate Environmental Planner (Natural Sciences). M.S., Biological Sciences, California Polytechnic State University, San Luis Obispo; B.S., Biology, California State University, Bakersfield; 9 years of environmental impact assessment and biological resources experience. Contribution: Oversight review of the Natural Environment Study and permit coordination with resource agencies.

Wendelyn Wickham, P.E., Civil Engineer. M.S., Civil Engineering; 19 years doing Caltrans hydraulics/floodplain studies. Contribution: Prepared the Location Hydraulic Study and the Floodplain Evaluation Report and Summary.

4.2 City of Santa Cruz

Joe H. Hall, AICP. B.A., Economics, University of California, Los Angeles, Economics; M.S., Public Administration, San Diego State University; M.C.R.P., Rutgers University; more than 30 years in city planning and urban redevelopment. Contribution: Project initiation, administration, review and oversight.

Christophe J. Schneiter, P.E., Assistant Director/City Engineer, City of Santa Cruz. B.S., University of California, Davis; 29 years of transportation and civil engineering design, management and construction experience. Contribution: project initiation, administration, review and oversight.

4.3 Consultant Team

4.3.1 BKF

Natalina Bernardi, P.E., Principal/Vice-President. B.S., Civil Engineering, University of California, Berkeley; 27 years of transportation, highway and civil engineering design, management and construction. Contribution: Project design and oversight.

Ed Boscacci, P.E., Project Manager. B.S., Civil Engineering, University of California, Berkeley; 31 years of hydraulic and hydrologic experience. Contribution: Author of the Location Hydraulics Memo.

Gordon Sweet, P.E., Associate/Project Manager. B.S., Civil Engineering, University of Arizona, Tucson; 17 years of civil engineering experience. Contribution: Project design and management. Author of the Utilities/Emergency Services and Traffic and Transportation/Pedestrian and Bicycle Memos.

4.3.2 Parikh Consultants, Inc.

Gary Parikh, P.E., G.E., President. M.S., Geotechnical Engineering; 39 years of geotechnical engineering experience. Contribution: Author of the Utilities Geology/Soils/Seismic/Topography Memo.

4.3.3 Geocon Consultants, Inc.

Chris Giuntoli, REA, Senior Project Scientist; 23 years of hazardous materials engineering experience. Contribution: Author of the Initial Site Assessment.

4.3.4 ICF International

Dave Buehler, Senior Acoustical Engineer. B.S., Civil Engineering, California State University, Sacramento; 30 years of acoustical consulting experience. Contribution: Noise studies.

Kate Giberson. M.A., Urban Geography, University of California, Davis; B.A., Geography, University of California, Berkeley; 15 years of project management experience. Contribution: Project manager.

Hina Gupta, Relocation Specialist. M.A., Planning, University of Southern California, Los Angeles; B.A., Planning, School of Planning and Architecture, New Delhi, India; 4 years of land use and community planning experience. Contribution: Relocations.

Jennifer Haire, Senior Wildlife Biologist. B.S., Biology, California State University, Fresno; 16 years of wildlife biology technical experience. Contribution: Wildlife biology.

Kathryn Haley, Architectural Historian. M.A., History, California State University, Sacramento; B.A., History, California State University, Sacramento; 8 years of historic architecture experience. Contribution: Cultural resources.

Shannon Hatcher, Senior Air Quality and Noise Specialist. B.S., Environmental Science and Environmental Health and Safety, Oregon State University, Corvallis, Oregon; 11 years of air quality and noise technical experience. Contribution: Air quality and climate change.

Christiaan Havelaar, Senior Archaeologist. B.A., Anthropology (minor in History), California State University, Sacramento; 14 years of California archaeology and cultural resources management experience. Contribution: Cultural resources.

Jody Job, Senior Publications Specialist; 32 years of publication and document production experience. Contribution: Document format and coordination.

David Lemon, Architectural Historian. M.A., Public History, California State University, Sacramento; 10 years of cultural resources management experience. Contribution: Historic resources.

Debbie Loh, Project Manager. M.A., Environmental Planning, University of California, Los Angeles; B.A., Geography/Ecosystems, University of California, Los Angeles; 30 years of project management experience. Contribution: Project manager.

Nate Martin, Senior Water Quality Specialist. Master's in Public Policy, University of Southern California; B.A., Environmental Studies (minor in biology), California State University, Sacramento; 12 years of water quality impact assessment experience. Contribution: Water quality and hydrology.

Bill Mitchell, Fisheries Biologist. M.S., Fisheries Biology, Humboldt State University; 25 years of fisheries assessment/environmental planning experience. Contribution: Fisheries biology.

Senh Saelee, Graphic Artist. B.A., Visual Communications Design, University of California, Davis; 10 years of illustration and information design experience. Contribution: Graphics.

Kimberly Stevens, Planner. B.S., Geography, University of Utah, Salt Lake City, Utah; 9 years of environmental planning experience. Contribution: Land use and growth.

Jennifer Stock, Senior Landscape Architect. B.L.A, Landscape Architecture, Pennsylvania State University, University Park; 11 years of visual impact assessment experience. Contribution: Visual/Aesthetics.

Lisa Webber, Senior Botanist, Wetland Ecologist. M.S., Botany, University of Massachusetts, Amherst; B.A., Biology, University of California, Santa Cruz; 20 years of botany and wetland ecology experience. Contribution: Botany and wetland ecology.

Appendix A California Environmental Quality Act Checklist

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 impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this 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 impact with mitigation	Less than significant impact	No impact
--------------------------------	--	------------------------------	-----------

I. AESTHETICS: Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> |

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <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 impact 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 checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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: | | | | |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input 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?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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"/> |
| 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 type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- f) Otherwise substantially degrade water quality?
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- j) Result in inundation by seiche, tsunami, or mudflow?

X. LAND USE AND PLANNING: Would the project:

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

XI. MINERAL RESOURCES: Would the project:

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

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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 checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

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 impact with mitigation	Less than significant impact	No impact
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XV. RECREATION:

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

XVI. TRANSPORTATION/TRAFFIC: Would the project:

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

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?
- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
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e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Comply with federal, state, and local statutes and regulations related to solid waste?

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

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Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

EDMUND G. BROWN Jr., Governor

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



*Flex your power!
Be energy efficient!*

March 16, 2012

NON-DISCRIMINATION POLICY STATEMENT

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

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

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

A handwritten signature in blue ink that reads "Malcolm Dougherty".

MALCOLM DOUGHERTY
Acting Director

"Caltrans improves mobility across California"

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Appendix C Summary of Relocation Benefits

California Department of Transportation Relocation Assistance Program

The purpose of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, is to establish a uniform policy for fair and equitable treatment of persons displaced as a result of federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole.”

The Fifth Amendment to the U.S. Constitution states, “No Person shall...be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation.” The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations, Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

Fair Housing

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state’s relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of

negotiations, and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Caltrans relocation advisor.

Relocation Assistance Advisory Services

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Caltrans will provide relocation advisory assistance to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. Caltrans will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are “decent, safe and sanitary.” Nonresidential displacees will receive information on comparable properties for lease or purchase (for business, farm and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning Federal and State assisted housing programs, and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable “decent, safe and sanitary” replacement dwelling, available on the market, is offered to them by Caltrans.

Residential Relocation Payments

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving

expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until Caltrans obtains control of the property in order to be eligible for relocation payments.

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. The maximum combination of these three supplemental payments that the owner-occupant can receive is \$22,500. If the total entitlement (without the moving payments) is in excess of \$22,500, the Last Resort Housing Program will be used (see the explanation of the Last Resort Housing Program below).

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by Caltrans prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when Caltrans determines that the cost to rent a comparable “decent, safe and sanitary” replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of

certain costs incidental to the purchase, subject to certain limitations noted under the Down Payment section below. The maximum amount payable to any eligible tenant and any owner-occupant of less than 180 days, in addition to moving expenses, is \$5,250. If the total entitlement for rent supplement exceeds \$5,250, the Last Resort Housing Program will be used.

In order to receive any relocation benefits, the displaced person must buy or rent and occupy a “decent, safe and sanitary” replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 180 days and tenants in legal occupancy prior to Caltrans’ initiation of negotiations. The down payment and incidental expenses cannot exceed the maximum payment of \$5,250. The one-year eligibility period in which to purchase and occupy a “decent, safe and sanitary” replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 CFR 24) contain the policy and procedure for implementing the Last Resort Housing Program on federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the \$22,500 and \$5,250 limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, Caltrans will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced
- Specific arrangements needed to accommodate any family member(s) with special needs
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family

- Preferences in area of relocation
- Location of employment or school

Nonresidential Relocation Assistance

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

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

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

Reestablishment Expenses

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

Fixed In Lieu Payment

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

Additional Information

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

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

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

Relocation Assistance Program Brochures

The links below are to the Relocation Assistance brochures for residential and business displacements. Copies of both are included this appendix.

http://www.dot.ca.gov/hq/row/pubs/residential_english.pdf

http://www.dot.ca.gov/hq/row/pubs/business_farm.pdf

Contact Information

For more information about relocation assistance associated with the Highway 1/9 Intersection Improvement Program, contact Julie Hendee, City of Santa Cruz, Economic Development Department (831-420-5158).

Your Rights and Benefits as a
Displacee Under the Uniform
Relocation Assistance Program
(Residential)
2007



Caltrans

California Department of Transportation

Introduction

In building a modern transportation system, the displacement of a small percentage of the population is often necessary. However, it is the policy of Caltrans that displaced persons shall not suffer unnecessarily as a result of programs designed to benefit the public as a whole.

Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments.

This brochure provides information about available relocation services and payments. If you are required to move as the result of a Caltrans transportation project, a Relocation Agent will contact you. The Relocation Agent will be able to answer your specific questions and provide additional information.

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 As Amended "The Uniform Act"

The purpose of this Act is to provide for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by federal and federally assisted programs and to establish uniform and equitable land acquisition policies for federal and federally assisted programs.

49 Code of Federal Regulations Part 24 implements the "Uniform Act" in accordance with the following relocation assistance objective:

To ensure that persons displaced as a direct result of federal or federally-assisted projects are treated fairly, consistently and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

While every effort has been made to assure the accuracy of this booklet, it should be understood that it does not have the force and effect of law, rule, or regulation governing the payment of benefits. Should any difference or error occur, the law will take precedence.

Some Important Definitions...

Your relocation benefits can be better understood if you become familiar with the following terms:

Comparable Replacement: means a dwelling which is:

- (1) Decent, safe, and sanitary. (See definition below)
- (2) Functionally equivalent to the displaced dwelling.
- (3) Adequate in size to accommodate the family being relocated.
- (4) In an area not subject to unreasonable adverse environmental conditions.
- (5) In a location generally not less desirable than the location of your displacement dwelling with respect to public utilities and commercial and public facilities, and reasonably accessible to the place of employment.
- (6) On land that is typical in size for residential development with typical improvements.

Decent, Safe and Sanitary (DS&S): Replacement housing must be decent, safe, and sanitary...which means it meets all of the minimum requirements established by federal regulations and conforms to applicable housing and occupancy codes. The dwelling shall:

- (1) Be structurally sound, weather tight, and in good repair.
- (2) Contain a safe electrical wiring system adequate for lighting and other devices.



- (3) Contain a heating system capable of sustaining a healthful temperature (of approximately 70 degrees) for a displaced person, except in those areas where local climatic conditions do not require such a system.
- (4) Be adequate in size with respect to the number of rooms and area of living space needed to accommodate the displaced person. The Caltrans policy is that there will be no more than 2 persons per room unless the room is of adequate size to accommodate the normal bedroom furnishings for the occupants.
- (5) Have a separate, well-lighted and ventilated bathroom that provides privacy to the user and contains a sink, bathtub or shower stall, and a toilet, all in good working order and properly connected to appropriate sources of water and to a sewage drainage system.

Note: In the case of a housekeeping dwelling, there shall be a kitchen area that contains a fully usable sink, properly connected to potable hot and cold water and to a sewage drainage system, and adequate space and utility service connections for a stove and refrigerator.

- (6) Contains unobstructed egress to safe, open space at ground level. If the replacement dwelling unit is on the second story or above, with access directly from or through a common corridor, the common corridor must have at least two means of egress.
- (7) *For a displaced person who is handicapped, be free of any barriers which would preclude reasonable ingress, egress, or use of the dwelling by such displaced person.*

Displaced Person or Displacee: Any person who moves from real property or moves personal property from real property as a result of the acquisition of the real property, in whole or in part, or as the result of a written notice from the agency to vacate the real property needed for a transportation project. In the case of a partial acquisition, Caltrans shall determine if a person is displaced as a direct result of the acquisition.

Residents **not lawfully present** in the United States are not eligible to receive relocation payments and assistance

Relocation benefits will vary, depending upon the type and length of occupancy. As a residential displacee, you will be classified as either a:

- An owner occupant of a residential property (includes mobile homes)
- A tenant occupant of a residential property (includes mobile homes and sleeping rooms)

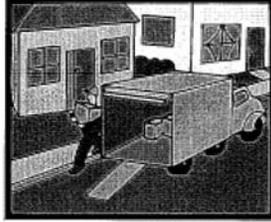
Dwelling: The place of permanent or customary and usual residence of a person, according to local custom or law, including a single family house; a single family unit in a two-family, multi-family, or multi-purpose property; a unit of a condominium or cooperative housing project; a non-housekeeping unit; a mobile home; or any other residential unit.

Owner: A person is considered to have met the requirement to own a dwelling if the person purchases or holds any of the following interests in real property:

- (1) Fee title, a life estate, a land contract, a 99-year lease, oral lease including any options for extension with at least 50 years to run from the date of acquisition; or
- (2) An interest in a cooperative housing project which includes the right to occupy a dwelling; or
- (3) A contract to purchase any interests or estates; or
- (4) Any other interests, including a partial interest, which in the judgment of the agency warrants consideration as ownership.

Tenant: A person who has the temporary use and occupancy of real property owned by another.

Moving Expenses



If you qualify as a displaced person, you are entitled to reimbursement of your moving costs and certain related expenses incurred in moving. The methods of moving and the various types of moving cost payments are explained. Below.

Displaced individuals and families may choose to be paid on the basis of actual, reasonable moving costs and related expenses, or according to a fixed moving cost schedule. However, to ensure your eligibility and prompt payment of moving expenses, you should contact your Relocation Agent before you move.

You Can Choose Either:

Actual Reasonable Moving Costs - You may be paid for your actual reasonable moving costs and related expenses when a commercial mover performs the move. Reimbursement will be limited to a move of 50 miles or less. Related expenses may include:

- Transportation
- Packing and unpacking personal property.
- Disconnecting and reconnecting household appliances.
- Temporary storage of personal property.
- Insurance while property is in storage or transit.

OR

Fixed Moving Cost Schedule - You may be paid on the basis of a fixed moving cost schedule. Under this option, you will not be eligible for reimbursement of related expenses listed above. The fixed schedule is designed to cover such expenses.

Examples (Year 2005 Rate):
4 Rooms - \$ 950
7 Rooms - \$1,550

If the furniture is moved with the mobile home, the amount of the fixed payment is based on Schedule B.

Examples (Year 200 Rate):
4 Rooms - \$1,175
7 Rooms - \$1,900

Under the Fixed Move Schedule for a furnished unit (e.g. you are a tenant of an apartment that is furnished by your landlord) is based on Schedule B.

Example (Year 2005 Rate):
1 Room - \$400

Under the Fixed Move Schedule, you will not receive any additional payments for temporary storage, lodging, transportation or utility hook-ups.

Replacement Housing Payments

The type of Replacement Housing Payment (RHP) depends on whether you are an owner or a tenant, and the length of occupancy in the property being acquired.

If you are a qualified **owner occupant** of more than 180 days prior to the initiation of negotiations for the acquisition of your property, you may be entitled to a RHP that consists of:

- Price Differential, and**
- Mortgage Differential, and**
- Incidental Expenses;**
- OR**
- Rent Differential**

If you are a qualified **owner occupant** of more than 90 days but less than 180 days, OR you are a qualified **tenant occupant** of at least 90 days, you may be entitled to a RHP as follows:

Rent Differential

OR

Downpayment Option

Length of occupancy simply means counting the number of days that you actually occupied a dwelling before the date of initiation of negotiations by Caltrans for the purchase of the property. The term "initiation of negotiations" means the date Caltrans makes the first personal contact with the owner of real property, or his/ her representative, to give him/her a written offer for the property to be acquired.

Note: If you have been in occupancy less than 90 days before the initiation of negotiations and the property is subsequently acquired, or if you move onto the property after the initiation of negotiations and you are still in occupancy on the date of acquisition, you may or may not be eligible for a Replacement Housing Payment. Check with your Relocation Agent before you make any decision to vacate your property.

For Owner Occupants of 180 Days or More

If you qualify as a 180-day owner occupant, you may be eligible -- in addition to the fair market value of your property -- for a Replacement Housing Payment that consists of a Price Differential, Mortgage Differential and/or Incidental Expenses.

The **Price Differential** payment is the amount by which the cost of a replacement dwelling exceeds the acquisition cost of the displacement dwelling. This payment will assist you in purchasing a comparable decent, safe, and sanitary (DS&S) replacement dwelling. Caltrans will compute the maximum payment you may be eligible to receive.

In order to receive the full amount of the calculated price differential, you must spend at least the amount calculated by Caltrans on a replacement property

The **Mortgage Differential** payment will reimburse you for any increased mortgage interest costs you might incur because the interest rate on your new mortgage exceeds the interest rate on the property acquired by Caltrans. The payment computation is complex as it is based on prevailing rates, your existing loan and your new loan. Also, a part of this payment may be prorated such as reimbursement for a portion of your loan origination fees and mortgage points.

To be eligible to receive this payment, the acquired property must have been encumbered by a bona fide mortgage which was a valid lien for at least 180 days prior to the initiation of negotiations.

You may also be reimbursed for any actual and necessary **Incidental Expenses** that you incur in relation to the purchase of your replacement property. These expenses may be those costs for title search, recording fees, credit report, appraisal report, and certain other closing costs associated with the purchase of property. You will not be reimbursed for any recurring costs such as prepaid real estate taxes and property insurance.

If the total amount of your **Replacement Housing Payment** (Price Differential, Mortgage Differential and Incidental Expenses) exceeds \$22,500, the payment must be deposited directly into an escrow account or paid directly to the mortgage company.

EXAMPLES OF PRICE DIFFERENTIAL PAYMENT COMPUTATION:

Assume that Caltrans purchases your property for \$98,000. After a thorough study of available, decent, safe and sanitary dwellings on the open market, Caltrans determines that a comparable replacement property will cost you \$100,000. If your purchase price is \$100,000, you will receive \$2,000 (see *Example A*).

If your actual purchase price is more than \$100,000, you pay the difference (see *Example B*). If your purchase price is less than \$100,000, the differential payment will be based on actual costs (see *Example C*).

How much of a differential payment you receive depends on how much you actually spend on a replacement dwelling as shown in these examples:

Caltrans' Computation

Comparable Replacement Property and Mobile Home	\$100,000
Acquisition Price of Your Property and Mobile Home	<u>-\$ 98,000</u>
Maximum Price Differential	\$ 2,000

Example A

Purchase Price of Replacement	\$100,000
Comparable Replacement Property	\$100,000
Acquisition Price of Your Property	<u>-\$ 98,000</u>
Maximum Price Differential	\$ 2,000

Example B

Purchase Price of Replacement Property	\$105,000
Comparable Replacement Property	\$100,000
Acquisition Price of Your Property	<u>\$ 98,000</u>
Maximum Price Differential	\$ 2,000
You Must Pay the Additional	\$ 5,000

Example C

Comparable Replacement Property	\$100,000
Purchase Price of Replacement	\$ 99,000
Acquisition Price of Your Property	<u>\$ 98,000</u>
Price Differential	\$ 1,000

In Example C you will only receive \$1,000 - not the full amount of the Caltrans "Comparable Replacement Property" because of the "Spend to Get" requirements.

IN ORDER FOR A "180 DAY OWNER OCCUPANT" TO RECEIVE THE FULL AMOUNT OF THEIR REPLACEMENT HOUSING PAYMENT (*Price Differential, Mortgage Differential and Incidental Expenses*), **you must:**

A) Purchase and occupy a DS&S replacement dwelling within one year after the later of:

(1) The date you first receive a notification of an available replacement house, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the closing of escrow on State's acquisition),

AND

B) Spend at least the amount of the Caltrans "Comparable Replacement Property" for a replacement property,

AND

C) File a claim for relocation payments within 18 months of the later:

(1) The date you vacate the property acquired by Caltrans, **OR**

(2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the close of escrow on State's acquisition)

You will not be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. Also, you will also receive at least 90 days' written notice before you must move.

For Owner Occupants and Tenants of 90 Days or More

If you qualify as a 90-day occupant (either as an owner or tenant), you may be eligible for a Replacement Housing Payment in the form of a Rent Differential.

The **Rent Differential** payment is designed to assist you in renting a comparable decent, safe and sanitary replacement dwelling. The payment is based on the difference between the base monthly Rent for the property acquired by Caltrans (including average monthly cost for utilities) and the lesser of:

- a) The monthly rent and estimated average monthly cost of utilities for a comparable replacement dwelling as determined by Caltrans, **OR**
- b) The monthly rent and estimated average monthly cost of utilities for the decent, safe and sanitary dwelling that you actually rent as a replacement dwelling.

Utility costs are those expenses you incur for heat, lights, water and sewer - regardless of the source (e.g. electricity, propane, and septic system). It does not include garbage, cable, telephone, or security. The utilities at your property are the average costs over the last 12 months. The utilities at the comparable replacement property are the estimated costs for the last 12 months for the type of dwelling and area used in the calculation.

This difference is multiplied by 42 months and may be paid to you in a lump sum payment or in periodic installments in accordance with policy and regulations.

In order to receive the full amount of the calculated Rent Differential, you must spend at least the amount calculated by Caltrans on a replacement property.

This payment may - with certain limitations - be converted to a **Downpayment Option** to assist you in purchasing a replacement property.

Example of Rent Differential Payment Computation:

After a thorough study of comparable, decent, safe and sanitary dwellings that are available for rent, Caltrans determines that a comparable replacement property will rent for \$325.00 per month.

Caltrans Computation (rates are per month)

Rental Rate for Comparable Replacement Property	\$ 325
PLUS average estimated utilities costs	<u>+ 100</u>
TOTAL Cost to Rent Comparable Replacement Property	= \$ 425

Rental Rate for Your Current Property	\$ 300
PLUS average utilities costs	<u>+ 90</u>
TOTAL Cost to Rent Current Property	= \$ 390

Comparable Replacement Property including utilities	\$ 425
Cost you pay to rent your property including utilities	<u>+ 390</u>
Difference	= \$ 35

Multiplied by 42 months = \$1,470 Rent Differential

Example A:

Rental Rate for a Replacement Property including Estimated average utilities costs	\$ 525
Comparable Replacement Property including utilities	\$ 425
Cost you pay to rent your property including utilities	\$ 390

Since \$425 is less than \$525, the Rent Differential is based on the difference between \$390 and \$425.

Rent Differential (\$35 x 42 months = \$1,470)

In this case you spent "at least" the amount of the Comparable Replacement Property on the replacement property and will receive the full amount.

Example B:

Rental Rate for a Replacement Property including Estimated average utilities costs	\$ 400
Comparable Replacement Property including utilities	\$ 425
Cost you pay to rent your property including utilities	\$ 390

Since \$400 is less than \$525, the Rent Differential is based on the difference between \$400 and \$390.

Rent Differential (\$10 x 42 months = \$420)

In this case you spent "less than" the amount of the Comparable Replacement Property on the replacement property and will not receive the full amount.

IN ORDER FOR A "90 DAY OWNER OCCUPANT" TO RECEIVE THE FULL AMOUNT OF THEIR REPLACEMENT HOUSING PAYMENT (Rent Differential), you must:

A) Rent and occupy a DS&S replacement dwelling within one year after the later of:

- (1) The date you first receive a notification of an available replacement house, **OR**
- (2) The day you vacate the property acquired by Caltrans.

AND

B) Spend at least the amount of the Caltrans "Comparable Replacement Property" to rent a replacement property,

AND

C) File a claim for relocation payments within 18 months of the later of:

- (1) The date you vacate the property acquired by Caltrans, **OR**
- (2) The date that Caltrans has paid the acquisition cost of your current dwelling (usually the close of escrow on State's acquisition)

You will not be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. And, you will also receive at least 90 days' written notice before you must move.

Note1: The time periods for a 90-day owner occupant are different than a 180-day owner occupant.

Note 2: If the Rent Differential is converted to a Downpayment Option, there is no "spend-to-get" requirement.

DOWN PAYMENT OPTION

The Rent Differential payment may - with certain limitations - be converted to a **Down Payment Option** to assist you in purchasing a replacement property. The down payment option is a direct conversion of the Rent Differential payment.

If the Caltrans calculated Rent Differential is between \$0 and \$5,250, your down payment option will be \$5,250, which can be used towards the purchase of a replacement decent, safe and sanitary dwelling.

If the Rent Differential is over \$5,250, you may be able to convert the entire amount of the Rent Differential to a downpayment option.

The down payment option must be used for the acquisition of the replacement dwelling, plus any eligible incidental expenses (see "180-day Owner Occupants Incidental Expenses") related to the purchase of the property. You must work closely with your Relocation Agent to ensure you can utilize the full amount of your down payment option towards the purchase.

If any portion of the Rent Differential was used prior to the decision to convert to a down payment option, those advance payments will be deducted from the entire benefit.

LAST RESORT HOUSING

On most projects, an adequate supply of housing will be available for sale and for rent, and the benefits provided will be sufficient to enable you to relocate to comparable housing. However, there may be projects in certain locations where the supply of available housing is insufficient to provide the necessary housing for those persons being displaced. In such cases, Caltrans will utilize a method called Last Resort Housing. Last Resort Housing allows Caltrans to construct, rehabilitate or modify housing in order to meet the needs of the people displaced from a project. Caltrans can also pay above the statutory limits of \$5,250 and \$22,500 in order to make available housing affordable.

Relocation Advisory Assistance



Any individual, family, business or farm displaced by Caltrans shall be offered relocation advisory assistance for the purpose of locating a replacement property. Relocation services are provided by qualified personnel employed by Caltrans. It is their goal and desire to be of service to you and assist in any way possible to help you successfully relocate.

A Relocation Agent from Caltrans will contact you personally. Relocation services and payments will be explained to you in accordance with your eligibility. During the initial interview with you, your housing needs and desires will be determined as well as your need for assistance. You cannot be required to move unless at least one comparable replacement dwelling is made available to you.

You can expect to receive the following services, advice and assistance from your Relocation Agent who will:

- Explain the relocation benefits and eligibility requirements.
- Provide the amount of the replacement housing payments in writing.
- Assure the availability of a comparable property before you move.
- Inspect possible replacement residential units for DS&S compliance.
- Provide information on counseling you can obtain to help minimize hardships in adjusting to your new location.
- Assist you in completing loan documents, rental applications or Relocation Claims Forms.

AND provide information on:

- Security deposits
- Interest rates and terms
- Typical down payments
- VA and FHA loan requirements
- Real property taxes.
- Consumer education literature on housing

If you desire, your Relocation Agent will give you current listings of other available replacement housing. Transportation will be provided to inspect available housing, especially if you are elderly or handicapped. Though you may use the services of a real estate broker, Caltrans cannot provide a referral.

Your Relocation Agent is familiar with the services provided by others in your community and will provide information on other federal, state, and local housing programs offering assistance to displaced persons. If you have special problems, your Relocation Agent will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you.

If the highway project will require a considerable number of people to be relocated, Caltrans will establish a temporary Relocation Field Office on or near the project. Project relocation offices will be open during convenient hours and evening hours if necessary.

In addition to these services, Caltrans is required to coordinate its relocation activities with other agencies causing displacements to ensure that all persons displaced receive fair and consistent relocation benefits.

Remember - YOUR RELOCATION AGENT is there to offer advice and assistance. Do not hesitate to ask questions. And be sure you fully understand all of your rights and available benefits.



YOUR RIGHTS AS A DISPLACEE

All eligible displacees have a freedom of choice in the selection of replacement housing, and Caltrans will not require any displaced person to accept a replacement dwelling provided by Caltrans. If you decide not to accept the replacement housing offered by Caltrans, you may secure a replacement dwelling of your choice, providing it meets DS&S housing standards. Caltrans will not pay more than your calculated benefits on any replacement property.

The most important thing to remember is that the replacement dwelling you select must meet the basic "decent, safe, and sanitary" standards. Do not execute a purchase agreement or a rental agreement until a representative from Caltrans has inspected and certified in writing that the dwelling you propose to occupy meets the basic standards. **DO NOT jeopardize** your right to receive a replacement housing payment by moving into a substandard dwelling.

It is important to remember that your relocation benefits will not have an adverse affect on your:

- Social Security Eligibility
- Welfare Eligibility
- Income Taxes

In addition, the Title VIII of the Civil Rights Act of 1968 and later acts and amendments make discriminatory practices in the purchase and rental of most residential units illegal if based on race, color, religion, sex, or national origin.

Whenever possible, minority persons shall be given reasonable opportunities to relocate to decent, safe, and sanitary replacement dwellings, not located in an area of minority concentration, and that is within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Caltrans' Non-Discrimination Policy ensures that all services and/or benefits will be administered to the general public without regard to race, color, national origin, or sex in compliance with Title VI of the 1964 Civil Rights Act (42 USC 2000d. et seq.).

And you always have the Right to Appeal any decision by Caltrans regarding your relocation benefits and eligibility.

Your Right of Appeal is guaranteed in the "Uniform Act" which states that any person may file an appeal with the head of the responsible agency if that person believes that the agency has failed to properly determine the person's eligibility or the amount of a payment authorized by the Act.

If you indicate your dissatisfaction, either verbally or in writing, Caltrans will assist you in filing an appeal and explain the procedures to be followed. You will be given a prompt and full opportunity to be heard. You have the right to be represented by legal counsel or other representative in connection with the appeal (but solely at your own expense).

Caltrans will consider all pertinent justifications and materials submitted by you and other available information needed to ensure a fair review. Caltrans will provide you with a written determination resulting from the appeal with an explanation of the basis for the decision. If you are still dissatisfied with the relief granted, Caltrans will advise you that you may seek judicial review.

NOTES

Your Rights and Benefits as a Displaced Business, Farm or Nonprofit Organization Under the Uniform Relocation Assistance Program

Introduction

In building a modern transportation system, the displacement of a small percentage of the population is often necessary. However, it is the policy of Caltrans that displaced persons shall not suffer unnecessarily as a result of programs designed to benefit the public as a whole.

Displaced businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments.

This brochure provides information about available relocation services and payments. If you are required to move as the result of a Caltrans transportation project, a Relocation Agent will contact you. The Relocation Agent will be able to answer your specific questions and provide additional information.

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 As Amended "The Uniform Act"

The purpose of this Act is to provide for uniform and equitable treatment of persons displaced from their business, farm or nonprofit organization, by federal and federally assisted programs and to establish uniform and equitable land acquisition policies for federal and federally assisted programs.

49 Code of Federal Regulations Part 24 implements the "Uniform Act" in accordance with the following relocation assistance objective:

To ensure that persons displaced as a direct result of federal or federally-assisted projects are treated fairly, consistently and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

While every effort has been made to assure the accuracy of this booklet, it should be understood that it does not have the force and effect of law, rule, or regulation governing the payment of benefits. Should any difference or error occur, the law will take precedence.

Relocation Services

The California Department of Transportation has two programs to aid businesses, farms and nonprofit organizations which must relocate.

These are:

1. The Relocation Advisory Assistance Program, which is to aid you in locating a suitable replacement property, and
2. The Relocation Payments Program, which is to reimburse you for certain costs involved in relocating. These payments are classified as:
 - Moving and Related Expenses (costs to move personal property not acquired).
 - Reestablishment Expenses (expenses related to the replacement property).
 - In-Lieu Payment (a fixed payment in lieu of moving and related expenses, and reestablishment expenses).

NOTE: *Payment of loss of goodwill is considered an acquisition cost. California law and the federal regulations mandate that relocation payments cannot duplicate other payments such as goodwill. You will **not** be eligible to receive any relocation payments until the State has actually made the first written offer to purchase the property. You will also receive at least 90 days' written notice before you must move.*

Some Important Definitions...

Your relocation benefits can be better understood if you become familiar with the following terms:

Business: Any lawful activity, with the exception of a farm operation, conducted primarily for the purchase, sale, lease and rental of personal or real property, or for the manufacture, processing, and/or marketing of products, commodities, or any other personal property, or for the sale of services to the public, or solely for the purpose of this Act, and outdoor advertising display or displays, when the display(s) must be moved as a result of the project.

Displaced Person or Displacee: Any person who moves from real property or moves personal property from real property as a result of the acquisition of the real property, in whole or in part, or as the result of a written notice from the agency to vacate the real property needed for a transportation project. In the case of a partial acquisition, Caltrans shall determine if a person is displaced as a direct result of the acquisition.

Owners and tenants **not lawfully present** in the United States are not eligible to receive relocation payments and assistance.

Contributes Materially: A business or farm operation must have had average annual gross receipts of at least \$5,000 **or** average annual net earnings of at least \$1,000, or their income must have contributed at least 33 1/3 percent of the owner's or operator's average annual gross income from all sources, in order to qualify as a bona-fide operation.

Farm Operation: Any activity conducted solely or primarily for the production of one or more agricultural products or commodities, including timber, for sale and home use, and customarily producing such products or commodities in sufficient quantity to be capable of contributing materially to the operator's support.

Nonprofit Organization: A public or private entity that has established its nonprofit status under applicable law.

MOVING EXPENSES

If you qualify as a displaced business, farm or nonprofit organization, you are entitled to reimbursement of your moving costs and certain related expenses incurred in moving. To qualify you must legally occupy the property as the owner or lessee/tenant when Caltrans initiates negotiations for the acquisition of the property **OR** at the time Caltrans acquires title or takes possession of the property. However, to assure your eligibility and prompt payment of moving expenses, you should contact your Relocation Agent before you move.

You Can Choose Either:

Actual Reasonable Moving Costs – You may be paid for your actual reasonable moving costs and related expenses when a commercial mover performs the move. Reimbursement will be limited to a move of 50 miles or less. Related expenses, with limitations, **may** include:

- Transportation.
- Packing and unpacking of personal property.
- Disconnecting and reconnecting personal property related to the operation.
- Temporary storage of personal property.
- Insurance while property is in storage or transit, or the loss and damage of personal property if insurance is not reasonably available.
- Expenses in finding a replacement location.
- Professional services to plan and monitor the move of the personal property to the new location.
- Licenses, permits and fees required at the replacement location.

OR

Self-Move Agreement – You may be paid to move your own personal property based on the lower of two acceptable bids obtained by Caltrans.

Under this option, you will still be eligible for reimbursement of related expenses listed above that were not included in the bids.

OR

In-Lieu Payment – You can accept a fixed payment between \$1,000 and \$20,000, based on your annual earnings IN LIEU OF the moving cost, related expenses and reestablishment cost.

Actual Reasonable Moving Costs

You may be paid the actual reasonable and necessary costs of your move when a professional mover performs the move. All of your moving costs must be supported by paid receipts or other evidence of expenses incurred. In addition to the transportation costs of your personal property, certain other expenses may also be reimbursable, such as packing, crating, unpacking and uncrating, and the disconnecting, dismantling, removing, reassembling, and reinstalling relocated machinery, equipment, and other personal property.

Other expenses such as professional services necessary for planning and carrying out the move, temporary storage costs, and the cost of licenses, permits and certifications may also be reimbursable. This is not intended to be an all-inclusive list of moving related expenses. Your Relocation Agent can provide you with a complete explanation of reimbursable expenses.

Self-Move Agreement

If you agree to take full responsibility for all or part of the move of your business, farm, or nonprofit organization, the Department may approve a payment not to exceed the lower of two acceptable bids obtained by the Department from qualified moving firms or a qualified Department staff employee. A low-cost or uncomplicated move may be based on a single bid or estimate at the Department's discretion. The advantage of this moving option is the fact that it relieves the displaced business, farm or nonprofit organization operator from documenting all moving expenses. The Department may make the payment without additional documentation as long as the payment is limited to the amount of the lowest acceptable bid or estimate. Other expenses, such as professional services for planning, storage costs, and the cost of licenses, permits, and certifications may also be reimbursable if determined to be necessary. These latter expenses must be pre approved by the Relocation Agent.

Requirements:

Before you move, you must provide Caltrans with the:

- Certified inventory of all personal property to be moved.
- Date you intend to vacate the property.
- Address of the replacement property.
- Opportunity to monitor and inspect the move from the acquired property to the replacement property.

Related Expenses

1. **Searching Expenses for Replacement Property:** Displaced businesses, farms and nonprofit organizations are entitled to reimbursement for actual reasonable expenses incurred in searching for a replacement property, not to exceed \$2,500. Expenses may include transportation, meals, and lodging when away from home; the reasonable value of the time spent during the search; fees paid to the real estate agents, brokers or consultants; and other expenses determined to be reasonable and necessary by the Department.
2. **Direct Loss of Tangible Personal Property:** Displaced businesses, farms, and nonprofit organizations may be eligible for a payment for the actual direct loss of tangible personal property which is incurred as a result of the move or discontinuance of the operation. This payment will be based upon the lesser of:
 - a. The fair market value of the item for continued use at the displacement site minus the proceeds from its sale.

OR

 - b. The estimated cost of moving and reinstalling the replaced item, based on the lowest acceptable bid or estimate obtained by the Department for eligible moving and related expenses, including dismantling and reassembly, but with no allowance for storage, cost of code requirement betterments or upgrades at the replacement site.

EXAMPLE:

You determine that the "document shredder" cannot be moved to the new location because of its condition, and you will not replace it at the new location.

Fair Market Value of the Document Shredder	
Based on its use at the current location	\$ 1,500
Proceeds: Price received from selling the Document Shredder	-
	\$ 500
Net Value	\$ 1,000

OR

Estimated cost to move	\$ 1,050
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Based on the "lesser of", the amount of the "Loss of Tangible Personal Property" =	\$ 1,000
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Note: You are also entitled to all reasonable costs incurred in attempting to sell the document shredder (e.g. advertisement).

3. Purchase of Substitute Personal Property: If an item of personal property, which is used as part of the business, farm, or nonprofit organization, is not moved but is promptly replaced with a substitute item that performs a comparable function at the replacement site, the displacee is entitled to payment of the lesser of:
 - a. The cost of the substitute item, including installation costs at the replacement site, minus any proceeds from the sale or trade-in of the replaced item;

OR

 - b. The estimated cost of moving and reinstalling the replaced item, based on the lowest acceptable bid or estimate obtained by the Department for eligible moving and related expenses, including dismantling and reassembly, but with no allowance for storage, cost of code requirement betterments or upgrades at the replacement site.

EXAMPLE A:

You determine that the copying machine cannot be moved to the new location because it is now obsolete and you will replace it.

Cost of a substitute copy machine	
Including installation costs at the replacement site	\$ 3,000
Trade-in Allowance	- \$ 2,500
Net Value	\$ 500

OR

Estimated cost to move	\$ 550
Based on the "lesser of", the amount of the "Substitute Personal Property" =	\$ 500

EXAMPLE B:

You determine that the chairs will not be used at the new location because they no longer match the décor and you will replace them.

Cost of substitute chairs	\$ 1,000
Proceeds from selling the chairs	- \$ 100
Net Value	\$ 900

OR

Estimated cost to move	\$ 200
Based on the "lesser of", the amount of the "Substitute Personal Property" =	\$ 200

Note: You are also entitled to all reasonable costs incurred in attempting to sell the copy machine and/or chairs.

- 4. Disconnecting and Reinstallation:** You will be reimbursed for your actual and reasonable costs to disconnect, dismantle, remove, reassemble and reinstall any machinery, equipment or other personal property in relation to its move to the new location. This includes connection to utilities available nearby and any modifications to the

personalty that is necessary to adapt it to utilities at the replacement site.

5. **Physical changes at the new location:** You may be reimbursed for certain physical changes to the replacement property if the changes are necessary to permit the reinstallation of machinery or equipment necessary for the continue operation of the business. **Note:** *The changes cannot increase the value of the building for general purposes, nor can they increase the mechanical capability of the buildings beyond its normal requirements.*
6. The cost of installing utilities from the right of way line to the structure(s) or improvements on the replacement site.
7. Marketing studies, feasibility surveys and soil testing.
8. Professional real estate services needed for the purchase or lease of a replacement site.
9. One-time assessments or impact fees for anticipated heavy utility usage.

Reestablishment Expenses

A small business, farm or nonprofit organization may be eligible for a payment, not to exceed \$10,000, for expenses actually incurred in relocating and reestablishing the enterprise at a replacement site.

Reestablishment expenses may include, but are not limited to, the following:

1. Repairs or improvements to the replacement real property required by Federal, State or local laws, codes or ordinances.
2. Modifications to the replacement real property to make the structure(s) suitable for the business operation.
3. Construction and installation of exterior signing to advertise the business.
4. Redecoration or replacement such as painting, wallpapering, paneling or carpeting when required by the condition of the replacement site or for aesthetic purposes.

5. Advertising the new business location.
6. The estimated increased costs of operation at the replacement site during the first two years, for items such as:
 - a) Lease or rental charges
 - b) Personal or real property taxes
 - c) Insurance premiums, and
 - d) Utility charges (excluding impact fees).
7. Other items that the Department considers essential for the reestablishment of the business or farm.

Note: A nonprofit organization must substantiate that it cannot be relocated without a substantial loss of existing patronage (membership or clientele). The payment is based on the average of two years annual gross revenues less administrative expenses.

In-Lieu Payment (Fixed)

Displaced businesses, farms and nonprofit organizations may be eligible for a fixed payment in lieu of (in place of) actual moving expenses, personal property losses, searching expense, and reestablishment expenses. The fixed payment may not be less than \$1,000 or more than \$20,000.

For a business to be eligible for a fixed payment, the Department must determine the following:

1. The business owns or rents personal property that must be moved due to the displacement.
2. The business cannot be relocated without a substantial loss of existing patronage.
3. The business is not part of a commercial enterprise having more than three other businesses engaged in the same or similar activity, which are under the same ownership and are not being displaced by the department.
4. The business contributed materially to the income of the displaced business operator during the two taxable years prior to displacement.

Any business operation that is engaged solely in the rental of space to others is not eligible for a fixed payment. This includes the rental of space for residential or business purposes.

Eligibility requirements for farms and nonprofit organizations are slightly different than business requirements. If you are being displaced from a farm or your represent a nonprofit organization and are interested in a fixed payment, please consult your relocation counselor for additional information.

The Computation of Your In-Lieu Payment:

The fixed payment for a displaced business or farm is based upon the average annual net earnings of the operation for the two taxable years immediately preceding the taxable year in which it is displaced. Caltrans can use a different two year period if it is determined that the last two taxable years do not accurately reflect the earnings of the operation.

EXAMPLE: Caltrans acquires your property and you move in 2005:

2003 Annual Net Earnings	\$ 10,500
2004 Annual Net Earnings	<u>\$ 12,500</u>
TOTAL	\$ 23,000
Average over two years	\$ 11,500

This would be the amount of your in-lieu payment. Remember – this is in-lieu of all other moving benefits, including reestablishment expenses. You must provide the Department with proof of net earnings to support your claim.

Proof of net earnings can be documented by income tax returns, certified financial statements, or other reasonable evidence of net earnings acceptable to the Department.

Note: The computation for nonprofit organizations differs in that the payment is computed on the basis of average annual gross revenues less administrative expenses for the two year period specified above.

Before You Move:

- A. Request a determination of entitlement for in-lieu payment from your Relocation Agent.
- B. Include a written statement of the reasons the business cannot be relocated without a substantial loss in net earnings.

- C. Provide certified copies of tax returns for the two tax years immediately preceding the tax year in which you move. (If you move anytime in the year 2005, regardless of when negotiations began or the State took title to the property, the taxable years would be 2003 and 2004).
- D. You will be notified of the amount you are entitled to after the application is received and approved.
- E. You cannot receive the payment until after you vacate the property, AND submit a claim for the payment within 18 months of the date of your move.

Relocation Advisory Assistance



Any business, farm or nonprofit organization displaced by Caltrans shall be offered relocation advisory assistance for the purpose of locating a replacement property. Relocation services are provided by qualified personnel employed by Caltrans. It is their goal and desire to be of service to you and assist in any way possible to help you successfully relocate.

A Relocation Agent from Caltrans will contact you personally. Relocation services and payments will be explained to you in accordance with your eligibility. During the initial interview with you, your needs and desires will be determined as well as your need for assistance.

You can expect to receive the following services, advice and assistance from your Relocation Agent who will:

- Determine your needs and preferences.
- Explain the relocation benefits and eligibility requirements.
- Provide information on replacement properties for your consideration.
- Provide information on counseling you can obtain to help minimize hardships in adjusting to your new location.
- Assist you in completing loan documents, rental applications or Relocation Claims Forms.

AND provide information on:

- Security deposits
- Interest rates and terms
- Typical down payments
- Permits, fees and local planning
- SBA loan requirements
- Real property taxes.
- Consumer education literature

If you desire, your Relocation Agent will give you current listings of other available replacement property. Transportation will be provided to inspect available property, especially if you are elderly or handicapped. Though you may use the services of a real estate broker, Caltrans cannot provide a referral.

Your Relocation Agent is familiar with the services provided by others in your community and will provide information on other federal, state, and local programs offering assistance to displaced persons. If you have special needs, your Relocation Agent will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you.

If the highway project will require a considerable number of people to be relocated, Caltrans will establish a temporary Relocation Field Office on or near the project. Project relocation offices will be open during convenient hours and evening hours if necessary.

In addition to these services, Caltrans is required to coordinate its relocation activities with other agencies causing displacements to ensure that all persons displaced receive fair and consistent relocation benefits.

Remember - YOUR RELOCATION AGENT is there to offer advice and assistance. Do not hesitate to ask questions. And be sure you fully understand all of your rights and available benefits.



YOUR RIGHTS AS A DISPLACEE

It is important to remember that your relocation benefits will not have an adverse affect on your:

- Social Security Eligibility
- Welfare Eligibility
- Income Taxes

In addition, the Title VIII of the Civil Rights Act of 1968 and later acts and amendments make discriminatory practices in the purchase and rental of most residential units illegal if based on race, color, religion, sex, or national origin.

Caltrans' Non-Discrimination Policy ensures that all services and/or benefits will be administered to the general public without regard to race, color, national origin, or sex in compliance with Title VI of the 1964 Civil Rights Act (42 USC 2000d. et seq.).

And you always have the Right to Appeal any decision by Caltrans regarding your relocation benefits and eligibility.

Your Right of Appeal is guaranteed in the "Uniform Act" which states that any person may file an appeal with the head of the responsible agency if that

person believes that the agency has failed to properly determine the person's eligibility or the amount of a payment authorized by the Act.

If you indicate your dissatisfaction, either verbally or in writing, Caltrans will assist you in filing an appeal and explain the procedures to be followed. You will be given a prompt and full opportunity to be heard. You have the right to be represented by legal counsel or other representative in connection with the appeal (but solely at your own expense).

Caltrans will consider all pertinent justifications and materials submitted by you and other available information needed to ensure a fair review. Caltrans will provide you with a written determination resulting from the appeal with an explanation of the basis for the decision. If you are still dissatisfied with the relief granted, Caltrans will advise you that you may seek judicial review.

NOTES

Appendix D Minimization and/or Mitigation Summary

Route 1/9 Intersection Improvement Project Mitigation Monitoring Plan and Environmental Commitments Record

Project Name	Route 1/9 Intersection Improvement Project	Lead Agency; Responsible Agency	California Department of Transportation, Environmental Central Coast Branch (Caltrans); City of Santa Cruz, Department of Public Works
Caltrans Expenditure Authorization #	465800	Agency Contacts and Phone Numbers	Matt Fowler, Caltrans, 805-542-4603 Chris Schneider, Santa Cruz, 831-420-5422

Project Description	Improve traffic operations at the Route 1/9 intersection by widening the intersection to accommodate additional turning vehicle lanes, bicycle lanes, and shoulders from post miles 17.5 to 17.7 on Route 1 and from PM 0.0 to 0.2 on Route 9 in the City of Santa Cruz
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Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
HUMAN ENVIRONMENT					
Community Impacts—Relocations and Real Property Acquisition					
Project includes replacement and relocation assistance for renter-occupied home located at 744 River Street. If the Central Home Supply business is fully displaced by project, the project includes replacement and relocation assistance for this business.	Initial Study under Relocations and Real Property Acquisition	Prior to construction			
Traffic and Transportation/Pedestrian and Bicycle Facilities					
Project includes: 1. The City will develop a Traffic Management Plan to assess stage construction and traffic handling, to minimize impacts to vehicular, bicycle, and pedestrian traffic during project construction. To prepare the plan, the City will coordinate with affected local entities to develop necessary strategies to maintain efficient and safe movement of vehicles through the construction zone. Measures that may be included in the plan are a public awareness campaign, portable changeable message signs, and a Construction Zone Enhanced Enforcement Program. 2. Pedestrian and bicycle access during construction will be staged in order to preserve existing or similar access points and travel routes to the	Initial Study under Traffic and Transportation/Pedestrian and Bicycle Facilities	1. Prior to and during construction 2. During construction			

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
maximum extent. The San Lorenzo River Multipurpose Path along the San Lorenzo River will also be available as an alternative route to bypass the construction area along River Street and Route 9.					
Visual/Aesthetics					
<p>The City of Santa Cruz/Caltrans will implement the following mitigation measures:</p> <ol style="list-style-type: none"> 1. Loss of landscaping will be replaced where space allows, or owners will be compensated for their loss of landscaping. Project landscaping shall adhere to the following: <ul style="list-style-type: none"> – Seventy-five percent of the plants shall be species that are native and indigenous to the project area and California. – Invasive plant species shall not be used at any location. – Vegetation shall be planted within the first year following project completion. – Irrigation for the replanted areas shall utilize a smart watering system that evaluates the existing site conditions and plant material along with weather conditions in order to avoid overwatering. Broken spray head, pipes, or other components would be repaired within 1 to 2 days or shut down to avoid wasteful watering practices. 2. Any retaining walls that would be visible to viewers will be treated with aesthetic treatments, to the extent feasible, in order for the walls to blend with the surroundings. Aesthetics and color will be context sensitive. Walls will be matte and roughened. Low-sheen and non-reflective surface materials will be used to avoid the potential for glare. 3. Caltrans/City shall move the River Street gateway sign to the reconstructed River Street median considering available space and City and State design and roadway safety standards. 	Initial Study under Visual/Aesthetics	<ol style="list-style-type: none"> 1. After construction 2. During construction 3. During construction 			

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
PHYSICAL ENVIRONMENT					
Water Quality and Storm Water Runoff					
<p>The project includes:</p> <ol style="list-style-type: none"> 1. To minimize the mobilization of sediment and construction-related contaminants to the adjacent water body, Caltrans/City will require that erosion and sediment control measures be specified in the construction and project performance specifications based on standard Caltrans/City requirements. These may include but are not be limited to the following: <ul style="list-style-type: none"> – To prevent fertilizers used on landscaped areas from contributing nutrients to the impaired San Lorenzo River, contain runoff from landscaped onsite. This containment can be achieved by irrigating at an agronomic rate so as to prevent runoff. – Develop a hazardous material spill prevention control and countermeasure plan before construction begins that will minimize the potential for and the effects of hazardous or toxic substances spills during construction. The plan will include storage and containment procedures to prevent and respond to spills, and will identify the parties responsible for monitoring the spill response. During construction, any spills will be cleaned up immediately according to the spill prevention and countermeasure plan. The City/Caltrans will review and approve the contractors' toxic materials spill prevention control and countermeasure plan before allowing construction to begin. The City/Caltrans will routinely inspect the construction site to verify that Best Management Practices specified in the plan are properly implemented and maintained. The City/Caltrans will notify the contractor immediately if there is a noncompliance issue and will require compliance. – Cover or apply nontoxic soil stabilizers to 	Initial Study under Water Quality and Storm Water Runoff	<ol style="list-style-type: none"> 1. During final design and construction 2. During final design and construction 			

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.</p> <ul style="list-style-type: none"> – Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways. – Contain soil and filter runoff from disturbed areas by berms, vegetated filters, sediment control BMPs, straw wattle, catch basins, or other means necessary to prevent the escape of sediment from the disturbed area. – Use other temporary sediment control measures (such as large sediment barriers, staked straw wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes), and install permanent erosion control or other ground cover as soon as soil disturbing activities are complete to control erosion from disturbed areas as necessary. – Avoid earth or organic material from being deposited or placed where it may be directly carried into the channel. – Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete; solvents and adhesives; thinners; paints; fuels; sawdust; dirt; gasoline; asphalt and concrete saw slurry and wash water; heavily chlorinated water. – Measure baseline turbidity, pH, specific conductance, and temperatures in the channel when flow is present, and sample water from dewatering activities. As required by the Regional Water Quality Control Board, avoid exceeding water quality standards specified in the Basin Plan standards over the natural conditions. – The following temporary construction site BMPs, that will address the above concerns, to be included as contract bid items are 					

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>anticipated to be: Prepare Water Pollution Control Program (WPCP), Job Site Management, Temporary Check Dam, Temporary Gravel Bag Berm, Temporary Drainage Inlet Protection, Temporary Hydraulic Mulch (BFM), Temporary Large Sediment Barrier, Street Sweeping, Temporary Concrete Washout, and Temporary Fence (type ESA). The City/Caltrans shall perform routine inspections of the construction area to verify that the BMPs are properly implemented and maintained. The City/Caltrans will notify contractors immediately if there is a noncompliance issue and will require compliance.</p> <p>2. As this project does not add an acre or more of net new impervious surfaces, it is not required to consider incorporation of permanent storm water treatment BMPs. As per the Caltrans Work Plan for compliance with the San Lorenzo River TMDLs, the project will incorporate design pollution prevention BMPs (DPPBMPs) to reduce or eliminate the potential for sediment discharge to the San Lorenzo River and its tributaries. DPPBMPs under consideration are: compost based soil modification to reduce run-off and increase infiltration, reduction of paved surfaces as much as is feasible, utilization of an open vegetated storm water conveyance system wherever feasible, flared culvert end sections, outlet protection/velocity dissipation devices, preservation of existing vegetation, and stabilization of disturbed soil with erosion and sediment control BMPs when soil disturbing activities cease.</p>					
Geology/Soils/Seismic/Topography					
<p>Project includes:</p> <p>1. Normal maintenance of surface drainage and slope maintenance will be incorporated into the project plans. Sloped areas that will be disturbed during construction will be revegetated after completion of construction. New sloped areas will also be</p>	Initial Study under Geology/Soils/Seismic/Topography	<p>1. During final design and construction</p> <p>2. During final design and construction</p> <p>3. During final design</p>			

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>planted. Construction of sediment ponds or siltation basins will be considered to retain water during heavy rainfall periods. These basins would be connected to storm drainage system.</p> <p>2. The project design will incorporate Caltrans standards and construction methods in order to minimize the potential risks associated with strong ground shaking.</p> <p>3. The project design will incorporate Caltrans standards and construction methods in order to minimize the potential risks associated with potential liquefaction hazards.</p>		and construction			
Hazardous Waste or Materials					
<p>The City of Santa Cruz/Caltrans will implement the following mitigation measures:</p> <p>1. A soil investigation will be performed to determine the potential presence of lead in site soils in the vicinity of any project improvement excavations. Additionally, if the project requires soil excavation at the existing Union Pacific Railroad right-of-way, a soil investigation will be conducted to determine the presence of metals, herbicides, and polycyclic aromatic hydrocarbons in site soil. If proposed construction activities extend to the depth of groundwater, sampling of groundwater will be included in the environmental investigation. These investigations will be conducted to evaluate potential environmental impairments, and soil and groundwater material management and possible disposal requirements.</p> <p>2. An asbestos and lead-containing paint survey will be conducted at buildings proposed for demolition as part of the project to satisfy Monterey Bay Unified Air Pollution Control District requirements (asbestos) and demolition waste disposal characterization (asbestos and lead).</p> <p>3. If construction workers encounter thermoplastic paint striping during construction, implement Caltrans' Special Provisions for handling this material.</p>	Initial Study under Hazardous Waste or Materials	<p>1. Between 60% and 95% design phases</p> <p>2. Between 60% and 95% design phases</p> <p>3. During construction</p> <p>4. During construction</p>			

Appendix D • Minimization and/or Mitigation Summary

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
4. If encountered during construction activities, undocumented underground storage tanks, septic systems and domestic/agricultural/oil wells will be properly removed or abandoned in accordance with Santa Cruz County requirements.					
Air Quality					
<p>Project includes: Construction activities are subject to Caltrans Standard Specifications, Section 14-9.01, "Air Pollution Control" and Section 14.02, "Dust Control." The following measures will be performed:</p> <p>1. <u>14-9.01 Air Pollution Control:</u></p> <ul style="list-style-type: none"> Comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including air pollution control rules, regulations, ordinances, and statutes provided in Government Code § 11017 (Pub Cont Code 10231). Do not burn material to be disposed of. <p>2. <u>14-9.02 Dust Control:</u></p> <ul style="list-style-type: none"> Prevent and alleviate dust by applying water, dust palliative, or both under Section 14-9.01. Apply water under Section 17, "Watering." Apply dust palliative under Section 18, "Dust Palliative." If ordered, apply water, dust palliative, or both to control dust caused by public traffic. This work will be paid for as extra work as specified in Section 4-1.03D, "Extra Work." 	Initial Study under Air Quality	<p>1. During construction</p> <p>2. During construction</p>			
Climate Change					
<p>The project includes:</p> <p>1. Caltrans and the California Highway Patrol are working with regional agencies to implement Intelligent Transportation Systems (ITS) to help manage the efficiency of the existing highway system. ITS commonly consists of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation</p>	Initial Study under Climate Change	<p>1. Ongoing (before, during and after Construction)</p> <p>2. Ongoing (before, during and after Construction)</p> <p>3. During or after</p>			

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>system.</p> <p>2. In addition, the Santa Cruz County Regional Transportation Commission provides ridesharing services and park-and-ride facilities to help manage the growth in demand for highway capacity.</p> <p>3. The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost \$60 to \$70 each, but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves consume 10% of the electricity of traditional lights, which will also help reduce the project's CO₂ emissions.²¹</p> <p>4. According to Caltrans' Standard Specifications, the contractor must comply with all local Air Pollution Control District's (APCD) rules, ordinances, and regulations for air quality restrictions.</p>		<p>construction</p> <p>4. During construction</p>			
BIOLOGICAL ENVIRONMENT					
Natural Communities					
<p>The City of Santa Cruz/Caltrans will implement the following mitigation measures:</p> <p>1. Caltrans/City or its contractor will install orange construction barrier fencing to identify environmentally sensitive areas including the creek channel and riparian areas. A qualified biologist will identify sensitive biological resources adjacent to the construction area before the final design plans are prepared so that the areas to be fenced can be included in the plans. Before construction begins,</p>	Initial Study under Natural Communities	<p>1.Prior to construction</p> <p>2.Prior to construction</p> <p>3.During construction</p> <p>4.During construction and after construction is</p>			

²¹ Knoxville Business Journal, "LED Lights Pay for Themselves," May 19, 2008 at <http://www.knoxnews.com/news/2008/may/19/led-traffic-lights-pay-themselves/>.

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
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<p>stakes will be placed around the sensitive resource sites to indicate these locations. The fencing will be maintained throughout the construction period and removed after completion of construction.</p> <p>2. Caltrans/City will retain a U.S. Fish and Wildlife Service-approved biologist to develop and conduct environmental awareness training for construction employees on the importance of onsite biological resources, including sensitive natural communities; trees to be retained; special-status wildlife habitats; and nests of special-status birds. In addition, construction employees will be educated about invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations.</p> <p>3. Caltrans/City will retain a qualified biologist to conduct construction monitoring in and adjacent to all sensitive habitats in the construction area. The frequency of monitoring will range from daily to weekly depending on the biological resource. The monitor, as part of the overall monitoring duties, will inspect the fencing once a week along the creek and riparian vegetation in the construction area, surrounding trees, and special-status wildlife habitats. The biological monitor will assist the construction crew as needed to comply with all project implementation restrictions and guidelines.</p> <p>4. Caltrans/City will avoid and minimize potential disturbance of riparian communities by implementing the following measures:</p> <ul style="list-style-type: none"> – The potential for long-term loss of riparian vegetation will be minimized by trimming vegetation, where possible, rather than removing entire shrubs or trees. Shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. To protect nesting birds, Caltrans/City will not allow pruning or removal of woody riparian 		<p>complete</p> <p>5. See Water Quality and Storm Water Runoff above</p> <p>6. After construction is complete</p>			

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
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<p>vegetation between February 1 and September 30 without preconstruction surveys.</p> <ul style="list-style-type: none"> – A certified arborist will be retained to perform any necessary pruning or root cutting of retained riparian trees. – The areas that undergo vegetative pruning and tree removal will be inspected immediately before construction, immediately after construction, and 1 year after construction to determine the amount of existing vegetative cover, cover that has been removed, and cover that resprouts. If, after 1 year, these areas have not resprouted sufficiently to return the cover to the pre-project level, Caltrans/City will replant the areas with the same species (or native species if existing vegetation removed was non-native) to reestablish the cover to the pre-project condition. <p>5. Caltrans/City will implement Best Management Practices to maintain water quality. The practices are described above under Water Quality and Storm Water Runoff.</p> <p>6. Caltrans/City will compensate for temporary construction-related loss of riparian vegetation by replanting disturbed areas with the native species including coast live oak and arroyo willow. A mitigation planting plan that includes a species list and number of each species, planting locations, timing for planting, maintenance requirements, and success criteria will be prepared and implemented for the replanting. Caltrans/City will also compensate for the permanent loss of riparian vegetation by restoring the riparian forest adjacent to the permanent impact area along the Arroyo de San Pedro Regalado at a minimum ratio of 1:1 (1 acre restored for every 1 acre permanently affected); this ratio will be confirmed through coordination with state and federal agencies as part of the permitting process for the proposed project.</p> <p>7. Caltrans/ City would comply with the City's ordinance for the preservation of heritage trees and heritage shrubs (City of Santa Cruz Municipal Code</p>					

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Section 9.56). Under this ordinance, a tree permit from the City Parks and Recreation Department is required for trimming or removing any heritage tree or shrub. Mitigation is required for heritage tree removal, with the option of either paying a \$250.00 bond for each tree to be removed and then replanting onsite or making a \$150.00 donation to the City's Tree Trust fund for each tree to be removed. The replanting option requires the applicant to plant three 15-gallon trees or one 24-inch-box-size specimen tree for each approved tree removal.					
Wetlands and Other Waters					
<p>The City of Santa Cruz/Caltrans will implement the following mitigation measures:</p> <ol style="list-style-type: none"> 1. Caltrans/City will restore portions of the creek channel temporarily disturbed by construction to original grade and preconstruction conditions following construction. 2. Caltrans/City will compensate for the permanent fill of other waters of the United States in creek channel habitat based on the requirements specified by the U.S. Army Corps of Engineers in the Nationwide Permit that is issued for this project by implementing one or a combination of the following options. <ul style="list-style-type: none"> – Purchase credits for created riparian stream channel at a locally approved mitigation bank. – Replanting temporarily disturbed areas with the native species and restoring the riparian forest adjacent to the permanent impact area along the Arroyo de San Pedro Regalado as described above in Section 2.3.1, Natural Communities. 					
Animal Species					
<p>The City of Santa Cruz/Caltrans will implement the following mitigation measures:</p> <ol style="list-style-type: none"> 1. Within 48 hours of the start of work within or along the Arroyo de San Pedro Regalado, a qualified biologist will conduct a preconstruction survey for foothill yellow-legged frogs and western pond turtle 	Initial Study under Animal Species	<ol style="list-style-type: none"> 1.Prior to construction 2.During construction 			

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>in the construction area and 500 feet upstream and downstream of the construction area. If the biologist discovers any frogs, tadpoles, or egg masses or western pond turtles in or near the construction area, a biological monitor will monitor construction activities within the Arroyo de San Pedro Regalado. If any foothill yellow-legged frogs or western pond turtles are found during monitoring, a biologist with authorization from the California Department of Fish and Wildlife will relocate frogs and/or turtles outside of the construction area.</p> <p>2. Vegetation removal will occur during the non-breeding season for most migratory birds (generally between October 1 and January 31) to the extent feasible. If possible, construction activities will begin prior to the nesting season for most birds (generally February 1 through September 30) to discourage noise-sensitive raptors and other birds from attempting to nest within or near the study area.</p> <p>If beginning construction activities (including vegetation removal) prior to the breeding season is not possible, Caltrans/City will retain a qualified wildlife biologist to conduct nesting surveys before the start of construction. If an active nest is found in the survey area, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (September 30) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area.</p>					
Threatened and Endangered Species					
<p>The City of Santa Cruz/Caltrans will implement the following mitigation measures: California red-legged frog:</p> <p>1. To ensure that the proposed project is conducted in accordance with the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program, Caltrans/City will implement the avoidance and minimization measures from the Programmatic Biological Opinion prior to and during</p>	Initial Study under Threatened and Endangered Species	1.Prior to and during construction 2.During construction			

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>construction at the Arroyo de San Pedro Regalado. The measures are summarized below.</p> <ul style="list-style-type: none"> – Only U.S. Fish and Wildlife Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. – Ground disturbance will not begin until written approval is received from the U.S. Fish and Wildlife Service that the biologist is qualified to conduct the work. – The approved biologist will survey the project site 48 hours before the onset of work activities. If any life stage of California red-legged frog is found, the approved biologist will relocate the California red-legged frog the shortest distance possible to a location that will not be affected by project activities. – Before any activities begin, the 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, and the boundaries within which the project may be accomplished. – The approved biologist will be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of habitat has been completed. After this time, Caltrans/City will designate a person to monitor compliance with all minimization measures. If the monitor or approved biologist recommends that work be stopped, they will notify the resident engineer, who will eliminate the effect or halt actions causing the effect. If work is stopped, U.S. Fish and Wildlife Service will be notified as soon as possible. – During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of 					

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>regularly. Following construction, all trash and construction debris will be removed from work areas.</p> <ul style="list-style-type: none"> – All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat and water bodies, and in a location where a spill would not drain directly toward aquatic habitat. The monitor will ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the contractor will ensure that a plan is in place for 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 will a spill occur. – Habitat contours that are temporarily disturbed during construction will be returned to their original configuration at the end of project activities, unless determined to be infeasible by the U.S. Fish and Wildlife Service and Caltrans. – 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. Environmentally sensitive areas will be established to confine access routes and construction areas. – Work will be scheduled during the time of the year when impacts to California red-legged frog will be minimal. In-water construction activities would occur during the dry season (July 1 through October 15), and construction activities along the creek banks that do not involve in-water work would be restricted to May 1 through October 15. – Best management practices outlined in any authorizations or permits will be implemented to control sedimentation during and after project implementation. – If a work site is to be temporarily dewatered by 					

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>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.</p> <ul style="list-style-type: none"> – Unless approved by the U.S. Fish and Wildlife Service, water will not be impounded in a manner that may attract California red-legged frogs. – The approved biologist will permanently remove any individuals of exotic species such as bullfrogs, crayfish, and centrarchid fishes from the project area to the maximum extent possible. The biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code. – 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. – To ensure that diseases are not conveyed between work sites by the USFWS-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times. – Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. – Caltrans will not use herbicides as the primary method used to control invasive, exotic plants. – Upon completion of the project, the U.S. Fish and Wildlife Service project completion form will be completed and send to the Ventura Fish and Wildlife Office. <p>Central California Coast steelhead and coho salmon</p>					

Task and Brief Description	Document	Timing/Phase	Specific Action(s) Taken to Comply with Task	Certification of Task Completion	
				Initial	Date
<p>and tidewater goby:</p> <p>2. Caltrans/City proposes to conduct in-water construction activities during the dry season (July 1–October 15) to avoid the primary migration seasons of adult and juvenile salmonids and minimize the potential for adverse effects on water quality and aquatic habitat in the San Lorenzo River resulting from temporary increases in suspended sediment and turbidity.</p> <p>3. Caltrans/City will require the contractor to bypass the flow of the creek around the construction area and isolate the construction area from the live stream to minimize downstream water quality effects during construction. A pump and/or gravity will be used to bypass the flow through a pipe (large enough to accommodate the entire flow of the creek) to a point downstream of the construction area. Temporary cofferdams will be constructed as needed to isolate the construction area from the live stream, and will be constructed of clean imported gravel, impermeable liners (e.g., plastic), water bladders, and/or sand bags.</p> <p>4. During dewatering operations, water will be pumped out of the isolated construction area to water storage containers or a temporary detention or filtration basin away from the stream channel to prevent direct discharge of this water to the creek. All gravel, sand bags, liners, pipes, concrete debris, and other materials will be removed from the channel before stream flow is restored to the dewatered area.</p>					

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Appendix E U.S. Fish and Wildlife Service Correspondence



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:
08EVEN00-2012-F-0168

October 29, 2012

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

Subject: Biological Opinion for the Route 1/Route 9 Intersection Improvement Project,
Santa Cruz County, California (8-8-12-F-54)

Dear Mr. Walth:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the California Department of Transportation's (Caltrans) proposed Route 1/Route 9 Intersection Improvement Project, and its effects on the federally endangered tidewater goby (*Eucyclogobius newberryi*) and the federally threatened California red-legged frog (*Rana draytonii*). This biological opinion is issued in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Your request for formal consultation, dated February 3, 2012, was received by our office on February 7, 2012.

This biological opinion was prepared using the biological assessment prepared by Caltrans (2012) that was included with your request for consultation as well as information contained in our files. A complete administrative record for this biological opinion can be made available at the Ventura Fish and Wildlife Office.

CONSULTATION HISTORY

Your February 7, 2012, letter, you requested our concurrence with your determination that the proposed project was not likely to adversely affect the California red-legged frog or tidewater goby. Following our review of the biological assessment Chad Mitcham (of our staff) contacted you by phone on February 10, 2012, to discuss our concern with this determination. Based on known occurrences of both California red-legged frog and tidewater goby within dispersal distance of the project site, we did not concur with your determination. You subsequently revised your determination and requested formal consultation for the effects of the project on California red-legged frog and tidewater goby.

Jim Walth (8-8-12-F-54)

2

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Caltrans proposes to improve traffic operations and provide safety benefits at the existing intersection of Routes 1 and 9 by widening the existing intersection to accommodate additional turning lanes, bicycle lanes, and shoulders. Project activities proposed in and around surface waters involve extension of the existing culvert within Arroyo de San Pedro Regaldo (Arroyo) by 25 feet. A concrete apron and cutoff wall currently exists in the channel at the location of the culvert extension. These structures would remain in place or be replaced in kind and integrated into the culvert extension. An earthen embankment would be constructed to support the intersection widening over the drainage culvert that opens into the Arroyo. The embankment would have a 2:1 slope and would extend approximately 40 feet beyond the existing roadway. Dewatering a short reach of the Arroyo would be required to extend the culvert. This would be accomplished with small check dams and bypass pipes.

Caltrans proposes to implement the following protective measures for the California red-legged frog and tidewater goby:

1. Only Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs and tidewater gobies.
2. Ground disturbance will not begin until written approval is received from the Service that the biologist is qualified to conduct the work.
3. Before any activities begin on the 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 tidewater goby and their habitats, the specific measures that are being implemented to conserve the California red-legged frog and tidewater goby, and the boundaries within which the project may be accomplished.
4. A Service-approved biologist will be present at the work site until all California red-legged frogs and tidewater gobies have been removed and disturbance of habitat has been completed. After this time, the project proponent will designate a person to monitor on-site compliance with all minimization measures. The Service-approved biologist will ensure that the monitor receives the training outlined in measure 3 above. If the monitor or Service-approved biologist recommends that work be stopped because California red-legged frogs and/or tidewater gobies would be affected to a degree that exceeds the levels anticipated by the Service during review of the proposed action, they will notify the construction foreman immediately. The construction foreman will either resolve the situation by eliminating the effect immediately or require that all actions which are causing these effects be halted. If work is stopped, the Service will be notified as soon as possible.

Jim Walth (8-8-12-F-54)

3

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. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly towards aquatic habitat. The Service-approved biologist or designated monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure 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.
7. Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic 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.
8. Project activities taking place in aquatic habitat will be restricted to July 1 through October 15. Construction activities taking place in riparian habitat (i.e., above the water line) would be restricted to May 1 through October 15.
9. 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 and tidewater gobies 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.
10. A Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*) and centrarchid fishes from the project area, to the maximum extent possible.

California red-legged frog specific protective measures:

1. A Service-approved biologist will survey the project site no later 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 activities begin. The Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be effected by activities associated with the proposed project. The Service-approved

Jim Walth (8-8-12-F-54)

4

biologist will maintain detailed records of any individuals that are moved to assist him or her in determining whether translocated animals are returning to the original point of capture.

2. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Caltrans will install orange construction barrier fencing along the creek channel and riparian forest to delineate the boundary of the work area and identify environmentally sensitive areas to be protected during construction. The Service-approved biologist or designated biological monitor will inspect the barrier fencing daily for California red-legged frogs.
3. Unless approved by the Service, water will not be impounded in a manner that may attract California red-legged frogs.

Tidewater goby specific protective measure:

Prior to and during incremental draining of the site a Service-approved biologist will survey the area for tidewater gobies through the use of dip nets or seine nets. Any captured tidewater gobies will be released in appropriate habitat adjacent to the dewatered area.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY 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 tidewater goby and 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 tidewater goby and 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 these species; (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 tidewater goby and California red-legged frog; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the tidewater goby and 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 tidewater goby and 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 tidewater goby or 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 tidewater goby and California red-legged frog and

Jim Walth (8-8-12-F-54)

5

the role of the action area in the survival and recovery of these species 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.

STATUS OF THE SPECIES

Tidewater goby

The tidewater goby was listed as endangered on March 7, 1994 (Service 1994). On June 24, 1999, the Service proposed to remove the populations occurring north of Orange County, California, from the endangered species list (64 FR 33816). In November 2002, the Service withdrew this proposed delisting rule and determined to retain the tidewater goby's listing as endangered throughout its range (Service 2002a).

We originally designated critical habitat for the tidewater goby on November 20, 2000 (Service 2000). In November 2006, we proposed to revise that designated critical habitat (71 FR 68914), and subsequently designated critical habitat in January 2008 (Service 2008a). A recovery plan for the tidewater goby was completed on December 12, 2005 (Service 2005).

Much of the information in this species account is summarized from the following sources: Wang (1982), Irwin and Soltz (1984), Lafferty et al. (1999a, 1999b), Swift et al. (1989, 1993, 1997), Worcester (1992), Swenson (1995, 1999), and Swenson and McCray (1996).

The tidewater goby is endemic to California and typically inhabits coastal lagoons, estuaries, and marshes; preferring relatively low salinities of approximately 12 parts per thousand (ppt). Tidewater goby habitat is characterized by brackish estuaries, lagoons, and lower stream reaches where the water is fairly still but not stagnant. They tend to be found in the upstream portions of lagoons. Tidewater gobies can withstand a range of habitat conditions and have been documented in waters with salinity levels that range from 0 to 42 ppt, temperatures from 46 to 77 degrees Fahrenheit, and depths from approximately 10 inches to 6.5 feet.

The tidewater goby is primarily an annual species in central and southern California, although some variation in life history has been observed. If reproductive output during a single season fails, few (if any) tidewater gobies survive into the next year. Reproduction typically peaks from late April or May to July and can continue into November or December depending on the seasonal temperature and amount of rainfall. Males begin the breeding ritual by digging burrows (3 to 4 inches deep) in clean, coarse sand of open areas. Females then deposit eggs into the burrows, averaging 400 eggs per spawning effort. Males remain in the burrows to guard the eggs. They frequently forego feeding which may contribute to the mid-summer mortality observed in some populations. Within 9 to 10 days, larvae emerge and are approximately 0.20 to 0.27 inch in length. They live in vegetated areas in the lagoon until they are 0.60 to 0.70 inch long. When they reach this life stage, they become substrate-oriented, spending the majority of time on the bottom rather than in the water column. Both males and females can breed more than once in a season, with a lifetime reproductive potential of 3 to 12 spawning events.

Jim Walth (8-8-12-F-54)

6

Vegetation is critical for over-wintering tidewater gobies because it provides refuge from high water flows.

Tidewater gobies feed on small invertebrates, including mysids, amphipods, ostracods, snails, aquatic insect larvae, and particularly chironomid midge larvae. Tidewater gobies of less than 0.30 inch probably feed on unicellular phytoplankton or zooplankton similar to many other early stage larval fishes.

Historically, the tidewater goby occurred in at least 126 California coastal lagoons and estuaries from Tillas Slough near the Oregon border south to Agua Hedionda Lagoon in northern San Diego County. The southern extent of its distribution has been reduced by approximately 8 miles. The species is currently known to occur in about 98 locations, although the number of sites fluctuates with climatic conditions. Currently, the most stable populations are in lagoons and estuaries of intermediate size (5 to 124 acres) that are relatively unaffected by human activities.

In Santa Barbara County during the fall of 1994, tidewater gobies were reported as common in the Santa Ynez River at 4 miles distance above the lagoon (Swift et al. 1997), however, by January, 1995, they were absent at the upstream sites. Tidewater gobies that are found upstream of the lagoons in summer and fall tend to be juveniles. The highest densities of tidewater gobies are typically present in the fall.

Tidewater gobies enter the marine environment when sandbars are breached during storm events. The species' tolerance of high salinities (up to 60 ppt) for short periods of time enables it to withstand marine environment conditions where salinities are approximately 35 ppt, thereby allowing the species to re-establish or colonize lagoons and estuaries following flood events. However, genetic studies indicate that individual populations rarely have contact with other populations so natural recolonization may be rare.

Native predators are not known to be important regulators of tidewater goby population size in the lagoons of southern California. Rather, population declines are attributed to environmental conditions. During high flows streams, flood and breach lagoon barriers that create strong tidal conditions. As a result, populations plummet. Populations typically recover quickly in summer, with mean densities of between 54 to 323 fish per square foot recorded. Tidewater goby densities are greatest among emergent and submergent vegetation (Moyle 2002).

The decline of the tidewater goby is attributed primarily to habitat loss or degradation resulting from urban, agricultural, and industrial development in and around coastal wetlands. Tidewater gobies have been extirpated from water bodies that are impaired by degraded water quality (e.g., Mugu Lagoon, Ventura County), but still occur in others (e.g., Santa Clara River, Ventura County). Some extirpations are believed to be related to pollution, upstream water diversions, and the introduction of non-native predatory fish species (most notably, centrarchid sunfish and bass). These threats continue to affect some of the remaining populations of tidewater gobies.

Jim Walth (8-8-12-F-54)

7

California red-legged frog

The California red-legged frog was federally listed as threatened on May 23, 1996 (Service 1996). A recovery plan was published by the Service in 2002 and critical habitat designated on April 13, 2006. On September 16, 2008, revised designation of critical habitat was proposed to modify critical habitat boundaries to better reflect lands containing essential features for the California red-legged frog (Service 2008b). On April 28, 2009, an amended version of the proposed rule was reopened for comments to interested parties (Service 2009). The final designation of critical habitat for the California red-legged frog was published on March 17, 2010 (Service 2010).

Until recently, the California red-legged frog was recognized as two conspecific subspecies, *Rana aurora aurora* and *Rana aurora draytonii*. Recent genetic analysis of the *Rana aurora/draytonii* complex has concluded that the two *Rana aurora* subspecies are in fact separate species (Shaffer et al. 2004, Frost et al. 2006, as cited in Service 2009); this change in nomenclature was acknowledged in the final rule for revised designation of critical habitat for the California red-legged frog (Service 2010).

The California red-legged frog is the largest native frog in the western United States, ranging from 1.5 to 5.1 inches in length. The abdomen and hind legs of adults are largely red; the back is characterized by small black flecks and larger, irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers, and dorsolateral folds are prominent on the back. Tadpoles range from 0.6 to 3.1 inches in length and are dark brown and yellow with dark spots.

California red-legged frogs spend most of their lives in and near sheltered backwaters of ponds, marshes, springs, streams, and reservoirs. Deep pools with dense stands of overhanging willows and an intermixed fringe of cattails are considered optimal habitat. Eggs, larvae, transformed juveniles, and adults also have been found in ephemeral creeks and drainages and in ponds that do not have riparian vegetation. Accessibility to sheltering habitat is essential for the survival of California red-legged frogs within a watershed, and can be a factor limiting population numbers and distribution. Some California red-legged frogs have moved long distances overland between water sources during winter rains. Adult California red-legged frogs have been documented to move more than 2 miles in northern Santa Cruz County “without apparent regard to topography, vegetation type, or riparian corridors” (Bulger et al. 2003). Most of these overland movements occur at night. In another study conducted at the Point Reyes National Seashore and Golden Gate National Recreation Area in Marin County, radio tagged frogs often moved in a straight line between breeding and upland habitats up to 1.7 miles, again with no apparent regard to topography. Some of these frogs remained at breeding ponds all year, while others moved to non-breeding areas, even when the breeding sites retained water (Fellers and Kleeman 2007).

California red-legged frogs breed from November through March with earlier breeding records occurring in southern localities. California red-legged frogs are often prolific breeders, typically laying their eggs during or shortly after large rainfall events in late winter and early spring.

Jim Walth (8-8-12-F-54)

8

Female California red-legged frogs deposit egg masses on emergent vegetation so that the masses float on the surface of the water. Egg masses contain about 2,000 to 5,000 moderate-sized (0.08 to 0.11 inch in diameter), dark reddish-brown eggs. Embryos hatch 6 to 14 days after fertilization. Larvae generally undergo metamorphosis 3.5 to 7 months after hatching, but some larvae overwinter and metamorphose after up to 13 months (Fellers et al. 2001). Tadpoles probably experience the highest mortality rates of all life stages, with less than 1 percent of eggs laid reaching metamorphosis. Sexual maturity normally is reached at 3 to 4 years of age. California red-legged frogs may live 8 to 12 years. Juveniles can be active diurnally and nocturnally, whereas adults are mainly nocturnal.

The diet of California red-legged frogs is highly variable. Invertebrates are the most common food items for adults, although vertebrates such as Pacific treefrogs (*Hyla regilla*) and California mice (*Peromyscus californicus*) can constitute over half of the prey mass eaten by larger frogs (Hayes and Tennant 1985). Larvae eat algae and detritus.

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 subspecies was found throughout the Central Valley and Sierra Nevada foothills. California red-legged frogs have been documented in 46 counties in California, but now remain in only 238 streams or drainages in 31 counties in California and one region in Baja California, Mexico (Grismar 2002, Fidenci 2004, Smith and Krofta 2005, Service 2009).

Over-harvesting, habitat loss, non-native species introduction, and urban encroachment are the primary factors that have negatively affected the California red-legged frog throughout its range (Jennings and Hayes 1985, Hayes and Jennings 1988). Ongoing causes of decline include direct habitat loss due to stream alteration and disturbance to wetland areas, indirect effects of expanding urbanization, and competition or predation from non-native species. Other causes of declines in amphibian species have been studied by Davidson et al. (2001). Results indicate that ozone depletion resulting in an increase in ultraviolet radiation is a potential factor of amphibian decline. In addition, upwind pesticides and/or other chemicals used for agricultural purposes have been identified as factors in a number of declining California amphibians.

An additional threat affecting amphibians worldwide is the chytrid fungus *Batrachochytrium dendrobatidis*. *Batrachochytrium dendrobatidis* causes chytridiomycosis, a skin disease that has been found to disrupt osmoregulatory function in the skin of amphibians, resulting in an imbalance of electrolytes and death (Voyles et al. 2009). Chytridiomycosis in amphibians may be marked by deformed mouthparts in tadpoles, wherein most infected tadpoles will die at metamorphosis (Service 2002b). Infected boreal toads (*Bufo boreas boreas*) showed few clinical signs of the disease but many appeared weak or lethargic, exhibited excessive shedding of skin and were reluctant to flee at the approach of humans (U.S. Geological Service 2000, as cited in Service 2002b). Chytrid fungi are widespread in the environment where they act as decomposers of keratin, chitin, cellulose, and other plant material, and are known parasites of fungi, algae,

Jim Walth (8-8-12-F-54)

9

higher plants, protozoa, invertebrates, and most recently in vertebrates. Chytrid fungi reproduce asexually by means of minute, fragile, motile spores, and are probably spread directly from amphibian to amphibian in water. These fungi most likely move from one water source to another on migrating amphibians, water birds, or flying insects (Daszak et al. 1999 as cited in Service 2002b).

Since its discovery in 1998, chytrid fungus has likely been responsible for die-offs of a number of amphibian species, including remaining populations of the endangered boreal toad in the southern Rocky Mountains, and Chiricahua leopard frogs (*Rana chiricahuensis*) in Arizona (Colorado Herpetological Society 2000, as cited in Service 2002b). Occurrences of infection have been observed in two amphibian species in the Sierra Nevada, the mountain yellow-legged frog (*Rana muscosa*) and the Yosemite toad (*Bufo canorus*). An infected California red-legged frog tadpole was collected in Calabasas Pond on the Ellicott Slough National Wildlife Refuge in Santa Cruz County (Service 2002b).

The chytrid fungus *Batrachochytrium dendrobatidis* is now recognized for its ability to spread quickly through amphibian populations and infect numerous species, causing high rates of mortality, and persisting at low host densities (Voyles et al. 2009). These recent findings validate the importance of taking precautions to prevent the spread of chytrid fungus or any disease agent into and/or between amphibian populations.

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 all areas where construction equipment and personnel would be working, areas downstream that may receive sediment, and all areas where California red-legged frogs and/or tidewater gobies area relocated.

Tidewater Goby

Tidewater gobies have been observed approximately 0.5 mile south of the project area during previous surveys (Caltrans 2012). Although tidewater gobies have not been observed within 0.5 mile of the project area; because no physical barriers exist to preclude the species from moving upstream and into the project area, Caltrans and the Service has assumed presence. The action area provides suitable aquatic habitat for the species.

California red-legged frog

California red-legged frogs are known to occur approximately 0.75 mile west of the project area in the Moore Creek drainage. Although no California red-legged frogs were observed during surveys in 2010, the action area provides suitable California red-legged frog breeding, non-

Jim Walth (8-8-12-F-54)

10

breeding, and upland habitat. If the species occurs in the vicinity of this portion of the San Lorenzo River watershed, dispersing individuals could also occur in the Arroyo de San Pedro Regaldo.

EFFECTS OF THE ACTION

Tidewater Goby

Construction of the earthen embankment and extension of the existing culvert within the creek channel would result in the permanent loss of 0.01 acre of tidewater goby habitat and the temporary loss of an additional 0.01 acre of tidewater goby habitat. Riparian vegetation and the stream bank would be subject to temporary adverse effects, but Caltrans will restore all temporarily impacted areas to pre-construction conditions to the maximum extent feasible.

The proposed project could cause temporary adverse effects to the tidewater goby. Sedimentation and noise and vibrations are likely to occur during the project activities. Noise and vibration are likely to disturb tidewater gobies to some degree, but these effects would last only for the duration of the project. Sedimentation of the habitat is possible, resulting in reduced water quality. Tidewater gobies are able to adapt to sedimentation to a certain extent because they breed in sandy substrates, but increased sedimentation usually creates large amounts of shallow, warm habitats that may be unsuitable (Moyle 2002). This effect would only occur for the duration of construction activities. Caltrans will implement best management practices to minimize the adverse effects of sedimentation.

Project construction within aquatic habitat is scheduled to occur between July 1 and October 15, when water levels would be at their lowest. The project requires the use of heavy equipment within the drainage, but access will be limited to the maximum extent practicable. Any tidewater gobies that are present within the work areas will be captured and relocated by a Service-approved biologist.

Tidewater gobies may be present at Arroyo de San Pedro Regaldo during construction activities. If dewatering of the aquatic habitat occurs, tidewater gobies may be entrained by the pump intakes. Screening pump intakes with wire, no greater than 0.2 inch mesh diameter, would reduce the potential for tidewater gobies to be caught in the inflow. Handling of tidewater gobies to move them from a work area may result in injury or mortality caused by the stress created by the capture efforts. Individuals could suffocate if water becomes depleted of oxygen as a result of a rise in temperature or from excessive crowding in the temporary holding containers. The use of Service-approved biologists to conduct the capture and relocation efforts, however, would minimize these adverse effects to tidewater gobies. Tidewater gobies could also be crushed in seines by the weighted lead line if it should roll inward while being pulled out of the water. To minimize this potential adverse effect, Caltrans will pull seines ashore in a deliberate manner, with care being taken to avoid rolling the weighted line inward.

Jim Walth (8-8-12-F-54)

11

California red-legged frog

The proposed project could permanently and temporarily cause direct adverse effects to the California red-legged frog. Impacts include the permanent loss of 0.01 acre of potential breeding habitat and the temporary loss of an additional 0.01 acre of potential breeding habitat. Additionally, construction would result in the permanent loss of 0.03 acre of riparian habitat and the temporary loss of 0.04 acre of riparian habitat. Caltrans proposes to minimize the adverse effects to breeding adults by scheduling construction to occur between May 1 and October 15, when water levels would be at their lowest. The project requires the use of heavy equipment within the drainage, but access will be limited to the maximum extent practicable.

Loud noises and vibration from construction activities may alter normal behaviors and disturb California red-legged frogs to the extent that they surface to seek alternate cover. This would expose these individuals to increased chance of desiccation and predation, as well as require an increased expenditure of energy that could result in a reduction in foraging efforts. Such effects will be reduced or prevented with the use of qualified biologist to capture and move California red-legged frogs.

Trash left at the work site during or after project activities could attract predators, which could, in turn, prey on California red-legged frogs. For example, raccoons are attracted to trash and also prey opportunistically on either species. This potential impact will be reduced or avoided by careful control of waste products at all work sites.

Direct adverse effects to California red-legged frogs would also be reduced by relocating individuals, including adults and sub-adults, if any are found, prior to the start of construction activities. California red-legged frogs could be injured or killed if they are improperly handled or contained during capture and relocation efforts. Such effects will be reduced or prevented with the use of qualified biologist to capture and move California red-legged frogs.

Chytrid fungus could be spread if infected California red-legged frogs are relocated to areas with uninfected California red-legged frogs. Chytrid fungus is a water-borne fungus that can be spread through direct contact between aquatic animals and a spore that can move short distances through the water. The fungus only attacks the parts of an amphibian'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 has become infected with Chytrid fungus, the fungus stays in the water for an undetermined amount of time. Caltrans would reduce the risk of spreading Chytrid fungus by using Service-approved biologists.

CUMMULATIVE 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

Jim Walth (8-8-12-F-54)

12

Federal actions that are unrelated to the proposed action are not considered in this section because they would require separate consultation pursuant to section 7 of the Act. We are not currently aware of any non-federal actions that are reasonably certain to occur in the action area.

CONCLUSION

After reviewing the current status of the tidewater goby and California red-legged frog, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Route 1/Route 9 Intersection Improvement Project, as proposed, is not likely to jeopardize the continued existence of the tidewater goby or California red-legged frog.

We have reached this conclusion for the following reasons:

1. Caltrans has proposed measures to reduce the adverse effects of the proposed work on the tidewater goby and California red-legged frog;
2. Little effect on the number of California red-legged frogs is expected because few if any individuals are likely to be killed or injured during project implementation and natural breeding and mortality are expected to mask any project effects;
3. Little effect on the number of tidewater gobies is expected because few if any individuals are likely to be killed or injured during project implementation and it is anticipated that any effects would likely be countered by future recolonization of the project site; and,
4. Little to no effect on the distribution of California red-legged frogs and tidewater gobies are expected because only a small area of upland and aquatic habitat would be permanently degraded.

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

Jim Walth (8-8-12-F-54)

13

Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

We expect the level of incidental take of the California red-legged frog and tidewater goby to be very low because: (1) no individuals of these species have been observed in the project area to date; (2) the habitats where these species occur is distinct and readily identifiable; and (3) because Caltrans will ensure the implementation of measures to reduce the extent of incidental take. However, we anticipate that incidental take of the, California red-legged frog and tidewater goby may occur as a result of the following activities that are evaluated in this biological opinion: removal or destruction of habitat features (e.g., California red-legged frog upland habitat, California red-legged frog and tidewater goby aquatic habitat, etc.), soil excavation and grading, grade and stream channel stabilization, construction of earthen embankment, placement of fill, burial, trampling or crushing from equipment and foot traffic, limited removal of vegetation, use of equipment, or noise generated by workers and project activities.

All California red-legged frogs found within project footprint would be subject to take because Caltrans will attempt to capture and relocate all life stages of California red-legged frogs out of work areas prior to the onset of any project activities that may result in adverse effects to California red-legged frogs. We assume that a very small percentage of the captured California red-legged frogs could succumb to injury or mortality; however, the purpose of capturing and relocating is to reduce the overall risk to California red-legged frogs that could result from implementing the project actions. While California red-legged frogs that are not detected and moved out of harm's way may be killed or injured by the construction activities, we anticipate that few, if any, California red-legged will be injured or killed during the proposed action. Incidental take of California red-legged frogs is difficult to detect because of their small body size and finding a dead or injured specimen is unlikely. California red-legged frog may be taken only within the defined boundaries of the work area.

All tidewater gobies within project area would be subject to take because Caltrans will attempt to capture and relocate all life stages of tidewater gobies out of work areas prior to the onset of any project activities that may result in adverse effects to these species. We assume that a very small percentage of the captured tidewater gobies could succumb to injury or mortality; however, similar to the California red-legged frog, the purpose of capturing and relocating is to reduce the overall risk to tidewater gobies that could result from implementing the project actions. Quantification of take for the tidewater goby is similarly difficult to detect due to the species' small size, aquatic habitat, and annual life history. These factors make it difficult to detect where tidewater gobies are present and if any have been affected by the action. This also indicates that some individuals may not be captured and relocated and could be killed or injured by the activities. Tidewater goby may be taken only within the defined boundaries of the work area.

The measures described below are non-discretionary and Caltrans must include them as binding conditions of any contracts associated with the proposed action, for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans fails to require its' contractors to adhere to the terms and

Jim Walth (8-8-12-F-54)

14

conditions of the incidental take statement through enforceable terms that are added to its authorization, or contracts, 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)].

Only forms of take that are incidental to implementation of the project are exempted from the prohibitions described in section 9 of the Act. If the amount of incidental take is reached, Caltrans has committed to cease project activities and will reinitiate formal consultation with the Service. This biological opinion does not authorize any form of take that is not incidental to implementation of the project within the boundaries of work areas under Caltrans oversight.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the California red-legged frog and tidewater goby:

1. Caltrans must ensure that the level of incidental take during project implementation is commensurate with the analysis contained in this biological opinion.
2. Biologists must be authorized by the Service before they survey for, capture, and move California red-legged frogs and (or) tidewater gobies from the construction area.

The Service's evaluation of the effects of the proposed action includes consideration of the measures developed by Caltrans and the Service and repeated in the Description of the Proposed Action portion of this biological opinion to minimize the adverse effects of the proposed action on the California red-legged frog and tidewater goby. Any subsequent changes in these measures may constitute a modification of the proposed action and may warrant re-initiation 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 exempted from the prohibitions of section 9 of the Act, Caltrans must ensure that the following terms and conditions, which implement the reasonable and prudent measures described above, are implemented:

1. The following terms and conditions implement reasonable and prudent measure 1:
 - a. If one (1) adult or juvenile California red-legged frog or one (1) tadpole is found dead or injured, Caltrans must notify our office immediately. We will then review the project activities to determine if additional protective measures are needed. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Jim Walth (8-8-12-F-54)

15

- b. Because we are unable to anticipate with a great deal of certainty the number of tidewater gobies that may be killed or injured, Caltrans must notify the Service if more than two (2) individuals are found killed or injured. We will then review the project activities to determine if additional protective measures are needed. The cause of death or injury must be determined by a Service-approved biologist. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.
 2. The following terms and conditions implement reasonable and prudent measure 2:
 - a. Caltrans must request our approval of any biologists that they employ to conduct monitoring activities for the tidewater goby or California red-legged frog pursuant to this biological opinion. Such requests must be in writing, and be received by the Ventura Fish and Wildlife Office at least 15 days prior to any such activities being conducted.
 - b. To avoid transferring disease or pathogens between aquatic habitats during the course of surveys and handling of California red-legged frogs, the Service-approved biologist shall follow the Declining Amphibian Population Task Force's Code of Practice. A copy of this Code of Practice is enclosed. You may substitute a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water) for the ethanol solution. Care must be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat.

REPORTING REQUIREMENTS

Caltrans must provide a written report to the Service within 90 days following completion of the proposed project. The report must document the number and size of any California red-legged frogs and (or) tidewater gobies relocated from the action area, the date and time of relocation, and a description of relocation sites. The report must also state the number of California red-legged frogs and (or) tidewater gobies killed or injured, describing the circumstances of the mortalities or injuries if known. The report must contain a brief discussion of any problems encountered in implementing minimization measures, results of biological surveys and sighting records, and any other pertinent information such as the acreage affected and restored or undergoing restoration of each habitat type. We encourage you to submit recommendations regarding modification of or additional measures that would improve or maintain protection of the California red-legged frog and tidewater goby, while simplifying compliance with the Act.

DISPOSITION OF DEAD OR INJURED SPECIMENS

Upon locating a dead or injured tidewater goby or California red-legged frog, you 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.

Jim Walth (8-8-12-F-54)

16

Care must be taken in handling dead specimens to preserve biological material in the best possible state for later analysis. Should any injured tidewater gobies or California red-legged frogs survive, the Service must be contacted regarding their final disposition. The remains must be placed with educational or research institutions holding the appropriate State and Federal permits, such as the Santa Barbara Natural History Museum (Contact: Paul Collins, Santa Barbara Natural History Museum, Vertebrate Zoology Department, 2559 Puesta Del Sol, Santa Barbara, California 93105, telephone 805/682-4711 ext. 321).

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. 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 or that benefit listed species and their habitats.

Caltrans should work with local agencies and governments towards the implementation of recovery actions identified in the California red-legged frog and tidewater goby recovery plans.

REINITIATION NOTICE

This concludes formal consultation on the Route 1/Route 9 Intersection Improvement Project in Santa Cruz County, California. 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 retained (or is authorized by law) and if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this biological opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion; or 4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions, please contact Chad Mitcham of my staff at (805) 512-6805.

Sincerely,


Diane K. Noda
for Field Supervisor

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The Declining Amphibian Populations Task Force Fieldwork Code of Practice

- A. 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 work site.
- B. Boots, nets, traps, and other types of equipment used in the aquatic environment should then be scrubbed with 70 percent ethanol solution and rinsed clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond, wetland, or riparian area.
- C. 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 "base camp". Elsewhere, when washing-machine facilities are available, remove nets from poles and wash in a protective mesh laundry bag with bleach on the "delicates" cycle.
- D. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable gloves and change them between handling each animal. Dedicate sets of nets, boots, traps, and other equipment to each site being visited. Clean them as directed above and store separately at the end of each field day.
- E. When amphibians are collected, ensure that animals from different sites are kept separately and take great care to avoid indirect contact (e.g., via handling, reuse of containers) between them or with other captive animals. Isolation from unsterilized plants or soils which have been taken from other sites is also essential. Always use disinfected and disposable husbandry equipment.
- F. Examine collected amphibians for the presence of diseases and parasites soon after capture. Prior to their release or the release of any progeny, amphibians should be quarantined for a period and thoroughly screened for the presence of any potential disease agents.
- G. Used cleaning materials and fluids should be disposed of safely and, if necessary, taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

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. E-mail: DAPTF@open.ac.uk Fax: +44 (0) 1908-654167

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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.).



Rich Krumholz (8-8-10-F-58)

2

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

Rich Krumholz (8-8-10-F-58)

3

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

Rich Krumholz (8-8-10-F-58)

4

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

Rich Krumholz (8-8-10-F-58)

5

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.

Rich Krumholz (8-8-10-F-58)

6

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,

Rich Krumholz (8-8-10-F-58)

7

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.

Rich Krumholz (8-8-10-F-58)

8

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

Rich Krumholz (8-8-10-F-58)

9

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 (*Pacifastacus 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.

Rich Krumholz (8-8-10-F-58)

10

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.

Rich Krumholz (8-8-10-F-58)

11

- 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 reinstate 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 reinstate 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

Rich Krumholz (8-8-10-F-58)

12

- 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

Rich Krumholz (8-8-10-F-58)

13

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.

Rich Krumholz (8-8-10-F-58)

14

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.

Rich Krumholz (8-8-10-F-58)

15

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).

Rich Krumholz (8-8-10-F-58)

16

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

Rich Krumholz (8-8-10-F-58)

17

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,

Rich Krumholz (8-8-10-F-58)

18

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.

Rich Krumholz (8-8-10-F-58)

19

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

Rich Krumholz (8-8-10-F-58)

20

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 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.

Rich Krumholz (8-8-10-F-58)

21

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.

Rich Krumholz (8-8-10-F-58)

22

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.

Rich Krumholz (8-8-10-F-58)

23

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

Rich Krumholz (8-8-10-F-58)

24

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

Rich Krumholz (8-8-10-F-58)

25

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).

Rich Krumholz (8-8-10-F-58)

26

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.

Rich Krumholz (8-8-10-F-58)

27

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

Rich Krumholz (8-8-10-F-58)

28

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.

Rich Krumholz (8-8-10-F-58)

29

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).

Rich Krumholz (8-8-10-F-58)

30

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[®] or Aquamaster[®]) is probably the most likely herbicide to be used. Glyphosate is the active ingredient in a variety of herbicides including Roundup[®], Rodeo[®], Aquamaster[®], Buccaneer[®], Glyfos[®], Honcho[®], Touchdown[®], Vision[®], Duramax[®], Rattler[®], 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).

Rich Krumholz (8-8-10-F-58)

31

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[®], 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[®] while the isopropylamine (IPA) salt of glyphosate (the active constituent in Roundup[®]) 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[®] or Aquamaster[®] is Agri-Dex[®], produced by Helena Chemicals. We are not aware of any information regarding the

Rich Krumholz (8-8-10-F-58)

32

toxicity of Agri-Dex[®] on amphibians, but based on the data available, Monheit et al. (2004) concluded crop oil-based surfactants (i.e. Agri-Dex[®]) 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[®] 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[®] 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

Rich Krumholz (8-8-10-F-58)

33

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

Rich Krumholz (8-8-10-F-58)

34

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 acrestotal 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

Rich Krumholz (8-8-10-F-58)

35

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

Rich Krumholz (8-8-10-F-58)

36

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

Rich Krumholz (8-8-10-F-58)

37

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.

Rich Krumholz (8-8-10-F-58)

38

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

Rich Krumholz (8-8-10-F-58)

39

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

Rich Krumholz (8-8-10-F-58)

40

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.

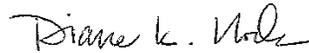
The Service requests notification of the implementation of any conservation recommendations, so we may be kept informed of actions that minimize or avoid adverse effects to or benefit the California red-legged frog and its habitat.

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
Cliffendon 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
Pfeifer 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

Ruggerone, G. 2007. Telephone conversation regarding the California Department of Transportation's exemption from the injunction of use of 66 pesticides (Center for Biological Diversity v. Johnson and Nastri). Dated April 9, 2007. Senior Environmental Planner. California Department of Transportation. San Luis Obispo, California.

Appendix E • U.S. Fish and Wildlife Service Correspondence

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 vinyl¹ 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. Fax: +44 (0) 1908-65416

¹ Do not use latex gloves. Latex is toxic to amphibians.

DEPARTMENT OF TRANSPORTATION

50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
TELEPHONE: (805) 542-4657
TDD (805) 549-3259
<http://www.dot.ca.gov/dist05>

February 3, 2012
Route 1/Route 9 Intersection
Improvement Project

Chad Mitcham
U.S. Fish and Wildlife Service
2493 Portola Road, Suite B
Ventura, CA 93003

Dear Mr. Mitcham,

The California Department of Transportation (Caltrans) is requesting initiation of formal consultation with the U.S. Fish and Wildlife Service for the Route 1/Route 9 Intersection Improvement Project for tidewater gobi and California red-legged frog individuals under the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (HDA-CA, File #: Section 7 with Ventura USFWS, Document #: S38192) (1-8-02-F-68).

The California Department of Transportation (Caltrans) and the City of Santa Cruz (City) propose to implement improvements to the intersection at Route 1 and Route 9/River Street (Route 1/9) in the City of Santa Cruz, Santa Cruz County, California.

Based on the limited scope of work for this project Caltrans believes that the project would not likely adversely affect the CRLF or tidewater gobi.

If you have any questions please contact William Mitchell at (916) 737-3000 or WMitchell@icfi.com. As an alternative you can contact Jim Walth at (805) 543-4657 or Jimmy_Walth@dot.ca.gov

Sincerely,

Jim Walth
Associate Biologist, Caltrans D5

Attachments: (5)

Supporting Information for Consultation under the Programmatic Biological Opinion for California Red-Legged Frog for the Route 1/9 Intersection Improvements Project, Santa Cruz County

The following information is provided to support consultation for the finding that the Route 1/9 Intersection Improvements Project would likely adversely affect the California red-legged frog (*Rana draytonii*) under the Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (U.S. Fish and Wildlife Service 2011).

Description of the Proposed Action

The California Department of Transportation (Caltrans) and City of Santa Cruz (City) propose to implement improvements to the intersection at Route 1 and Route 9/River Street (Route 1/9 intersection) in the City of Santa Cruz, Santa Cruz County, California (Figure 1). The Route 1/9 Intersection Improvements Project (proposed action) would improve traffic operations and provide safety benefits at the existing Route 1/9 intersection by widening the existing intersection to accommodate additional turning vehicle lanes, bicycle lanes, and shoulders. The proposed action would be funded with local, State Transportation Improvement Program, and Federal Transportation Improvement Program funds. The limits of the action area are shown in Figure 2.

The proposed improvements, all of which are standard lane and shoulder width dimensions, would require widening the existing intersection. The majority of the improvements would affect ruderal and landscaped areas along Route 1 and Route 9. Specific information on the types, width, number, and location of vehicle lanes, bicycle lanes, and shoulders is provided in the Natural Environment Study for the proposed action.

At the northeast corner of the Route 1/9 intersection, an earthen embankment would be constructed to support the intersection widening over the drainage culvert that opens into a stream channel known as Arroyo de San Pedro Regaldo (Figure 3). The Arroyo de San Pedro Regaldo extends approximately 450 feet from the existing culvert to its outlet with the San Lorenzo River. The embankment would have a 2:1 slope with the toe of the embankment extending approximately 40 feet beyond the existing roadway (Figure 4). The existing culvert would be extended approximately 25 feet. The existing concrete apron and cutoff wall that extend approximately 25 feet from the existing culvert would remain in place or be reconstructed "in-kind". All in-water construction activities within the Arroyo de San Pedro Regaldo would be conducted during the dry season (July 1 through October 15) to avoid effects on juvenile steelhead. Because the creek is perennial, dewatering would be needed. Dewatering would be accomplished by using small check dams and a bypass pipe to isolate all in-channel activities from flowing water and bypass the flow past the construction site. Construction activities along

the creek banks that do not involve in-water work would be restricted to May 1 through October 15 to minimize effects on California red-legged frog.

Construction Methods

The sequence of activities and construction methods within/near the Arroyo de San Pedro Regaldo are described first, since they are most pertinent to California red-legged frog. The first order of work would be placing environmentally sensitive area (ESA) fencing to establish the construction limits near the arroyo and installing temporary construction/water pollution control devices. Smaller bobcat dozers and graders would then be used to clear and grub the construction area. If the creek is flowing, a pump and/or gravity diversion would be used to bypass the flow through a plastic pipe (large enough to accommodate the entire flow of the creek) to a point downstream of the construction area. Temporary cofferdams would be constructed as needed to isolate the construction area from the live stream and would consist of clean imported gravel, impermeable liners (e.g., plastic), water bladders, and/or sand bags. The culvert, wingwalls, apron, cut-off wall would be extended or reconstructed; and the embankment would be extended, compacted, and graded. Smaller bulldozers/ graders (i.e. bobcat), pickup trucks, dump trucks, concrete trucks, pump trucks, and hand held compactors and jackhammers would be used for the embankment/culvert extension work. Pickup trucks, dump trucks, concrete trucks, and pump trucks would be operated from the roadway above the arroyo. The disturbed area would be restored by seeding and replanting the area, as discussed in the next section, *Habitat Restoration Plan*.

Construction of the project, in general, will involve the following activities: setting up staging areas, installation of temporary construction areas and storm water pollution prevention devices, installation of traffic control and traffic handling devices and establishing detours, demolition, trenching associated with placement of drainage facilities and utilities, placement of concrete improvements, installation of lighting and traffic signals, grading and roadway paving operations, and clean up and equipment removal. The type of equipment and construction vehicles that could be used during construction include forklift; combination back hoe/frontloader/excavator, bulldozer (including bobcat); concrete mixer; crane; pump truck; pickup truck; compactor; roller; dump truck; spreader; and sweeper.

All refueling, maintenance, and staging of equipment and vehicles would occur at least 60 feet from riparian habitat and water bodies, and in locations where spills would not drain directly toward aquatic habitat (Figure 3).

Habitat Restoration Plan

A detailed restoration plan will be prepared and submitted to USFWS as part of the final design of the proposed action. Mitigation that will be implemented to compensate for the temporary and permanent effects on riparian forest vegetation in the action area is described below. This mitigation includes the preparation of a mitigation planting plan (i.e., habitat restoration plan).

- Caltrans/the City will compensate for temporary construction-related loss of riparian vegetation by replanting the temporarily disturbed area with the native species removed,

including coast live oak and arroyo willow. Replanting will occur after completion of the construction activities and before October 15 to minimize erosion and creek sedimentation.

- Caltrans/the City will compensate for the permanent loss of riparian vegetation by restoring the riparian forest adjacent to the permanent impact area along the Arroyo de San Pedro Regaldo at a minimum ratio of 1:1 (1 acre restored for every 1 acre permanently affected). This ratio will be confirmed through coordination with state and federal agencies as part of the permitting process for the proposed project.
- Caltrans/the City will prepare a mitigation planting plan, which will include a species list and number of each species, planting locations, and maintenance requirements. Non-woody riparian species plantings and small trees will consist of cuttings taken from local plants, or plants grown from local material obtained within the Arroyo de San Pedro Regaldo watershed. Replacement of any trees with a circumference of 44 inches or more (equivalent to a diameter of approximately 14 inches or more) measured at 54 inches above the existing grade will be in accordance with the City's heritage tree ordinance, and will include either three 15-gallon trees or one 24-inch box size specimen tree for each heritage tree removed. Planted species will include coast live oak (*Quercus agrifolia*), arroyo willow (*Salix lasiolepis*), California bay (*Umbellularia californica* var. *californica*), and Himalayan blackberry (*Rubus armeniacus*). Native understory species, such as sedge species (*Carex* spp.), mugwort (*Artemisia douglasiana*), California wild rose (*Rosa californica*), poison-oak (*Toxicodendron diversilobum*), California wild grape (*Vitis californica*), or other suitable native species will be planted.
- Plantings will be monitored annually for 3 years or as required in the project permits. If 75% of the plants survive at the end of the monitoring period, the revegetation will be considered successful. If the survival criterion is not met at the end of the monitoring period, planting and monitoring will be repeated after mortality causes have been identified and corrected.

Construction Monitoring Plan

The construction monitoring plan will consist of the following components.

- Caltrans/the City will retain a USFWS-approved biologist to conduct construction monitoring in and adjacent to the Arroyo de San Pedro Regaldo. The biological monitor will assist the construction crew as needed to comply with all project implementation restrictions and guidelines.
- Ground disturbance will not begin until written approval is received from the USFWS that the biologist is qualified to conduct the work, unless the individual has been approved previously and USFWS has not revoked that approval.
- Before any activities begin, the USFWS-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, and the boundaries within which the project may be accomplished.
- A USFWS-approved biologist will survey the project site 48 hours before the onset of work activities (including fence installation). If any life stage of California red-legged frog is

found, the approved biologist will relocate the California red-legged frog the shortest distance possible to a location that will not be affected by project activities.

- Caltrans/the City or its contractor will install orange construction barrier fencing along the creek channel and riparian forest to delineate the boundary of the work area and identify environmentally sensitive areas to be protected during construction.
- The approved monitor will inspect the fencing once a week along the creek and riparian vegetation in the construction area.
- Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.
- A USFWS-approved biologist will be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of habitat has been completed. After this time, Caltrans/the City will designate a person to monitor compliance with all minimization measures. If the monitor or USFWS-approved biologist recommends that work be stopped, they will notify the resident engineer, who will eliminate the effect or halt actions causing the effect. If work is stopped, USFWS will be notified as soon as possible.

Site Assessment Results

A site assessment for California red-legged frog was conducted on August 4, 2005 and November 18, 2010. The site assessments were conducted in the study area and within 1-mile of the study area, and were conducted in accordance with USFWS guidelines (U.S. Fish and Wildlife Service 2005). Surveys according to USFWS guidelines have not been conducted. The Arroyo de San Pedro Regaldo provides small areas of breeding habitat (pools) at the west and east ends of the study area. The remainder of the creek provides suitable refuge habitat. Photographs of the drainage and adjacent riparian forest are shown in Figures 5, 6, and 7. The upland is limited to the riparian corridor along the Arroyo de San Pedro Regaldo and the San Lorenzo River. There are 16 records of California red-legged frog occurrences within a 5-mile radius of the project area (California Natural Diversity Database 2011). The closest recorded sightings of California red-legged frogs are approximately 1.25 miles west of the project area, in Moore Creek (California Natural Diversity Database 2011). This occurrence is not hydrologically connected to the Arroyo de San Pedro Regaldo in the project area or the San Lorenzo River.

Effects of the Proposed Action

Movement of construction equipment on the creek banks and placement of fill in the channel could result in the injury or mortality of California red-legged frogs. In-water construction activities would occur during the dry season (July 1 through October 15); since the creek appears to be perennial, water may still be present. Construction activities along the creek banks that do not involve in-water work would be restricted to May 1 through October 15. These project specifications would minimize impacts on California red-legged frog. Although accidental spills

could still occur, contamination of aquatic habitat from vehicle refueling and operation of vehicles and equipment adjacent to the Arroyo de San Pedro Regaldo and subsequent injury or death of California red-legged frog would be minimized through staging areas being located at least 60 feet from riparian habitat and water bodies, and implementation of best management practices to control the discharge of pollutants to the Arroyo. Construction of the earthen embankment and extension of the existing culvert within the creek channel would result in the permanent loss of 0.01 acre of creek channel and 0.03 acre of riparian forest that provides suitable habitat for California red-legged frog (Figure 8). There would also be a temporary loss of 0.01 acre of creek channel and 0.04 acre of riparian forest habitats.

References

- California Natural Diversity Database. 2011. RareFind 3, Version 3.1.0 (June 4, 2011 update). Sacramento, CA: California Department of Fish and Game. Search of Santa Cruz, Davenport, Felton, Laurel, and Soquel U.S. Geological Survey 7.5-minute quadrangles.
- U.S. Fish and Wildlife Service. 2005. *Revised Guidance on Site Assessment and Field Surveys for California Red-Legged Frogs*. August. Sacramento, CA: Ecological Services, Sacramento Field Office.
- . 2011. *Programmatic Biological Opinion for Projects Funded or Approved under the Federal Aid Program (8-8-10-F-58)*. May 4. Ventura Fish and Wildlife Office, Ventura California.

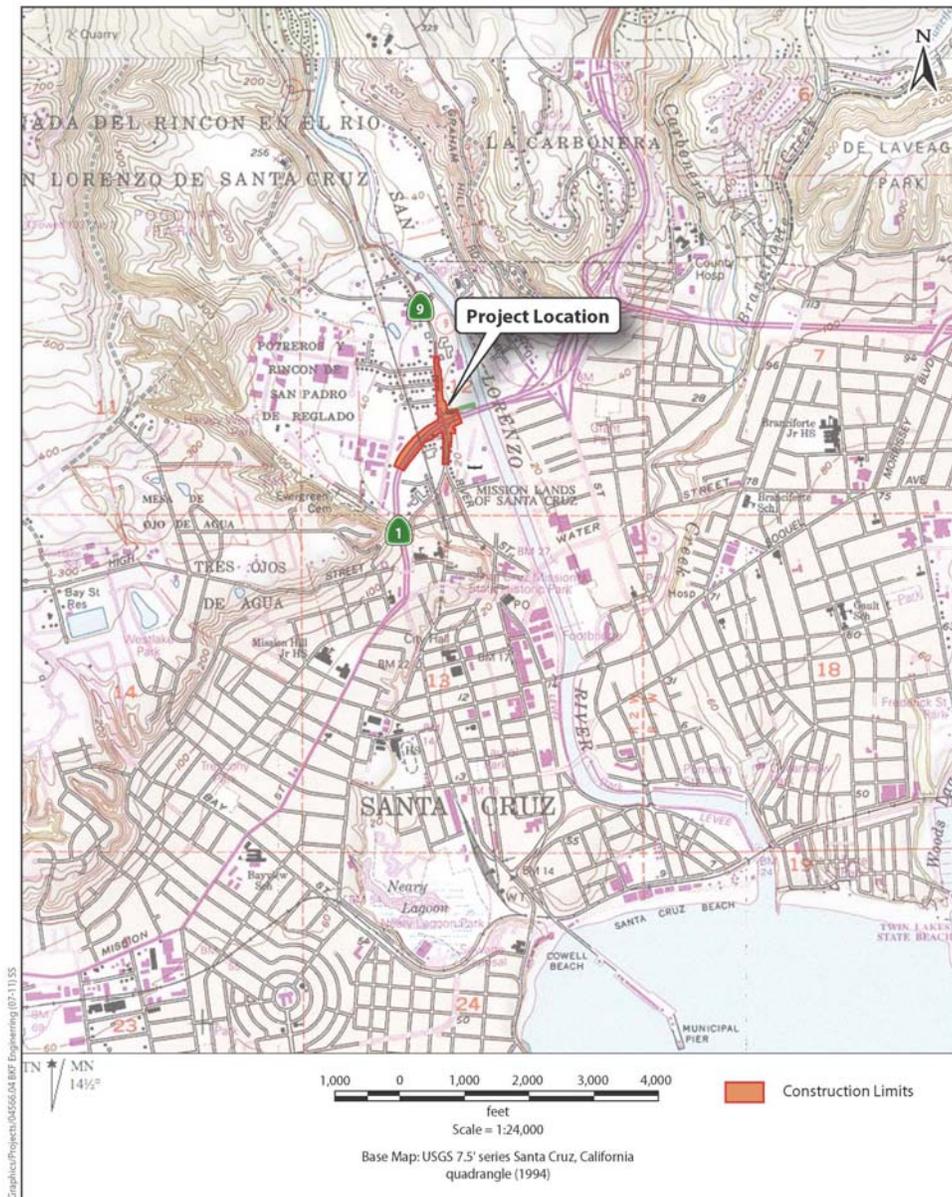
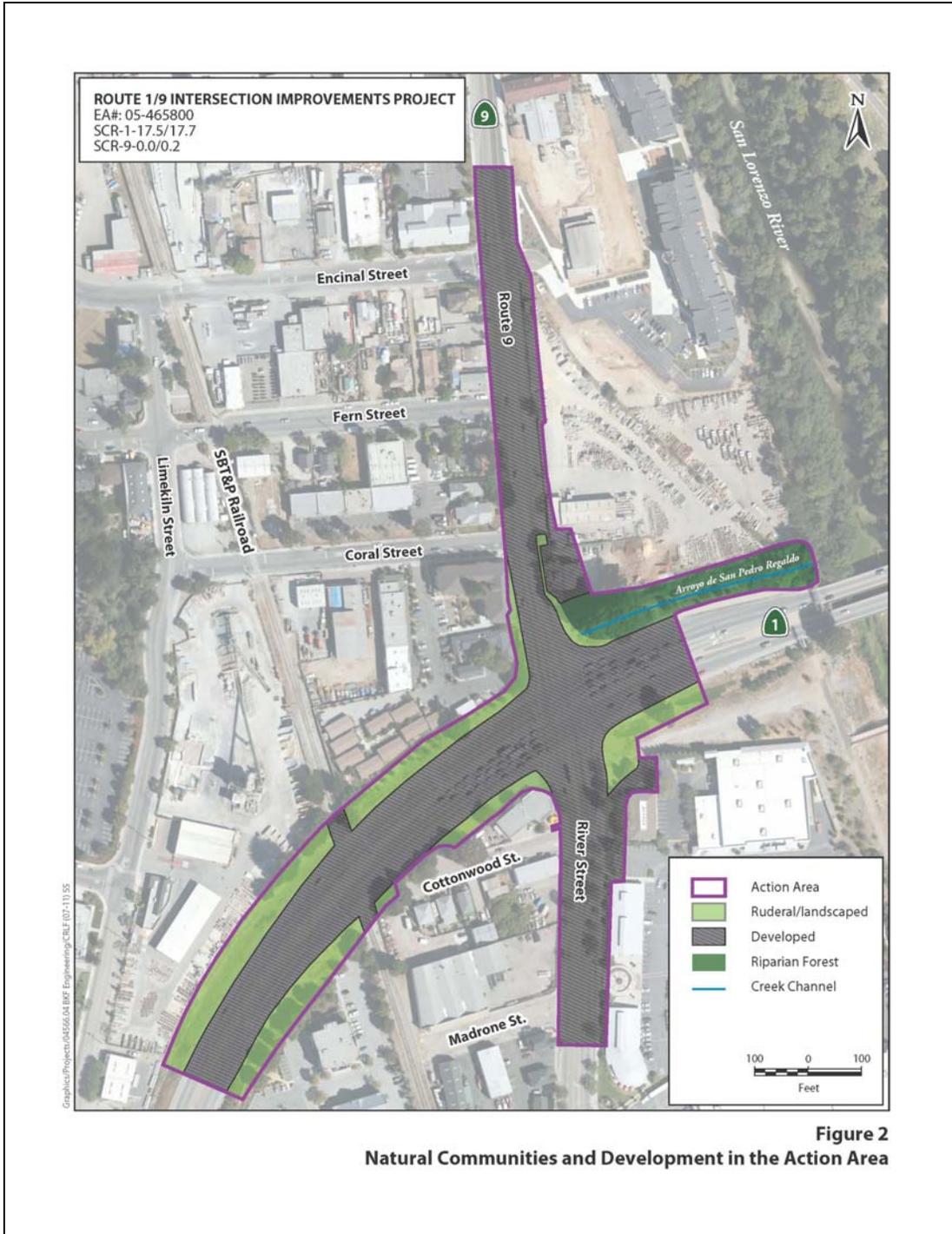


Figure 1
Location of the Proposed Action



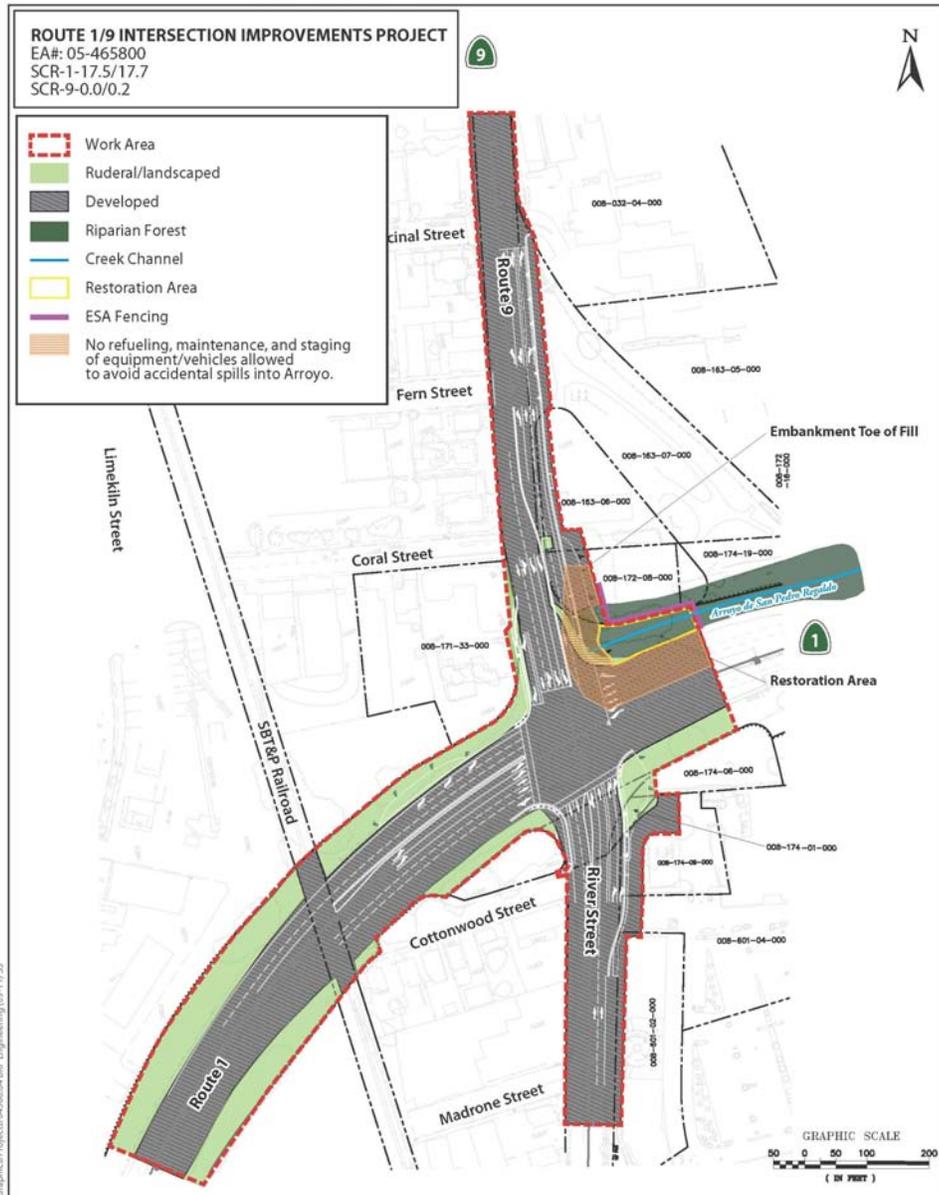
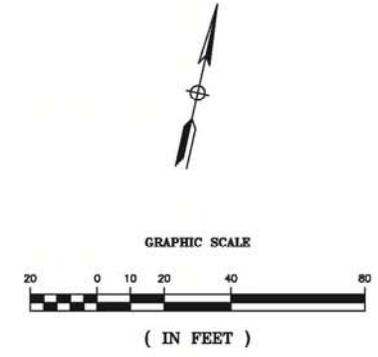
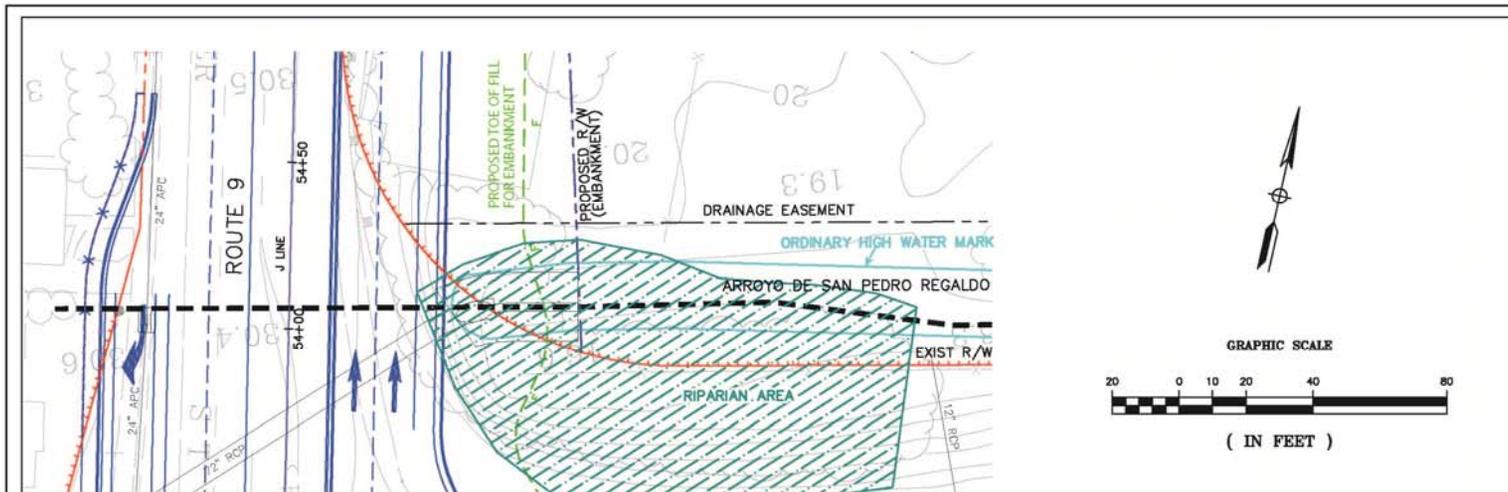
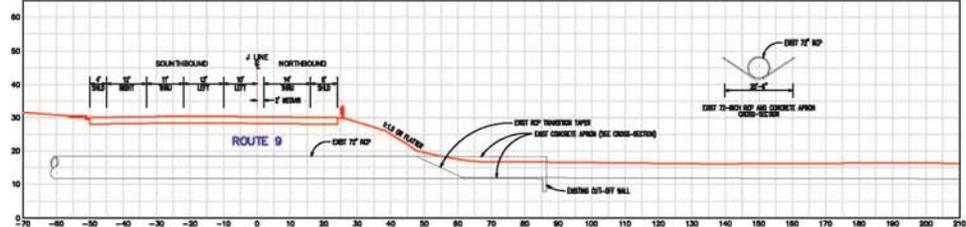


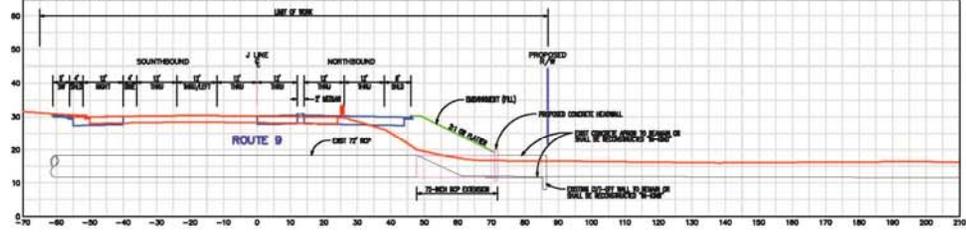
Figure 3
 Plan View



EXISTING CONDITIONS



PROPOSED PROJECT (EMBANKMENT FILL)



Graphics/Projects/04566.04 BKF Engineering (09-11) SS

Source: BKF Engineering

Figure 4
Cross Sectional View of Existing Conditions and Improvements
within the Arroyo de San Pedro Regaldo



Photo 5a. Looking upstream at the western end of the drainage.



Photo 5b. Western portion of drainage where the vegetation has been cut.

Graphics ...04566.04 (12/10) AB

Figure 5
Arroyo de San Pedro Regaldo



Photo 6a. Portion of drainage where vegetation became very dense.



Photo 6b. Looking downstream at the eastern end of the drainage.

Graphics ...04566.04 (12/10) AB

Figure 6
Arroyo de San Pedro Regaldo



Photo 7a. Pool #1 at the west end of the drainage.



Photo 7b. Pool #2 at the east end of the drainage.

Graphics ...04566.04 (12/10) AB

Figure 7
Arroyo de San Pedro Regaldo

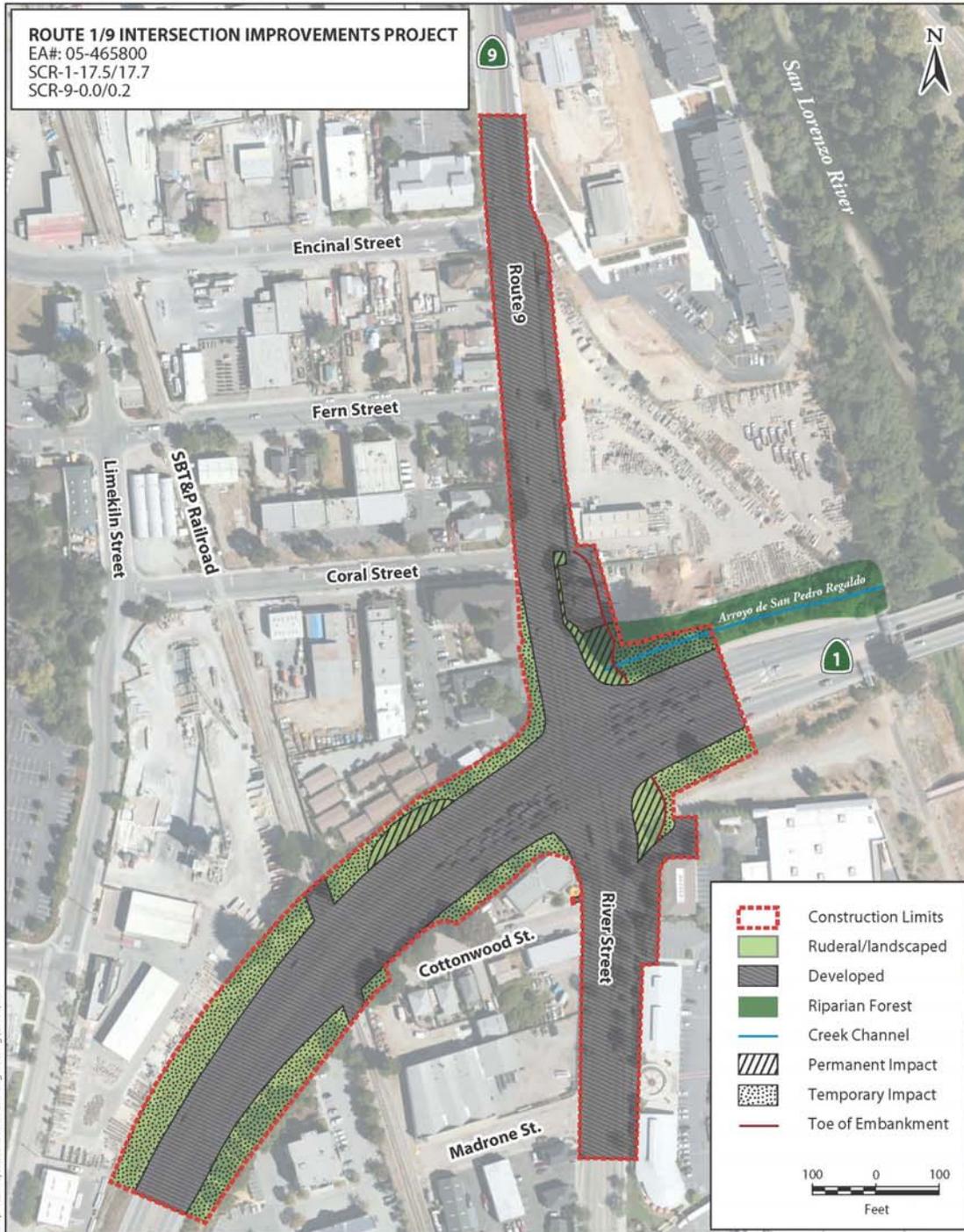


Figure 8
Temporary and Permanent Impacts
to Natural Communities

DEPARTMENT OF TRANSPORTATION

50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3101
FAX (805) 549-3329
TTY 711
<http://www.dot.ca.gov/dist05/>



*Flex your power!
Be energy efficient!*

December 30, 2011

Christopher J. Diel, Fish & Wildlife Biologist
U.S. Fish and Wildlife Service
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

**Subject: Route 1/Route 9 Intersection Improvement Project,
City of Santa Cruz, California**

Dear Mr. Diel:

The California Department of Transportation (Caltrans) and the City of Santa Cruz (City) propose to implement improvements to the intersection at Route 1 and Route 9/River Street (Route 1/9) in the City of Santa Cruz, Santa Cruz County, California (Figure 1 in the attached memorandum). In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, Caltrans is requesting the U.S. Fish and Wildlife's (USFWS) written concurrence with our determination that the Route 1/9 Intersection Improvements Project (proposed action) is not likely to adversely affect the federally endangered tidewater goby (*Eucyclogobius newberryi*) or its designated critical habitat.

The basis for this determination is presented below. This letter includes a description of the proposed action, consultation history, proposed measures to avoid incidental take of tidewater gobies and other listed species, and the results of a site assessment to determine the potential for tidewater gobies to occur in the action area (attached memorandum).

Description of the Proposed Action

The proposed action would improve traffic operations at the existing Route 1/9 intersection by widening the existing intersection to accommodate additional turning vehicle lanes, bicycle lanes, and shoulders. The additional turning lanes would improve the level of service at the intersection and provide safety benefits. The proposed action would be funded with local, State Transportation Improvement Program, and Federal Transportation Improvement Program funds. The limits of the action area are shown in Figure 2 in the attached memorandum.

The proposed improvements, all of which are standard lane and shoulder width dimensions, would require widening the existing roadway at the intersection. At the northeast corner of the Route 1/9 intersection, an earthen embankment would be constructed to support the roadway widening over the drainage culvert that opens into a stream channel known as Arroyo de San Pedro Regaldo (Arroyo). The Arroyo extends approximately 450 feet from the existing culvert to its outlet with the San Lorenzo River at approximately river mile 2. The embankment would have a 2:1 slope with the toe of the embankment extending approximately 40 feet beyond the existing roadway. The existing culvert would be extended approximately 25 feet. The existing concrete apron and cutoff wall that extend approximately 25 feet from the existing culvert would remain in place or be reconstructed "in-kind". All in-water construction activities within the Arroyo would be conducted during the dry season (July 1 through October 15). Dewatering would be accomplished by using small check dams and bypass pipes to isolate all in-channel activities from flowing water and bypass the flow past the construction site.

The proposed action includes the following measures to avoid, minimize, and compensate for effects on sensitive habitat and special-status fish and wildlife species:

- Caltrans/City propose to conduct in-water construction activities during the dry season (July 1-October 15) to avoid the primary migration seasons of adult and juvenile salmonids and minimize the

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Christopher J. Diel
August 30, 2005
Page 2

potential for adverse effects on water quality and aquatic habitat in the San Lorenzo River resulting from temporary increases in suspended sediment and turbidity.

- Caltrans/City will require the contractor to construct a temporary cofferdam to isolate in-channel construction activities from the stream. The cofferdam will be constructed of clean imported gravel, impermeable liners (e.g., plastic), water bladders, and/or sand bags, and used in conjunction with a bypass pipe (large enough to accommodate the entire flow) to isolate the construction area from the stream and bypass the flow around the construction area to the channel below.
- During dewatering operations, water will be pumped out of the isolated construction area to water storage containers or a temporary detention or filtration basin away from the stream channel to prevent direct discharge of this water to the creek. All gravel, sand bags, liners, pipes, concrete debris, and other materials will be removed from the channel before stream flow is restored to the dewatered area.
- Caltrans/City will prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Plan (WPCP) in accordance with Caltrans' *Stormwater Pollution Prevention Plan and Water Pollution Control Program Preparation Manual*. The SWPPP and WPCP will include all applicable erosion control, slope stabilization, and spill prevention and control BMPs to avoid or minimize potential adverse effects on water quality and aquatic habitat. All erosion control and slope stabilization measures will be in place by October 15 and monitored and maintained in accordance with the SWPPP and WPCP.
- Caltrans/City will avoid, minimize, and compensate for impacts to riparian vegetation by avoiding native trees and shrubs to the extent practicable and compensating for temporary disturbance (0.04 acre) and permanent losses (0.03 acre) of riparian vegetation. Caltrans/ City will prepare and implement a mitigation planting plan, which will include a 3-year monitoring and maintenance plan.
- Caltrans/City will restore temporarily disturbed portions of the stream channel immediately downstream of the culvert (0.01 acre¹) to original grade and pre-construction conditions following construction. Permanent losses of stream habitat (0.01 acre¹) will be compensated by implementing one or a combination of the following options: 1) purchasing mitigation credits for stream/riparian habitat at a locally approved mitigation bank or 2) implementing compensatory riparian mitigation in addition to the acreage restored for loss of riparian habitat.

Detailed descriptions of these and other avoidance, minimization, and compensation measures can be found in the project's Natural Environment Study submitted to Caltrans in July 2011.

Consultation History

ICF International (ICF) biologists reviewed existing information and conducted field surveys in 2005, 2007, 2010, and 2011 to identify biological communities and sensitive species that could be present in the action area. These surveys included a recent survey (November 2010) by ICF wildlife biologist Jennifer Haire to update the site assessment for California red-legged frog (CRLF). An updated CRLF site assessment report was submitted to the USFWS in April 2011.

On April 11, 2011, Ms. Haire and ICF fisheries biologist Bill Mitchell spoke to Chris Diel, Ventura Field Office, by phone to discuss additional information on the project design, site characteristics, and the potential for occurrence of CRLF and tidewater goby. Mr. Diel generally agreed that physical barriers could prevent tidewater goby from occurring in the Arroyo but also wanted to talk to the tidewater goby lead in his office (Chris Dellith) before making a decision regarding consultation requirements. In a subsequent telephone conversation between Ms. Haire and Mr. Diel on April 28, 2011, Mr. Diel stated that tidewater goby could occur in the San Lorenzo River adjacent to the Arroyo, and that a site visit was needed to determine if there is enough of an elevation change to preclude tidewater goby from entering the Arroyo. Mr. Mitchell spoke with Mr. Dellith by telephone on May 12, 2011. Mr. Dellith

¹ Impact acreages include the stream channel and banks up to the ordinary high water mark.

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Christopher J. Diel
August 30, 2005
Page 3

stated that the potential exists for tidewater goby to occur in the Arroyo based on recent documentation of their occurrence well inland of tidal habitat in other streams. He also said that if there is evidence of a migration barrier either in the Arroyo (i.e., the outlet is elevated above the San Lorenzo River during normal spring flows) or San Lorenzo River (e.g., presence of steep riffles below the Arroyo), tidewater goby would not likely be present in the project area. A field survey and site assessment was conducted on June 1, 2011 to address this question and document the general suitability of habitat conditions for tidewater goby in the project area.

Field Survey and Site Assessment

On June 1, 2011, ICF fisheries biologists Rebecca Sloan and Donna Maniscalco and Gary Kittelson (Kittleson Environmental Consulting, consulting biologist for the City of Santa Cruz) conducted a field survey of the Arroyo and the San Lorenzo River between the Arroyo and Water Street Bridge approximately 0.5 mile downstream of the Arroyo outlet. Based on the results of this survey, past fish sampling efforts in the San Lorenzo River, and a review of relevant information on the life history, distribution, and ecology of tidewater gobies, it was concluded that tidewater gobies are unlikely to occur in the project area. The results of this assessment and basis for this conclusion are presented in the attached memorandum.

Conclusion

Based on review of the above information, Caltrans concludes that the Route 1/9 intersection project is not likely to adversely affect tidewater goby or its designated critical habitat. The San Lorenzo River and Arroyo are not within the designated habitat of tidewater goby. In addition, the attached memorandum cites a number of factors that would likely preclude the occurrence of tidewater goby in the Arroyo and San Lorenzo River in the vicinity of the Arroyo. The most significant factor is the presence of a major riffle in the San Lorenzo River approximately 0.5 mile downstream of the Arroyo outlet (just downstream of the Water Street Bridge). This is supported by the failure to detect tidewater gobies upstream of the Water Street Bridge during past fish sampling efforts. In addition, the potential for temporary construction-related water quality effects on tidewater goby and their habitat downstream of this point is considered discountable with proposed avoidance, minimization, and compensation measures implemented prior to, during, and after construction of the proposed action.

Please direct any questions regarding this letter to Jim Walth, Caltrans District 5 biologist, at 805- 542-4657.

Sincerely,

Jim Walth
Associate Biologist
Central Coast Environmental Management Branch

Attachment (4)

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Memorandum

Date:	July 21, 2011
To:	Yvonne Hoffman, Environmental Manager, Caltrans District 5 Jim Walth, Associate Biologist, Caltrans District 5
Cc:	Gordon Sweet, Project Engineer, BKF Engineers Christophe Schneider, Assistant Public Works Director, City Engineer, City of Santa Cruz
From:	William Mitchell and Rebecca Sloan, ICF International Fisheries Biologists Debbie Loh, ICF International Project Manager
Subject:	Assessment of the Potential for Tidewater Goby to Occur in the City of Santa Cruz Route 1/Route 9 Intersection Improvement Project Area

Introduction

The California Department of Transportation (Caltrans) and the City of Santa Cruz propose to implement improvements to the intersection at Route 1 and Route 9/River Street (Route 1/9 intersection) in the City of Santa Cruz, Santa Cruz County, California (Figure 1). The project would improve traffic operations at the existing Route 1/9 intersection by widening the existing intersection to accommodate additional turning vehicle lanes, bicycle lanes, and shoulders. The additional turning lanes would improve the level of service at the intersection and provide safety benefits. The proposed project includes extending an existing culvert and placing earthen fill at the northeast corner of the Route 1/9 intersection, resulting in disturbance of aquatic habitat in the Arroyo de San Pedro Regaldo (Arroyo), a small tributary channel that extends from the culvert to the San Lorenzo River at approximately river mile 2 (Figure 2).

ICF International (ICF) assessed the potential for the Route 1/9 intersection project to affect tidewater goby (*Eucyclogobius newberryi*), an endemic California fish species that is listed as endangered under the federal Endangered Species Act (ESA). The results of this assessment, reported in this memorandum, are intended to support a determination of whether or not the project is likely or not likely to adversely affect this species in accordance with ESA Section 7 consultation requirements.

On June 1, 2011, ICF fisheries biologists Rebecca Sloan and Donna Maniscalco and Gary Kittelson (Kittelson Environmental Consulting, consulting biologist for the City of Santa Cruz) conducted a field survey of the Arroyo and the San Lorenzo River adjacent to and downstream of the Arroyo. The purpose of this survey was to evaluate the potential for tidewater goby to occur in the project area based on site conditions and current information on the life history, distribution, and ecology of tidewater gobies in the San Lorenzo River and other central California streams.

Assessment of Potential for Tidewater Goby to Occur in Route 1/9 Project Area
July 21, 2011
Page 2 of 5

Species Status and Background Information

The tidewater goby was listed as endangered throughout its range on March 7, 1994 (59 FR 5494-5499). The U.S. Fish and Wildlife Service (USFWS) designated critical habitat for tidewater goby on November 20, 2000, and revised the critical habitat designation on January 31, 2008 (73 FR 5920). The Arroyo and San Lorenzo River are not designated as critical habitat for tidewater goby but are part of Recovery Sub-Unit GB8 in the Recovery Plan for the Tidewater Goby (USFWS 2005).

The following is a brief summary of relevant life history information obtained from several sources (Moyle 2002; U.S. Fish and Wildlife Service 2005, 2007; 73 FR 5920). Tidewater gobies occur in coastal lagoons, estuaries, and marshes at the mouths of major stream drainages. The species is benthic (living on the bottom) and its habitat is characterized by brackish, shallow lagoons and lower stream reaches where the water is fairly still but not stagnant. Important habitats include stable lagoons formed by sandbars at the mouths of streams during the later spring, summer, and fall. Tidewater gobies prefer waters with relatively low salinity (less than 12 parts per thousand [ppt]) but they have wide salinity tolerances (0–42 ppt), enabling them to occupy freshwater streams and withstand some exposure to marine waters. Optimal habitats are brackish, shallow-water areas (less than 2 meters deep) with sandy bottoms and emergent vegetation. Tidewater gobies prefer slack water or low-velocity areas (but not stagnant), avoiding areas with steep gradients or substantial currents. Vegetation provides important cover from predators and shelter during flood events. Backwater marshes, including lateral sloughs, also provide important refuges that reduce the likelihood that tidewater gobies will be flushed out of the lagoons or estuaries during high winter flows. Tidewater gobies also occur in the low-gradient sections of freshwater streams upstream or tributary to brackish water habitats. Existing records indicate that tidewater gobies can occur 1.6 to 7.3 miles upstream from the ocean. Sub-adult and adult gobies appear to move upstream in summer and fall, and there is evidence of spawning in these upstream areas. Variation in the extent of these upstream movements may be related to salinity but high stream gradient and other physical barriers (e.g., beaver dams, sills) may be more important in limiting upstream dispersal.

The available tidewater goby habitat in the San Lorenzo River encompasses 66 acres of the lower river (USFWS 2005). In May 2004, Camm Swift and Gary Kittleson observed tidewater goby at this locality for the first time during seining efforts associated with the U.S. Army Corps of Engineers Riverbend Project (Gary Kittleson, personal communication; USFWS 2005). The project area extended from the Laurel Street Bridge (located approximately 1 mile downstream of the Arroyo) to the Third Street train trestle bridge (located at the mouth of the San Lorenzo River) (City of Santa Cruz Urban River Plan Task Force 2003). The population was believed to have been locally extirpated but since 2004 has persisted in low numbers (Gary Kittleson, personal communication).

Mr. Kittleson has consistently found tidewater gobies while seining or dip netting for various City projects over the years, but has never found any evidence of gobies above the Water Street Bridge, approximately 0.5 mile downstream of the mouth of the Arroyo. Jeff Hagar, a fisheries biologist who often consults with the City of Santa Cruz Department of Water, has, over the years, routinely sampled the San Lorenzo River reach that includes the Arroyo outlet. This reach of the San Lorenzo

Assessment of Potential for Tidewater Goby to Occur in Route 1/9 Project Area
July 21, 2011
Page 3 of 5

River extends from the City of Santa Cruz's water intake, located approximately 0.5 mile upstream of the Arroyo, to the Water Street Bridge. Mr. Hagar has not found tidewater goby during his surveys of this upstream reach (Gary Kittleson, personal communication). In 2005, the USFWS concluded that tidewater gobies were not likely to occur in the San Lorenzo River at the site of the proposed bike/pedestrian bridge (located approximately 350 feet downstream of the Arroyo outlet) based on surveys conducted by Mr. Hagar and the presence of unsuitable habitat conditions (swift water currents and substrate dominated by gravel) (Pereksta, personal communication).

Tidewater goby populations in the San Lorenzo River are currently characterized as intermittent and dependent on recolonization from adjacent source populations (Corcoran Lagoon located approximately 1 mile east of the San Lorenzo River). Known or potential threats to this population include municipal runoff, stream channelization, water diversions and groundwater pumping, and native predators. Major constraints to the establishment and persistence of tidewater goby populations in the San Lorenzo River are channelization of the lagoon and lower river with little refuge from high flows and frequent breaching of the sandbar in summer.

Site Description

The Arroyo extends approximately 450 feet from the existing culvert at the Route 1/9 intersection to its outlet with the San Lorenzo River (Figure 3a, Photos 1 and 2). The Arroyo receives flows from the watershed draining portions of the City of Santa Cruz and the University of California, Santa Cruz campus. The vegetation community is dominated by Himalayan blackberry, willow, bulrush, eucalyptus, and grasses. A portion of the riparian vegetation along the Arroyo is heavily disturbed by foot traffic associated with homeless encampments. The substrate was primarily silt, sand, and small gravels.

At the time of the survey, the creek was flowing at approximately 1–2 cubic feet per second. The presence of water was also noted in August of 2005 and 2009, indicating that the Arroyo is likely perennial. Between the culvert and the San Lorenzo River, the Arroyo had two notable habitats: an approximate 25-foot length of channel lined with *Typha* sp. (Figure 3b, Photo 3), and a small pool, approximately 10 feet by 10 feet, at the outfall of the culvert (Figure 3b, Photo 4). The elevation of the water surface of the Arroyo at its outlet was the same elevation as the water surface of the San Lorenzo River (Figure 3a, Photo 2). There is no significant elevation difference between the channel bed of the Arroyo and that of the San Lorenzo at the confluence (Gary Kittleson, personal communication).

The San Lorenzo River between the Arroyo and the Water Street Bridge (approximately 0.5 mile downstream of the Arroyo) is a wide channel that is characterized by a number of smaller braided channels confined between two levees (Figure 3c, Photo 5). Willows dominate the river channel between the levees. Just downstream of the Water Street Bridge is a major riffle with faster water than observed throughout the remainder of the surveyed reach (Figure 3c, Photo 6).

Assessment of Potential for Tidewater Goby to Occur in Route 1/9 Project Area
July 21, 2011
Page 4 of 5

Potential for Tidewater Goby to Occur in the Project Area

Based on the general habitat requirements of tidewater gobies, the Arroyo may serve as potential overwintering habitat for tidewater goby in that it offers protection from main channel flows (based on its location and orientation relative to the main channel) and is bordered by dense vegetation. However, the ability of the Arroyo to support tidewater gobies at other times is likely impaired by direct discharges of storm and municipal runoff that create variable and potentially adverse hydraulic conditions compared to the relatively stable habitats where tidewater gobies are typically found. The water quality in the Arroyo is also likely to be reduced (relative to the San Lorenzo River) by potentially elevated levels of chemicals, nutrients, and other contaminants associated with municipal runoff. Another consideration is human disturbance associated with the homeless encampments adjacent to the channel. Although no sampling data are available, small freshwater tributaries like the Arroyo often support other fish species that are known to prey on tidewater gobies (e.g., centrarchids).

The most significant factor limiting the potential occurrence of tidewater goby in the project area is the presence of a major riffle in the San Lorenzo River approximately 0.5 mile downstream of the Arroyo outlet (just downstream of the Water Street Bridge) (Figure 3c, Photo 6). Under most flow conditions, this riffle likely poses a significant impediment to upstream dispersal of tidewater gobies based on their avoidance of swift currents, poor swimming abilities, and restriction to low-gradient reaches of other streams. This provides a reasonable explanation for the failure to detect tidewater gobies above the Water Street Bridge during past fish sampling efforts. Thus, although the Arroyo is within potential dispersal distance of tidewater gobies from the lagoon, it is unlikely that gobies can disperse as far upstream as the Arroyo.

Conclusion

The potential for tidewater goby to occur in the project area is considered very low. An examination of site conditions in June 2011 indicated that the Arroyo could provide winter refuge habitat for tidewater gobies during high winter flows in the San Lorenzo River. However, tidewater gobies are unlikely to occur in the project area for the following reasons:

- A major riffle on the San Lorenzo River at the Water Street Bridge 0.5 miles downstream of the Arroyo likely precludes upstream movement of tidewater goby beyond this point.
- There is no sampling evidence to suggest that tidewater goby occur above the Water Street Bridge on the San Lorenzo River.
- The Arroyo itself is subject to variable and potentially adverse hydraulic conditions associated with direct discharges of storm and municipal runoff.
- The Arroyo is subject to poor water quality associated with direct discharges of municipal runoff.
- The site is subject to human disturbance associated with homeless encampments adjacent to the Arroyo.

Assessment of Potential for Tidewater Goby to Occur in Route 1/9 Project Area
July 21, 2011
Page 5 of 5

Literature Citations

Moyle, Peter. 2002. Inland Fishes of California. University of California Press. Berkeley and Los Angeles, CA.

U.S. Fish and Wildlife Service. 2005. Recovery Plan for the Tidewater Goby (*Eucyclogobius newberryi*). Portland, Oregon. vi + 199 pp.

U.S. Fish and Wildlife Service. 2007. Tidewater goby (*Eucyclogobius newberryi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, Ventura, California. September 2007.

Personal Communications

Gary Kittleson. June 1, 2011. Field Visit to the Arroyo de San Pedro Regaldo and a follow up phone conservation regarding potential for tidewater goby to occur in Arroyo de San Pedro Regaldo.

Pereksta, D.M. December 12, 2005. Letter to Gary Ruggerone, Caltrans, regarding construction of the San Lorenzo River Bike/Pedestrian Bridge, Santa Cruz, California (05-SCR-0-SCR).

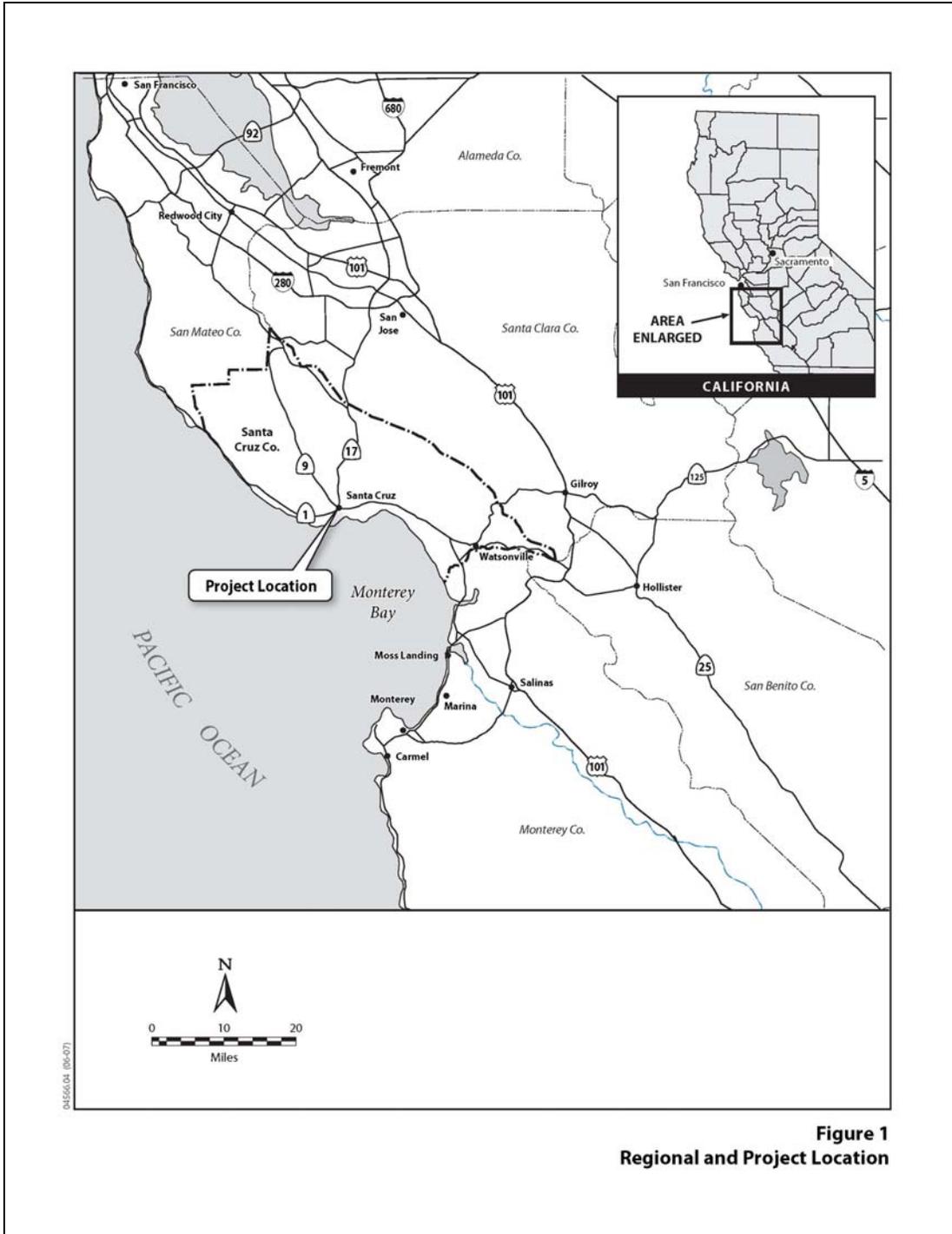


Figure 1
Regional and Project Location



Figure 2
Natural Communities and Development in the Action Area



Photo 5: San Lorenzo River, looking downstream from the confluence with the Arroyo.



Photo 6: Riffle on the San Lorenzo River located approximately 0.5 mile downstream from the Arroyo confluence and just downstream of the Water Street Bridge.

Graphics/Projects/Graphic/Project_Graphics_2014/Project_Graphics/05666/04/04_Eng/Engineering/Drawings/05666/07-11/04_3_Preview.indd 07/21/15

Figure 3c
Representative Photographs
Assessment of Potential Tidewater Goby to Occur in Route 1/9 Project Area

Appendix F National Marine Fisheries Service Correspondence



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

February 22, 2012

In response, refer to:
2012/00418

Cathy Stettler
Acting Branch Chief
U.S. Department of Transportation, District 5
Environmental Stewardship Branch
50 Higuera Street
San Luis Obispo, California 93401-5415

Dear Ms. Stettler:

Thank you for your letter of December 30, 2011, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Effective July 1, 2007, the Federal Highway Administration assigned, and the U.S. Department of Transportation (Caltrans) has assumed all responsibilities for consultation and approval on most highway projects in California. Therefore, Caltrans is now considered the Federal action agency for ESA consultations with NMFS for Federally funded projects. This letter also serves as consultation under the authority of, and in accordance with, the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act (MSA), and the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. These consultations pertain to Caltrans' proposed Route 1/Route 9 Intersection Improvement Project in Santa Cruz County, California.

The Route 1/Route 9 Intersection Improvement Project site is located at the intersection of Highway 1 and Highway 9 (Intersection) in the City of Santa Cruz in Santa Cruz County, California. A small creek, Arroyo de San Pedro Regaldo (Arroyo), flows from an underground culvert beneath Highway 9 and runs above ground along the north side of the Highway 1 for a short distance (approximately 450 feet) before joining the San Lorenzo River. Arroyo is less than one mile long and flows through linear roadside channels and culverts for the majority of its length. The San Lorenzo River originates in the Santa Cruz Mountains and flows south to meet the Monterey Bay approximately two miles south the project site.

Caltrans and the City of Santa Cruz (City) propose to widen the existing Intersection to accommodate additional vehicle lanes, bicycle lanes, and shoulders. Project activities proposed to occur in and around surface waters involve extension of the existing culvert on Arroyo by 25



feet. This will bring the culvert outfall to within approximately 425 feet of the San Lorenzo River. A concrete apron and cutoff wall exist in the channel at the location of the proposed culvert extension; these structures will remain in place or be replaced in kind and integrated into the culvert extension. In channel activities associated with this culvert extension are proposed to occur in one season between July 1 and October 15.

Dewatering a short reach of Arroyo will be required to extend the culvert. This will be accomplished with small check dams (constructed with cleaned gravel, impermeable liners, water bladders and/or sandbags) and bypass pipes. Standard best management practices for construction site, erosion, and sediment and stormwater runoff control will be utilized on this project. This will include the following measures: 1) isolate in channel activities from flowing water; 2) dispose of water pumped out of the isolated construction area away from the stream channel or offsite; 3) minimize the extent of areas that require clearing, grading, or recontouring; and 4) restore (to approximately the original site conditions), enhance, or mitigate temporarily disturbed or permanently lost stream habitat (0.01 acres).

Caltrans has determined the potential impacts related to the Route 1/Route 9 Intersection Improvement Project are not likely to adversely affect listed species or designated critical habitat, and has asked NMFS for concurrence with this determination.

Endangered Species Act

In your December 30, 2011, letter Caltrans asked for concurrence with a finding that the project is not likely to adversely affect Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*), and CCC coho salmon (*O. kisutch*). Available information indicates the following listed species (Distinct Population Segments [DPS] or Evolutionarily Significant Units [ESU]) or designated critical habitat may occur in the project area.

Central California Coast steelhead DPS

Threatened (71 FR 834; January 5, 2006)
Critical Habitat (70 FR 52488; September 2, 2005); and

Central California Coast coho salmon ESU

Endangered (70 FR 37160; June 28, 2005)
Critical Habitat (64 FR 24049; May 5, 1999).

The life history of CCC coho salmon is summarized by Shapovalov and Taft (1954) and Hassler (1987), and the life history of CCC steelhead is summarized by Busby *et al.* (1996). Coho salmon are likely extirpated from the San Lorenzo River and its tributaries (Smith 1982, DWAA 2006). NMFS believes it is unlikely coho salmon will be present in Arroyo and, therefore, any effects resulting from this project are not expected to impact this species. However, accessible waters within the San Lorenzo River Watershed (including Arroyo) are designated as critical habitat for CCC coho salmon (64 FR 24049).

As described above, Arroyo is heavily modified. Upstream of the project area, Arroyo flows through an underground culvert for over 500 feet. The approximately 40-foot wide riparian area of Arroyo between the culvert outfall and the San Lorenzo River is bordered by a construction

stockpile yard and Highway 1. There are no recent records of salmonids in Arroyo; it is unlikely accessible salmonid spawning habitat exists in Arroyo, and rearing habitat is likely to be limited to accessible waters near the confluence of Arroyo and the San Lorenzo River. The San Lorenzo River Watershed continues to support a run of federally threatened CCC steelhead and is designated as critical habitat for CCC steelhead (70 FR 52488). Waters of the San Lorenzo River adjacent to the project area are used primarily as a migration corridor for upriver migrating adult steelhead and downriver emigrating juveniles (smolts). CCC steelhead adults typically migrate into the San Lorenzo River Watershed from the Monterey Bay between November and April; whereas, juvenile steelhead emigrate from the watershed between February and June (Fukushima and Lesh 1998). Steelhead rearing habitat in the San Lorenzo River near the Arroyo confluence is considered poor and further limited in dry years by low summer flows. Relatively low juvenile steelhead densities have been recorded in sampling sites on the San Lorenzo River near the Arroyo confluence (DWAA 2006). The City proposes to dewater approximately 25 feet of the Arroyo channel adjacent to the existing culvert outfall (approximately 425 feet from the San Lorenzo River) during one summer season. Based on this information, it is unlikely that steelhead will be present in these waters of Arroyo during proposed dewatering activities.

Proposed activities within the channel of Arroyo consist of extending an existing culvert by 25 feet. The culvert extension will occur over the existing 25-foot concrete-lined channel downstream of the culvert outfall. It is unlikely that this segment of the concrete-lined channel provides quality habitat for coho salmon and Arroyo is not designated critical habitat for CCC steelhead; therefore, the proposed project is not likely to adversely affect steelhead or coho salmon critical habitat. Adjacent to the project site, the San Lorenzo River functions primarily as a migratory corridor for steelhead. During and following construction, water quality could be temporarily affected through increased levels of turbidity. However, temporarily disturbed areas will be restored and re-vegetated, and impacts to water quality are expected to be minor, localized and insignificant. Overall, the project is not expected to result in a net change to existing habitat values or adversely affect essential physical or biological features associated with designated critical habitat for the CCC steelhead or CCC coho salmon.

Based on the best available information, NMFS concurs with Caltran's determination that CCC steelhead and CCC coho salmon are not likely to be adversely affected by the Route 1/Route 9 Intersection Improvement Project. Regarding designated critical habitat, NMFS has determined the proposed project is not likely to adversely modify designated CCC steelhead or CCC coho salmon critical habitat. This concludes informal consultation in accordance with 50 CFR 402.13(a) for the proposed Route 1/Route 9 Intersection Improvement Project in Santa Cruz County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Magnuson-Stevens Fishery Conservation and Management Act

EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. EFH includes all associated physical, chemical and biological properties of aquatic habitat that are used by fish. The project is located within an area identified as EFH for coho salmon, a species managed by the Pacific Salmon Fishery Management Plan (FMP) under the MSA.

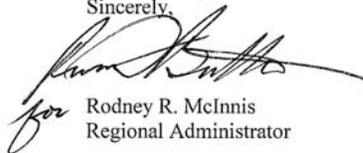
NMFS has evaluated the proposed project for potential adverse effects to EFH pursuant to Section 305(b)(2) of the MSA. Under the EFH implementing regulations [50 C.F.R. 600.810(a)], the term "adverse effect" is defined as any impact that reduces quality and/or quantity of EFH and may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce quantity and/or quality of EFH. Based on information provided in the EFH assessment and developed during consultation, the proposed action may result in temporary increases in turbidity, and therefore NMFS has determined that the proposed action would adversely affect EFH for coho salmon. However, the proposed actions contain adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH. Therefore, NMFS has no additional EFH Conservation Recommendations to provide.

Fish and Wildlife Coordination Act

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development [16 U.S.C. 661]. The FWCA establishes a consultation requirement for federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage [16 U.S.C 662(a)]. Consistent with this consultation requirement, NMFS provides recommendations and comments to federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA allows the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA. Pursuant to FWCA, NMFS has no comments to provide.

Please contact Mr. Joseph Heublein at (707) 575-1251, or via e-mail at joe.heublein@noaa.gov should you have any questions.

Sincerely,



for Rodney R. McInnis
Regional Administrator

cc: Jim Walth, Caltrans District 5, San Luis Obispo
Chris Schneider, Department of Public Works, Santa Cruz
Chad Mitcham, USFWS, Ventura
Suzanne DeLeon, CDFG, Yountville
Eric Chavez, NMFS, Long Beach
Copy to File ARN: 151422SWR2012SR00055

Literature Cited

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70 FR 52488. September 2, 2005. Final Rule: Endangered and Threatened Species: Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States Department of Commerce. Federal Register, Volume 70 Pages 52487-52627.

DEPARTMENT OF TRANSPORTATION

50 HIGUERA STREET
 SAN LUIS OBISPO, CA 93401-5415
 PHONE (805) 549-3101
 FAX (805) 549-3329
 TTY 711
<http://www.dot.ca.gov/dist05/>



*Flex your power!
 Be energy efficient!*

December 30, 2011

Joe Heublein, Fisheries Biologist
 National Marine Fisheries Service
 777 Sonoma Avenue
 Santa Rosa, CA 95404

**Subject: Route 1/Route 9 Intersection Improvement Project,
 City of Santa Cruz, California**

Dear Mr. Heublein:

The California Department of Transportation (Caltrans) and the City of Santa Cruz (City) propose to implement improvements to the intersection at Route 1 and Route 9/River Street (Route 1/9 intersection) in the City of Santa Cruz, Santa Cruz County, California (Figure 1). In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, Caltrans is requesting the National Marine Fisheries Service's (NMFS's) written concurrence with our determination that the Route 1/9 Intersection Improvements Project (proposed action) is not likely to adversely affect the endangered Central California Coast (CCC) coho salmon (*Oncorhynchus kisutch*), threatened Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*), and their designated critical habitat. Caltrans is also requesting NMFS's written concurrence that the proposed action would have minimal effects on essential fish habitat (EFH) in accordance with the consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The basis for these determinations is presented below. This letter includes a description of the proposed action, consultation history, and proposed measures to avoid incidental take of coho salmon and steelhead. This letter report describes the results of recent field surveys and site assessments conducted by ICF International (ICF).

Description of the Proposed Action

The proposed action would improve traffic operations at the existing Route 1/9 intersection by widening the existing intersection to accommodate additional turning vehicle lanes, bicycle lanes, and shoulders. The additional turning lanes would improve the level of service at the intersection and provide safety benefits. The proposed action would be funded with local, State Transportation Improvement Program, and Federal Transportation Improvement Program funds. The limits of the action area are shown in Figure 2.

The proposed improvements, all of which are standard lane and shoulder width dimensions, would require widening the existing roadway. At the northeast corner of the Route 1/9 intersection, an earthen embankment would be constructed to support the roadway widening over the drainage culvert that opens into a stream channel known as Arroyo de San Pedro Regaldo (Arroyo). The Arroyo extends approximately 450 feet from the existing culvert to its outlet with the San Lorenzo River at approximately river mile 2. The embankment would have a 2:1 slope with the toe of the embankment extending approximately 40 feet beyond the existing roadway. The existing culvert would be extended approximately 25 feet. The existing concrete apron and cutoff wall that extend approximately 25 feet from the existing culvert would remain in place or reconstructed "in-kind". All in-water construction activities within the Arroyo would be conducted during the dry season (July 1 through October 15). Dewatering would be accomplished by using small check dams and bypass pipes to isolate all in-channel activities from flowing water and bypass the flow past the construction site.

The proposed action includes the following measures to avoid, minimize, and compensate for effects on sensitive habitat and special-status fish and wildlife species:

- Caltrans/City propose to conduct in-water construction activities during the dry season (July 1-October 15) to avoid the primary migration seasons of adult and juvenile salmonids and minimize the

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potential for adverse effects on water quality and aquatic habitat in the San Lorenzo River resulting from temporary increases in suspended sediment and turbidity.

- Caltrans/City will require the contractor to construct a temporary cofferdam to isolate in-channel construction activities from the stream. The cofferdam will be constructed of clean imported gravel, impermeable liners (e.g., plastic), water bladders, and/or sand bags, and used in conjunction with a bypass pipe (large enough to accommodate the entire flow) to isolate the construction area from the stream and bypass the flow around the construction area to the channel below.
- During dewatering operations, water will be pumped out of the isolated construction area to water storage containers or a temporary detention or filtration basin away from the stream channel to prevent direct discharge of this water to the creek. All gravel, sand bags, liners, pipes, concrete debris, and other materials will be removed from the channel before stream flow is restored to the dewatered area.
- Caltrans/the City will prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Plan (WPCP) in accordance with Caltrans' *Stormwater Pollution Prevention Plan and Water Pollution Control Program Preparation Manual*. The SWPPP and WPCP will include all applicable erosion control, slope stabilization, and spill prevention and control BMPs to avoid or minimize potential adverse effects on water quality and aquatic habitat. All erosion control and slope stabilization measures will be in place by October 15 and monitored and maintained in accordance with the SWPPP and WPCP.
- Caltrans/City will avoid, minimize, and compensate for impacts to riparian vegetation by avoiding native trees and shrubs to the extent practicable and compensating for temporary disturbance (0.04 acre) and permanent losses (0.03 acre) of riparian vegetation. Caltrans/the City will prepare and implement a mitigation planting plan, which will include a 3-year monitoring and maintenance plan.
- Caltrans/City will restore temporarily disturbed portions of the stream channel immediately downstream of the culvert (0.01 acre¹) to original grade and pre-construction conditions following construction. Permanent losses of stream habitat (0.01 acre¹) will be compensated by implementing one or a combination of the following options: 1) purchasing mitigation credits for stream/riparian habitat at a locally approved mitigation bank or 2) implementing compensatory riparian mitigation in addition to the acreage restored for loss of riparian habitat.

Detailed descriptions of these and other avoidance, minimization, and compensation measures can be found in the project's Natural Environment Study submitted to Caltrans in July 2011.

Species and Habitat in Action Area

Central California Coast Steelhead

The CCC steelhead distinct population segment (DPS) was listed as threatened by NMFS on August 18, 1997 (62 FR 43938). On January 5, 2006, NMFS issued a final listing determination reaffirming the threatened status of CCC steelhead (71 FR 834). CCC steelhead includes populations in coastal California streams from the Russian River to Aptos Creek, and several tributaries of San Francisco, San Pablo, and Suisun Bays. NMFS issued a final rule designating critical habitat for CCC steelhead on September 2, 2005 (70 FR 52488). Critical habitat includes the San Lorenzo River within the study area.

The San Lorenzo River in the action area is a migration corridor for adult and juvenile salmonids between November and June. Within the study area, the abundance of sand and high winter flows create poor spawning conditions. Juvenile steelhead use the lagoon and lower river for summer rearing although the quality of the habitat is low, especially in drought years. In the main channel, sand limits the extent and depth of pools and the abundance of aquatic insects, reducing the value of this area for summer rearing of steelhead (John Gilchrist & Associates 2003).

¹ Impact acreages include the stream channel and banks up to the ordinary high water mark.

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Joe Heublein
August 30, 2005
Page 3

Fish sampling in fall 2000 detected relatively low densities of juvenile steelhead (4.5 fish per 100 feet of stream) between the Route 1 bridge and the Water Street bridge (John Gilchrist & Associates 2003). Based on a review of existing habitat and population data, Alley et al. (2004) concluded that sedimentation due to excessive erosion of fine sediment from the watershed, low summer streamflows (especially in drought years), and adult passage impediments were major limiting factors for salmonid production in the San Lorenzo River. High water temperature was also identified as a limiting factor in the lower San Lorenzo River. The primary limiting factor for smolts moving downstream from rearing habitat to the ocean is dewatering of the stream channel resulting in very shallow riffles or dry sections, which create physical barriers to migration. Upstream diversions exacerbate these conditions, especially in drought years. These conditions also can create unsuitable conditions for juvenile rearing in the lower river and lagoon through the spring and summer. However, in wetter years, higher streamflows may provide suitable conditions for juvenile rearing and migration into June, and allow some juveniles to rear in the lower river and lagoon through the summer.

Central California Coast Coho Salmon

The CCC coho salmon Evolutionarily Significant Unit (ESU) was formerly listed as threatened by NMFS on October 31, 1996, and was listed as endangered on June 28, 2005 (70FR37160). CCC coho salmon also are listed as endangered under the California Endangered Species Act (CESA). The CCC coho salmon ESU includes populations from Punta Gorda in Humboldt County to and including the San Lorenzo River in Santa Cruz County, as well as populations in tributaries to San Francisco Bay (excluding the Sacramento-San Joaquin River system). Critical habitat for coho salmon was designated by NMFS on May 5, 1999 (64 FR 24049) and includes the San Lorenzo River within the study area.

Most natural populations of coho salmon in streams south of San Francisco Bay have been extirpated. Since the 1976-1977 drought, the only known naturally spawning coho populations are in San Vicente, Gazos, Waddell, and Scott Creeks (Circuit Rider Productions, Inc. and NOAA Coastal Services Center 2004). In the San Lorenzo River at Felton Diversion Dam, available records indicate that 174 adult coho were trapped in 1976-1977 and 77 were trapped in 1979-1980. In fall 1981, juvenile coho were found only in Bean and Fall Creek sites out of 32 sites sampled in the San Lorenzo River watershed (Smith 1982, as cited by Alley et al. 2004). No coho have been captured in recent years (1994-2002) (Alley 1995-2002 and H.T. Harvey 2003, as cited by Alley et al. 2004), and it is currently believed that they have been extirpated from the San Lorenzo River. Conditions in the San Lorenzo watershed that hinder the recovery of coho salmon include difficult adult passage conditions in the upper watershed, excessive sedimentation of spawning habitat, removal of woody material from the stream, water diversions, and warm water temperatures in the lower gradient reaches that coho prefer (Alley et al. 2004).

Consultation History

ICF biologists reviewed existing information and conducted field surveys in 2005, 2007, 2010, and 2011 to identify biological communities and sensitive species that could be present in the action area. These surveys included a recent survey (November 2010) by ICF wildlife biologist Jennifer Haire to update the site assessment for California red-legged frog (CRLF) and a site visit conducted by fisheries biologists Rebecca Sloan (ICF), Donna Maniscalco (ICF), and Gary Kittleson (Kittleson Environmental Consulting) on June 1, 2011 to document site conditions and determine the potential for tidewater gobies to occur in the action area.

On March 29, 2011, ICF fisheries biologist Bill Mitchell spoke to Joe Heublein, NMFS, regarding the proposed project and potential for adverse effects on listed coho salmon and steelhead and their designated critical habitat. Based on the proposed location, timing, magnitude, and duration of project effects and low likelihood of summer rearing of juvenile steelhead in the Arroyo, Mr. Heublein indicated that a "not likely to adversely affect" determination would be warranted with the implementation of several measures to avoid or minimize the potential for adverse water quality effects in the San Lorenzo River. Those measures, described above, have been incorporated into the project description.

Conclusion

With implementation of the proposed minimization and avoidance measures, Caltrans concludes that any effects of the proposed action to CCC coho salmon, CCC steelhead, or their critical habitat would be insignificant and limited to temporary, minor increases in suspended sediment and turbidity in the San Lorenzo River in the vicinity of the Arroyo. Accordingly, the proposed action would also result in no more than minimal effects to EFH. Therefore, Caltrans concludes that the Route 1/9 intersection project is not likely to adversely affect CCC coho salmon, CCC steelhead, their critical habitat, or EFH.

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Joe Heublein
August 30, 2005
Page 4

Please direct your response and any questions regarding this letter to Jim Walth, Caltrans District 5 biologist, at (805) 542-4657.

Sincerely,

Jim Walth
Associate Biologist
Central Coast Environmental Management Branch

Attachments (2)

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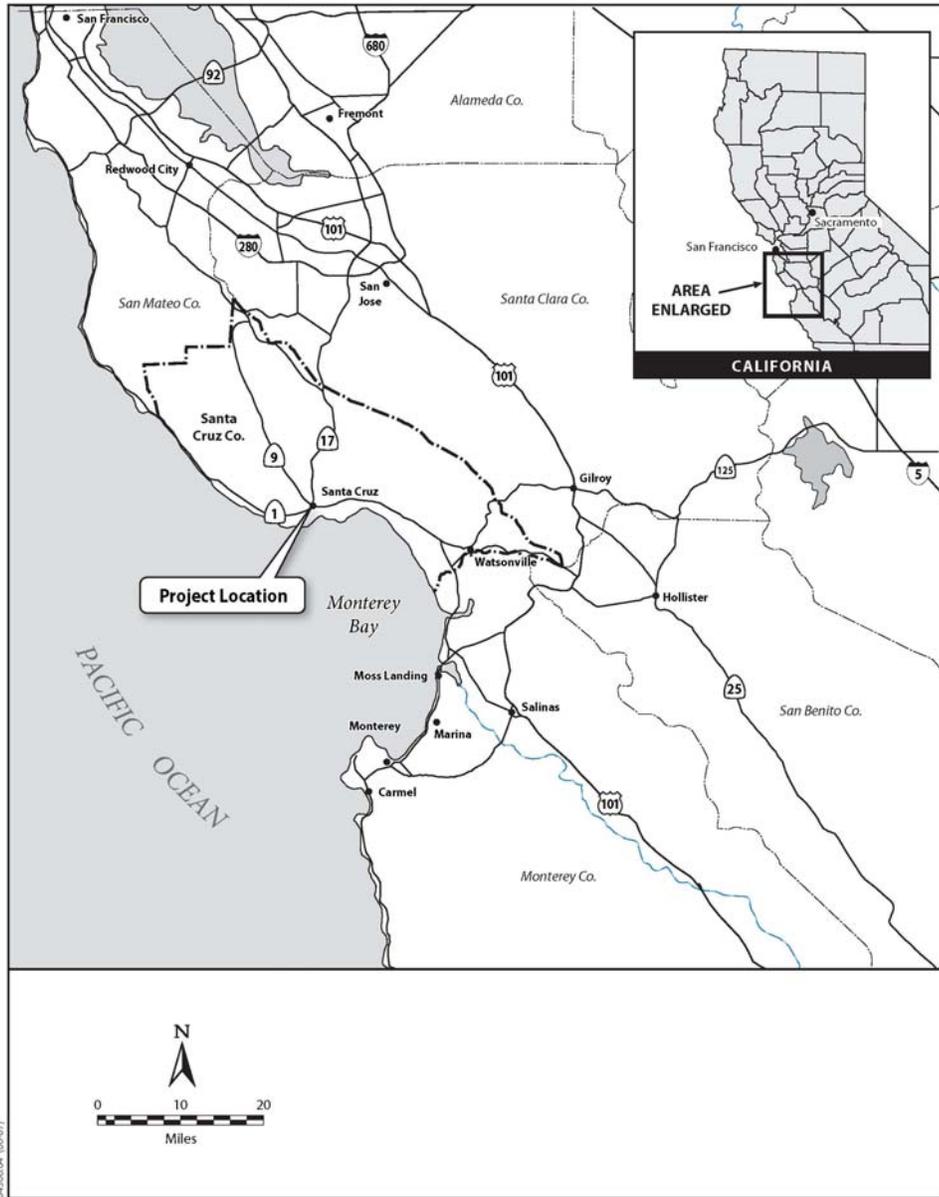


Figure 1
Regional and Project Location

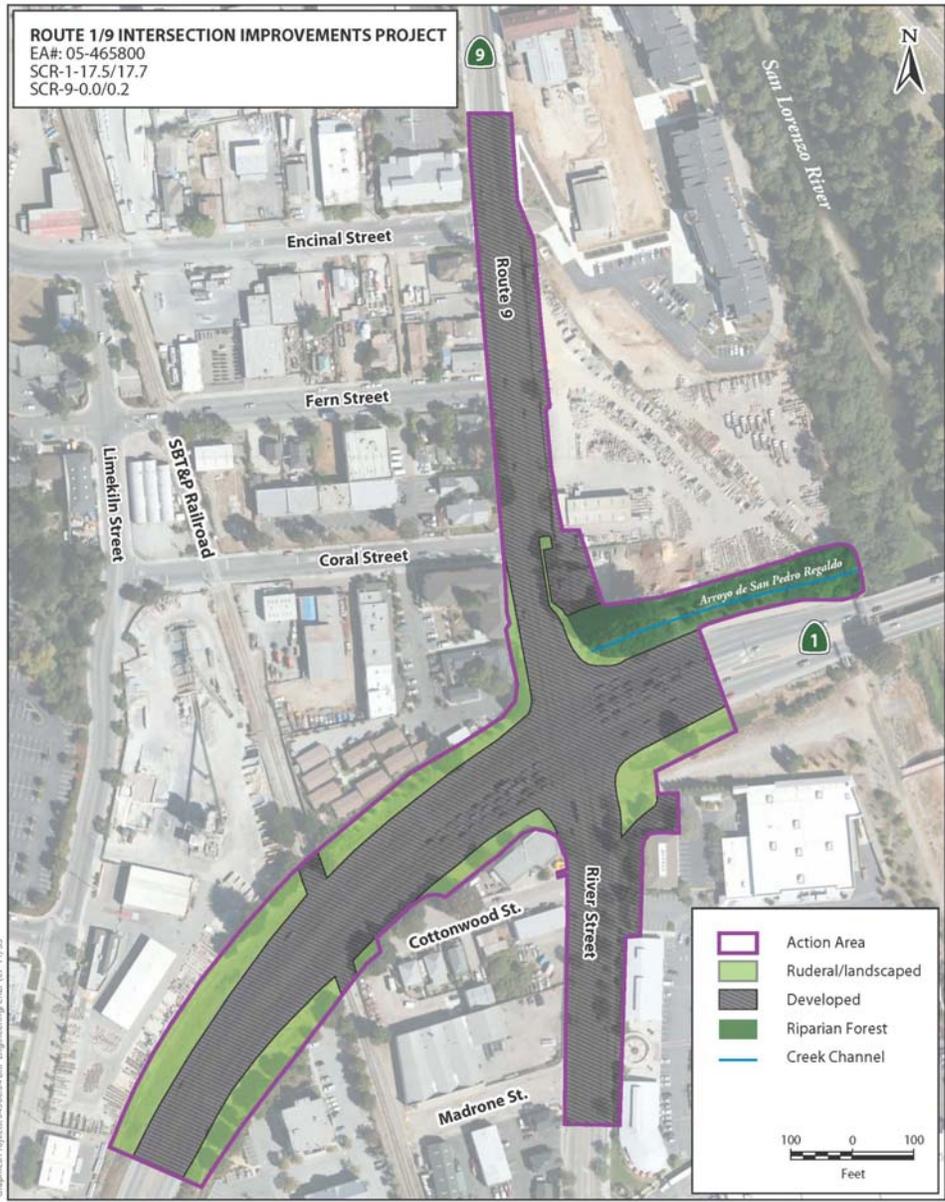


Figure 2
Natural Communities and Development in the Action Area

Appendix G State Historic Preservation Officer Correspondence

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY

EDMUND G. BROWN, JR., Governor

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.chp.parks.ca.gov



March 26, 2012

Reply To: FHWA120224A

Valerie Levulett
Chief, Central Coast Technical Studies Branch
Caltrans District 5
50 Higuera Street
San Luis Obispo, CA 93401-5415

Re: Determinations of Eligibility for the Proposed Route 1/9 Intersection Improvements Project,
Santa Cruz County, CA

Dear Ms. Levulett:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA)*.

Caltrans has determined that 744 River Street in Santa Cruz is not eligible for the National Register of Historic Places. Based on review of the submitted documentation, I concur.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

A handwritten signature in cursive script that reads "Susan H. Stratton for".

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

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Appendix H 2014 Species List

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

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

Endangered Species Act species list information for your project is NOT available online for the following FWS Field Offices:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM
W-2605 SACRAMENTO, CA
95825
(916) 414-6600

Project Name:

Highway 1/Highway 9 Intersection Improvement Project

Project Location Map:



Project Counties:
Santa Cruz, CA

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):
MULTIPOLYGON (((-122.0303944 36.9847793, -122.0307899 36.9871064, -122.0307896
36.9871145,-122.0307861 36.9871219, -122.0307801 36.9871272, -122.0307723
36.9871297, -122.0296066 36.9872548, -122.0295992 36.9872542, -122.0295925
36.9872509, -122.0295874 36.9872453, -122.0295848 36.9872383, -122.0290221
36.9840181, -122.0290221 36.984011, -122.0292468 36.9828103, -122.0292495
36.9828034, -122.0292546 36.9827979, -122.0292613 36.9827947, -122.0305939
36.9824356, -122.030596 36.9824351, -122.0315256 36.9822882, -122.0315339
36.9822887, -122.0315414 36.9822925, -122.0315466 36.9822991, -122.0315487
36.9823072, -122.0316088 36.9837367, -122.0316072 36.9837454, -122.031602
36.9837525, -122.0304245 36.9847843, -122.0304177 36.9847882, -122.03041 36.9847893,
-122.0304024 36.9847872, -122.0303963 36.9847825, -122.0303944 36.9847793),
(-122.0315684 36.9837288, -122.0315097 36.9823313, -122.0306033 36.9824745, -
122.0292838 36.98283, -122.0290621 36.9840148, -122.029621 36.987213, -122.0307469
36.9870922, -122.0303514 36.9847646, -122.0303516 36.9847568, -122.0303548
36.9847496, -122.0303605 36.9847443, -122.0303677 36.9847415, -122.0303755
36.9847417, -122.0303827 36.9847449, -122.030388 36.9847506, -122.0303908
36.9847578, -122.0303921 36.9847652, -122.0303934 36.9847604, -122.0303981
36.9847543, -122.0315684 36.9837288)))

Project Type:
Transportation

Endangered Species Act Species List ([USFWS Endangered Species Program](#))

There are a total of 16 threatened, endangered, or candidate 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 fishes may appear on the species list because a project could cause downstream effects on the 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 below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

Amphibians	Status		Has Critical Habitat	Contact
California red-legged frog (<i>Rana draytonii</i>) Population: Entire	Threatened	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
Birds				
California Least tern (<i>Sterna antillarum browni</i>)	Endangered	species info		Ventura Fish And Wildlife Office
Least Bell's vireo (<i>Vireo bellii pusillus</i>) Population: Entire	Endangered	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
Marbled murrelet (<i>Brachyramphus marmoratus</i>) Population: CA, OR, WA	Threatened	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
Southwestern Willow flycatcher (<i>Empidonax traillii extimus</i>) Population: Entire	Endangered	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
western snowy plover (<i>Charadrius nivosus ssp. nivosus</i>) Population: Pacific coastal pop.	Threatened	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
Fishes				
Tidewater goby (<i>Eucyclogobius newberryi</i>) Population: Entire	Endangered	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
Flowering Plants				
Marsh Sandwort (<i>Arenaria paludicola</i>)	Endangered	species info		Ventura Fish And Wildlife Office
Santa Cruz tarplant (<i>Holocarpha macradenia</i>)	Threatened	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
Scotts Valley Polygonum (<i>Polygonum hickmanii</i>)	Endangered	species info	Final designated critical habitat	Ventura Fish And Wildlife Office

Amphibians	Status		Has Critical Habitat	Contact
Population:				
Scotts Valley spineflower (<i>Chorizanthe robusta</i> <i>var. hartwegii</i>) Population:	Endangered	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
White-Rayed pentachaeta (<i>Pentachaeta bellidiflora</i>)	Endangered	species info		Ventura Fish And Wildlife Office
Insects				
Ohlone tiger beetle (<i>Cicindela ohlone</i>)	Endangered	species info		Ventura Fish And Wildlife Office
Zayante Band-Winged grasshopper (<i>Trimerotropis infantilis</i>)	Endangered	species info	Final designated critical habitat	Ventura Fish And Wildlife Office
Mammals				
Southern Sea otter (<i>Enhydra lutris nereis</i>) Population:	Threatened	species info		Ventura Fish And Wildlife Office
Reptiles				
San Francisco Garter snake (<i>Thamnophis sirtalis tetrataenia</i>) Population: Entire	Endangered	species info		Ventura Fish And Wildlife Office

Critical habitats within your project area:

There are no critical habitats within your project area.

FWS National Wildlife Refuges ([USFWS National Wildlife Refuges Program](#))

There are no refuges found within the vicinity of your project.

FWS Migratory Birds ([USFWS Migratory Bird Program](#))

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Bald eagles and golden eagles receive additional protection under the [Bald and Golden Eagle Protection Act](#) (16 U.S.C. 668). The Service's [Birds of Conservation Concern \(2008\)](#) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

Migratory bird information is not available for your project location.

NWI Wetlands ([USFWS National Wetlands Inventory](#))

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

IPaC is unable to display wetland information at this time.

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List of Technical Studies that are Bound Separately

Air Quality Technical Memorandum

Geotechnical Information Memorandum

Historic Property Survey Report
(Confidential and not available for public review)

Initial Site Assessment Hazardous Waste Report

Location Hydraulics Memorandum

Natural Environment Study

Noise Technical Memorandum

Relocation Impact Memorandum

Site Assessment for California Red-Legged Frog

Traffic Operations Report

Water Quality Technical Memorandum

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