

# Niles Canyon Safety Improvement Project

ALAMEDA COUNTY, CALIFORNIA  
DISTRICT 4 – ALA – 84, (PM 13.6/18.0)  
Expenditure Authorization 2A3300

## Draft Environmental Impact Report/ Environmental Assessment



Prepared by the  
State of California Department of Transportation

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



June 2010



# GENERAL INFORMATION ABOUT THIS DOCUMENT

## What's in this document:

The California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), has prepared this Environmental Impact Report/Environmental Assessment (EIR/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Alameda, California. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, the potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or compensation measures.

## What you should do:

- Please read this Environmental Impact Report/Environmental Assessment. Additional copies of this document are available for review at the Fremont Main Library at 2400 Stevenson Blvd., Fremont, CA 94538; the document as well as the technical studies are available for review at the Caltrans office at 111 Grand Ave., Oakland, CA 94612.
- We welcome your comments. If you have any comments regarding the proposed project, please attend the open house:

Tuesday, July 27, 2010 at 7:00 PM  
Sunol Glen Elementary School  
11601 Main Street  
Sunol, CA 94586

- Submit comments via postal mail to:  
Valerie Heusinkveld, Environmental Branch Chief, Attention: Oliver Iberien, Department of Transportation, Office of Environmental Analysis MS 8B  
111 Grand Ave., Oakland, CA 94612
- Submit comments via e-mail to: [valerie\\_heusinkveld@dot.ca.gov](mailto:valerie_heusinkveld@dot.ca.gov).
- Submit comments by the deadline: August 23, 2010

## 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) undertake additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

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For individuals with sensory disabilities, this document can be made available in Braille, large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to Department of Transportation, Attention: Oliver Iberien, Department of Transportation, Office of Environmental Analysis MS 8B 111 Grand Ave., Oakland, CA 94612.

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04-ALA-84 PM 13.6/18.0  
EA 2A3300

Widen State Route 84 from the Alameda Creek Bridge to the State Route 84/Interstate 680 separation to improve sight distance, upgrade shoulders and provide curve corrections.

DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to:

(State) Division 13, California Public Resources Code

(Federal) 42 U.S.C. 4332(2) C and 49 USC 303

THE STATE OF CALIFORNIA

Department of Transportation

June 30, 2010  
Date of Approval

*Dan McElhinney* Chief Deputy DD

*FOR* Bijan Sartipi  
District Director  
California Department of  
Transportation



## SUMMARY

This project proposes roadway widening to provide standard shoulder width, and curve correction, in a rural portion of Alameda County on State Route (SR) 84, between Alameda Creek Bridge (approximately PM (postmile) 13.6) and the SR-84/I-680 Separation (PM 18.0) in Sunol, Alameda County, California. Route 84 within the project area is a state Scenic Highway. The Alameda Countywide Bicycle Plan has identified this segment of Route 84 as a proposed Class III Bikeway. The current facility is a winding two-lane, undivided, conventional State highway consisting of multiple horizontal and vertical curves.

The purpose of the project is to incrementally improve safety on Route 84 within the project limits by improving sight distances, providing refuge for errant vehicles that might otherwise cross the centerline, providing means of warning drivers who may approach curves at unsafe speeds or whose vehicles may stray over the center or fog lines, and providing a safer traveled way for bicyclists. Although the accident rate within the project area is below the state average, the number of fatalities has been higher than the statewide average

The project will widen the existing highway by up to 18' to accommodate a 2' soft median barrier, one standard 12' lane in each direction, and standard 8-foot shoulders. To make room for widening, the project will construct five retaining walls upslope from the highway where hillsides are cut away, a total of 5,300 linear feet of wall, and nine retaining walls downslope from the highway toward Alameda Creek, a total of 3,400'. At the creek locations, 10-foot wide shoulders with metal-beam guard rail will be constructed on the side of the highway adjacent to the walls. A preferred project alternative has been identified that does not include widening at several sites in the project area, generally at sites where historic structures are present.

The proposed project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA), and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Department is the lead agency under CEQA. In addition, FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by the Department under its assumption of responsibility pursuant to 23 U.S.C. 327.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for NEPA. One of the most commonly seen joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

Following receipt of public comments on the Draft EIR/EA and circulation of the Final EIR/EA, the Department will be required to take actions regarding the environmental document. The Department will determine whether to certify the EIR, issue Findings and a Statement of Overriding Considerations under CEQA, and to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) under NEPA.

This project will have a significant negative visual impact under CEQA and may result in incidental take of listed species.

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

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species Review and Comment on 404 Permit	Biological Assessment Expected Submittal July 2010
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States.	Jurisdictional wetland delineation completed 2006; not yet submitted to the USACE for verification.
California Department of Fish and Game	1602 Agreement for Streambed Alteration Section 2080.1 Agreement for Threatened and Endangered Species	Application will be prepared when design details are available
Regional Water Quality Control Board	Water Discharge Permit Clean Water Act Section 401 Certification	Application will be prepared when design details are available

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# **Chapter 1 – Proposed project**

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## **1.1 INTRODUCTION**

This project proposes roadway widening for shoulder improvements and curve correction in a rural portion of Alameda County on State Route (SR) 84, between Alameda Creek Bridge (approximately PM 13.6) and the SR-84/I-680 Separation (PM 18.0) in Sunol. The highway is situated in a narrow canyon bordered by steep hills, a creek, and railroad tracks. Niles Canyon Railway, once part of the original Transcontinental Railroad, runs broadly parallel and north of Route 84 within the project limits. The historic Western Pacific Railroad runs on the south side of Route 84. The Sunol Aqueduct, a relict of the historic Spring Valley water system, runs parallel to the highway within the first two miles of this project.

Route 84 within the project area is a state Scenic Highway. The Alameda Countywide Bicycle Plan identifies this highway as a cross-county corridor as well as a proposed Class III Bikeway. This is a safety project in the SHOPP program scheduled for the construction in first quarter of 2012, with construction concluding in the second quarter of 2014.

## **1.2 PURPOSE AND NEED**

The purpose of the project is to incrementally improve safety on Route 84 within the project limits by improving sight distances, providing refuge for errant vehicles that might otherwise cross the centerline, providing means of warning drivers who may approach curves at unsafe speeds or whose vehicles may stray over the center or fog lines, and providing a safer traveled way for bicyclists.

This project is necessary because, although the accident rate within the project area is below the state average, the number of fatalities has been higher than the statewide average. In 2003, the District recommended the project location for safety improvements, and Headquarters Traffic Safety Program approved it following Headquarters' 2003 Report on cross-centerline fatal collisions under the Two-and Three-Lane Highway Monitoring Program. The safety analysis indicated that Route 84 has multiple "S" alignments with shoulder widths on both sides of the roadway ranging from 1 foot to 8 feet, and that the surrounding trees and brush limit motorists' sight distance. The analysis indicated that limited sight distance might have contributed to the majority of accidents the project area (head-on collisions, rear-end collisions, and collisions with objects such as guardrail, walls, cut slopes and embankments).

The 8-foot shoulder width is a mandatory design standard for new construction and major reconstruction on conventional highways in California. Design standards are considered essential to providing a safe and efficient transportation system. Shoulder widening has been found to significantly reduce run-off-the-road and head-on collisions. Full-width paved shoulders provide the necessary space for drivers to recover safely should they lose vehicle control, including when a driver over-corrects after the vehicle has drifted from the travel lane, causing the vehicle to cross

into the opposing traffic lane. An additional safety benefit of shoulders is that the area outside the traveled way is available for emergency use by disabled vehicles, as vehicles stopping on the traveled way introduce high accident potential. Standard-width shoulders also improve horizontal sight distance.

Shoulder rumble strips are intended to alert inattentive drivers that their vehicles have left the traveled way, especially along curving alignments. This helps to reduce the number and severity of single-vehicle, run-off-the road crashes. Rumble strips are most effective when installed near the edge of the travel lane adjacent to relatively wide (standard) shoulders. This placement provides motorists inadvertently leaving the traveled way with both time and space to steer back onto the roadway safely. A rumble strip may also serve as an effective means of locating the edge of the traveled way during inclement weather, such as heavy rain, which can often obscure the pavement marking edge. Also, under conditions of poor or limited visibility, rumble strips help drivers maintain their proper lane position. Rumble strips also help enhance bicycle safety as it acts as a “soft barrier” between vehicular traffic and bicycle traffic.

Three-year safety and traffic accident data from January 1, 2002 to December 31, 2004 are provided in Table 1.1.

Table 1.1 TASAS Accident Rate Data

Number of Accidents/Significance							Accident Rate (accidents/million vehicles)							
							Actual			Average				
Total	Fatalities	Injuries	Fatalities + Injuries	Multi-Vehicle	Wet	Dark	Fatalities	Injuries	Fatalities + Injuries	Total	Fatalities	Injuries	Fatalities + Injuries	Total
58	2	24	26	36	2	11	0.038	0.50	1.11	0.034	0.84	1.69		

Source: California Department of Transportation Traffic Accident Surveillance and Analysis System (TASAS)

Table 1.2 below, summarizing accident type data, shows that 5 head-on, 18 rear end and 21 hit object accidents occurred during the same time period within the project limits. From TASAS accident records, the majority of the accidents occurred with prevailing environmental conditions as follows: during clear weather = 49 (84.5%), at daylight = 46 (79%), on dry pavement surface = 53 (91 %). Primary Collision Factors were: speeding = 21 (36.2%), improper turn = 14 (24.1 %), alcohol = 8 (13.8%), failure to yield = 6 (10.3%), and other violations = 6.

Table 1.2 TASAS Accident Type Data

Type of Accident	Number	Percentage
Head-on	5	8.6
Sideswipe	4	6.9
Rear End	18	31.0
Broadside	7	12.1



Figure 1.1. Project Location

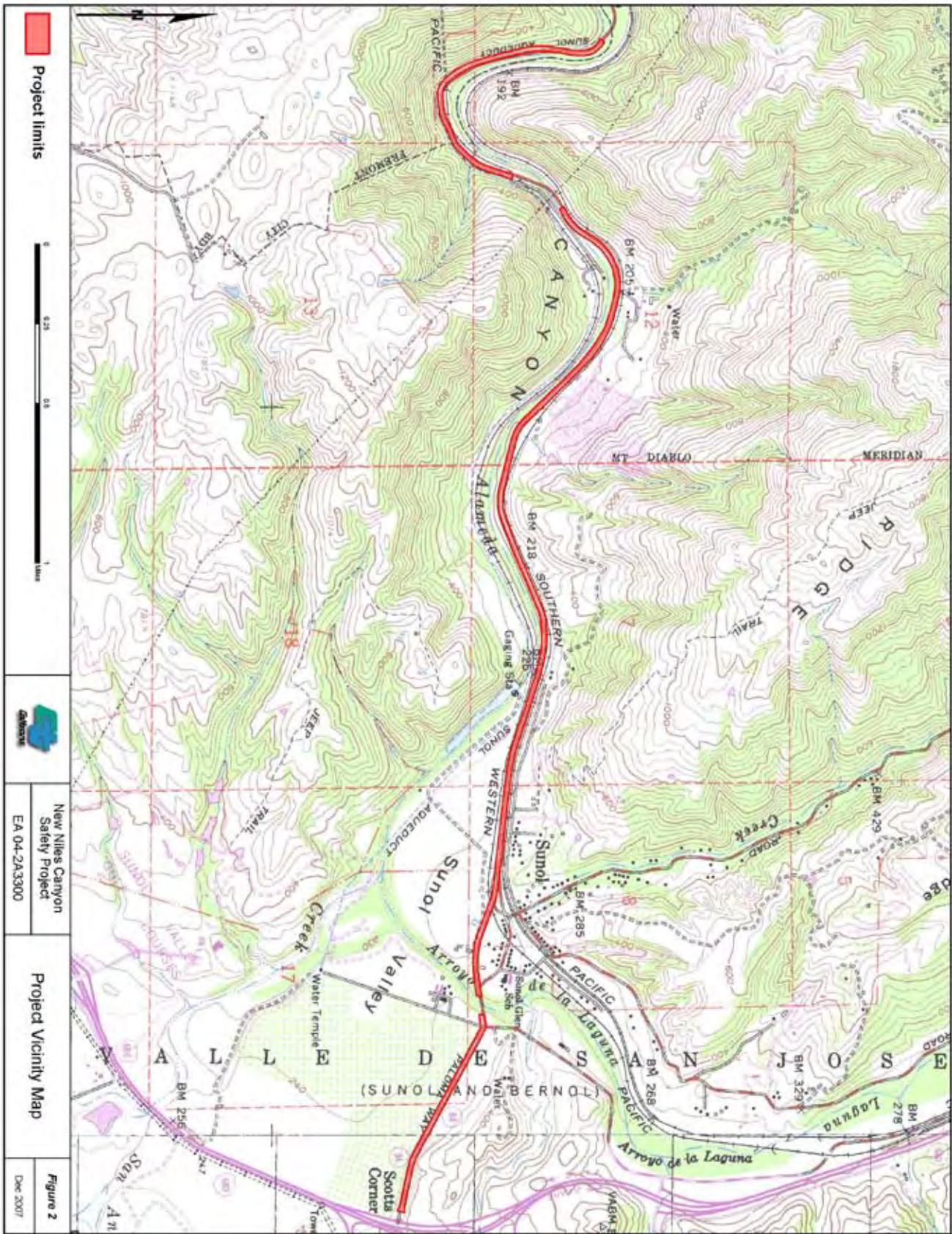


Figure 1.2. Project Vicinity

Type of Accident	Number	Percentage
Hit Object	21	36.2
Overturn	3	5.2
TOTAL	58	100

Source: California Department of Transportation Traffic Accident Surveillance and Analysis System (TASAS)

Accident rates for the period January 2005-December 2007 dropped below the statewide average for this type of highway facility.

## 1.3 PROJECT DESCRIPTION

### 1.3.1 Project Alternatives

This section describes the proposed action and the design alternatives that were developed by a multi-disciplinary team to achieve the project purpose and need while avoiding or minimizing environmental impacts. The alternatives are the Build Alternative, the No-Build Alternative, and an Alternative Withdrawn from Further Consideration.

This project proposes roadway widening to make room for shoulder improvements and curve correction in a rural portion of Alameda County on State Route (SR) 84, between Alameda Creek Bridge (approximately PM 13.6) and the SR-84/I-680 Separation (PM 18.0) in Sunol. The purpose of the project is to incrementally improve safety on Route 84 within the project limits by improving sight distances, providing refuge for errant vehicles that might otherwise cross the centerline, providing means of warning drivers who may approach curves at unsafe speeds or whose vehicles may stray over the center or fog lines, and improving the traveled way for bicyclists.

The project has logical termini; it extends from Alameda Creek Bridge to the State Route 84 / Interstate 680 Interchange, an area large enough to address all the Project Needs. It also has independent utility as it will provide safety improvements whether or not any other project is developed.

#### 1.3.1.1 Common Design Features of the Build Alternatives

The project will widen the existing highway section by up to 18' to accommodate the construction of a 2' soft median barrier, one standard 12' lane in each direction, and standard 8-foot shoulders.

In some parts of the project area, the level space that currently accommodates the roadway and shoulders is not wide enough for the planned width. These areas will need additional grading, including cutting into the hillside, or moving soil to build up the downhill shoulder. The project will construct five retaining walls upslope from the highway where hillsides are removed and nine retaining walls downslope from the road toward Alameda Creek; at these creekside locations 10-foot wide shoulders with visually transparent barriers will be constructed on the side of the highway adjacent to the proposed wall. The faces of the retaining wall will be treated with a context-sensitive wall treatment, which, depending on the setting, will employ a carved rock

texture and color treatment to reflect the surrounding natural setting, or, in areas where the railroad is prominent, will reflect the historic era of the railroad by emulating historic construction methods and incorporating a rough surface texture and darkened or variegated appearance achieved by staining or other color treatment.

Table 1.1 Location and Dimensions of Project Retaining Walls

ID	Length (feet)	Post Mile	Height (feet)	Area (feet <sup>2</sup> )	Type
ALL DIMENSIONS APPROXIMATE					
North Side					
WL2	800	13.7-13.8	5	3,700	Fill
WL3	700	13.7-13.8	10	6,400	Fill
WL4	100	14.0-14.1	4	300	Fill
WL5	900	15.4-15.6	15	12,700	Cut
WL6	600	15.6-15.7	12	6,900	Cut
WL7	1,100	15.9-16.1	12	1,300	Cut
South Side					
WR1	2,200	13.6-14.0	15	31,900	Cut
WR2	500	14.1-14.2	13	5,100	Cut
WR3	500	14.5-14.6	4	1,700	Fill
WR4	300	15.3-15.4	9	2,300	Fill
WR5	300	15.7-15.9	13	3,300	Fill
WR6	400	16.0-16.1	8	3,000	Fill
WR7	200	16.1-16.2	10	2,200	Fill
WR8	100	16.2-16.3	8	600	Fill

A temporary construction access road adjacent to the proposed retaining walls is likely to be required. Riprap or large rock protection will be placed at the base of the retaining walls at creek-facing locations to protect against damage during floods.

The project will realign two short sections of the roadway by shifting the centerline above the Western Pacific/Union Pacific railroad tunnels at PM 14.1 and away from the east portal of Tunnel No. 1 at PM 13.9. Also, the project will upgrade the existing the traffic-lane delineation at the entrance to the quarry at PM 15.0 using State-approved pavement markers and traffic-line paint.

Some of the project features like signs, lighting, and retaining walls will be beyond the paved highway, so construction work will extend beyond the roadway in some locations for tasks such as sign installation, foundation excavation, and trenching for electrical conduits.

Roadside drainage inlets will be extended and modified to match the widening. Asphalt curbs and dikes intended to direct flow to drainage systems will be installed. In hillside areas, 30"-diameter cross-drainage pipes at approximately 2000-foot intervals will drain to the creek side of the roadway. No additional excavation for this drainage work is planned because the pipes and culverts will be placed in areas already excavated for wall construction. When a trenching activity encounters groundwater, dewatering will be needed.

Post-construction stormwater management BMPs will include vegetated biostrips and storage pipes to retain stormwater on site and release it at reduced rates. Permanent erosion control measures may include placement of stone or concrete riprap, installation of culverts or planted material on steep surfaces, use of specialty netting, and hydroseeding.

Trees and shrubs will be removed for shoulder widening and for improvement of sight distances. Additional vegetation will be affected by construction. Replacement planting will occur throughout the project area where feasible, and will include replanting trees along Paloma Way and applying a hydroseed mix mulch to stabilize the soil in disturbed areas. There will be a 3 - 5 year plant establishment period.

Overhead utility poles that are in conflict with the project will be relocated approximately 25-30 feet away from their current location to outside of the clear recovery zone (CRZ, the area determined necessary to be kept clear of obstacles along the roadway in case of errant vehicles). Four historic telegraph poles will also be relocated outside the CRZ.

Excavated material will be reused as much as is possible. Excavated material will otherwise be disposed of at an approved upland location or become property of the contractor and disposed of outside of the State right-of-way.

During some periods of construction, one side of the roadway will be temporarily closed in one direction of travel during the day and one-way traffic will be enforced, with both directions opened at night. During other periods, the temporary one-way traffic restrictions occur at night. Additional right-of-way, and permanent and temporary easements will be required; there will be no residential or business relocations.

**1.3.1.3 Build Alternative 1**

There are three bridges within the project limits: the Silver Springs Underpass Bridge (Br No 33-0042); Alameda Creek Bridge and Overhead (Br No 33-0039); and Arroyo De La Laguna Bridge (Br No 33-0043). There are no proposed improvements to any of these existing structures. Traffic lane striping may change slightly. Additionally, the following areas are excluded from the project.

Table 1.2 Locations Omitted from Build Alternative 1

Silver Spring Underpass with curb, gutter and 4-foot-wide sidewalk	PM 16.70 to 17.00	Right (south) side
Silver Spring Underpass with curb, gutter and 4-foot-wide sidewalk	PM 16.76 to 17.00	Left (north) side
From Arroyo de la Laguna Creek Bridge to east of Water Temple entrance	PM 17.23 to 17.31	Both sides

At sites where Sunol Aqueduct adjoins the highway	PM 13.9 to 14.50	Four locations, either side
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The estimated project cost of this alternative is \$34,200,000, entirely funded from the State Highway Operation and Protection Program (SHOPP).

#### **1.3.1.4 No Build Alternative**

The current facility is a winding two-lane, undivided, conventional State highway consisting of multiple horizontal and vertical curves. The existing roadway consists of two 12-foot lanes with shoulders between 2 and 8 feet in width. The posted speed limit is 45 mph along most of the project, but is reduced to 25 mph at several locations where horizontal curves exist.

The current facility is safely navigable at currently posted speeds, but the topography of the canyon poses challenges for motorists who are not attentive to warning signage and to changes in posted speed. Under the no-build alternative, routine maintenance and repair would still occur.

#### **1.3.1.5 Alternative Considered but Withdrawn from Further Consideration**

This alternative proposes to provide standard shoulders throughout the project area. It would replace the Silver Springs Underpass Bridge (Br. No. 33-0042), and widen Alameda Creek Bridge and Overhead (Br. No. 33-0039) and the Arroyo De La Laguna Bridge (Br. No. 33-0043). The resulting highway mainline for this segment of Route 84 would consist of a 2-foot soft median, two standard 12-foot lanes, and uninterrupted standard 8-foot shoulders.

Portions of the Sunol Aqueduct would be removed, or partially removed or capped at the ends and filled with slurry. Widening would also occur at the Sunol Water Temple gates and the Western Pacific/Union Pacific Silver Springs underpass. Additional right-of-way acquisition and relocation of overhead utilities would be required in this alternative. These structures, and the Alameda Creek Bridge and Overhead, are eligible for inclusion in the National Register of Historic Places; for more information, please see section 2.1.3. This alternative would also have additional impacts to the creek.

The project development team considered the magnitude of this alternative’s impacts to historic resources as well as to biological resources and decided to discontinue development of this alternative. The cost of this alternative has not been fully estimated, but would be substantially greater than that of the Build Alternative.

### **1.3.2 Comparison of Alternatives**

After comparing and weighing the benefits and impacts of all of the feasible alternatives, the project development team has identified Build Alternative 1 as the preferred alternative, subject to public review. Final selection of a preferred alternative will occur after the public review and comment period.

After the public circulation period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the project’s effect on the environment. In accordance with CEQA, Caltrans will certify that the project complies with CEQA, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that determined whether the project will have significant impacts, compensation measures were included as conditions of project approval, findings were made, and a Statement of Overriding Considerations was adopted. Similarly, if Caltrans, as assigned by FHWA, determines the NEPA action does not significantly impact the environment, Caltrans will issue a Finding of No Significant Impact (FONSI) in accordance with NEPA.

## 1.4 PERMITS AND APPROVALS NEEDED

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

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species Review and Comment on 404 Permit	Biological Assessment Expected Submittal July 2010
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States.	Jurisdictional wetland delineation completed 2006; not yet submitted to the USACE for verification.
California Department of Fish and Game	1602 Agreement for Streambed Alteration Section 2080.1 Agreement for Threatened and Endangered Species	Application will be prepared when design details are available
Regional Water Quality Control Board	Water Discharge Permit Clean Water Act Section 401 Certification	Application will be prepared when design details are available



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

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

Table 2.1 No Adverse Impact Determinations Summary

<b>AIR QUALITY</b>
This project was found to be exempt from Regional and project level air conformity under 40 CFR 93.126 as a safety project to increase shoulder widths and increase sight distance.
<b>COMMUNITY IMPACTS- Community Character and Cohesion, Relocations, Environmental Justice</b>
There are no residential or commercial areas in the project vicinity. The project will not change public access, divide neighborhoods, separate residences from community facilities, change the quality of life or increase urbanization or isolation. There will be no relocations as a result of this project. No minority or low-income populations have been identified that will be adversely impacted by the proposed project. Therefore, this project is not subject to the provisions of Executive Order 12898.
<b>FARMLANDS/TIMBERLANDS</b>
The project will use approximately 0.6 acres of grazing land. No prime agricultural land or Williamson Act lands will be used for this project.
<b>GEOLOGY AND SOILS</b>
Because the Bay Area is seismically active, Caltrans routinely conducts detailed geotechnical studies and develops project specific construction features to minimize seismic risks. A Preliminary Geotechnical Report has been prepared to determine soil conditions and local earthquake fault characteristics in the immediate project vicinity. A design report stating mitigation recommendations shall be prepared in accordance with the following document: California Division of Mines and Geology Guidelines for Evaluating and Mitigating Seismic Hazards.
<b>GROWTH</b>
This project is a safety improvement project and the proposed improvements do not alter or increase the capacity of the State Route.
<b>MINERAL RESOURCES</b>
The project does not conflict with resource recovery plans or operations in the vicinity.
<b>NOISE</b>
No observable changes in noise levels are expected with this project because it is not capacity increasing, does not add design elements to the current highway that will cause new sources of noise, and does not move noise sources closer to potential receptors.
<b>PALEONTOLOGY</b>
The project will not affect paleontological resources.
<b>PUBLIC SERVICES</b>
The project will not affect provision of existing public services or measurably increase the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives for any public service. Standard Department Management practices will preclude substantial adverse impacts during construction. A traffic management plan (TMP) will be completed prior to construction to address lane closures and traffic rerouting.

<b>RECREATION</b>
Because the project will not cause a substantial noise level increase, it will not directly or indirectly reduce the value of any nearby recreational properties. Access to adjacent properties will remain unchanged and therefore the project will not measurably change the use of existing neighborhood and regional parks or other recreational facilities. An area popularly known as Sims Park on Niles Canyon Road, owned by the Alameda County Water District, could possibly be affected by access restrictions due to construction, but is not in public use and public access to it is currently blocked. Vargas Plateau Regional Park is closed to the public.
<b>COMMUNITY IMPACTS/RELOCATIONS</b>
Construction of the proposed project will require the acquisition of right-of-way in the immediate area. The types of right-of-way required for this project include partial acquisitions, as well as underground, temporary and drainage easements. There will be no full acquisitions of residential, commercial, or municipal properties.
<b>TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES</b>
There will be no changes in capacity or design speeds, so no changes in traffic impacts are anticipated. This section of roadway is a proposed Class III Bikeway in the 2006 Alameda Countywide Bicycle Plan; all build alternatives include shoulders of at least eight-foot shoulders through most (Build Alternative 1) or all (Build Alternative 2) of the project. For temporary impacts of roadway construction on traffic, see section 2.4, Construction Impacts.
<b>UTILITIES and SERVICES</b>
Existing utilities and services will be restored to pre-existing conditions or better after construction. Standard Caltrans procedures for coordinating temporary service disruptions during construction are considered adequate for this project.

## 1.1 HUMAN ENVIRONMENT

### 2.1.1 LAND USE

#### 2.1.1.1 Consistency with State, Regional, and Local Plans and Programs

##### 2.1.1.1.1 State Scenic Highway Program

###### *2.1.1.1.1.1 Regulatory Setting*

The enabling legislation establishing the Scenic Highway Program states that scenic highways “shall take into consideration the concept of a ‘complete highway’, which is a highway, which incorporates not only safety, utility, and economy, but also beauty . . . . In the development of official scenic highways, Caltrans shall give special attention both to the impact of the highway on the landscape, and to the highway’s visual appearance” (Streets and Highways Code, Division 1, Chapter 2, Article 2.5, Section 261).

The four criteria used to determine whether a highway may be designated as scenic are:

- The State or county highway consists of a scenic corridor that is comprised of a memorable landscape that showcases the natural scenic beauty or agriculture of California . . . .
- Existing visual intrusions do not significantly impact the scenic corridor . . . .
- Demonstration of strong local support for the proposed scenic highway designation.

- The length of the proposed scenic highway is not less than a mile and is not segmented.”

The portion of the project in unincorporated Alameda County falls within the East County Area Plan. Policy 215 is the only policy regarding scenic highways in the East County Area Plan. It states: “The County shall manage development and conservation of land within East County scenic highway corridors to maintain and enhance scenic values.”

The County of Alameda General Plan, Scenic Route Element does not contain specific policies, but presents general ROW design and development principles that could apply to the visual resources of the project, including:

- Design scenic routes to minimize grading in the ROW.
- Scenic routes should be designed so as to avoid excessive cutting, filling and grading.
- Enhance scenic route ROW through outstanding design of highway structures.
- Scenic route ROW should be made as attractive as possible through appropriate design of roadways and structure appurtenances, as well as adjacent utilities, street furniture, and traffic and other official signs.

#### *2.1.1.1.1.2 Affected Environment*

The project portion of State Route 84 through Niles Canyon is part of the recently designated “Niles Canyon Road and Paloma Way portion of California State Route 84 State Scenic Highway.” This 7.1-mile scenic highway encompasses Niles Canyon Road and Paloma Way between Mission Boulevard (SR-238) and I-680. The 4.4-mile project portion of SR-84 lies in the middle of the Scenic Highway, in Niles Canyon.

In February 2003, Alameda County, the City of Fremont, and Union City submitted an application for nomination of SR-84 for scenic highway status to the California Department of Transportation Advisory Committee, which was unanimously accepted by the CDTAC.

In February 2007, Alameda County, City of Fremont, Union City, and other jurisdictional agencies submitted a Scenic Corridor Protection Plan to the CDTAC. The plan consists of the adopted ordinances, policies, and other regulatory mechanisms of the jurisdictional agencies that provide the corridor protection required under the Scenic Highway Program. The Scenic Corridor Protection Plan was reviewed by the CDTAC and other Caltrans departments and the Caltrans Director officially designated SR-84 as a State Scenic Highway in late 2007.

#### *2.1.1.1.1.3 Environmental Consequences*

Because the absence of visual intrusion is a qualifying criterion for scenic highway status, any new visual intrusion associated with the proposed project, particularly the construction of retaining walls and the removal of roadside vegetation will require avoidance and minimization adequate for the corridor to remain consistent with scenic highway status.

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

To address the potential impacts of downslope retaining wall construction, various features have been proposed for incorporation into final project design, including:

- The in-kind replacement of all removed vegetation
- Minimizing the removal of large, specimen-size riparian trees to the greatest extent feasible
- Use appropriate context-sensitive wall texture and color treatments to minimize contrast with the existing natural and historic setting.

With incorporation of these design measures, potentially substantial adverse visual impacts will be reduced to acceptable levels consistent with the highway's scenic status. Highway structures such as retaining walls will be visually enhanced through appropriate color and texture treatments; and replacement planting will be done using native materials in a manner consistent with the scenic corridor environment.

#### *2.1.1.1.2 SFPUC Alameda Watershed Management Plan*

Lands to the south of Niles Canyon Road are within Alameda County, but are under the ownership and jurisdiction of the San Francisco Public Utility Commission (SFPUC). In April 2001, the SFPUC adopted the Alameda Watershed Management Plan to guide management of the SFPUC lands for watershed protection. Chapter 4 of the plan identifies "Requirements for new facilities, projects, activities and development," under which portions of Policies WA22 and WA24 provide guidance on the protection of visual resources associated with the project.

Policy WA22: Proposals for new facilities, structures, roads, trails, projects, leases, or improvements to existing facilities shall be:

- Designed, sited, constructed, and maintained to blend with the natural landscape ....
- Design and site . . . road and highway structures to be unobtrusive to the surrounding landscape.
- Design and site new facilities, structures, roads, and trails to minimize, wherever possible, grading and the visibility of cut banks and fill slopes."

Policy WA24: "Require that all proposed development involving any grading of lands include the submittal of a grading plan to the SFPUC to retain the existing topography where feasible, minimize grading, minimize the impacts on scenic, ecological, and cultural resources, and minimize off-site soil loss from erosion."

With recommended compensation measures, the project will be designed to blend with the natural landscape, and to be as unobtrusive as feasible, through use of appropriate texture and color treatment of walls and barriers in order to blend with the existing scenic setting. Grading under the proposed project will be minor, confined mainly to the upslope retaining walls. With recommended compensation measures, project road alignment will be designed to minimize scenic and cultural impacts to the greatest feasible extent.

### 2.1.1.1.3 City of Fremont Municipal Code

The most westerly 1-mile segment of the project is within the city limits of Fremont, California. The project area within the city of Fremont is currently zoned as “Open Space-Development Reserve Overlay District.” In addition, passage of the 2002 Hillside Initiative (H-1) has added an additional designation to the Open Space designation: the “Hillside Combining District (H-I)” which pertains to areas within the Open Space zoning designation that are above the “Toe of the Hill.” Although these policies could be construed to apply to the project, they are clearly directed to residential development and similar structures and do not appear to address road projects.

## 2.1.2 VISUAL/AESTHETICS

Caltrans analyzes existing and future visual quality by applying the Federal Highway Administration impact assessment methodology (<http://www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactAssmt.pdf>). That methodology characterizes the existing landscape character and visual quality of the project setting by landscape unit (broad contiguous areas of similar scenic character) and landscape type (large-scale physical geography units), and identifies potential impacts from representative key viewpoints where viewers with potentially high sensitivity (e.g. adjacent residents) may experience adverse visual impacts as a result of the project alternatives. Visual quality is characterized and evaluated in terms of the descriptors “vividness”, “intactness”, and “unity”.

- Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- Intactness is the visual integrity of the natural man-made landscape of the immediate environs and its freedom from encroaching elements.
- Unity is the degree to which the visual resources of the landscape joining together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

Visual impacts are identified as a combination of the degree of project-related change to visual character and quality (the visual resource) and viewer response or overall sensitivity and exposure to visual change. Viewer sensitivity (i.e. the anticipated level of concern for visual quality and visual change) is based primarily on viewer activity type (e.g. recreational motorists, hikers, etc., and associated scenic expectations, as well as viewer attitude surveys and local priorities and values, particularly as expressed in adopted public policy. Viewer exposure may also strongly influence the viewers’ sensitivity to project effects, and includes consideration of the presence/absence of screening or filtering; numbers of viewers; viewer distance zones; extent, frequency and duration of viewer exposure; and other relevant viewing conditions.

### 2.1.2.1. Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 U.S. Code 4331[b][2]). To further emphasize this point, the Federal Highway Administration in its implementation of NEPA

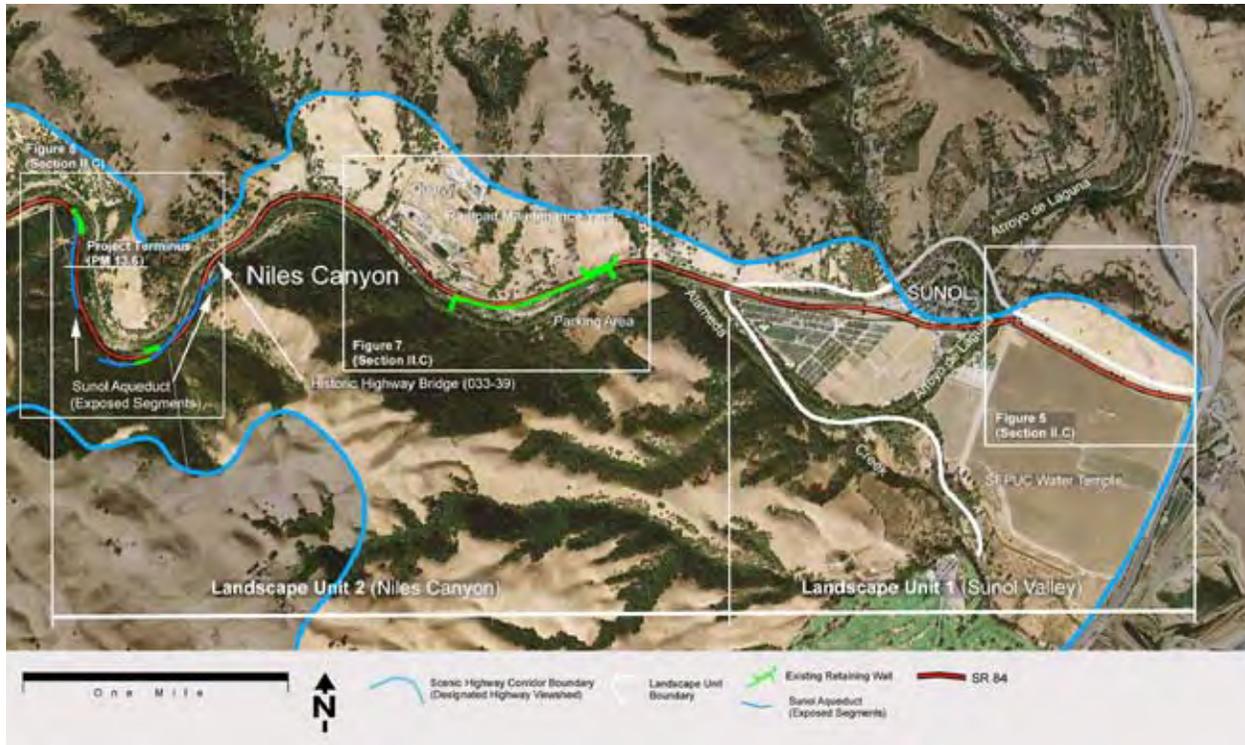


Figure 2.1 – Project Landscape Setting

(23 U.S.C. 109[h]) directs that final decisions regarding projects be made in the best overall public interest, taking into account adverse environmental impacts, including destruction or disruption of aesthetic values.

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

### 2.1.2.2. Affected Environment

The project is within the Diablo Range, a portion of the Pacific Coast Mountain Range that defines the eastern edge of the San Francisco Bay to the west. The project setting, including both the Sunol Valley and Niles Canyon, is within the area drained by Alameda Creek, the largest creek in the East Bay region. The project is located between Alameda Creek Bridge and the SR-84/I-680 Separation in Sunol in eastern Alameda County. State Route 84 (Niles Canyon Road and Paloma Way) within the project limits is a designated State Scenic Highway.

#### 2.1.2.2.1 Viewshed

Much of the project viewshed, including most of Sunol Valley and Niles Canyon, remains in San Francisco Public Utilities Commission ownership. This fact, and the very steep terrain of the canyon, accounts for the highly intact landscape of the viewshed, which has few visual intrusions of any kind and none that dominate the landscape character.



Figure 2.2 – Landscape Unit 1, Sunol Valley (P.M. 15.0 – 16.0)

Figure 2.1, project Landscape Setting, depicts the project viewshed/scenic corridor, and landscape units.

A broad project viewshed (the area visible from the highway) for SR-84 between I-680 and the town of Niles was defined in the Application for State Scenic Highway Designation prepared by the County of Alameda and the Cities of Fremont and Union City, to identify the highway’s scenic corridor boundaries as required under the State Scenic Highway Program. That boundary is somewhat broader than the actual area potentially seen from SR-84, but both the actual viewshed and the designated scenic corridor essentially consist of the Sunol Valley on the east, enclosed by surrounding hillsides to the north, west, and south, and with I-680 to the east; and Niles Canyon to the west, a narrow, highly confined viewshed defined by the steep canyon slopes to the north and south of the creek and highway.

For the highway project, the viewshed is characterized below in terms of two landscape units, Sunol Valley and Niles Canyon. Each is a distinctive geographic segment of the viewshed with a broad unity of landscape character and visual quality. The characterization of landscape units in terms of visual character, visual quality, and viewer response (visual sensitivity and exposure of their viewers) provides the baseline for evaluating potential project impacts.



Sunol Valley bottom with wooded hillsides in background



Arroyo de la Laguna riparian woodland from SR 84



Town of Sunol from SR 84



Sunol Water Temple entrance gates



Tree allée on Paloma Way



Tree damage,  
allée on Paloma Way



Existing landscape berms  
south of Paloma Way

Figure 2.3 Sunol Valley Image Types and Visual Features

#### 2.1.2.2.2 Landscape Units

##### *Landscape Unit 1: Sunol Valley*

Image types represent the visual aspect of varying land uses and land cover as these comprise the landscape, and are the basic descriptive components of the landscape and its visual character. Within the Sunol Valley, these include the town of Sunol; open, undeveloped oak-grassland hillsides; dense oak-evergreen woodland; riparian woodland; undeveloped fields and landscaped earthen berms in the valley bottom; and distinctive visual features associated with the San Francisco Water Department’s Sunol Water Temple. The latter include the entrance gates to the Water Temple at the intersection of Pleasanton-Sunol Road, and the Temple structure itself, designed in a distinctive Beaux Arts style by the renowned nineteenth century architect Willis Polk. A dual allée of London

plane and walnut trees on Paloma Way also forms a distinctive gateway/entry feature to the town of Sunol and to Niles Canyon (refer to Figure 2.3).

### **Visual Quality**

The Sunol Valley Landscape Unit remains highly intact and vivid. The vicinity of the town of Sunol is visually dominated by the tall canopy of the Arroyo de Laguna riparian corridor, which establishes a highly vivid and intact setting. The prominent entrance gates of the Sunol Water Temple are a vivid landmark at the town's main entry. Other structures in the town that are visible from SR-84 are few and remain visually subordinate. Extensive undeveloped portions of the valley floor offer long, open views to surrounding hillsides and ridges that define the boundaries of the viewshed and present a highly legible landscape of high unity. An extensive mining operation to the south of Paloma Way is hidden from view by large landscaped earth berms and remains largely unseen. Vividness, intactness, and unity of the landscape are thus all high, and overall visual quality is high.

Viewers within this landscape unit primarily include motorists on SR-84/Paloma Way, and residents and visitors in the town of Sunol. Motorists are presumed to have a high level of viewer sensitivity due to the scenic status of the highway. Residents and visitors in Sunol, while presumed to have a high level of sensitivity, have almost no visual exposure to the highway.

The visual character of the project setting is represented using Key Viewpoints. The Sunol Valley Landscape Unit is represented by Key Viewpoint 1. The Key Viewpoints will also be used in the next section of evaluate environmental consequences.

### **Sunol Valley: Key Viewpoint 1**

Key Viewpoint 1 (below) represents the view of motorists on Paloma Way as they approach or leave the towns of Sunol and Niles. The existing view is dominated by a dual allée of London plane trees, walnut trees, and some oaks, possibly associated with the development of the adjoining historic water facilities. The trees form a notable gateway/entry feature to the town and canyon. Visual quality of this viewpoint is moderately high, and both viewer sensitivity and exposure are high in this location.



Key Viewpoint 1: View from Paloma Way Looking West (refer to Figure 2.6) at approximately P.M. 17.6

Visual Quality (VQ): High

Viewer Response (VR): High

(Viewer Sensitivity (VS): High, Viewer Exposure (VE): High)

### **Views to the Road:**

Although sensitivity of viewers from the main street of Sunol would be high, visual exposure to proposed project activities is low. Consequently, no key viewpoints in this category were identified within the Sunol Valley landscape unit.

### *Landscape Unit 2: Niles Canyon*

Three principal image types dominate the landscape of Niles Canyon: high, steep oak-grassland hillsides on the north side of the canyon; high, steep hillsides of dense oak-evergreen woodland on most of the south side of the canyon; and the Alameda Creek riparian corridor. The latter is characterized by occasional, highly vivid views of the creek, mainly from highway bridges; and by the vivid forms of tall, distinctive riparian trees including western sycamore (*Platanus racemosa*), maple, cottonwood and black walnut, as well as abundant live oak. The very steep hillsides of the winding canyon always lie directly ahead in the motorist's view, and provide a sense of enclosure. The creek corridor, which parallels the roadway, is always in evidence either through views of the creek, or its associated riparian forest whose tall trees often overhang the edge of the highway, casting dramatic patterns of light and shadow and creating a vivid driving experience of alternating enclosure and open views across the canyon (refer to Figure 2.4).

### **Other Visual Features**

In addition to these dominant natural images, various man-made elements are visible in the Niles Canyon Landscape Unit, notably the two railroad lines that parallel the highway throughout the canyon. Both are National Register-eligible historic properties of defining importance to the canyon's image. The Niles Canyon Railroad closely parallels the westbound lanes of the highway, but is not highly evident due to its position above the roadway. However, its proximity is visually important when the historic train, which is operated solely as a tourist attraction, is present. Distinctive low telegraph poles are associated with the NCRR and are often visible from the roadway. The railroad maintenance yard of the NCRR is visible near Post Mile 15.14; an adjacent quarry is not visible from the roadway. In the past, substantial numbers of recreational visitors have used a parking area ("Sims Park") in the same segment of the highway to access Alameda Creek, although the facility is to be closed by Alameda County, which currently leases the property. The parking area is characterized by mature trees and views of the creek and is currently among the only available vista points where cars may stop within the canyon.

The Sunol Aqueduct, a square concrete structure that formerly carried water from the Sunol Reservoir, directly abuts the roadway shoulder between P.M. 14.0 and 14.41, and is visible about 25 feet above the roadway to the west between Alameda Creek Bridge 033-36 and P.M. 13.9, and from roughly P.M. 14.0 to 14.27. In appearance, it resembles a retaining wall.

Other man-made features include a gracefully curving highway bridge (Alameda Creek Bridge 033-39) between P.M. 14.3 and 14.5, a National Register-eligible property constructed in the 1940s; a visually inconspicuous historic stone culvert near P.M. 15.6, on the slope north of the road; and Alameda Creek Bridge 033-36 just outside the western project terminus (P.M. 13.6). Views of the creek from both bridges are particularly vivid.



Mixed evergreen woodland hillside



Oak-grassland hillside



Roadside riparian woodland



Open views of creek water



Niles Canyon Railroad



Eucalyptus tree near PM 14.0



Historic highway bridge 036-39



Niles Canyon Railroad maintenance yard



Exposed portion of Sunol Aqueduct



Parking area near quarry, maintenance yard

Figure 2.4 – Niles Canyon Image Types and Visual Features



Key Viewpoint 2: View from Vicinity of P.M.16.0, Looking West toward the location of proposed Upslope Retaining Wall L7.



Key Viewpoint 3: View from Vicinity of P.M. 15.6, Looking West . This viewpoint depicts a view of the site of upslope retaining Wall L6 near P.M. 15.70.



Key Viewpoint 4: View from Vicinity of P.M. 15.4, Looking West. This viewpoint depicts the proposed sites of upslope retaining Wall L5 and downslope Wall R5 near P.M. 15.4.



Key Viewpoint 5: View from Vicinity of P.M. 14.2, Looking West. This viewpoint depicts a view of the site of upslope retaining Wall R3 near P.M. 14.2.



Key Viewpoint 6: View from Vicinity of P.M. 14.0, Looking West. This viewpoint depicts a view of the sites of upslope retaining Walls R1 and R2 where the Sunol Aqueduct, on the left, adjoins the highway.



Key Viewpoint 7: View from Vicinity of P.M. 14.0, Looking West. This viewpoint depicts a view of the sites of upslope retaining Walls R1 and downslope wall L3.



Key Viewpoint 8: View from Vicinity of P.M.13.8, Looking West Toward Proposed Retaining Wall R1. This view is representative of views of the sites of proposed upslope retaining Wall R1 and downslope Wall L2, both of which will be near the western project terminus between P.M. 13.6 and 14.3.



Key Viewpoint 9: View from Vicinity of P.M. 13.7, Looking North. This viewpoint depicts a stand of large Eucalyptus trees near P.M 13.7 at the site of a proposed downslope Wall L1, now re-assigned to the adjoining Alameda Creek Bridge Project, and upslope wall R1, still a part of this project. It is also representative of effects of roadside tree removal that will occur in some, though not all, locations due to downslope retaining wall construction throughout the project.

Figure 2.5: Key Viewpoints

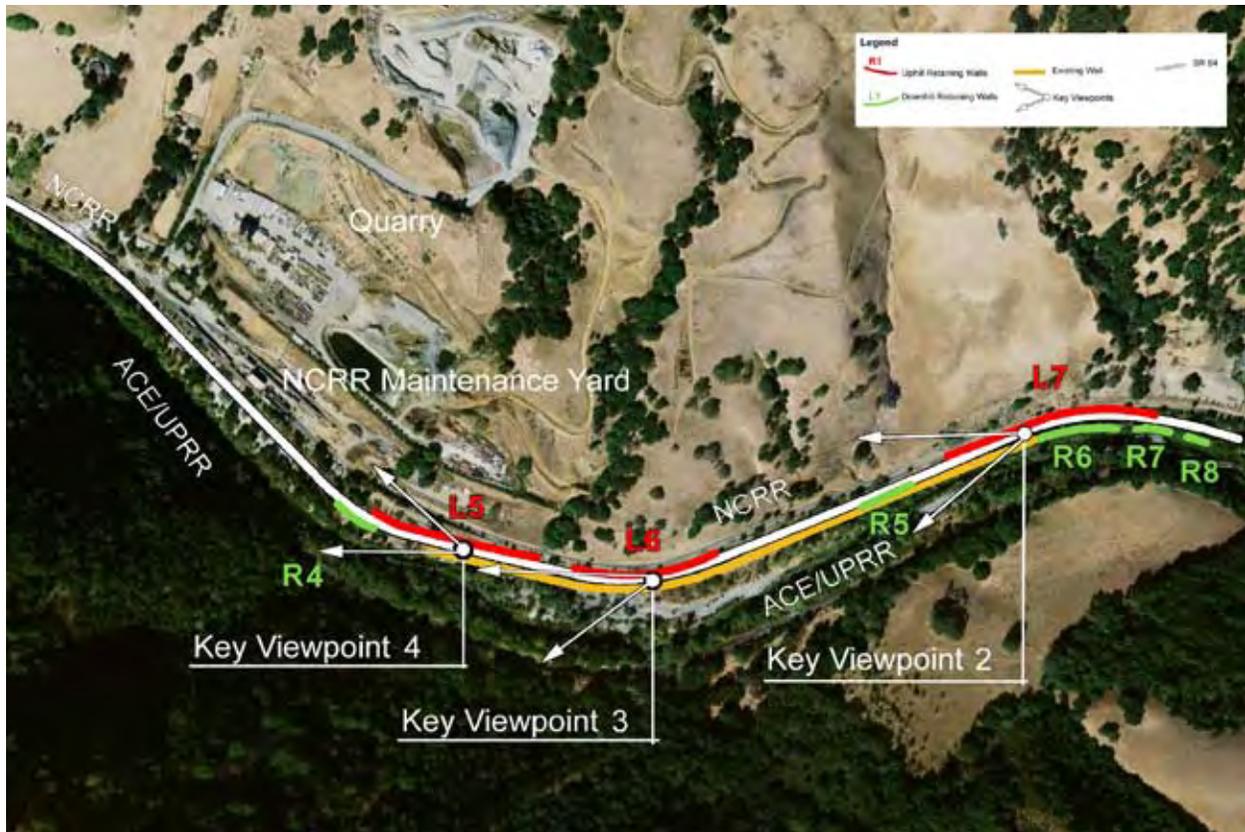


Figure 2.6 – Middle Section (P.M. 15.0 – 16.22) of the Niles Canyon Landscape Unit

A row of very tall (over 100-foot) blue gum Eucalyptus trees adjoin the east side of the road near P.M. 13.7. These trees were investigated as part of the historic studies for this project, and were not identified as possessing historic significance. Such Eucalyptus allées are very common throughout northern California, including urban areas, and in this case are highly contrastive and out of character with the surrounding native oak and riparian landscapes.

### Visual Quality

Vividness, intactness, and unity of Niles Canyon are all very high. The steep canyon slopes are particularly dramatic, rising quickly to a height of 1,000 feet or more above the roadway and creating a highly enclosed landscape. Views of the creek, tall riparian trees, and undisturbed grassland and woodland dominate throughout, presenting a vivid and memorable natural landscape. The winding geography of the canyon presents continually changing vistas that alternate between enclosure by trees and slopes, and open panoramic vistas.

Intactness is high throughout, with very few man-made intrusions. Many of the man-made features that are apparent, such as the railroad lines and highway bridges, are historic properties of interest in themselves. Incongruous or incompatible visual features are nearly absent within the Niles Canyon Landscape Unit. Existing utility lines remain visually very subordinate. Overall, the canyon landscape retains a highly intact natural character.

Unity of the canyon landscape is also high. The high, narrow canyon walls form a highly legible landscape, and there is a strong continuity of the scenic natural image types that persists throughout the canyon.

In few instances do man-made features dominate or substantially detract from the intactness and unity of the canyon viewshed. Overall visual quality within the canyon is thus uniformly high.

### **Viewer Response**

#### **Views from the Road: Key Viewpoints 2-9**

The principal sensitive viewer group within Niles Canyon consists of motorists, and due to the designated State Scenic Highway status of SR-84, they are considered to have high viewer sensitivity. Motorists also will have high exposure to proposed project changes to the roadway. Overall, viewer response in views from the road is considered high throughout the project limits.

The preceding Key Viewpoints were selected to depict potential project impacts in Section 2.1.2.3. The locations of each Key Viewpoint are shown on Figures 2.6 and 2.7, above. The reduced thumbnail images are presented for convenience. Readers should refer to the corresponding full-sized images in Section 2.1.2.3.

VQ of all Key Viewpoints in The Niles Canyon Landscape Unit: high.

VR and VS of all viewers in The Niles Canyon Landscape Unit: high except as noted.

VE: high from roadways and all Key Viewpoints; and otherwise as noted.

### **Views to the Road: Niles Canyon**

Potentially sensitive viewer groups with views to the road include passengers on the purely recreational NCCR, and Altamont Commuter Express passengers on the Union Pacific railroad line. EBRPD will soon adopt a master plan for the park that will propose trail access to the park be developed near the intersection of Mission Boulevard and Niles Canyon Road. No other access points (vehicular or trail) are planned along Niles Canyon Road.

Bicyclists are another potentially sensitive viewer group. Because highway shoulders in some locations in Niles Canyon are narrow or nonexistent, bicyclists do not currently favor the route. Shoulder improvements are likely to increase use by bicyclists.

### **Niles Canyon Railroad Passengers (No Key Viewpoint)**

The NCCR is a portion of the former Southern Pacific railroad line and was a segment of the original Transcontinental Railroad. As such, it is a National Register–eligible historic property. The railroad is no longer used beyond the limits of Niles Canyon and is operated exclusively for recreational purposes by Alameda County and the Pacific Locomotive Association during the summer and fall. As depicted in the photographs of Figure 17, while views from the NCCR are highly scenic, views of the highway from the train are generally limited and highly filtered by an abundance of dense trees and other vegetation in the surrounding canyon and creek corridor. Because of low viewer exposure, no specific key viewpoints for project simulation were identified.

### **Altamont Commuter Express Passengers (No Key Viewpoint)**

The Altamont Commuter Express Train is a commuter train operating daily between the City of Stockton and the City of San Jose on the Union Pacific Railroad line. The UPRR line parallels the creek, SR-84, and the NCCR throughout the canyon. While the train track parallels the highway

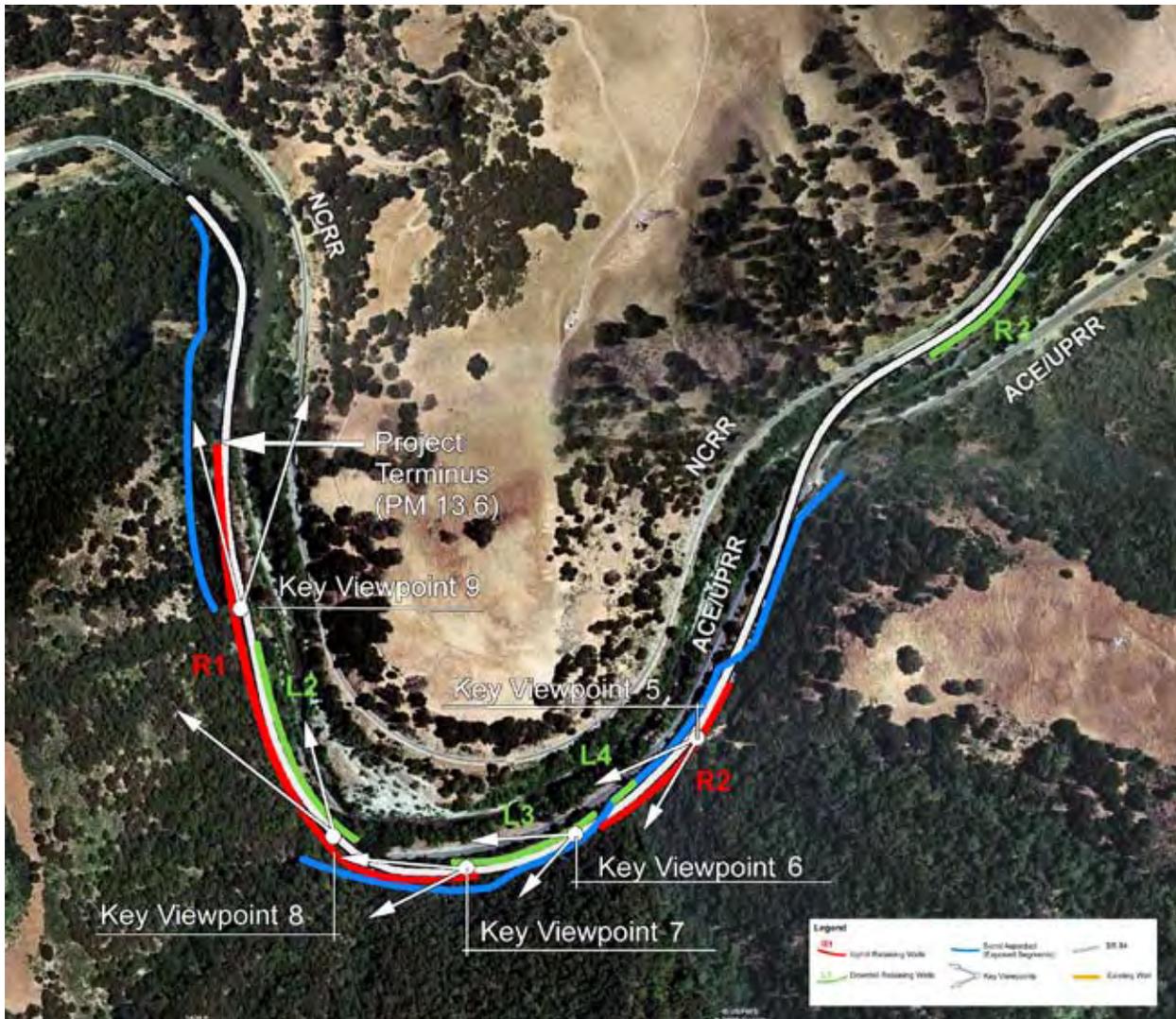


Figure 2.7 – Western Section (P.M. 13.6– 14.45) of the Niles Canyon Landscape

for extended segments, including long portions of existing downslope retaining wall, because of the dense riparian vegetation between the track and highway, views of the roadway by train passengers remain few, intermittent, and highly filtered and are thus not a prominent object of attention.

Although the ACE Train carries large numbers of passengers daily, because the train serves commuters and is not scenery- and recreation-oriented as the NCR is, the sensitivity of viewers was considered moderate. Viewer exposure to the proposed project is likely to be low, except in one 650-foot segment along proposed retaining Wall L3, discussed in Section II, below.

### 2.1.2.3 Impacts

This section describes the anticipated visual impacts of the Build Alternative by landscape unit. A number of key viewpoints were selected throughout the project corridor to represent the viewshed

at points where project actions will potentially result in visual impacts. Computer-generated visual simulations from several of these viewpoints are included in the impacts discussion.

#### 2.1.2.3.1 Impact Assessment Methodology and Criteria

Impacts in this study were identified according to guidelines of the FHWA Visual Impact Assessment methodology. In addition, criteria for the designation of State Scenic Highways, and criteria of historic integrity under the National Historic Preservation Act are applicable to potential visual effects of the proposed project. Since this portion of SR-84 was designated as a State Scenic Highway in 2007, conformance with local plans and policies applicable to this project is, in most respects, equivalent to conformance with qualifying criteria of the State Scenic Highway Program.

##### *Federal Highway Administration Methodology*

Caltrans guidance for identification of visual impacts is based on FHWA methodology, in which substantial declines in visual quality of the setting as identified by the average overall decline in the attributes of vividness, intactness, and unity, in combination with high levels of anticipated viewer response (viewer sensitivity and exposure), are likely to result in substantial adverse impacts. Impacts identified in this way are evaluated according to the general impact matrix in Caltrans Standard Environmental Reference, Chapter 27, Visual and Aesthetics Review (Caltrans, 2006), which is reproduced below.

Low (L) – Minor adverse change to the existing visual resource (i.e., decline in visual quality), with low viewer response to change in the visual environment. May or may not require compensation.

Moderate (M) – Moderate adverse change to the visual resource with moderate viewer response. Impact can be mitigated within five years using conventional practices.

Moderately High (MH) – Moderate adverse visual resource change with high viewer response or high adverse visual resource change with moderate viewer response. Extraordinary compensation practices may be required. Required landscape treatment required will generally take longer than five years to mitigate.

High (H) – A high level of adverse change to the resource and a high level of viewer response to visual change. Architectural design and landscape treatment may not fully mitigate the impacts. An alternative project design may be required to avoid highly adverse impacts.

##### *State Scenic Highway Program Criteria*

According to the State Scenic Highway statutes, a scenic highway must incorporate “not only safety, utility, and economy but also beauty” and pleasing appearance must be a consideration in the planning and design process of a scenic highway (Sec. 261, Streets and Highway Code).

To be designated under the State Scenic Highway Program, highways must meet various criteria established in a visual assessment conducted and reviewed during the scenic highway’s nomination process. The visual assessment includes an evaluation of the corridor’s visual quality in terms

of vividness, intactness, and unity. In particular, visual intrusions cannot significantly impact the intactness and unity of the scenic corridor. SR-84 between I-680 and the town of Niles was nominated for State Scenic Highway status in 2003 and designated by the state in 2007. Potentially substantial visual impacts from new project-related visual intrusions will thus imply inconsistency with the qualifying criteria for the scenic highway.

#### *Section 106, National Historic Preservation Act Eligibility Criteria*

The eligibility of historic properties for the National Register may be adversely affected by visual impacts that impair their historic integrity. Several listed or eligible National Register-eligible historic properties have been identified within the viewshed of the proposed project. For further information on these properties, see section 2.1.3.

#### 2.1.2.3.2 Visual project Description (Visual Features)

Visually important features of the project will include:

Outside shoulder widening and roadway realignments.

- Upslope retaining walls and associated tree/vegetation removal required for widening. These walls are designated in Figures 2.9 and 2.11 through 2.14 as Walls L5, L6, L7 and R1 and R2, with an overall length of up to 1.02 miles.
- Downslope retaining walls and associated tree/vegetation removal required for widening: these walls are designated in Figures 2.13, 2.14 and 2.15 as Walls L2, L3, L4 and R4 through R9, with an overall length of up to 0.60 mile.
- Safety barriers along all downslope retaining wall segments.

#### 2.1.2.3.3 project Impacts

Potential project Impact Types include decline in visual quality due to:

- Visual intrusion/incompatibility of upslope retaining walls and concrete barrier as seen to and from the road
- Visual intrusion/incompatibility of downslope retaining walls as seen in views to the road, primarily from nearby railroad lines
- Tree and vegetation removal due to widening and wall construction

Impacts from increased roadway dominance due to proposed shoulder widening and paving per se will be minor, and were considered to be insignificant.

The following sections describe the anticipated visual impacts of the proposed project by Landscape Unit. Within each landscape unit, impacts are grouped according to major project visual feature and impact type, and discussed by Key Viewpoint.

### *Landscape Unit 1: Sunol Valley*

The following section describes the anticipated visual impacts of the proposed project within the Sunol Valley Landscape Unit. As above, impacts are grouped according to major project visual feature and impact type, and discussed by Key Viewpoint.

Figure 2.2 depicts portions of the Sunol Valley Landscape Unit in which major project features are proposed. The corresponding Key Viewpoint location is indicated:

This viewpoint represents potential project impacts from shoulder widening and the resulting tree removal at Paloma Way, as seen from the road.

The existing allée of walnut, oak and London plane trees may be associated with the development of the Spring Valley Water Company and was investigated as a possible contributing feature of the historic water company property. However, the allée was found not to be an eligible historic property or contributing element (Krase, 2007).

In addition to their historic interest, however, the dual allée of mature trees forms a striking gateway to the Sunol Valley and Niles Canyon, and despite the declining condition of some of the trees, represents a vivid and memorable scenic landmark. Younger London plane trees make up the allée's south side, and are in good condition. The allée's north side, consisting primarily of older black walnut trees, is intermittent, with several missing, damaged or disfigured trees.

The removal of these tree allées will eliminate a notable gateway feature and represent a strong decline in visual quality. In addition, the allée represents a scenic resource within a scenic highway.

In addition to potential tree removal, the project could require side safety barriers if the existing scenic-resource trees do not fall outside of the standard clear recovery zone (30 feet). The metal-beam guardrails which will be used at the highway shoulder in this location will be less visually intrusive than concrete barriers, as depicted in Figure 2.6b. The resulting decline in visual quality will be moderate.

#### **Views to the Road**

There are no sensitive off-road receptors to the proposed project actions on Paloma Way. Potentially sensitive receptors within Landscape Unit 1 include viewers in downtown Sunol, and visitors to the Sunol Water Temple. However, no project actions are proposed within view of those locations and thus no impacts to off-road viewers are anticipated within the Sunol Valley Landscape Unit.

### *Landscape Unit 2: Niles Canyon*

The following section describes the anticipated visual impacts of the proposed project within the Niles Canyon Landscape Unit. As above, impacts are grouped according to major project visual feature and impact type, and discussed by Key Viewpoint.

Figures 2.6 and 2.7 depict portions of Niles Canyon Landscape Unit in which major project features are proposed. Corresponding Key Viewpoint locations are indicated by arrows.



Figure 2.8a – Key Viewpoint 1, Existing View from Paloma Way Looking West



Figure 2.8b – Key Viewpoint 1, Simulated View from Paloma Way Looking West

## **Potential Impacts from Upslope Retaining Walls**

### **Impact Types:**

- Visual intrusion of upslope retaining walls as seen from the road.
- Tree and vegetation removal.

Five upslope retaining walls will be required in two segments within the Niles Canyon Landscape Unit, as indicated in Figures 7 and 8: Walls L4, L5, L6 (Eastern Segment of the Niles Canyon Landscape Unit), and Walls R1 and R2 (Western Segment of the Niles Canyon Landscape Unit). These walls are estimated to vary between 0 and 15 feet in height, with a combined length of up to 5,400 feet (1.02 miles). This will represent nearly 23 percent of the length of the overall project, and a larger proportion of the Niles Canyon Landscape Unit. These concrete retaining walls will introduce a prominent hardscape feature into the immediate highway foreground that will contrast strongly with the intact natural setting and represent a strong visual intrusion.

As will be discussed further in Section 2.1.2.4, “Avoidance, Minimization, and Compensation Measures”, with appropriate design measures the potential impacts of upslope retaining walls will be reduced. Those measures should include minimization of overall height and scale of walls to the greatest feasible extent, and use of context-sensitive textures and colors appropriate to the specific situation in order to reduce contrast of color and character. Such measures will greatly reduce the associated adverse decline in intactness and unity of the highway corridor. This discussion of visual impacts will initially analyze the impacts as if none of the measures were included. The proposed walls are depicted and discussed in greater detail below:

### **Upslope Walls – Eastern Segment of the Niles Canyon Landscape Unit**

Between P.M. 15.4 and 16.1, three uphill retaining walls will be constructed on the slope between the westbound roadway shoulder and adjoining railroad tracks in a roughly 3,800-foot (0.7-mile) road segment east of the Niles Canyon Railroad Maintenance Yard. The visual setting and impacts of these three walls (Walls L7, L6, and L5, from east to west), will be essentially similar.

Figures 2.9a and 2.9b depict the site of proposed upslope retaining Wall L7, near P.M. 16.0. The wall will be up to 12 feet in height, with a total length of 1,050 feet (0.2 mile). The wall will be directly downslope from the existing Niles Canyon Railroad line, supporting the railroad bed and track.

As depicted in Figure 2.9a, the existing slope is characterized by a smaller retaining structure made from concrete sack, beneath a short grass-covered slope. As depicted in Figure 2.9b, the proposed wall will substantially increase the scale of the existing retaining structure, replacing the predominantly grass-covered slope with a visually dominant feature of man-made character in the roadway foreground.

Existing vegetation on the affected slope is relatively minor. Wall construction will require removal of a small number of existing oak trees at the shoulder between the roadway and railroad track. This loss will represent a decline in vividness in this location, but the effect of the loss of this small row of trees, against the background of larger mature oak trees and natural grassland beyond the railroad bed, will be relatively minor for motorists and train passengers.

However, the retaining wall, with a height of up to 12 feet and length of over 1,000 feet, will be prominent. Intactness and unity of the setting will decline due to the contrastive, industrial character of a retaining wall and barrier.

Replacement vegetation will be planted in a suitable location in close proximity to the disturbance. The moderate decline in vividness due to loss of existing trees will be substantially diminished within several years, and enhanced in the long term by an increase in the number of trees in the roadway foreground.

The wall will be generally unnoticed by rail passengers, who will be directly above it and will not see it.

Viewpoint 3 depicts proposed upslope retaining Wall L6, located near P.M. 15.7, a short distance west of Wall L7 and Viewpoint 2. Wall L6 will have a maximum height of up to 14 feet and total length of 575 feet (0.1 mile). The setting is essentially similar to that described for Viewpoint 2, above. Like Wall L7, the wall will be directly downslope from the existing Niles Canyon Railroad line, supporting the railroad bed and track.

As at Viewpoint 2, the affected slope is grassland. Up to two oaks and minor shrub vegetation will be removed, with little effect on visual quality. As with Wall L7, the 14-foot-tall Wall L6 will be highly prominent and, coming in rapid succession, will extend the experience of dominance of the walls in this segment. Although the incongruous, industrial character of a standard retaining wall and barrier will represent a decline in the intactness, unity, and overall visual of the existing, predominantly natural setting, the context-sensitive wall treatment reflecting the historic man-made character of the adjacent railroad and emulating historic construction methods will greatly reduce contrast in character. The associated decline in the setting's intactness, unity, and overall visual quality will be reduced to a moderate level.

With revegetation, the minor proposed tree removal will be substantially restored within several years, and enhanced in the long term by an increase in the number of trees in the roadway foreground, if sufficient right-of-way is available for replanting. If right-of-way is not available, revegetation will take place at an available nearby location.

The wall will be generally unnoticed by rail passengers, who will be directly above it and will not see it.

Viewpoint 4 depicts proposed upslope retaining Wall L5, a short distance west of Wall L6 near P.M. 15.5. Wall L5 will have a maximum height of up to 17 feet and total length of 850 feet (0.16 mile). The setting is essentially similar to that described for Viewpoints 2 and 7 above. Like those walls, Wall L5 will be directly downslope from the existing Niles Canyon Railroad line, on the slope below the railroad bed and track.

One existing oak tree will be removed at the shoulder between the roadway and railroad track for wall construction. Impacts will be essentially similar to those described for Walls L7 and L6 above. Although the industrial character of a standard retaining wall and barrier will represent a substantial decline in the intactness, unity, and overall visual of the existing, predominantly natural setting, the context-sensitive wall treatment reflecting the historic era of the railroad will reduce contrast in character and the associated decline in visual quality to a moderate level.



Figure 2.9a – Viewpoint 2, Existing View



Figure 2.9b – Key Viewpoint 2, Simulated View.

This view depicts anticipated project impacts from upslope retaining Wall L7 adjoining the NCRR tracks.



Figure 2.10a – Key Viewpoint 3, Existing View



Figure 2.10b – Key Viewpoint 3, Simulated View



Figure 2.11a – Key Viewpoint 4, Existing View



Figure 2.11b – Key Viewpoint 4, Simulated View



Figure 2.12a – Key Viewpoint 5, Existing View



Figure 2.12b – Key Viewpoint 5, Simulated View

These three upslope walls, coming in quick succession in the road segment between P.M. 15.4 and 16.1 will alter the character of that 3,800-foot (0.7-mile) segment substantially, becoming a co-dominant visual element with the natural canyon landscape. At a typical driving speed of 45 miles per hour, views of the three walls will extend for roughly one minute. Attractive, highly scenic views of the canyon's natural wooded slopes to the south, however, will continue to draw visual attention and remain unobstructed by the project features.

### **Upslope Walls – Western Segment of The Niles Canyon Landscape Unit**

Between P.M. 13.6 and 14.6, two uphill retaining walls (Walls R1 and R2) will be constructed on the slope above the eastbound roadway shoulder, following in quick succession so that they will resemble a single wall. The walls will be up to nearly 23 feet in maximum height and 2,800 feet (0.53 mile) in overall length, ending at the western project terminus of the Alameda Creek Bridge project, P.M. 13.6. However, this series of uphill walls will combine with a continuation of the uphill wall under the Alameda Creek Bridge project, for an overall cumulative length of 4,200 feet (0.80 mile). Key Viewpoints 5, 6, 7, 8, and 9 depict different portions of walls R1 and R2.

#### **Key Viewpoint 5**

Figures 2.12a and 2.12b

Figures 2.12a and 2.12b depict Wall R2, located near P.M. 14.3 as seen by westbound motorists

#### **Key Viewpoint 6**

#### **Key Viewpoint 7**

Figures 2.13a and 2.13b

Figures 2.13a and 2.13b depict retaining Wall R1 near P.M. 14.14 as seen by westbound motorists.

#### **Key Viewpoint 8**

Figures 2.14a and 2.14b

Figures 2.14a and 2.14b depict retaining Wall R1 near P.M. 14.01.

As depicted in these key viewpoints and simulations, the existing slope above the eastbound lanes within this western segment of the project limits is extremely steep, meeting the roadway within feet of the travel lane, and is heavily vegetated. Uphill slopes are native mixed evergreen forest typical of the southern slopes in this steepest and most scenic portion of Niles Canyon. Trees on the affected slope include oak, bay, and maple. Downhill, the forest is a mixture of riparian species such as western sycamore, willow, and others, with oaks, bay, and one hedgerow of very large Eucalyptus depicted in Viewpoint 9 (refer to Figure 2.15a, below). The surrounding tree canopy throughout this western segment is the dominant feature of the existing visual setting, often closing above the roadway, and largely limiting views to the immediate highway foreground.

Roughly 60 oak and bay trees will be removed on the affected uphill slopes to make way for the road widening and retaining walls R1 and R2. In addition, roughly 70 native oak, bay and maple will be removed on the downhill side in this segment, along with 22 large Eucalyptus. The remaining adjacent forest canopy will remain visually prominent. However, due to the considerable maximum height and length of Wall R1, the retaining wall will begin to strongly dominate the roadway foreground as seen by motorists in certain locations, particularly at the western terminus near the Alameda Creek Bridge. The easternmost portion of Wall R1 will remain in shadow almost all of the time due to its north-facing position, reducing its contrast and conspicuousness. From roughly P.M. 14.0 to the project terminus the west slope of the wall will be exposed due to tree removal for wall L2 in the same segment, and will be brightly lit in the early morning hours. Visual dominance of uphill walls R1 and R wall may be reduced to a degree where tree removal for downhill walls would open long scenic views over Alameda Creek to northern hillsides, drawing viewers' attention away from the roadway and walls, and outward to the new scenic views. This is depicted in Figure 2.15b, below.

In most segments facing new downhill walls, however, downhill tree removal will be minimized due to use of retaining-wall construction techniques, as depicted in Key Viewpoint 8. In most situations this technique will allow retention of the vivid existing tree canopy, but will also enclose views within the immediate road foreground, focusing attention on the new uphill walls. Overall, the new Walls R1 and R2, up to nearly 23 feet in height in some sections, will strongly alter the roadway foreground. In combination with the anticipated Alameda Creek Bridge project, these uphill walls will alter a 0.8-mile segment to an industrial, man-made character, resulting in a strong decline in vividness, intactness, unity, and overall visual quality.

With the measures described in 2.1.2.4, the decline in visual quality will be reduced from a strong to moderate level as depicted in the accompanying visual simulations.

### **Downslope Walls – Western Segment of The Niles Canyon Landscape Unit,**

#### **Impact Types:**

- Tree and vegetation removal, including removal of large roadside riparian trees, due to outside widening and construction of downslope retaining wall as seen from the road
- Visual intrusion of downslope retaining walls and tree and vegetation removal as seen from nearby railroad lines

Downslope retaining walls will be required in various locations, as indicated in Figures 7 and 8 above by walls L2 through L4 and R4 through R9. These walls will range from 2 to 13 feet tall, with a combined length of 3,175 feet (0.60 mile). In combination with walls of the adjoining anticipated Alameda Creek Bridge project, this will represent an overall length of 4,334 feet (0.82 mile).

Key Viewpoint 9 – View from Vicinity of P.M. 14.0, Looking North

Figures 2.15a and 2.15b:

Key Viewpoint 9, Figure 2.15b, depicts effects of a downslope wall, L1, which was formerly proposed under this project. At the time of writing that wall had been re-assigned to an adjacent



Figure 2.13a – Key Viewpoint 7, Existing View



Figure 2.13b – Key Viewpoint 7, Simulated View



Figure 2.14a – Key Viewpoint 8, Existing View



Figure 2.14b – Key Viewpoint 8, Simulated View



Figure 2.15a – Key Viewpoint 9, Existing View



Figure 2.15b – Key Viewpoint 9, Simulated View

project, the Alameda Creek Bridge Replacement project. Consequently, Viewpoint 9, Figure 15b, depicts the cumulative impacts of the two projects in combination, and not the impacts of the Niles Canyon project alone. However, the bridge replacement project will be anticipated shortly after or concurrently with the Niles Canyon project; and the downslope wall depicted will be necessary for the Niles Canyon project in the absence of the bridge replacement project.

This cumulative project simulation is also relevant because in various instances of downhill walls proposed under this project, downslope wall construction will result in removal of existing trees and other vegetation, including instances of large riparian trees. Please see section 2.3.3 for numbers and species of trees removed for this project.

The tall riparian forest adjoining the highway is notable for its distinctive tree species, including large sycamore, maple, and willow trees that frequently overhang the road, creating enclosure, shadow patterns on the roadway, and a distinctive scenic character marking the presence of the creek.

Standard downslope wall construction will typically involve construction from the creek bed, requiring substantial riparian tree and vegetation removal for equipment access, excavation of footings, and wall construction. However, the project will use construction methods that reduce impact to existing vegetation.

Although tree removal will be minimized to the greatest feasible extent, riparian tree and vegetation removal at the road edge will in some situations result in some limited decline in vividness and intactness in the short term (e.g. where large riparian trees must be removed within the proposed right-of-way). A total distance of 0.60 mile will potentially be affected by proposed downslope retaining walls within the project.

As depicted in Figure 15b, potential adverse effects on vividness and intactness due to downslope tree removal will be counteracted to some degree by the opening of new long, scenic vistas of the creek and canyon slopes as seen from the roadway. With removal of foreground trees, views of the creek and hillsides will increase in many cases. In addition, substantial riparian forest will remain throughout the creek corridor even in instances of construction impact. Generally, removal of riparian trees at the roadside will expose other existing riparian trees behind them, with limited overall change to the image type and visual quality. For these reasons — context-sensitive construction method, opportunity to open scenic views, and continued prominence of riparian forest — impacts to motorists' views from the road due to downslope wall construction are considered to be weak overall.

### **Views to the Road**

The principal sensitive off-road receptors of the project will be passengers on the two railroad lines operating in the canyon. In addition to potential impacts to the view of motorists, riparian tree removal and visual intrusion from downslope retaining walls will have adverse effects on these viewers.

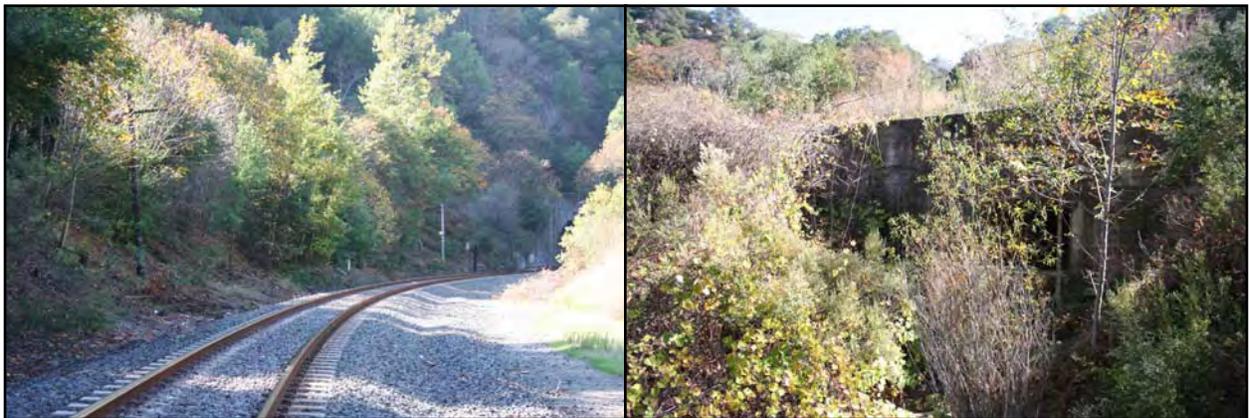
**The Niles Canyon Landscape Unit, Views to the Road: Views from the Niles Canyon Railroad and ACE Train**

**Niles Canyon Railroad**

Viewers on the NCRR have very limited visual exposure to proposed project actions. In particular, in the segments of proposed downslope retaining walls L2, L3, and L4, NCRR passengers overlook the roadway from a somewhat higher elevation at distances of roughly 250 to 400 feet over Alameda Creek. However, these views are highly filtered by intervening riparian vegetation. Although the roadway may sometimes be seen, it is visible very intermittently for brief moments only. The extensive existing downslope retaining walls of SR-84 are visible to only a very limited degree and are not prominent in views of rail passengers.



Views to downhill Retaining Walls L1, L2, and L3 as seen from Niles Canyon Railroad. Segments where downhill walls will potentially be visible from the NCRR are heavily filtered by distance and existing riparian vegetation, as depicted in these photographs.



View of segment of downhill retaining wall as seen from the ACE Train. The slope on the left will be converted into a retaining wall of roughly 15 feet in height for a distance of 650 feet. The image on the right depicts a portion of the Sunol Aqueduct visible from the ACE Train in this same segment. As shown, the aqueduct is not highly evident due to existing screening vegetation.

Figure 2.16 – Landscape Unit 2, Views to the Road: Views from the Niles Canyon Railroad and ACE Train

### **Western Pacific (Union Pacific) Railroad / Altamont Commuter Express Train**

The Stockton-to-San Jose Altamont Commuter Express commuter line travels the Union Pacific rail line through Niles Canyon each day, exposing considerable numbers of passengers to views of the creek corridor, and in some cases, retaining walls of SR-84. Unlike the NCR, which is north of SR-84 throughout its length, the ACE train travels the canyon to the north between a tunnel near P.M. 13.9 to the vicinity of the Alameda Creek Bridge (P.M. 14.4), where it crosses to the south of SR-84, roughly paralleling the highway to the south of Alameda Creek at varying distances.

Viewers on the ACE train will potentially have views of proposed downslope walls R4 through R9 from south of the road between roughly P.M. 14.5 and 16.2, over a total wall length of 1,675 feet (0.3 mile). These walls will range from 2 to 9.5 feet in height. Walls R5 and R6 will replace similar existing retaining walls of similar height in the same general locations. Potential overall visual change will thus be moderate or minor. Walls R4 through R9 will be viewed by train passengers at distances of roughly 250 to 350 feet, across Alameda Creek. Along nearly the entire length of these walls, views of train passengers will be screened or highly filtered by remaining intervening riparian vegetation. Even with considerable vegetation removal in a worst-case scenario, then, except in limited instances ACE train viewers will not have substantial visual exposure to the proposed walls or their construction.

#### **2.1.2.4 Avoidance, Minimization and Mitigation Measures**

##### **2.1.2.4.1 Landscape Units**

###### **Landscape Unit 1: Sunol Valley**

If feasible, the project will realign the project centerline northward in order to avoid removal of healthy trees to the south of the roadway. The feasibility of replacement planting of the existing northern tree row within the existing Caltrans right-of-way along with recommended roadway realignment northward is doubtful at this time due to insufficient ROW width.

Consequently, Caltrans shall pursue permission from the San Francisco Public Utilities Commission to install replacement planting of the northern tree row outside of the Caltrans ROW on SFPUC land. With SFPUC permission, Caltrans will:

- replace the tree row removed due to highway widening, outside of the Caltrans ROW. The replaced trees will be planted north of the existing ROW, so as to reproduce the original allée effect, meet Caltrans safety standards, and avoid future tree disfigurement by cable operators.

With this measure, the long-term effects of the project in this location will be beneficial, since it will replace existing disfigured trees with healthy, undamaged ones, in an allée configuration similar to that currently existing.

###### **Landscape Unit 2: Niles Canyon – Upslope Retaining Walls**

Context-sensitive surface treatment of these uphill walls, including texture and coloring, will reduce the impact to intactness and unity of the setting. A variety of design measures are available to minimize the visual impacts of retaining walls, including:

- minimizing the overall height and scale of walls;
- staining the bottom, safety barrier portion of walls to reduce overall color contrast and visual intrusion;
- coordinating wall texture treatments and carrying consistent context-sensitive themes throughout the corridor; and
- using appropriate context-sensitive wall texture and color treatments.

In the project area, two themes are available for wall surface treatments:

**Historic masonry effect:** With context-sensitive surface treatment, including appropriate texture and coloring, the decline in intactness and unity of the setting will be reduced. A context-sensitive wall treatment, reflecting the historic era of the railroad by emulating historic construction methods, will reduce contrast in character and the associated decline in the setting's intactness and unity. A rough surface texture and darkened or variegated coloring will also reduce reflectivity, contrast, and overall incompatibility of visual character. Staining or other color treatment of the entire retaining wall, including the safety barrier portion of the wall, will be an important factor in adequately reducing overall visual contrast. Although the new wall will not be concealed, with these measures it will be made to appear less prominent and more complementary with the historic character of the setting, reducing the decline in visual quality to a moderate level.

**Carved rock effect:** Although the scale of the walls will not change, a rough surface texture and darkened or variegated coloring will reduce reflectivity, contrast, and overall incompatibility with the character of the setting. In the case of Walls R1, R2, and R3, context-sensitive wall treatment suggests use of a naturalistic carved rock texture and color treatment to reflect the surrounding natural setting. Though less contrastive than standard walls, such treated walls will not appear completely naturalistic and the artificial character will remain evident. However, color, form, and character contrast will all be greatly reduced in comparison to standard untreated retaining walls, as indicated in the simulations.

#### **The Niles Canyon Landscape Unit: Niles Canyon Downslope Retaining Walls**

To address the potential impacts of downslope retaining wall construction, various features have been incorporated into project design, including:

- replacement of all removed vegetation with in-kind revegetation
- minimization of the removal of large, specimen-size riparian trees to the greatest extent feasible
- Reduction of construction impacts for retaining walls. A technique of constructing from the road should be considered, particularly where specific outstanding riparian tree stands are identified that will require removal with standard construction techniques in order to avoid their removal.
- Use appropriate wall texture and color treatments to minimize contrast with the existing natural and historic setting.

## **2.1.3 CULTURAL RESOURCES**

### **2.1.3.1 Regulatory Setting**

“Cultural resources” as used in this document refers to all historical and archaeological resources, regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act of 1966, as amended, (NHPA) sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and Caltrans went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the Advisory Council’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 773) (July 1, 2007).

Historic properties are covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties. Historic resources are also considered under the California Environmental Quality Act (CEQA), as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory any state-owned structures located in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

### **2.1.3.2 Affected Environment**

Cultural studies completed

- 1a. Historic Property Survey Report (HPSR), 11/20/07.
- 1b. Historic Resources Evaluation Report (HRER), 10/15/07.
- 1c. Archaeological Survey Report (ASR), November 2007.
- 1d. Finding of Effect Report (FOE) March, 2010.

### 2.1.3.2.1 Methodology and Area of Potential Effects

#### *Area of Potential Effect*

The Area of Potential Effect (APE) for the project was established in consultation with Mary K. Smith, PQS Principal Architectural Historian, Brett Rushing, PQS Principal Investigator – Prehistoric Archaeology, and Shahradd Mahini, project Manager, on 11/01/07. The archaeology APE includes 50 feet on each side of the existing centerline (total width of 100 feet) to encompass the proposed shoulder and pavement widening, the construction of retaining walls and any other project activities that could result in ground disturbance. The architecture APE was set using parcel limits, the boundaries of previously evaluated historic resources that could be impacted by the project, and the nature and extent of the proposed work. In the western section of the project area, the architecture APE parallels the roadway and includes the Western Pacific/Union Pacific tracks and the Western Pacific/Niles Canyon Railroad as well as the Sunol Aqueduct, all of which are previously identified historic resources. (These three resources extend west beyond the beginning of the current project and terminate in the Niles district of the City of Fremont.) In order to encompass these linear resources, the architecture APE in the western half of the project varies in width from between 500 and 700 feet. In the eastern section of the project in the vicinity of Sunol, the architecture APE expands well south of SR-84 in Alameda to include elements of the Spring Valley Company's Alameda Creek System such as the Sunol Water Temple and adjacent filter galleries that are currently owned by the San Francisco Public Utilities Commission (SFPUC). East of the Pleasanton-Sunol Road intersection, the architecture APE expands north to include another large parcel of land owned by the SFPUC, and then terminates at the southbound I-680 on and off ramps.

Early in 2010, the archaeology APE was expanded to the north near the eastern terminus of the project to include a construction easement that is proposed to be used to replant and establish a tree row along the north side of the road between Sunol-Pleasanton Road and I-680 and an additional hillside cut located in an area that had originally been the site of a proposed retaining wall. An amended archaeology APE was established in consultation with Brett Rushing, Principal Investigator – Prehistoric Archaeology and Ron Kiaaina, Project Manager on in February, 2010.

#### *Methodology*

A record search at the Northwest Information Center (NWIC), Sonoma State University, was completed on October 22, 2006. In June and July of 2007, the following sources/archives were consulted: Samuel Knight Chapter of the Society For Industrial Archaeology, Livermore Heritage Guild, City of Fremont Planning Department, California Archives-Alameda County History (1914), Central Pacific Railroad History Museum, Fremont Museum of Local History (including information regarding the Landmark Trees of Fremont), and the Roadside Arboretum of Washington Township. In addition, historic Spring Valley Water Company records and maps were consulted regarding the Sunol Aqueduct and related water-delivery infrastructure in Niles Canyon.

Identification efforts documented in the ASR-consisted of background and archival research, a geoarchaeological study, an intensive pedestrian survey, and efforts to consult with the Native American community. The pedestrian survey covered all of the existing and proposed right-of-way and 50 feet on either side of the edge of pavement when not precluded by steep slopes.

A field survey of the 100' wide APE for archaeology did not identify any archaeological resources.

Concerns about the potential for buried archaeological resources were addressed through a geoarchaeological investigation into the presence of buried soils within the APE. Based upon the geoarchaeological analysis, the potential for encountering buried archaeological resources is considered low.

#### 2.1.3.2.2. Significant Cultural Resources Within the APE

As noted in the Archaeology Survey Report (ASR) completed for the project, sections of ALA-84/Niles Canyon Road have been surveyed previously (Cartier 1986; Holman and Chavez 1977; Dames and Moore 1985). No archaeological resources were identified within the project APE.

As noted in the HPSR-and HRER completed in 2007, the following have been previously determined eligible for listing in the National Register of Historic Places, and are present within the project APE:

- Western Pacific/Central Pacific/Niles Canyon Railroad (determined eligible on 11/30/04)
- Western Pacific/Union Pacific Railroad and Tunnels (determined eligible on 12/03/98)
- Spring Valley Water Company's Alameda Creek System
- Sunol Aqueduct (determined eligible on 12/03/98)<sup>1</sup>
- Sunol Water Temple (and entry gates)<sup>1</sup>
- Sunol Dam (since removed by the San Francisco Public Utilities Commission (SFPUC))<sup>1</sup>
- Alameda Creek Bridge and Overhead #33-0039 (determined eligible on 12/03/98)

On January 11, 2008, the State Historic Preservation Office (SHPO) concurred that a stone railroad culvert (located at approximately PM 15.6 adjacent to the north shoulder of the highway), is eligible for the National Register of Historic Places as a contributor to the historic Western Pacific/Central Pacific/Niles Canyon Railroad.

#### 2.1.3.2.3 Discovery of Cultural Materials or Human Remains

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will cease until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage

<sup>1</sup> For the purposes of this project, Caltrans is assuming the eligibility of these resources, which were evaluated in 2003 by JRP for the proposed removal of the Niles and Sunol Dams by the SFPUC. In the fall of 2006, the SFPUC removed the Sunol Dam in order to aid fish passage and upstream migration.

Commission (NAHC) who will then notify the Most Likely Descendent (MLD). Further provisions of PRC 5097.98 are to be followed as applicable.

#### 2.1.3.2.3 Significance of Each Evaluated Historic Property Within the APE

##### *The Western Pacific/Central Pacific/Niles Canyon Railroad*

The Western Pacific/Central Pacific/Niles Canyon Railroad was determined eligible for listing in the National Register of Historic Places on December 30, 2004 through coordination with SHPO regarding another Caltrans project. It is eligible under National Register Criterion A at the local and regional level of significance for its association with the Transcontinental Railroad and the associated history of transportation, commerce and settlement. It is also eligible under National Register Criterion C at the local and regional level for its association with the design and construction of the Transcontinental Railroad, and as a significant example of nineteenth century railroad engineering, particularly in terms of railroad bridge technology.

The Western Pacific/Central Pacific Railroad was completed in Niles Canyon in 1869 as part of the Transcontinental Railroad. Construction of the railroad was a monumental engineering feat that involved years of surveying to establish a feasible route. Most of the line through Niles Canyon, which was then known as Alameda Canyon, was built along the north side of the canyon. Early work on the railroad took place between 1865-66, and only extended part of the way through the canyon from west to east. The Central Pacific acquired the struggling Western Pacific Railroad and completed work in Niles Canyon late in 1869, connecting it to the line they were already building across the Central Valley from Sacramento.

In the mid-1980s, commercial railroad operations ceased on the line and the land reverted back to Alameda County. The land and the existing tracks, rolling stock and equipment is currently leased to the Pacific Locomotive Association, a non-profit organization that maintains and operates the Niles Canyon Railroad and runs excursion trains between Niles and Sunol.

##### *Stone Culvert*

The stone culvert associated with the Western Pacific/Central Pacific/Niles Canyon Railroad at PM 15.6 was determined eligible for listing in the National Register of Historic Places on January 11, 2008 through consultation with SHPO regarding the proposed project. The culvert, which is located adjacent to the north shoulder of Route 84, is eligible as a contributor to the Western Pacific/Central Pacific/Niles Canyon Railroad. The stone culvert and the previously-identified sections of stone retaining wall and stone bridge piers located outside of the project APE appear to be the few surviving masonry structures that date to the original Western Pacific/Central Pacific construction through Niles Canyon.

##### *The Western Pacific/Union Pacific Railroad (and associated tunnels)*

The Western Pacific/Union Pacific Railroad (and associated tunnels) was determined eligible for listing in the National Register of Historic Places (NRHP) on December 3, 1998 through coordination with SHPO regarding another Caltrans project. The resource is eligible under National Register Criterion A at the local level of significance, as the Western Pacific/Union Pacific line broke the

stranglehold the powerful Southern Pacific Railroad had had on the Oakland waterfront for many years. The Western Pacific/Union Pacific Railroad was constructed on the south side of Niles Canyon between 1909-10, and was part of a 930-mile freight and passenger rail line between Salt Lake City and Oakland.

### *Alameda Creek System*

The Spring Valley Water Company's (SVWC) Alameda Creek System was determined to be eligible for listing in the National Register of Historic Places in approximately 2004 through consultation between the U.S. Army Corps of Engineers and the State Historic Preservation Officer (SHPO) regarding the proposed removal of the Niles and Sunol dams by the SFPUC. Prior to the removal of the Niles and Sunol dams late in 2006 to aid fish passage and migration upstream, a Memorandum of Agreement (MOA) was executed between the Army Corps and the SHPO. Compensation of the adverse effect (to the dams and the water filtration and delivery system) involved re-evaluation of the SVWC's Alameda Creek System after the two dams were removed. (Demolition of the Sunol Dam also involved the removal of a section of the structure on top of the dam that linked the Sunol Aqueduct to the Sunol filter galleries and other related structures.) The outcome of the re-evaluation of the Alameda Creek System by the Army Corps as stipulated in the MOA is unknown at this time.

### *The Sunol Aqueduct*

The Sunol Aqueduct was determined eligible for listing in the National Register of Historic Places on December 3, 1998 through coordination with SHPO regarding another Caltrans project. The resource is eligible under National Register Criterion A at the local and regional level of significance due to its association with the history of the development of urban water supplies in the Bay Area. The Sunol Aqueduct was constructed of concrete, and consists of a six-mile long series of enclosed contiguous box flumes. It extends west from the former site of the Sunol Dam near Sunol to a reservoir in Niles, and is part of a much larger water filtration and delivery system that was developed by the Spring Valley Water Company (SVWC) during the late 19th and early 20th century to deliver clean water to San Francisco and other cities on the peninsula. The SVWC's Alameda Creek System took advantage of a natural geologic feature, extensive underground beds of gravel located along the north side of Alameda Creek at the east end of Niles Canyon, to naturally filter the water. A series of underground filter galleries were built between the gravel beds and Alameda Creek to intercept filtered water. Depending on demand, the water could be released back into Alameda Creek and stored behind the Sunol Dam, or it could be routed west through the Sunol Aqueduct along the south side of Niles Canyon.

### *The Sunol Water Temple*

The Sunol Water Temple (including the entry gates) was determined eligible for listing in the National Register of Historic Places (as part of the Spring Valley Water Company's Alameda Creek System) in 2004 as a result of consultation between the U.S. Army Corps of Engineers and the State Historic Preservation Officer regarding a dam-removal project. The Sunol Water Temple and entry gates were constructed in 1910, and were designed by the noted architect, Willis Polk. The elaborate curving entry gates contained inscriptions welcoming the public to inspect its facilities in Sunol, as well as polychrome cartouches and a pair of spouting-dolphin fountains.

Spring Valley Water Works was franchised in 1858, and by 1862, rivaled the San Francisco City Water Works in its capacity to provide clean water to the city. In 1865, the city-owned water company was bought-out by the Spring Valley Water Works. By the mid-1870s, Spring Valley had begun to purchase land in and around Niles Canyon, an action that was not without controversy. By 1900, Spring Valley had completed the Sunol filter beds and galleries, as well as the Sunol Aqueduct. In the early years of the twentieth century, as other large municipalities in California began to develop their own publicly-owned and operated municipal water systems, San Francisco still relied on a privately-owned water system. In 1930, after repeated attempts, the City of San Francisco purchased the Spring Valley Water Company, gaining control of SVWC's facilities, structures, property and watersheds.

### *The Alameda Creek Bridge and Overhead*

The Alameda Creek Bridge and Overhead (Bridge No. 33-0039) was determined eligible for listing in the National Register of Historic Places on December 3, 1998 through coordination with SHPO regarding another Caltrans project. The bridge was built in 1948 to carry the newly re-aligned highway, which had previously hugged the edge of the nearby hillside, over the tracks of the Western Pacific/Union Pacific Railroad and Alameda Creek. The Alameda Creek Bridge and Overhead structure is 991 feet long and is comprised of fourteen hollow box-girder spans supported by bents and columns. The bridge is eligible under National Register Criterion C at the local level of significance as a distinctive and early example of concrete box-girder construction. Concrete box-girder spans use the roadway slab as the top of the "box" or bridge flange, which results in a lighter, stronger structure.

#### 2.1.3.2.4 Environmental Consequences

Late in 2007, the Office of Cultural Resource Studies submitted a Historic Property Survey Report (HPSR), an Archaeological Survey Report (ASR), and a Historic Resource Evaluation Report (HRER) to the State Historic Preservation Office (SHPO), along with a finding of No Historic Properties Affected for the project. At that time, the effect finding presented by Caltrans was based on the non-performance of work in seven specific locations in order to avoid affecting historic resources. Those specific locations at which no work would be performed by Caltrans included:

- At WP/UP Railroad Tunnel #1, north side of roadway, (1 location).
- At Sunol Aqueduct, southwest, south, north and southeast of roadway, (4 locations).
- At Alameda Creek Bridge and Overhead, (1 location).
- At Sunol Water Temple Entry Gates, (1 location).

In 2009, the project plans were modified in order to reduce possible stream and floodplain impacts in and around Alameda Creek. Those revisions will bring the road and related shoulder work, including sections of low retaining wall, closer to the historic WP/CP/Niles Canyon Railroad culvert identified in previous coordination with SHPO.

#### 2.1.3.2.5 Possible Effects to Historic Properties Associated with the Current Project

As per the Section 106 PA, there are three possible effect findings; no historic properties affected, no adverse effect, and adverse effect. When a project will result in ‘no adverse effect’ to historic properties, the finding is one of either ‘no adverse effect with standard conditions’ or ‘no adverse effect without standard conditions’ (standard conditions include building rehabilitation that meets the Secretary of the Interior’s Standards and the use of ESA’s to protect archaeological sites).

##### *Western Pacific/Central Pacific/Niles Canyon Railroad*

No Adverse Effect without Standard Conditions. The proposed project involves shoulder widening and installation of retaining walls along the north side of the highway immediately adjacent to the tracks and ballast bed of the Western Pacific/Central Pacific/Niles Canyon Railroad. The shoulder widening and retaining wall installation will also require the purchase of additional right-of-way from Alameda County, which leases the land to the organization that operates the Niles Canyon Railroad, the Pacific Locomotive Association. The proposed project involves work in the vicinity of a stone culvert at approximately PM 15.6, which is a contributor to the historic railroad. In order to protect the stone culvert, an ESA (Environmentally Sensitive Area) will be established around the structure. The existing slope along the south side of the WP/CP/Niles Canyon Railroad has been modified in the past by shoulder work and the installation of utilities.

In order to minimize impacts to four inoperable and abandoned railroad power poles that the Pacific Locomotive Association (PLA) has indicated are significant, the poles will be relocated outside of Caltrans right-of-way to a site specified by the PLA, which leases the railroad right-of-way from Alameda County in order to maintain and operate the Niles Canyon Railroad. (The four poles are currently located in a proposed shoulder widening and retaining wall location.) The poles are isolated remnants of a late-19th century or early 20th century signal and communication system that was built along the south side of the tracks. Most of the other poles have been removed, and the remaining poles do not carry active lines.

##### *Western Pacific/Union Pacific Railroad and Tunnels*

No Adverse Effect without Standard Conditions. No Historic Properties Affected, as the current project involves widening that, although adjacent to the east portal of WP/UP Tunnel #1, will not impact the historic tunnel or the historic railroad. The project will also require the purchase of a small amount of additional right-of-way from Union Pacific adjacent to the existing north shoulder of the highway. However the additional right-of-way consists of narrow strip takes of land along the highway and does not include any sections of railroad bed or tracks. The acquisition of this additional right-of-way will not impact railroad operations or maintenance activities.

##### *Spring Valley Water Company’s Alameda Creek System*

No Adverse Effects without Standard Conditions. The Sunol Aqueduct is a contributor to the SWPC’s Alameda Creek System.

##### *Sunol Aqueduct*

No Adverse Effect without Standard Conditions. In the western section of the project, the Sunol Aqueduct passes underneath the highway in two locations. Work in the vicinity of the aqueduct will

involve shoulder widening, pavement overlay and installation of metal beam guardrail. However, the work will not extend to the depth of the aqueduct and will not impact the historic resource.

*Sunol Water Temple (and Entry Gates)*

No Historic Properties Affected, as shoulder widening and related work ends at the western approach of the Arroyo de La Laguna Bridge, which is west of the Water Temple and entry gates, and resumes east of the entrance to the facility. The Sunol Water Temple is located over a thousand feet south of the entry gates and well outside of the project work area.

*Sunol Dam*

No Historic Properties Affected, as this structure has already been removed from the project area by another agency for an unrelated undertaking.

*Alameda Creek Bridge and Overhead*

No Historic Properties Affected, as no work is planned for the bridge.

2.1.3.2.6 Use of 4(f) Resources

*Western Pacific/Central Pacific/Niles Canyon Railroad*

This project will result in a 4(f) use of the historic resource (see Appendix A); however, the use qualifies as de minimis. An ESA (Environmentally Sensitive Area) will be established around the eligible stone culvert, and ESA-type fencing will be installed around the resource to prevent effects that could result from the construction of nearby retaining walls and the installation of new shoulders along the north side of the highway. A small amount of railroad right-of-way from the track bed will also be used.

*Western Pacific/Union Pacific Railroad and Tunnels*

This project will result in a 4(f) de minimis use of the historic resource.

*Spring Valley Water Company's (SVWC's) Alameda Creek System*

This project will result in a de minimis 4(f) use of the historic resource due to the interactions with the Sunol Aqueduct (see above), which is a contributor to the SWPC's Alameda Creek System.

*Sunol Aqueduct*

This project will result in de minimis use of a 4(f) resource, as interaction with the aqueduct will be non-destructive and minor.

*Sunol Water Temple and Entry Gates*

This project will not result in a 4(f) use of the historic resource.

### *Sunol Dam*

This project will not result in a 4(f) use of the historic resource, as the Sunol Dam was removed in late 2006 by another agency for another undertaking.

### *Alameda Creek Bridge and Overhead*

This project will not result in a 4(f) use of the historic resource.

#### 2.1.3.2.7 Pending Consultation

Caltrans plans to meet in spring of 2010 with Alameda County and the Pacific Locomotive Association, which runs the Niles Canyon Railroad, regarding proposed right of way (ROW) acquisition for this project, and the removal/relocation of four poles that the Pacific Locomotive Association has indicated are important to the Niles Canyon Railroad. Caltrans will also meet with the SFPUC in spring of 2010 regarding right-of-way takes from SFPUC parcels.

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

In consultation with the State Historic Preservation Office (SHPO), Caltrans presented a finding of No Historic Properties Affected in late 2007, and agreed to eliminate work at seven locations in order to avoid impacts to historic resources. In 2009 the project plans were modified to reduce stream, wetland and related biological impacts, and to reflect updated mapping data. The modifications will result in impacts to historic properties, but those impacts will not be adverse under Section 106 of the NHPA. Recently gathered utility-locating data will be used to avoid impacts to the Sunol Aqueduct where work is immediately adjacent to, or directly overhead of the historic resource. An Environmentally Sensitive Area (ESA) will be established around the stone railroad culvert to protect it from project construction activities. As no adverse effects are anticipated for the project, compensation is not required. The impacts associated with the project qualify as de minimis under Section 4(f). Caltrans submitted a Finding of Effect (FOE) report documenting the revised finding to the State Historic Preservation Office in April 2010.

## **2.2 PHYSICAL ENVIRONMENT**

### **2.2.1 HYDROLOGY AND FLOODPLAIN**

#### **2.2.1.1 Regulatory Setting**

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 CFR 650 Subpart A.

In order to comply, the following must be analyzed:

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

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

### **2.2.1.2 Affected Environment**

Caltrans completed a Location Hydraulics Study on November 23, 2009 based on the draft Layout and Typical Cross-Section plans, and a review of applicable Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) effective August 3,2009. Portions of the FIRMs have been attached (see Appendix E).

### **2.2.1.3 Environmental Consequences**

The existing highway from approximately PM 13.5 to PM 13.8 is currently subject to overtopping by the Base Flood. The FIRM for this area identifies the Base Flood as “Zone A”, which means that Base Flood elevations have not been determined. The proposed improvements within this area will have an insignificant impact on the Base Floodplain and will not measurably alter the stream velocity. The remainder of the proposed improvements will not encroach on the Base Floodplain.

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

None.

## **2.2.2 WATER QUALITY AND STORM WATER RUNOFF**

### **2.2.2.1 Regulatory Setting**

Section 401 of the Clean Water Act requires water quality certification from the State Water Resource Control Board (SWRCB) or a Regional Water Quality Control Board (RWQCB) when the project requires a Federal permit. Typically this means a Clean Water Act Section 404 permit to discharge dredge or fill into a water of the United States, or a permit from the Coast Guard to construct a bridge or causeway over a navigable water of the United States under the Rivers and Harbors Act.

Along with Clean Water Act Section 401, Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program

to the SWRCB and the nine RWQCBs. To ensure compliance with Section 402, the SWRCB has developed and issued the Department an NPDES Statewide Storm Water Permit to regulate storm water and non-storm water discharges from Department' right-of-way, properties and facilities. This same permit also allows storm water and non-storm water discharges into waters of the State pursuant to the Porter-Cologne Water Quality Act.

Storm water discharges from the Department's construction activities disturbing one acre or more of soil are permitted under the Department's Statewide Storm Water NPDES permit. These discharges must also comply with the substantive provisions of the SWRCB's Statewide General Construction Permit. Non-Departmental construction projects (encroachments) are permitted and regulated by the SWRCB's Statewide General Construction Permit. All construction projects exceeding one acre or more of disturbed soil require a Storm Water Pollution Prevention Plan (SWPPP) to be prepared and implemented during construction. The SWPPP, which identifies construction activities that may cause discharges of pollutants or waste into waters of the United States or waters of the State, as well as measures to control these pollutants, is prepared by the construction contractor and is subject to Department review and approval.

Finally, the SWRCB and the RWQCBs have jurisdiction to enforce the Porter-Cologne Act to protect groundwater quality. Groundwater is not regulated by Federal law, but is regulated under the state's Porter-Cologne Act. Some projects may involve placement or replacement of on-site treatment systems (OWTS) such as leach fields or septic systems or propose implementation of infiltration or detention treatment systems which may pose a threat to groundwater quality. Currently the OWTS program is without SWRCB regulation but you should be aware of threats to groundwater quality on the project site and evaluate and address accordingly in the environmental document. Design standards for installation and operation of infiltration and detention treatment systems should protect groundwater quality and those protections should also be addressed in the environmental document

#### **2.2.2.2 Affected Environment**

This project is located in the San Francisco Bay Regional Water Quality Control Board (RWQCB Region 2). The Hydrological Sub-Area (HSA) is the Alameda Creek Hydrologic Area (HSA #204.30). The water bodies within this project limit are Alameda Creek and Arroyo De La Laguna. Alameda Creek discharges to the San Francisco Bay – South, which is approximately eight miles west of the project site. Both water bodies are in the 303(d) list with a total maximum daily load (TMDL) for Diazinon. There are no High Risk Areas (HRAs), such as water reservoirs, located within or nearby the project limits.

This project is expected to impact the Waters of the State. A Clean Water Act (CWA) Section 401 Certification from the Regional Water Quality Control Board (RWQCB), United States Army Corps of Engineers Section 404 Certification, and California Department of Fish and Game Section 1602 Certification are anticipated. A dewatering permit is also expected to be required for this project.

The project site is located in the Santa Clara Valley and Sunol Valley groundwater basins.

### **2.2.2.3 Environmental Consequences**

The project is expected to create 9.47 acres of disturbed soil area. The new and reworked impervious areas are anticipated to be 5.18 and 3.95 acres respectively. The net increase in impervious area is expected to be 9.13 acres.

Alameda Creek susceptible to the erosive flows resulting from an increase in runoff rate and volume resulting from an increase in impervious area. This will be addressed by hydromodification measures in this project as part of Design Pollution Prevention (DPP) and Treatment Best Management Practices (BMPs).

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

BMPs will be incorporated to reduce the discharge of pollutants during construction as well as permanently to the Maximum Extent Practicable (MEP). For this project, the expected pollutants are pollutants generated by construction activities (e.g. construction debris) and soil contaminated with aerially deposited lead (ADL).

This project will require a Storm Water Pollution Prevention Plan (SWPPP) because this project is expected to create more than one acre of disturbed soil area. Construction Site BMPs required during construction activities will include:

- Construction Site Management with considerations for operations relating to construction activities such as material delivery and storage, material use, stockpile management, spill prevention and control, and waste management.
- Temporary Soil Stabilization BMPs (Preservation of Existing Vegetation, Geotextiles, Plastic Covers and Erosion Control Blankets/mats).
- Temporary Sediment Control BMPs (Silt Fence, Fiber Rolls, Sandbag Barrier, Straw Bale Barrier, Storm Drain Inlet Protection).
- Wind Erosion Control BMP.
- Tracking Control BMP (Stabilized Construction Entrance/ Exit).
- Non-Storm Water Management BMP (Dewatering Operations, Paving and Grinding Operations, Concrete Curing, Structure Demolition/Removal Over or Adjacent to Water).
- Water management and Materials Pollution Control BMP (Material Delivery and Storage, Material Use, Stockpile Management, Spill Prevention and Control, Contaminated Soil Management, Concrete Waste Management, and Liquid Waste Management).

Design Pollution Prevention (DPP) BMPs are permanent drainage measures with secondary water quality benefits. Based on the current project scope, erosion control and preservation of existing vegetation are proposed and include:

- Erosion control measures to be provided on all disturbed areas. Erosion control consists of permanent vegetates or hard surface treatment to slopes and disturbed soil areas. Erosion control measures will be provided on all disturbed areas resulting from the construction activities in this project.

- Preservation of existing vegetation by identifying and protecting desirable vegetation that provides erosion and sediment control benefits. Currently, trees located on the eastbound side of the highway beyond the Arroyo De La Laguna are proposed to be preserved. Additional vegetation will be selected for preservation where feasible.

Treatment BMPs are permanent devices and facilities that remove pollutants from storm water runoff prior to leaving Caltrans right-of-way and being discharged directly or indirectly to receiving waters. Based on the current project scope, bio-infiltration strips, infiltration trenches, and storage pipe treatment BMPs are proposed.

Maintenance BMPs are water quality controls used to reduce pollutant discharges during highway maintenance and activities conducted at maintenance facilities. Included in this category are litter pickup, street sweeping, and stenciling storm drain inlets. Maintenance personnel will determine appropriate maintenance BMPs after construction is complete.

## **2.2.3 HAZARDOUS WASTE/MATERIALS**

### **2.2.3.1 Regulatory Setting**

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

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

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

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

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other

California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

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

### **2.2.3.2 Affected Environment**

This project is located on a rural setting, where lead-contamination levels from past vehicle emissions in the soil are low. Previous Caltrans studies in the project vicinity showed low levels of Aerially Deposited Lead (ADL), and similar results are expected for the current project.

Caltrans reviewed the environmental regulatory databases, Envirostor and Geotracker, which revealed one leaking underground storage tank (LUST) located 2000 ft from Route 84, which is too far away to affect the project. All previous underground tanks, since removed, and the one existing LUST, share the same general location at the east end of an adjoining recently reviewed project.

### **2.2.3.3 Environmental Consequences**

The project might require soil sampling and testing for aerially deposited lead, other metals, and at a few locations, petroleum hydrocarbons in soil and water. ADL in soil accumulated from the lead formerly used as an anti-knock compound in gasoline. Dispersed in vehicle exhaust, ADL did not travel far into the subsurface and remains in the top few feet of soil adjacent to highways. Highways have varying amounts of ADL in adjacent soil depending on the intensity of their use at the time lead additives were used.

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

A site investigation for the project will be performed to determine necessary restrictions and practices for soil handling and worker safety. An asbestos survey is required if any structure is going to be modified as part of the project.

## **2.2.4. Energy**

The project involves no planned use of natural resource beyond fuel and energy needed during construction activities, thus the project would not result in an increase of fuel or energy use in large amounts or in a wasteful manner, an increase in the rate of use of any natural resource, or in the substantial depletion of any nonrenewable natural resource. Therefore, the project will not have an effect on energy resources.

## 2.3 BIOLOGICAL ENVIRONMENT

References in this section refer to work cited in the Natural Environment Study for this project (see Appendix H). The term “biological study area” refers to the area containing the project area and generally extending 30’ past either side of the traveled way that was evaluated for the presence of biological resources, and was analyzed for the probable impacts of this project on these resources. It extends beyond the construction area in order to look for resources that might indirectly be affected by the project.

There are two general types of impacts on : permanent impacts, where shoulders or retaining walls would be constructed and result in permanent hardscape structures, and temporary impacts, where any necessary roadcuts or slope modification would occur, but where these areas will be replanted with native vegetation and restored to a more natural condition.

“Compensation,” as used in this section, means measures taken to offset an environmental effect. It comprises measures such as replacement, restoration, and the establishment of environmental values in a new location.

General avoidance and minimization measures are implemented as part of all Caltrans construction activities. These represent Caltrans Best Management Practices (BMPs) for the minimization of impacts to environmental values. Measures included in this project would include:

- Temporary erosion control measures will be implemented on all disturbed areas. Permanent erosion control measures will be implemented upon completion of construction. All disturbed areas will be revegetated with native, non-invasive species or non-persistent hybrids that will serve to stabilize site conditions and prevent invasive species from colonizing. See section 2.2.2.4.
- Vegetation removal and cut-and-fill operations will be limited to the minimum necessary. Trees, snags, shrubs, other vegetation, woody debris, and uncompacted forest litter will be protected to the extent possible.
- Tree and shrub removal will be minimized to the extent possible. When feasible, trees or shrubs that interfere with construction or project operation will be pruned or topped, but not removed.
- Before the construction activities begin, Caltrans will clearly demarcate (with uniquely colored construction stakes and high-visibility orange mesh fencing) the limits of construction to avoid environmentally sensitive areas.
- Before the onset of site grading, construction personnel will be informed about the importance of avoiding ground-disturbing activities outside the designated construction work area. The Caltrans resident engineer (RE), with support from qualified engineers, compliance specialists and biologists, will monitor construction equipment and associated activities to avoid disturbance to sensitive areas outside the project areas.
- All material stockpiling and staging areas will be within the project right-of-way in non-sensitive areas or at designated disturbed/developed areas outside of design construction zones.

- Vehicle and equipment refueling and lubrication will only be permitted in designated disturbed/developed areas where accidental spills can be immediately contained.
- Project plans shall clearly indicate the locations of environmentally sensitive areas, boundaries of wetlands and OWUS, and other areas where access or disturbance is prohibited on a temporary or permanent basis.

### 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. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

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

#### 2.3.1.1 Affected Environment

In *Plant Community Characterization for Niles Canyon Safety project* (CH2M HILL, January 26, 2007), eight terrestrial community types were mapped within the project study area, including annual grassland, barren, California bay/coast live oak forest, coastal oak woodland, eucalyptus woodland, orchard; urban (several sub-types); and valley foothill riparian. Aquatic riverine habitat adjacent to, but not part of, the project study area includes Alameda Creek and Arroyo de la Laguna Creek. Table 3 lists these plant community habitats and their areas in the project study area. The bulk of the project study area is made up of a limited number of these habitats and plant communities, notably valley foothill riparian, ruderal/landscaped, coastal oak woodland (disturbed), and coast live oak/California bay forest.

Table 2.1. Plant Communities and Land Cover within the project study area

Plant Community / Cover Type	Project study area acres	Percent of project study area coverage
Annual Grassland	0.69	2.15%
Barren	0.02	0.06%
California Bay/Coast Live Oak Forest	2.36	7.33%
Coastal Oak Woodland (disturbed)	5.73	17.80%
Eucalyptus Woodland	0.25	0.78%
Orchard	0.00	0.00%
Urban – All Combined	8.06	25.06%
<i>Urban – Nursery</i>	<i>0.37</i>	<i>1.14%</i>
<i>Urban – Railroad</i>	<i>0.22</i>	<i>0.70%</i>
<i>Urban – Residential</i>	<i>0.08</i>	<i>0.26%</i>
<i>Urban – Ruderal/Landscaped</i>	<i>7.39</i>	<i>22.96%</i>

Plant Community / Cover Type	Project study area acres	Percent of project study area coverage
Valley Foothill Riparian Forest	5.95	18.50%
Road Shoulder / Road Bed / Driveways	9.11	28.32%
Total	32.18	100%

Of these, the following are considered as not contributing to the natural environment in the project area:

- **Annual Grassland** is an upland community type composed of a dense-to-sparse cover of mainly introduced (non-native) annual grasses, usually less than three feet in height.
- **Barren habitat** is defined as areas with less than two percent total vegetation cover by herbaceous<sup>2</sup>, desert, or non-wildland species and less than 10 percent cover by tree or shrub species.
- **Eucalyptus Woodland** is often characterized by a single, non-native species, Tasmanian blue gum (*Eucalyptus globulus*). Eucalyptus leaf litter contains chemicals that inhibit the growth of other plants, so few plants grow in the understory of these stands.
- **Orchard habitat** in the project study area is composed of open, single-species-dominated areas planted for agricultural production.
- **Urban environments** within the project study area encompass a variety of land-use types including nursery, railroad, residential, and ruderal<sup>3</sup>/landscaped.

#### 2.3.1.1.1 Valley Foothill Riparian

This riparian (creek- or river-side) habitat in the project study area is characterized by mature riparian forest with 40 to 80 percent canopy cover, often dominated by winter deciduous trees. Dominant overstory species include Fremont's cottonwood (*Populus fremontii*), big leaf maple, and coast live oak. Sub-canopy trees include arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), and blue elderberry (*Sambucus mexicana*). Understory species include poison oak, Himalayan blackberry (*Rubus discolor*), and wild grape (*Vitis californica*). Herbaceous species associated with the understory include miner's lettuce (*Claytonia perfoliata*), broadleaf filaree (*Erodium botrys*), and periwinkle (*Vinca minor*). Approximately 5.95 acres of valley foothill riparian habitat occurs within the biological study area along the edges of Alameda Creek and Arroyo de la Laguna.

Valley foothill riparian habitat contains some of the most important wildlife habitat in the region due to the diversity of plant life, the intricacy of the biological relationships between organisms, the large amounts of organic material available (and, therefore, high food abundance), and the availability of water. In addition to providing habitat for breeding, foraging, and roosting for a diverse array of animals, riparian habitats also provide movement corridors for some species and connect a variety of habitats throughout the region.

The riparian habitat in the project study area has been degraded by soil compaction, trash dumping, the spread of gravel from the road shoulder into the riparian corridor, and runoff in a number of locations along the project alignment. Wandering individuals from upstream populations of the

2 A plant that has leaves and stems that dies down at the end of the growing season to the soil level.

3 Characterized by weedy, largely non-native plants.

federally listed California red-legged frog (*Rana draytonii*) could potentially forage occasionally in this habitat, although no breeding habitat occurs in the project study area and dispersing individuals are expected to occur here infrequently. Western pond turtles (*Actinemys marmorata*) are known to occur along this reach of Alameda Creek and could potentially occur in the project study area. Riparian tree species provide valuable habitat for resident and migratory birds, including several types of raptors. Several species of bats are expected to forage and roost along this reach of Alameda Creek, including Yuma myotis (*Myotis yumanensis*), Mexican free-tailed bats (*Tadarida brasiliensis*), big brown bats (*Eptesicus fuscus*), and two California species of special concern, the pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*).

#### 2.3.1.1.2 California Bay / Coast Live Oak Forest

This forest habitat occurs throughout the southwestern and central portions of the project study area and dominates the north- and west-facing slopes above Alameda Creek. The dominant hardwood species are California bay laurel (*Umbellularia californica*) and coast live oak (*Quercus agrifolia*). Common tree associates in this habitat include madrone (*Arbutus menziesii*), California buckeye (*Aesculus californica*), and big leaved maple (*Acer macrophyllum*). Poison oak (*Toxicodendron diversilobum*) and ceanothus (*Ceanothus* spp.) are common understory associates. Approximately 2.36 acres of this habitat occurs within the southwestern limits of the project study area.

#### 2.3.1.1.3 Coastal Oak Woodland (Disturbed)

This woodland type is characterized by large expanses of open-forest coast live oak canopy interspersed with scattered valley oak (*Quercus lobata*), and an understory dominated by grasses. This habitat runs the length of the northern boundary between SR-84 and the railroad, a total of 5.73 acres within the project study area. This habitat is protected by California Senate Concurrent Resolution Number 17, which resolves that California State agencies preserve and protect to the maximum extent feasible or provide replacement plantings in oak woodlands, defined as 5 or more oak trees per acre. Because of its location between SR-84 and the railroad, existing fragmentation, invasion by non-native trees and a pervasive non-native annual grassland understory, the coastal oak woodland in the project study area is deemed disturbed.

The dense understory and thick layer of leaf litter common to this woodland type provide habitat for many amphibians and reptiles. This habitat also typically supports a diverse assemblage of small mammals, although they were not observed during studies for this project. These woodlands typically provide habitat, and food in the form of acorns and abundant prey for several species of birds and mammals that prey primarily on vertebrates. The taller oaks and California bay laurels potentially provide suitable nesting sites for hawks and owls, although no nests were observed during surveys.

#### 2.3.1.1.4 Migration Corridors

The biological study area is centered around SR-84, so it mostly parallels but occasionally crosses Alameda Creek and the Southern Pacific railroad tracks, crossings of which are enabled by bridges and/or culverts.

The creek and Niles Canyon form a natural geographical divide. All of the features in the canyon are expected to limit the biological study area's functions as a north-south migration corridor due to habitat fragmentation, the high level of human activity/vehicle traffic with associated light and noise pollution, and natural barriers such as sheer embankments and rapid stream flows. However, Niles Canyon and the associated riparian corridor as a whole likely function as an east-west migration corridor. Similarly, the open space located immediately north of the project boundaries likely functions as an east-west migration corridor for upland species at the southern limits of the Sunol Ridge. Altogether, Niles Canyon is expected to facilitate migratory movement, daily travel, and/or dispersal habitat for a variety of fish and wildlife species within the watershed, primarily in an east-west direction.

Although individuals of some species may occasionally cross SR-84 and other barriers as part of their migration or dispersal, they probably do not do so in large numbers or with great success. Some special-status species that may use the project study area for migration, but which are not expected to breed in or inhabit the project study area in large numbers, include the sharp-shinned hawk (*Accipiter striatus*), merlin (*Falco columbarius*), golden eagle (*Aquila chrysaetos*), and Townsend's big-eared bat. In addition, as noted elsewhere, Alameda Creek is a historic migration corridor for anadromous fish, including steelhead and river lamprey (*Lampetra ayresii*). Removal of downstream passage barriers could open a migration corridor to upstream spawning grounds for these fish.

#### 2.3.1.1.5 Aquatic Resources and Habitat

Alameda Creek is the primary aquatic resource near the project area, though only a small part of it is inside the biological study area. Other aquatic habitats include portions of the ephemeral and seasonal creeks within the project study area. Streams near the project study area include Sinbad Creek and Arroyo de la Laguna, both of which are seasonal tributaries to Alameda Creek. A number of wetlands and other waters of the U.S. also exist within the project area and are summarized in Section 2.3.2. Some project work between PM 15.8 and PM 16.1 will occur below the Ordinary High Water Mark (OHWM), placing it within the technical boundary of Alameda Creek, a jurisdictional "Water of the United States" under the Clean Water Act.

### 2.3.1.2 Environmental Consequences

#### 2.3.1.2.1 Valley Foothill Riparian

1.65 acres of valley foothill riparian are in the project's permanent impact zone, and 2.40 acres fell in the temporary impact zone.

#### 2.3.1.2.2 California Bay/Coast Live Oak Forest

0.56 acre of California bay/coast live oak forest habitat is in the project's permanent impact zone, and 0.82 acre fell in the temporary impact zone.

#### 2.3.1.2.3 Coastal Oak Woodland (Disturbed)

3.00 acres of disturbed coastal oak woodland habitat are in the project's permanent impact zone, and 2.08 acres fell in the temporary impact zone.

#### 2.3.1.2.4 Migration Corridors

SR-84 has posed a barrier to wildlife passage, particularly to amphibians that might otherwise suffer death or injury while crossing SR-84.

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

#### 2.3.1.3.1 Valley Foothill Riparian

As the NEPA-delegated federal action agency, Caltrans will follow the FHWA policy of compensating for impacts to natural lands. For any areas where valley foothill riparian habitat occurs in the jurisdiction of the California Department of Fish and Game (CDFG) under Section 1600 of the California Fish and Game Code, Caltrans will provide compensation for impacts to the valley foothill riparian areas; the exact acreage, location, and type of compensation for these impacts under the CDFG's jurisdiction will be developed during the permitting phase of this project. For compensation for oak species outside jurisdictional riparian areas, see section 2.3.1.3.2 and 2.3.1.3.3.

Additionally, because Caltrans places restrictions on replanting trees within a certain distance, typically 30 feet, from the edge of traveled roadway, it is possible that the required acreage of valley foothill riparian provision may not be possible in the immediate project vicinity. Some compensation may need to be provided offsite.

#### 2.3.1.3.2 California Bay/Coast Live Oak Forest

As the NEPA-delegated federal action agency Caltrans will follow the FHWA policy of compensating for impacts to natural lands. In riparian corridors where California bay/coast live oak forest habitat occurs in the jurisdiction of the CDFG under Section 1600 of the California Fish and Game Code, Caltrans will provide compensation for impacts; the exact acreage, location, and type of compensation for these impacts under the CDFG's jurisdiction will be developed during the permitting phase of this project.

Under S.R. 17, Caltrans will provide replacement plantings of removed upland oaks and will restore upland oak woodland forests. Caltrans proposes to compensate for native oak removal from upland California Bay/Coast Live Oak Forest by planting and maintaining sufficient numbers of trees such that they could be expected, according to current research, to produce a number of trees which at maturity would be roughly equal to the number of native oaks removed. Bay and other companion species of native trees and shrubs will be planted with the oaks in numbers which reflect a reasonable professional assessment of cover abundance of species occurring in nature in the area. Caltrans will also study the possibility of stockpiling trunks and woody debris from trees felled for the project for use in distributing through the project area after construction, in order to

provide habitat for forage, hunting and refuge for species that had depended on the presence of mature trees for these activities.

Additionally, because Caltrans places restrictions on replanting trees within a certain distance, typically 30 feet, from the edge of traveled roadway, it is possible that the required acreage of California Bay/Coast Live Oak Forest provision may not be possible in the immediate project vicinity. To compensate, some compensation may need to be provided offsite.

#### 2.3.1.3.3 Coastal Oak Woodland (Disturbed)

Under S.R. 17, Caltrans will provide replacement plantings of removed upland oaks and will restore Coastal Oak Woodland (Disturbed). Caltrans proposes to compensate for native oak removal from upland Coastal Oak Woodland (Disturbed) by planting and maintaining sufficient numbers of trees such that they could be expected, according to current research, to produce a number of trees which at maturity would be roughly equal to half the number of native oaks removed. The replacement ratio is less than for California Bay/Coast Live Oak Forest because the ecological values of the disturbed woodland are relatively impaired. Bay and other companion species of native trees and shrubs will be planted with the oaks in numbers which reflect a reasonable professional assessment of cover abundance of species occurring in nature in the area. Caltrans will also study the possibility of stockpiling trunks and woody debris from trees felled for the project for use in distributing through the project area after construction, in order to provide habitat for forage, hunting and refuge for species that had depended on the presence of mature trees for these activities.

Additionally, because Caltrans places restrictions on replanting trees within a certain distance, typically 30 feet, from the edge of traveled roadway, it is possible that the required acreage of California Bay/Coast Live Oak Forest provision may not be possible in the immediate project vicinity. To compensate, some compensation may need to be provided offsite.

#### 2.3.1.3.4 Migration Corridors

During the design of any replacement culverts or added culverts, design features will be added, if feasible, that will help them function as wildlife corridors. The reconstructed culverts described above will be sized and placed so as to accommodate wildlife passage better than the existing culverts.

### **2.3.2 WETLANDS AND OTHER WATERS**

#### **2.3.2.1 Regulatory Setting**

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into “Waters of the United States”, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric

soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters will be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the Environmental Protection Agency (EPA). A Section 404 permit is likely to be required for this project because of the retaining wall structures that will be placed within USACE jurisdiction in Alameda Creek.

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

At the state level, wetlands and waters are regulated primarily by the Department of Fish and Game (CDFG) and the Regional Water Quality Control Boards (RWQCB). Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. This may be the case in this project because work will occur within CDFG jurisdictional limits, which are defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the Clean Water Act, which is likely to apply to this project.

### **2.3.2.2 Affected Environment**

Within the project footprint, there is 0.01 acre of potentially jurisdictional Wetlands and 0.19 acre of potentially jurisdictional Other Waters of the United States (OWUS).

Of the 0.19 acre of Other Waters of the United States in the project footprint, 0.14 acre is located where a retaining wall (wall WR-6) would be placed below the ordinary high water mark (OHWM) of Alameda Creek near PM 15.9. Other wetland areas include:

- A seasonal wetland depression at the east end of the project was formed by an earthen berm that may be a relic of highway construction or a consequence of compression by grazing cattle. It is heavily disturbed by discing and exhibits a range of hydrophytic vegetation.
- A seep wetland, which consists of a central bare area with a trickle of water flowing from a culvert under railroad tracks to the north, surrounded by a larger area of saturated soils

and hydrophytic vegetation, and is bounded by a retaining wall at the edge of the highway and the bottom of the railway embankment.

- An emergent marsh, which is an apparent depression with a perennial or semi-perennial source of water, characterized by cattail (*Typha* spp.) and panicled bulrush (*Scirpus microcarpus*).
- A seasonal wetland ditch, which is a stretch of unlined ditch with some hydrophytic vegetation.

Sections of three man-made ditches and seventeen natural or realigned ephemeral channels totaling 0.15 acres were identified as potential Waters of the United States. Neither the affected wetlands nor the ditches and ephemeral channels that are potentially jurisdictional Other Waters of the U.S. are of particular ecological significance or appear to serve as habitat to protected species.

The existing culverts would be extended as necessary to accompany the widening of road shoulders. These extensions would result in impacts on the associated Waters. Sections of culverts with jurisdictional Waters that passed under SR-84 are potentially under USACE or Regional Water Quality Control Board (RWQCB) jurisdiction. These extensions would be considered project impacts and are included in the calculation of impacted areas.

### 2.3.2.3 Environmental Consequences

Some or all portions of the wetlands identified within the study area are considered to be permanently impacted by the build alternative:

Table 2.3. Project Impacts on Wetlands and Other Waters of the United States

Type	Total Impacts		Permanent Impacts		Temporary Impacts	
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
Wetlands	0.01	N/A	0.01	N/A	0.00	N/A
Alameda Creek	0.14	1,142	0.01	52	0.13	1,090
Misc. Other Waters of the U.S.	0.05	1,268	0.03	715	0.02	553
Total Waters of the U.S.	0.19	2,410	0.04	767	0.15	1,643

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

As the impacts to 0.01 acre of wetlands are considered de minimis, Caltrans is not proposing replacement measures or compensation for the expected impacts. In addition, the USACE does not typically require compensation for impacted OWUS. The Regional Water Quality Control Board requires mitigation for impacts to Waters of the State, meaning “any surface water or groundwater, including saline waters, within the boundaries of the state”(Water Code section 13050(e)).

Project plans shall clearly indicate the locations of environmentally sensitive areas, jurisdictional wetlands and Other Waters of the United States, and other areas where access or disturbance is prohibited. The 0.15 acre of OWUS that would be temporarily impacted by project activities will be restored upon project completion.

At the location where project construction will encroach upon the OHWM of Alameda Creek, the ecological impacts of this activity are expected to be minor, in part because there is already a retaining wall at that location. The proposed retaining wall would be placed closer to Alameda Creek and would consume some natural streambank, but the dynamics of the local hydrology and habitat are not expected to change.

To minimize project impacts on local hydrologic systems and those species dependent upon them:

- No contact between the live stream and wet concrete will be allowed.
- Groundwater that comes in contact with wet concrete, such as within bridge footing excavations (if necessary), will not be allowed to enter the creek but will be pumped to a truck or upland for disposal or treatment, or it may be discharged to a sediment-stilling basin on site and percolated back into the soil.
- Caltrans and/or contractors will remove all spoils materials and dispose of the material in a manner that will not result in discharge into OWUS.
- Heavy equipment will not be operated in the active flow channel of any creek.
- Complete diversion or damming of surface flows will not be allowed.
- Maintenance and refueling areas for equipment will be located a minimum of 100 feet away from active stream channels. If equipment must be washed, washing will occur where the water cannot flow into the creek channel.
- Spill containment booms will be maintained onsite at all times during construction operations and/or staging or fueling of equipment.
- All staging areas will be established at least 50 feet from the top of the stream bank or 50 feet from the outer edge of the riparian habitat, whichever is farther. This buffer will be clearly identified on the design drawings and delineated in the field with orange construction barrier fencing.
- Sedimentation fencing or other erosion and sediment control measures will be installed between the staging area and the riparian area to prevent sediment and pollutant discharges to creeks and riparian areas.

### **2.3.3. PLANT SPECIES**

#### **2.3.3.1 Regulatory Setting**

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

Please see Threatened and Endangered Species (Section 2.3.5) for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFG fully protected species and species of special concern, USFWS candidate species, and non-listed California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at United States Code 16 (U.S.C.), Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-21177.

### **2.3.3.2 Affected Environment**

#### **2.3.3.2.1 Congdon's Tarplant**

Congdon's tarplant (*Centromadia parryi* ssp. *Congdonii*) is identified in the CNPS Inventory (CNPS 2010) as a List 1B.2 species, which means that while it has no federal or state status, CNPS considers it to be "rare, threatened, or endangered across its range, yet is only fairly endangered in California." Congdon's tarplant is an annual herb in the Asteraceae family that blooms between the months of May and October. It is a prostrate-to-erect plant with small yellow flowers that is found in valley and foothill grasslands from 3 to 754 feet in elevation (Jepson Online Interchange 2007, CNPS 2010).

#### **2.3.3.2.2 Most Beautiful Jewel-Flower**

Most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*) is identified in the CNPS Inventory (CNPS 2010) as a List 1B.2 species which means that, while it has no federal or state status, CNPS considers it "rare, threatened, or endangered across its range, yet only fairly endangered in California." Most beautiful jewel-flower is an annual herb in the Brassicaceae family that blooms between April and September. It is a small herb with purple-blue flowers found in chaparral, cismontane woodland and valley and foothill grasslands (primarily serpentine) from 308 feet to 3,280 feet in elevation (Jepson Online Interchange 2007).

#### **2.3.3.2.3 Protected Trees**

Common native trees observed in the project area included the following: 290 coast live oaks, 56 California bays, 92 Northern California black walnuts, 60 big-leaf maple, and 41 red willows. The Northern California black walnut trees within the study area are an ornamental stand not naturally occurring, having been planted and cultivated, and although no genetic testing has been performed, they can safely be assumed to be a hybrid with a non-native type. Although the native species of Northern California black walnut (*Juglans californica* var. *hindsii*) is identified in the CNPS as being rare and endangered across its range, the cultivar found in the project limits does not merit protection.

Dominant vegetation along the banks of Alameda Creek and Arroyo de la Laguna Creek include a variety of native, riparian trees including western sycamore (*Platanus racemosa*), Arroyo willow, red willow, black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Fremont’s cottonwood and scattered big-leaf maple, with coast live oak and California bay trees more common on the slopes. A majority of these trees can be characterized as mature, vigorous trees ranging from 20 to 40 inches in dbh. At the Arroyo de la Laguna Creek Bridge location, dominant tree species along the banks of the creek include western sycamore, willow, and white alder (*Alnus rhombifolia*). Higher on the banks, prevalent species are coast live oak, California buckeye and California bay.

Table 2.4 Temporary and Permanent Impacts to Native Trees

**Native Tree Species and Abundance**

Scientific Name	Common Name	Abundance in Impact Area (Total)	No. in Permanent Impact Zone	No. in Temporary Impact Zones
<i>Acer macrophyllum</i>	Big-leaf maple	39	23	16
<i>Aesculus californica</i>	California buckeye	12	6	6
<i>Pinus sabiniana</i>	Foothill pine	17	12	5
<i>Platanus racemosa</i>	Western sycamore	8	5	3
<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	Black cottonwood	6	6	0
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood	6	0	6
<i>Quercus agrifolia</i>	Coast live oak	261	163	98
<i>Quercus lobata</i>	Valley oak	24	11	13
<i>Salix laevigata</i>	Red willow	10	9	1
<i>Salix lasiolepis</i>	Arroyo willow	6	5	1
<i>Sambucus mexicana</i>	Blue elderberry	16	9	7
<i>Umbellularia californica</i>	California bay	34	13	21
<b>TOTAL</b>		439	262	177

Most non-native trees are found in the southeastern project area along a 1-mile stretch of SR-84 between the I-680 interchange and Pleasanton-Sunol Road. Species in this area include English walnut, London plane tree (*Platanus hybrida*), and tree-of-heaven (*Ailanthus altissima*). A patch of approximately 24 non-native eucalyptus trees (*Eucalyptus* spp.) ranging from 30 inches to 60 inches in dbh is located adjacent to the Alameda Creek Bridge.

### 2.3.3.3 Environmental Consequences

#### 2.3.3.3.1 Congdon’s Tarplant

The species is not expected to appear in the project area. The nearest documented occurrence of the species is approximately 6 miles south of the study area. Although suitable habitat is present in the biological study area, the plant was not identified in the project area during focused surveys.

The species is wide-ranging with a high tolerance for disturbed sites, and the project will increase the disturbed roadside area along SR-84 which is an ideal recolonization habitat for the plant. The project is therefore not expected to have a negative impact on the species.

#### 2.3.3.3.2 Most Beautiful Jewel-Flower

In the project vicinity, the species is assumed to favor serpentine<sup>4</sup> woodland and grassland habitat. Lacking serpentine woodland or grassland in the project area, the species is unlikely to be present. Due to the low likelihood that the plant is present and with the implementation of avoidance and minimization efforts, the project is anticipated to have no effect upon the species.

#### 2.3.3.3.3 Protected Trees

An estimated 439 native trees will be removed.

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

Appropriate compensation for the loss of oak species is addressed in section 2.3.1.3. Replacement of riparian trees will be addressed during the permitting phase of the project (see section 2.3.1.3.1). Section 2.3.1.3 also addresses the replacement of other native species occurring with oaks. This compensation would provide adequate replacement of environmental values lost by the removal of individual upland trees of all species.

Separate replanting plans will be created for impacts in riparian areas and upland areas. Replacement native trees and shrubs should be planted in the appropriate season (i.e., spring or preferably fall) following the completion of construction. Propagules (i.e., shrub cuttings, tree seedlings) preferably will be obtained either onsite or from a local nursery (local stock).

A qualified biologist(s) will conduct preconstruction surveys to examine the site for special-status plant species. In the event that any protected plants are identified in the project action area, protective measures (e.g., fencing, relocation) will be implemented.

## 2.3.4 ANIMAL SPECIES

### 2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5 below. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

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<sup>4</sup> A mineral producing dry, nutrient-poor soil toxic to most plants; those that grow on it are specially adapted to its chemistry.

Federal laws and regulations pertaining to wildlife (other than those concerning endangered species) include the following:

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

State laws and regulations pertaining to wildlife include the following:

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

#### **2.3.4.2 Affected Environment**

##### **2.3.4.2.1 Western Pond Turtle**

The western pond turtle (*Clemmys marmorata*), including both the northwestern (*C. marmorata* ssp. *marmorata*) and southwestern (*C. marmorata* ssp. *pallida*) subspecies, is a California Species of Special Concern. Western pond turtles occur in a variety of permanent and intermittent aquatic habitats, such as ponds, marshes, rivers, streams, and ephemeral pools. Threats to the species relate primarily to nesting failure. Suitable egg-depositing sites must have a specific thermal and hydric environment for egg incubation.

The western pond turtle has been recorded along the project area in Alameda Creek. Foraging, basking, breeding and nesting habitat is present in the project area along Alameda Creek, in grasslands where hard-packed clay soils occur, and in various upland areas. Therefore, the western pond turtle is expected to occur in or immediately adjacent to the project area in a limited section near the center of the project. GIS analysis of the CNDDDB data, project design plans, and habitat mapping shows that there are 2.85 acres of potential pond turtle habitat in the project footprint. Of this total 2.07 acres are in the permanent impact zone and 0.77 acre is in the temporary impact zone.

##### **2.3.4.2.2 Special-Status Nesting Birds**

The Migratory Bird Treaty Act regulates protection of birds and their actively occupied nests. None of these special-status nesting birds or nest structures were observed during focused surveys; however, it is assumed that the proximity to water and abundance of riparian trees provide ample habitat for migrating nesting birds during at least some part of the migration season. These species and special status bird species are discussed here.

##### *Cooper's Hawk*

The Cooper's hawk (*Accipiter cooperii*) was designated a California species of special concern, category-three species in 1978. The category-three designation specifies that the California populations of a given species are neither currently in decline nor in any present danger of

extirpation; however, due to their limited population numbers they are vulnerable if a threat should arise. The Cooper's hawk is a breeding resident throughout most of the wooded portion of California, ranging from sea level to above 9,000 feet. It nests in dense stands of live oak, riparian deciduous forest, and other forest habitats near water. Cooper's hawks prey primarily on small birds and small mammals but can also take reptiles and amphibians. It hunts along habitat edges and can take prey in the air, on the ground and in vegetation (Zeiner et al. 2005). Male hawks defend an area about 330 feet around potential nest sites prior to pair formation. Nests are stick platforms lined with bark. Nests found in deciduous trees occur 20 to 50 feet above ground in branch crotches, while nests in conifers occur on horizontal branches, often just below the lowest live limbs. Breeding takes place March through August with the peak activity being May through July. CNDDDB records show several recent Cooper's hawk occurrences in a tight cluster between one-half and 1 mile to the southwest of the project area. Combined with the presence of suitable habitat in the project area, this indicates the species has moderate to high potential to occur.

#### *White-tailed Kite*

The white-tailed kite (*Elanus leucurus*) is a California fully protected species. Kites are common to uncommon residents in coastal and valley lowlands throughout California. Their nests are usually constructed of loosely piled sticks placed within and near the tops of dense oak, willow, or other tree stands (Zeiner et al. 1990). Kites forage over grasslands, marshes, agricultural areas, and wetlands, where they prey mostly on small mammals. White-tailed kites were detected foraging in an aggregate mining site near the city of Pleasanton, and so there is potential for white-tailed kite to forage in the aggregate mining sites located within two miles of the project. As a result, the species has the potential to occur in the biological study area while foraging and nesting.

#### *Loggerhead Shrike*

The loggerhead shrike (*Lanius ludovicianus*) was, until recently, designated a Federal species of concern. This species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. It occurs in highest density in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. This species frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low or sparse herbaceous cover. Some studies on San Clemente Island in California indicate the bird nests in canyon bottoms during the mating season. No occurrences of loggerhead shrikes are documented in the CNDDDB within a 10-mile radius of the project area, and no shrike nests were observed during surveys. However, suitable nesting habitat is present in the form of small trees and shrubs adjacent to open grassland areas.

#### *California Yellow Warbler*

The California yellow warbler (*Dendroica petechia brewsteri*) is a California species of special concern. A migratory passerine species that breeds across much of North America, the yellow warbler was once a common to locally-abundant summer resident in riparian areas virtually throughout California (Grinnell and Miller 1944), but today, populations are much reduced and even extirpated in some areas. The species is usually found breeding in riparian deciduous habitats in the summer: cottonwoods, willows, alders, and other small trees and shrubs, and in open-canopy riparian woodlands. The CNDDDB also shows one record of the California yellow warbler, but

it was reported in 2000 and occurred more than five miles to the northwest of the project. This species is likely to occur in the project area primarily as a migrant.

#### 2.3.4.2.3 Special-Status Bats

The pallid bat and Townsend's big-eared bat are both considered special-status, high-priority bats by the Western Bat Working Group (2007). Both species are likely to occur in the project area.

The pallid bat is a medium-sized bat that occurs throughout much of California. It is usually found in open regions where it preys upon flightless insects. It prefers roosting in caves and mine tunnels, though buildings, bridges, and trees may also be used. Pallid bats may travel up to several miles for water or foraging sites if roosting sites are limited. These bats prefer foraging on terrestrial arthropods in dry open grasslands near water and rocky outcroppings or old structures. They may also occur in oak woodlands and at the edge of redwood forests along the coast. Pallid bats are sensitive to human disturbances at roost sites. During focused surveys for this project, a male pallid bat was seen exiting a crevice in the long bridge located adjacent to but not within the project footprint. Additionally, a population of pallid bats occurs upstream in Sunol Regional Park. Johnston et al. (2006) found that the pallid bats at Sunol wintered in tree roosts, ground roosts, and anthropogenic structures located within the creek's riparian corridor through the winter and early spring months. This species is expected to occur within the project area throughout the year.

Townsend's big-eared bat is primarily a cave-rooster but has also been found roosting on bridges, in tunnels, and within hollow tree crevices. Winter roosts are used during colder weather and may be used for hibernation. Coastal colonies of both species commonly roost in deep crevices in rocky outcroppings, in buildings, under bridges, and in hollow trees. Tree roosts are large hollow trees of any species that provide adequate protection for the colony. Within the project area these may be western sycamore, cottonwood, Northern California black walnut, or black locust trees. Recent records for the Townsend's big-eared bat show occurrences in the vicinity of the project: in 1997 at the Calaveras Dam, various parts of Sunol Regional Park, and other points upstream from the project; however this species breeds in cavern-like habitat, and therefore, habitat in the project area is marginal. Nonetheless, this species could potentially roost in boles of some of the larger sycamores in the vicinity. Most potential roosting habitat in the project area was rated as having a low to moderate potential of being occupied because these trees lacked well-developed, exfoliating bark or hollows.

#### 2.3.4.2.4 San Francisco Dusky Footed Woodrat

The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is locally common in undisturbed portions of its habitat throughout its range. However, this subspecies occurs only in the southern half of the Bay Area (south of Golden Gate through the Santa Cruz Mountains to the Pajaro River and in the East Bay, south of the Suisun Bay along the western slope of the Diablo range). This unique subspecies is deemed a species of special concern and is protected by Fish and Game Code §4150.

Active woodrat nests are well distributed throughout the project area. During surveys for this project, over 70 nests (active and inactive) were located along the project alignment and within 30 ft of the traveled way. Nests were constructed primarily among coast live oak trees and blue

elderberry shrubs with or without associated poison oak. Approximately 10 elevated nests were located in coast live oak trees. The densities of woodrat nests varied considerably along the project alignment. The western portion of the project alignment contained 42 percent of all nests for that section, and the woodrat nests in the eastern portion of the project alignment were primarily distributed between two high-density clumps of nests.

#### 2.3.4.2.5 Ringtail

The ringtail (*Bassiriscus astutus*) is a fully protected species, a protection enforced by CDFG that prohibits ‘take’ as defined in the Fish and Game Code<sup>5</sup>. It was given full protection under the California Fish and Game Code in January of 1968. The species ranges throughout California with the majority of distribution data aggregated in the Coast Range and the western Sierra Nevada. Ringtails are nocturnal, sleeping in their dens during the day. As omnivores, their diet varies with the seasonality of the forage. Ringtails den in rock crevices, boulder piles, underground, and in tree cavities. Ringtails have been recorded in various parts of the Diablo Range, including talus slopes (slopes with loose rock that creates crevices) in the Fremont Peak area. Talus slopes along the bottom of Niles Canyon adjacent to the project alignment and large trees with cavities in the riparian habitat could potentially provide habitat for this species. Breeding occurs in late March and kits are born in May or June. Suitable habitat includes chaparral, rocky hillsides, and riparian areas.

Although ringtails have not been documented within the biological study area, this species is typically secretive and is easily missed. Rocky talus slopes with hollowed trees in the vicinity was identified as potential ringtail habitat along the bottom of Niles Canyon. Data from the special-status mammal habitat assessment produced an estimated area of 0.044 acre in the biological study area. The GIS analysis of the project designs showed 0.04 acre in the project footprint, just 0.02 acre of which was in the permanently impacted zone.

#### 2.3.4.2.6 Monarch Butterfly

The monarch butterfly (*Danaus plexippus*), a special animal monitored by the CDFG, is a migratory North American butterfly that roosts along the Pacific Coast, from northern Mendocino to Baja California, in wind-protected groves of eucalyptus, Monterey pine, and cypress trees. Key roosting habitat characteristics include a close proximity to water, temperate fog/cloud cover to insulate colonies from freezing temperatures, and ample protection from the elements (i.e. wind, rain, and hail).

Two monarch butterfly colonial roosts have been reported in the CNDDDB within a 10-mile radius of the biological study area (CDFG 2010). Although winter roosts have not been reported in the biological study area or the immediate vicinity, the windrow of eucalyptus trees in the biological study area and their close proximity to Alameda Creek provides potentially marginal winter roost habitat. There is 0.25 acre of eucalyptus tree habitat in the biological study area, an area that could serve as habitat for the monarch butterfly.

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<sup>5</sup> §86 of the Fish and Game Code defines “take” as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.”; see section 2.3.5.

#### 2.3.4.3.7 River Lamprey

The river lamprey (*Lampetra ayresii*), a California species of concern, is an anadromous (living in salt water but breeding in fresh) fish. Adults are predatory, attaching to and feeding on other fish (most commonly herring and salmon) while inhabiting marine coastal and estuarine waters. Spawning takes place in gravelly riffles during the spring. Adults die after spawning. The latest recorded observation of a river lamprey in Alameda Creek occurred in 1966. However, anadromous Pacific lampreys have been recently documented upstream of the project area within the Alameda Creek Watershed. River lamprey may be capable of traversing a weir structure in Alameda Creek below the project area. Because of this, and because suitable spawning and rearing habitat exists within Alameda Creek, this species is assumed to be present. Further, even if this species is currently not present in Alameda Creek due to the presence of an existing passage barrier (the BART weir, discussed in section 2.3.5.2.1 below), the planned removal of the barrier would allow this species to access and utilize the waters of Alameda Creek.

#### 2.3.4.3 Environmental Consequences

##### 2.3.4.3.1 Western Pond Turtle

The proposed project will conduct work near areas that have the potential to provide suitable nesting habitat for the western pond turtle, although no such habitat is in the project area. Because it is unlikely that western pond turtles will utilize the immediate work area, no direct impacts to western pond turtle are expected. Indirect impacts that may result from construction activities could include minimal habitat quality degradation from erosion or sediment loading.

Further, the exclusion fencing necessary for the Alameda whipsnake (Section 2.3.5.4.4) would exclude any western pond turtles that might otherwise enter the work area. Therefore, no direct impacts to western pond turtle are expected. Indirect impacts may result from habitat exclusion, and construction activities could include water quality degradation from erosion or sediment loading. The water quality impacts are unlikely, given the proposed avoidance and minimization measures and Caltrans BMPs, but temporary and permanent habitat exclusions are anticipated. Minor alteration of stream bank habitat as a result of retaining wall construction and temporary impacts are anticipated.

##### 2.3.4.3.2 Special-Status Nesting Birds

The proposed project could result in temporary loss or disturbance of habitats that are used by nesting migratory birds. During the road widening, common migratory bird species may be temporarily displaced due to habitat alteration or may be disturbed by noise from construction equipment. The proposed project might remove or disturb a small amount of unoccupied habitat potentially used by nesting or foraging migratory birds. However, this impact would be limited to a relatively small area compared to the extensive nesting and foraging habitat adjacent to the biological study area.

#### 2.3.4.3.3 Special-Status Bats

The two special-status bats likely to occur in the biological study area roost in structures that are largely absent from the project footprint (bridges and old, decaying trees). These structures are adjacent to the footprint, but they will be identified before construction and a buffer zone will be clearly established around them. A GIS analysis of the project footprint found that 0.35 acre of suitable habitat existed in the project footprint. Of that total, 0.05 acre was in the zone of permanent impact and 0.30 acre was in the zone of temporary impact.

#### 2.3.4.3.4 San Francisco Dusky Footed Woodrat

Riparian, oak woodland, and oak scrub habitats within the biological study area provide habitat for a fairly dense population of the woodrat. Although some nests were deemed inactive, nearly all nests found in the biological study area appeared to be occupied. Impacts to the species should be limited to disturbance and minimal nest relocation, which would not be a severe impact.

#### 2.3.4.3.5 Ringtail

The focused survey for ringtail habitat produced few areas of potentially suitable habitat within the biological study area. As a result, individual ringtails could be disturbed by project activities, but not in such a way that would constitute 'take' under the CESA.

#### 2.3.4.3.6 Monarch Butterfly

The proposed project could result in loss or disturbance of up to 0.25 acre of suitable habitat that could be used by the monarch butterfly. However, given the low likelihood of the monarch butterfly using the project footprint area, and the Caltrans practice of replanting for compensation of tree removal, and the implementation of standard avoidance and minimization measures, impacts on the species are expected to be minimal.

#### 2.3.4.3.7 River Lamprey

The proposed project would involve work below ordinary high water in Alameda Creek, a body of water that potentially provides habitat for the river lamprey. However, work will be conducted in this areas in the dry season when the water is low. Therefore, no direct impacts to the river lamprey are expected. Indirect impacts may result from habitat exclusion, and construction activities may result in water quality degradation from erosion or sediment loading. The water quality impacts are unlikely to be apparent, given avoidance and minimization measures and Caltrans BMPs, but minor alterations to stream bank habitat are anticipated as a result of retaining wall construction.

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

Vegetation removal and cut-and-fill operations will be limited to the minimum necessary. Trees, snags, shrubs, other vegetation, woody debris, and uncompacted forest litter will be protected to the extent possible. Vegetation is recommended to be removed during periods that will avoid impacts to nesting birds (in compliance with the Migratory Bird Treaty Act) and the breeding season for special-status mammal species potentially in the biological study area. Caltrans best

management practices will also be used to minimize or avoid impacts. Qualified biologist(s) will conduct preconstruction surveys for individuals or habitats of special-status wildlife species. In the event that occupied burrows, nests, dens, or other habitats are found, the biologist(s) will consult with the appropriate regulatory agency(ies) about how to relocate the resident animal(s). In addition, the following species-specific measures will be implemented.

#### 2.3.4.4.1 Western Pond Turtle

A qualified biologist will conduct a preconstruction survey of areas where pond turtles are of concern. The preconstruction survey will be conducted prior to clearing of vegetation. In the event that individuals are found, they will be removed to suitable habitat outside of the work area.

#### 2.3.4.4.2 Special-Status Nesting Birds

Grading, tree removal, or pruning could result in direct or indirect impacts to special-status nesting bird species by causing destruction or abandonment of occupied nests or loss of foraging habitat. To ensure compliance with the MBTA, California Fish and Game Code, and other laws and policies, the following measures are proposed:

- If rescheduling of work around active nests/roosts of special-status bird species is infeasible, a qualified biologist will monitor nests for signs of disturbance. If it is determined that project activities are resulting in nest/roost disturbance, work will cease immediately in the vicinity of the nests.
- Preconstruction bird surveys will be conducted by a qualified biologist no more than 2 weeks prior to the start of construction for activities occurring during the breeding season (February 1 to August 31).
- Where work is to occur within 300 feet of active raptor nests or 100 feet of active passerine nests, a non-disturbance buffer will be established at a distance sufficient to minimize nest/roost. The distance will be based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance.

#### 2.3.4.4.3 Special-Status Bats

A tree survey for bat maternity roosts will be conducted prior to cutting trees. The survey will be conducted by a qualified bat biologist. No activities that will result in disturbance to active maternity roosts will proceed prior to the completion of such surveys. If no active maternity or winter roosts are found, then no further action will be required.

If a maternity or a winter roost is detected, a qualified bat biologist will determine the extent of a construction-free buffer zone that should be maintained around the roost, since bats are known to abandon young when disturbed in a maternity colony. Construction activities within this zone should not occur during the period March 1 through August 31 to avoid potential construction disturbance to the maternity roost. After August 31, roosting individuals, such as those found in a winter roost, should be safely evicted, under the direction of a qualified bat biologist by using a one-way door to exclude the bats from the roost. A period of at least 10 days should follow after installing the one-way door to ensure all bats have left the roost.

#### 2.3.4.4.4 San Francisco Dusky Footed Woodrat

A qualified wildlife biologist will conduct a pre-construction survey of the construction area no more than 30 days prior to the start of construction to determine if active woodrat nests are present. The need for nest dismantling and relocation will be determined by Caltrans in consultation with the CDFG. Where active woodrat nests are to be moved, all understory vegetation will be cleared in the area immediately surrounding the nests. Then, each active nest will be dismantled piece by piece by a qualified wildlife biologist to the degree that all woodrats leave the nest and seek refuge outside of the immediate area. The nest sticks will be removed from the nest area and piled at the base of a nearby hardwood tree outside of the project action area (preferably an oak or California bay with refuge sites among the tree roots). The newly placed piles of sticks will not be closer than 100 feet apart, unless a qualified wildlife biologist has determined that a specific habitat can support higher densities of nests.

Vegetation would be removed during periods that would avoid impacts special-status mammal species in their breeding season.

#### 2.3.4.4.5 Ringtail

Surveys for ringtails will be conducted by a qualified wildlife biologist immediately prior to beginning the project. Surveys will include cavities in talus slopes, trees, and cavities in rock outcrops (for dens or nests). No activities that would result in disturbance to active nests would proceed prior to the completion of surveys. If no active nests are found, then no further action would be required. Avoidance of potential habitat and nests is preferable. Since ringtails are unlikely to remain on the site if disturbed, mortality to individuals can be avoided with pre-construction disturbance of suitable nesting locations.

Minor habitat effects in the form of nest disturbance and relocation would not constitute “take” of ringtail under CESA. Nest relocation would restore any small areas of habitat that might be disturbed.

#### 2.3.4.4.6 Monarch Butterfly

Project designs were developed with the goal of removing or impacting as few trees as possible. General caltrans avoidance and minimization measures, if properly implemented, would minimize the numbers of trees lost, permanently or temporarily, to project activities.

A qualified biologist will conduct a pre-construction survey of the eucalyptus trees on site for signs of monarch butterfly roosts. The preconstruction survey will be conducted prior to tree trimming or tree removal. In the event that a monarch butterfly roost is found on site, a suitable no-work zone shall be erected around the eucalyptus grove in cooperation with the CDFG. The no-work zone shall be maintained until the colony disperses naturally.

#### 2.3.4.4.7 River Lamprey

The general avoidance and minimization measures provided to reduce impacts to special-status species will also reduce impacts to this species. Impacts to Alameda Creek are expected to be minimal. Although 0.13 acre of temporary impact and 0.01 acre of permanent impact will occur

between Alameda Creek's Ordinary High Water Mark and its low flow channel, no project impacts will take place below the low flow channel level where this species might be found. Therefore, no additional efforts are required.

## **2.3.5 THREATENED AND ENDANGERED SPECIES**

### **2.3.5.1 Regulatory Setting**

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

Impacts to these species are referred to in a regulatory sense as "effects"; that terminology is applied in this section.

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The California Department of Fish and Game (CDFG) is the agency responsible for implementing CESA. 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." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

### **2.3.5.2 Affected Environment**

#### **2.3.5.2.1 Anadromous Fish Species**

There are two anadromous fish species with special-status considerations in the project area: the Central California coastal (CCC) steelhead ESU (*Oncorhynchus mykiss*), federally listed as threatened, and the river lamprey (*Lampetra ayresii*), a California species of special concern.

A background review of the status of this species has determined that the anticipated removal of downstream passage barriers before or during the lifetime of the project will allow CCC steelhead to be present in Alameda Creek, which runs adjacent to the project area.

Historically, the Alameda Creek watershed supported populations of steelhead, the anadromous form of rainbow trout. However, for the past several decades, CCC steelhead individuals have been unable to move upstream of the lowest reaches of Alameda Creek due to the presence of man-made structures that prevent passage. Downstream of Niles Canyon, the lower reaches of Alameda Creek flows through a system of engineered flood control channels, grade structures, and diversion dams. Presently, a concrete grade control structure referred to as the “BART weir” forms a complete barrier to steelhead (Gunther et al., 2000). Inflatable dams near the BART weir also present barriers during certain flows when the dams are inflated and in operation. These inflatable dams are used to divert water to groundwater recharge ponds nearby, and are operated by the Alameda County Water District (ACWD). The BART weir and Middle Rubber Dam (diversion structures for groundwater recharge) were installed in 1972, the Lower Rubber Dam in 1976, and the Upper Rubber Dam in 1989 (Gunther et al., 2000).

Since the installation of the BART weir, small numbers of adult steelhead have been observed attempting to pass over the BART weir structure. Some of these fish have been captured and released upstream of the BART weir. After this relocation to instream locations at the foot of Niles Canyon, Becker (2000) and Leidy (2007) found juvenile steelhead in Stonybrook Creek suggesting that reproduction was successful and that the creek had a resident population of steelhead (Alameda Creek Alliance 2007).

Because of these recent observations and the practice by EBRPD staff of moving steelhead from below the BART weir to upstream locations, the steelhead is now presumed to be present in Alameda Creek. However, these individuals are not capable of independently moving into the area during a spawning run, and as a result, they are not regulated by the National Marine Fisheries Service (NMFS). Although individuals have been found in Alameda Creek near the project area, downstream passage barriers prevent them from returning to the ocean and developing a viable spawning population in the creek. Therefore, the anadromous form of steelhead is not considered present in the project vicinity.

However, the BART weir is expected to be removed in summer of 2011. The Alameda Creek Alliance (2007) has speculated that regular migrations of spawning populations of steelhead will commence after the final remaining passage barrier is removed. At that time, steelhead and river lamprey could have access to Alameda Creek within the project area.

#### 2.3.5.2.2 California Red-legged Frog

The California red-legged frog (*Rana draytonii*, formerly *Rana aurora draytonii*; CRF) was federally listed as threatened on May 23, 1996. The historic range of the species extended along the California coast from Point Reyes National Seashore, Marin County, inland to Redding in Shasta County, and southward to northwestern Baja California, Mexico. Today the species is known to occur in about 238 streams or drainages in 23 counties and is found primarily in wetlands and streams in the coastal drainages of central California. It is the largest native frog in the western United States, ranging from 1.5 to 5 inches in size and it requires a distinct habitat mix consisting

of both aquatic and riparian components. Adult frogs require still or slow moving water that is relatively deep, with shrubby or emergent riparian vegetation.

CRF are generally found near permanent bodies of water such as small ponds, quiet pools along streams, reservoirs, springs, lakes, and marshes. They live in small mammal burrows and moist leaf litter. Adult frogs that have access to permanent water generally remain active throughout the summer. In cooler areas they may hibernate in burrows or other refuges, and they get stressed when exposed to chronic water temperatures at or above 84 degrees Fahrenheit, which can result in mortality.

The project footprint is located within the known range of the CRF but is outside of designated and proposed critical habitat (USFWS 2006a; USFWS 2009). The closest designated critical habitat units are nine miles from the proposed project, and the closest proposed critical habitat units are approximately two miles away. A CNDDDB query found six recorded observations within 2.0 miles.

The presence of CRF was inferred, and the species is considered present throughout the project footprint. There are no CRF breeding sites within the project area; however, a nursery pond with a CNDDDB documented CRF breeding occurrence (CDFG 2010) is approximately 0.1 mile away. Suitable habitat (riparian forest, extensive areas of open grassland, and oak woodlands) exists in close proximity to this pond, but in the opposite direction from the project. Bulger et al. (2002) suggest that efforts to conserve and protect CRF should focus on protecting suitable habitat within at least 328 feet of a breeding pond. This pond is slightly over 328 feet from the project area, but given the proximity of suitable habitat, it is possible that the occasional dispersing juvenile or adult frog could cross the project footprint. CRF has been documented to travel up to seven miles from ponds but usually travel no farther than one mile.

There are as many as three more ponds in a quarry adjacent to the project area. These ponds were not investigated during any of the special-status species surveys, and so their condition and CRF suitability is unknown. However, if the ponds are used in quarry operations it is unlikely they provide CRF habitat. In addition, the quarry ponds are greater than 328 feet from the project alignment, and the habitat that separates the ponds is highly disturbed (e.g. potted plants, mining activities, and commercial buildings and equipment).

#### 2.3.5.2.3 California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*; CTS) was federally listed as threatened throughout its range in August 2004 (69 Federal Register 47212).

During summer months, CTS individuals live in subterranean refuges, usually small mammal burrows, but also in crevices in the soil. These sites are typically referred to as “aestivation” locations, although the exact behavior of tiger salamanders in refuge sites is not fully understood. After winter rains have moistened the ground, the salamanders emerge from their refugia and migrate to breeding pools. Aquatic juveniles usually complete metamorphosis after three to six months. Generally, ephemeral breeding ponds dry up during summer months, but over-summering larvae have been observed in perennial pools. After metamorphosis, juveniles spend a few days

at the pond margin, and then migrate to refuge sites. Overland migration has been documented to extend up to 1.24 miles.

Tiger salamanders are not expected to breed in Alameda Creek or its tributaries within the project area because its fast flows (particularly in winter) would wash away any eggs laid in the stream. Also, the presence of predatory fish reduces the probability of successful breeding by tiger salamanders. Thus, there is no suitable breeding habitat within the project area. CRLF presence is expected to be primarily for seasonal migration and dispersal through the unpaved areas of the project footprint.

Less than 0.1 mile outside of the project area are a nursery pond with documented CRF breeding (CDFG 2010) and three quarry ponds. CTS migration routes from these ponds toward the project area are restricted by dispersal barriers such as thick riparian forest, Alameda Creek, roads, commercial enterprises, and buildings. Therefore, even if CTS are present in the nursery or quarry ponds, dispersal barriers (railroad tracks and Alameda Creek) are likely to prevent individuals from using the non-native grassland, agricultural, and hardscape/developed habitats nearby. The northeastern route has no migration barriers but also is far from suitable ponds.

#### 2.3.5.2.3 Alameda Whipsnake

The Alameda whipsnake (*Masticophis lateralis euryxanthus*; AWS) was listed as a threatened species under the FESA on December 5, 1997. Critical habitat for this species was designated on October 2, 2006, and the Draft Recovery Plan for Chaparral and Scrub Communities Species East of San Francisco Bay, California was published on March 20, 2003. Designated critical habitat for the AWS is discussed below.

AWS individuals are typically found in chaparral—northern coastal sage scrub and coastal sage. Recent telemetry data indicate that, although home ranges of AWS are centered on shrub communities, they venture up to 500 feet into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland (USFWS 2006b). Rock outcrops provide important retreat opportunities for whipsnakes as well as prey habitat.

Adult snakes appear to have a bimodal seasonal activity pattern with a large peak during the spring mating season and a smaller peak during late summer and early fall. Although short above-ground movements may occur during the winter, AWS individuals generally retreat in November into a hibernaculum (shelter used during the snake's dormancy period) and emerge in March (USFWS 2006b). Courtship and mating occur from late March through mid-June. Grassland habitats are used by males most extensively during the mating season in spring. Females use grassland areas most extensively after mating, possibly in their search for suitable egg-laying sites. The only reported evidence of AWS egg-laying is within a grassland community adjacent to a chaparral community. This egg-laying occurred within a few feet of scrub on ungrazed grassland interspersed with lots of scattered shrubs.

The AWS currently inhabits the inner coast range mostly in Contra Costa and Alameda counties, with additional occurrence records in San Joaquin and Santa Clara counties, and core areas most commonly occur on east, south, southeast, and southwest facing slopes. However, recent information indicates that whipsnakes do make use of north facing slopes in more open stands of

scrub habitat. The current distribution of the subspecies has been reduced to five separate areas with little or no interchange due to habitat loss, alteration, and fragmentation.

No targeted study was conducted for Alameda whipsnake; however, its potential habitat in the project area was assessed as part of the general wildlife study. Suitable foraging and potential breeding habitat for the Alameda whipsnake is present on the north side. The scrub and oak woodland habitat with rock outcrops and abundant prey resources (specifically western fence lizards) provides good habitat for the species. The remainder of the habitats within project area, particularly riparian habitat to the south of SR-84, could be used for dispersal. For all of these reasons, Caltrans will infer presence of the Alameda whipsnake.

#### *Critical Habitat for Alameda Whipsnake*

The USFWS published a final rule on October 2, 2006 designating 154,834 acres in California's East Bay as critical habitat for the federally threatened Alameda whipsnake. Areas designated as critical habitat include portions of Alameda, Contra Costa, Santa Clara, and San Joaquin counties.

Designated Critical Habitat for the Alameda whipsnake exists on the northern part of the project area between PM 13.6 and PM 16.1. In this area, the availability of scrub and oak woodland habitat with rock outcrops and abundant prey resources satisfy the statutory requirements to identify 7.55 acres of Critical Habitat that will be affected by project activities. Approximately 1.29 acres of these 7.55 acres of designated critical habitat are annual grasslands, California bay and coast live oak woodlands, and valley foothill riparian areas. The remaining 6.26 acres are made up of urban-ruderal and barren habitat types in the biological study area, but are adjacent to the higher-quality habitat and contain rock outcrops or small mammal burrows.

### **2.3.5.3 Environmental Consequences**

#### **2.3.5.3.1 Anadromous Fish Species**

Habitat suitable to support the CCC steelhead is present in the form of riparian bank that shades Alameda Creek. If the BART weir is removed as planned, disruption of this riparian bank habitat may occur. Direct impacts on steelhead habitat or individuals are possible as a result of work below the OHWM of Alameda Creek or other streams. The removal of trees for construction of the retaining walls within the riparian corridor of Alameda Creek could also result in an indirect effect to the species through habitat loss or alteration. In addition, the species could be indirectly affected by erosion or sedimentation during construction, since water quality is an important aspect of steelhead habitat. However, much of this type of disruption will be avoided, limited, and temporary. Under the FESA, these possibilities suggest that NMFS be consulted to determine whether this would constitute an adverse effect on list anadromous fish species. Caltrans will determine whether to initiate formal consultation with NMFS or whether informal consultation and a letter of concurrence are sufficient.

#### 2.3.5.3.2 California Red-legged Frog

Caltrans has inferred the occasional presence of CRLF throughout the 24.11 acres of project footprint that are suitable foraging and dispersal habitat. There are thus 15.49 acres of permanently impacted habitat and 8.62 acres of temporarily impacted habitat.

The Niles Canyon corridor intersects a large tract of relatively undisturbed habitat within Alameda County. This region supports populations of CRLF that occur in stock ponds, seasonal depressions, backwaters, and a pond created by a leaking aqueduct. Because CRLF will use a wide variety of habitats during dispersal and foraging bouts, and there are known CRLF occurrences within 2.0 miles of every point of the project alignment, essentially all the habitat within the BSA has the potential to be used by the occasional dispersing or foraging CRLF. This project is highly unlikely to have a direct effect on CRLF populations in this region as it would not impact breeding habitat. Since it would increase neither the number of traffic lanes nor traffic volume, the project is also unlikely to increase impediments to the occasional dispersing adult or juvenile CRLF.

However, the proposed project would conduct work near areas that have the potential to provide suitable breeding habitat for the CRLF. Construction of the retaining walls within the Alameda Creek riparian corridor would have the potential to result in direct effects to the species, if proper avoidance measures were not implemented. In addition, permanent loss of riparian habitat as a result of the placement of retaining walls and riprap will occur. Indirect impacts may also result from temporary habitat disruption.

The proposed project would temporarily disturb - and exclude CRLF from - narrow slivers of modified dispersal habitat on each side of SR 84. Before the construction of the railroad, the aqueduct, and SR 84, the canyon was probably used for dispersal and migration more than it is now. In its current state, the road, tracks, and other developments are existing impediments. It would also permanently modify - via pavement or retaining walls - additional strips of similarly degraded CRLF habitat. As there is no direct or demonstrable link between the minimal level of disturbance or loss of habitat and the welfare of individual CRLFs, Caltrans has concluded that, with implementation of standard avoidance and minimization measures, these habitat-related effects do not constitute take or adverse effect on the species.

Project activities may still have direct adverse effects on individuals of the species. The avoidance measures, including exclusion fencing, seasonal avoidance, surveys, and monitoring, are expected to be effective. However, with the documented presence of CRLF in the surrounding areas, it is unlikely but possible that an individual CRLF may enter the project footprint. It is also possible that ground disturbance activities may affect an aestivating CRLF individual. Because these possibilities cannot be completely eliminated, take of an individual may occur. The Biological Assessment (BA) for this project thus concluded that the project is likely to adversely affect CRLF, and a BO was requested from the USFWS.

#### 2.3.5.3.3 California Tiger Salamander

Disrupting connectivity between populations is an important factor for the long-term preservation of CTS. Increasing dispersal barriers among populations (even distantly spaced populations) decreases the potential for genetic exchange and re-colonization from outlying populations that may, on occasion, be

extirpated due to natural or anthropogenic causes. Major dispersal barriers have the potential to disrupt the connectivity among populations over large temporal periods. The SR 84 Niles Canyon Safety Widening Project will neither impact breeding habitat nor result in an increase in traffic lanes that would increase barriers to dispersal. Thus, the project is unlikely to have an impact on CTS population sizes in this region.

However, while the project is unlikely to have an impact on high-quality aestivation habitat, the CTS habitat assessment did identify low-quality potential aestivation habitat within the BSA. A GIS analysis of project plans and habitat maps showed that 4.98 acres of this potential habitat would be permanently impacted and 2.78 acres would be temporarily impacted. These impacted areas are illustrated in Figure 8.

Direct disturbance, injury, or mortality of individual salamanders during construction or after implementation of the project, would constitute take under the FESA and CESA. However, as with the CRLF, small amounts of habitat degradation or loss would not constitute take of the species unless there is a clear mechanism linking the habitat modification to injury or mortality of the individuals of the species. This linkage is not present in this case. Caltrans thus concluded that there is no take and thus no adverse effect on this species.

However, project activities may still have direct adverse effects on individuals of the species. The avoidance measures, including exclusion fencing, seasonal avoidance, surveys, and monitoring, are expected to be effective. However, with the documented presence of the CTS in the surrounding areas, it is unlikely but possible that an individual salamander may enter the project footprint. It is also possible that ground-disturbance activities may affect an aestivating individual. Because these possibilities cannot be completely eliminated, take of an individual may occur. The project BA thus concluded that the project is likely to adversely affect the CTS, and a BO was requested from the USFWS.

#### 2.3.5.3.4 Alameda Whipsnake

Direct disturbance, injury, or mortality of individual salamanders during construction or after implementation of the project, would constitute take under the FESA and CESA. However, since the shoulder widening would not increase traffic lanes, volume, or speed, the vehicle-related impacts on individuals of the species are expected to be negligible. Most of the impacts would instead be on the habitat. A GIS analysis of project plans and habitat maps showed that 15.49 acres of this habitat would be permanently impacted and 8.62 acres would be temporarily impacted (24.11 total).

As with the CRLF and CTS, small amounts of habitat degradation or loss would not constitute take of the species unless there is a clear mechanism linking the habitat modification to injury or mortality of the individuals of the species. This linkage is not present in this case. Caltrans thus concluded that there is no take and thus no adverse effect on this species.

However, project activities may still have direct adverse effects on individuals of the species. The avoidance measures, including exclusion fencing, seasonal avoidance, surveys, and monitoring, are expected to be effective. However, with the documented presence of the AWS in the surrounding areas, it is unlikely but possible that an individual snake may enter the project footprint. Because these possibilities cannot be completely eliminated, take of an individual may occur. The BA

prepared for this project thus concluded that the project is likely to adversely affect the AWS, and a BO was requested from the USFWS

#### *Critical Habitat for Alameda Whipsnake*

Designated critical habitat for the Alameda whipsnake is located within the BSA. An adverse modification that appreciably diminishes the value of the critical habitat is prohibited under the FESA. The CESA does not recognize critical habitat, so this section pertains only to impacts on FESA designated critical habitat.

Of the 7.55 acres of designated critical habitat, project activities within the BSA will permanently remove 5.33 acres and have a temporary effect on 2.22 acres of critical habitat for the species. This is captured by the habitat area calculations in section 2.3.5.3.4. These estimates were further investigated as part of the BA conducted for this project and for submission to the USFWS.

Implementation of this project would affect the designated critical habitat for the AWS. However, the 7.55 acres is less than 0.03% of the Pleasanton-Sunol Ridge designated critical habitat unit, which is one of six units. Further effects to this habitat will be avoided and minimized through implementation of the measures previously described. Construction activities may temporarily affect designated critical habitat, but these areas would be stabilized and revegetated after construction. Therefore, Caltrans concluded that the project would not appreciably diminish or adversely modify the designated critical habitat unit.

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

A qualified biologist will conduct pre-construction surveys to examine the site for potential habitat of mammal, bird, reptile, or amphibian species. In the event that occupied burrows, nests, dens, or other habitats are found, the biologist will determine how to relocate the resident animal(s).

##### 2.3.5.4.1 Central California Coast Steelhead

Under the FESA, a Section 7, informal consultation with NMFS will occur to ensure the species is protected in the event that remaining downstream anadromous fish passage is restored prior to completion of the proposed project. As the NEPA-delegated federal action agency, Caltrans will follow the FHWA policy of compensating for impacts to special-status species and habitats. Such compensation, if necessary, will be developed during the permitting phase of this project.

##### 2.3.5.4.2 California Red-legged Frog

CRLF-specific measures to be used will include:

- A USFWS- and CDFG-approved biologist will conduct weekly inspections of any sites within or near the project footprint where construction materials are being stored and that may provide potential retreat sites for wandering CRLF.

- CRLF exclusion fences will be installed at the most likely areas where a frog would enter the project footprint; the location and extent of these fences will be determined in consultation with the USFWS and CDFG on the basis of survey findings.
- Immediately prior to installation of the exclusion fence, a USFWS- and CDFG-approved biologist will survey the area for CRLF. If CRLF individuals are observed, the biologist will notify the Resident Engineer who will stop all work until the frog has left the immediate vicinity.
- A qualified biologist with knowledge of CRLF and their habitat will be present during construction activities. In the event that a CRLF individual is encountered during construction the biological monitor will notify the Resident Engineer who will stop all work until the frog has left the immediate vicinity.
- To the maximum extent practicable, Caltrans will use seasonal avoidance of work in riparian areas during CRLF dispersal periods.

As the NEPA-delegated federal action agency, Caltrans will follow the FHWA policy of mitigating for impacts to natural lands. Therefore, under this policy, Caltrans will provide compensation onsite for temporary effects and offsite for permanent effects on CRLF habitat. The 24.11 acres of potentially suitable CRLF habitat that would be modified by the project (15.49 acres permanent and 8.62 acres temporary) will be replaced through the restoration of habitat onsite to the maximum extent practicable and offsite where necessary. Offsite mitigation could take place at the Tyler Ranch mitigation site, Ohlone Preserve Conservation Bank, or other suitable location.

In accordance with the FESA, Caltrans has planned to avoid and minimize project-related effects on individuals of this species, yet take of CRLF individuals remains possible. The mitigation described above is sufficient to compensate for the unlikely event that take of CRLF individuals occurs.

The effects on CRLF habitat include modifications to those portions of the project footprint that are riparian corridors or other vegetated areas that are suitable for use in dispersal and foraging. As discussed in the “Project Impacts” section above, Caltrans has concluded that these effects would not constitute take of CRLF and no additional mitigation is proposed beyond that already discussed.

#### 2.3.5.4.3 California Tiger Salamander

CTS-specific measures to be used will include:

- A USFWS- and CDFG-approved biologist will conduct weekly inspections of any sites within or near the project footprint where construction materials are being stored and that may provide potential retreat sites for wandering CTS.
- Immediately prior to construction, a USFWS- and CDFG-approved biologist will survey the area for CTS. If CTS individuals are observed, the biologist will notify the Resident Engineer who will stop all work until the snake has left the immediate vicinity.
- A qualified biologist with knowledge of CTS and their habitat will be present during construction activities. In the event that a CTS individual is encountered during construction

the biological monitor will notify the Resident Engineer who will stop all work until the CTS has left the immediate vicinity.

As the NEPA-delegated federal action agency, Caltrans will follow the FHWA policy of mitigating for impacts to natural lands. Therefore, Caltrans will provide compensation onsite for temporary effects and offsite for permanent effects on CTS habitat. The 7.76 acres (4.98 acres permanent and 2.78 acres temporary) of potentially suitable CTS habitat that would be modified by the project will be replaced through the restoration of habitat onsite to the maximum extent practicable and offsite where necessary. Offsite compensation could take place at the Tyler Ranch mitigation site, Ohlone Preserve Conservation Bank, or other suitable location.

In accordance with the FESA, Caltrans has planned to avoid and minimize project-related effects on individuals of this species, yet take of CTS individuals remains possible. The mitigation described above is sufficient to compensate for the unlikely event that take of CTS individuals occurs.

The effects on CTS habitat include modifications to those portions of the project footprint that are riparian corridors or other vegetated areas that are suitable for use in dispersal and foraging. As discussed, Caltrans has concluded that these habitat effects would not constitute take of CTS and no additional mitigation is proposed beyond that already discussed.

#### 2.3.5.4.4 Alameda Whipsnake

Alameda-whipsnake-specific measures to be used will include:

- A USFWS-approved herpetologist will conduct weekly inspections of any sites within or near the action area where construction materials are being stored and that may provide potential retreat sites for wandering AWS.
- AWS exclusion fences to prevent snakes from entering the construction zone will be installed at the most likely areas where a snake may enter the project footprint; these areas will be determined by the USFWS-approved herpetologist on the basis of survey findings.
- Immediately prior to installation of the exclusion fence, a USFWS-approved herpetologist will survey the area for AWS. Should AWS be observed, the herpetologist will stop all work until the snake has left the immediate vicinity.
- A qualified biologist with knowledge of AWS and their habitat will be present during construction activities in habitat areas. In the event that an AWS is encountered during construction, the biological monitor will contact the RE and request that all work in the vicinity be stopped until the individual AWS has left the area.

As the NEPA-delegated federal action agency, Caltrans will follow the FHWA policy of mitigating for impacts to natural lands. Therefore, Caltrans will provide compensation onsite for temporary effects and offsite for permanent effects on AWS habitat. The 24.11 acres (15.49 acres permanent and 8.62 acres temporary) of potentially suitable AWS habitat that would be modified by the project will be replaced through the restoration of habitat onsite to the maximum extent practicable and offsite where necessary. Offsite compensation could take place at the Tyler Ranch mitigation site, Ohlone Preserve Conservation Bank, or other suitable location.

In accordance with the FESA, Caltrans has planned to avoid and minimize project-related effects on individuals of this species, yet take of AWS individuals remains possible. The mitigation described above is sufficient to compensate for the unlikely event that take of AWS individuals occurs.

The effects on AWS habitat include modifications to those portions of the project footprint that are riparian corridors or other vegetated areas that are suitable for use in dispersal and foraging. As discussed, Caltrans has concluded that these habitat effects would not constitute take of AWS, and no additional mitigation is proposed beyond that already discussed.

#### *Critical Habitat for Alameda Whipsnake*

Standard avoidance and minimization measures to protect the species and its habitat will similarly protect the designated critical habitat for AWS.

No separate compensation is planned for critical habitat, although Caltrans will restore temporary impacts throughout the project footprint. These areas will be stabilized and revegetated following construction to restore habitat to the pre-project condition.

### **2.3.6 INVASIVE SPECIES**

#### **2.3.6.1 Regulatory Setting**

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

#### **2.3.6.2 Affected Environment**

The majority of the vegetation present within the project study area consists of ruderal, non-native herbaceous species that thrive in disturbed soils, and many of these species are considered “noxious weeds” by the California Invasive Pest Council (Cal-IPC). Annual Grasslands, formerly known as Holland’s Non-native Grassland, described above, is found at the eastern end of the project study area. It is an upland vegetation type composed of a dense to sparse cover of mainly introduced annual grasses, usually less than 3 ft in height.

Of all the species identified during special status plant surveys the following species are considered high risk noxious weeds by Cal-IPC: yellow star thistle (*Centaurea solstitialis*), wild fennel (*Foeniculum vulgare*), Himalayan blackberry (*Rubus discolor*), and giant reed (*Arundo donax*). High risk species are those that “have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment (Cal-IPC, 2008).”

In the project vicinity, giant reed and yellow star thistle are the species of greatest concern. Giant reed is found within the riparian corridor along Alameda Creek and poses a serious risk to existing ecosystem function. Giant reed has successfully invaded the Sacramento and San Joaquin River basins and is a growing concern in waterways north, along the coast of California. The species not only displaces native riparian species but alters hydrology through sediment retention and aggressive vegetative growth. It thrives along slow moving channels, yet it is also found in more limited patches along faster moving waterways such as Alameda Creek. Yellow star thistle is a weedy species that readily colonizes disturbed areas. Like many noxious weeds it displaces native plants and animals, threatening natural ecosystems.

### **2.3.6.3 Environmental Consequences**

None of the species on the California list of noxious weeds is currently used by Caltrans for erosion control or landscaping in Alameda County.

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

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

Permanent erosion control measures will be implemented upon completion of construction. All disturbed areas will be revegetated with native, non-invasive species or non-persistent hybrids that will serve to stabilize site conditions and prevent invasive species from colonizing.

In the event that high- or medium-priority noxious weeds are disturbed or removed during construction or construction-related activities, the contractor will contain the plant material associated with these noxious weeds to the maximum extent feasible (particularly giant reed and yellow star thistle), and dispose of it in a manner that will not promote the spread of the species. Areas where noxious weeds are disturbed or removed will be replanted with fast-growing native grasses or a native erosion control seed mixture. If seeding is not possible the area should be covered with heavy black plastic material until the end of the project.

## **2.4 CONSTRUCTION IMPACTS**

### **2.4.1 Construction Methods**

The term “clearing and grubbing” refers to removal of plant material from beneath the roadway to eliminate possible future subsidence from decomposition. While the actual construction methods and equipment for clearing and grubbing activities are left to the contractor’s discretion, clearing and grubbing typically involve the use of tracked end loaders and dump trucks.

Earthwork is the next step in site preparation after clearing and grubbing. Earthwork for roadway pavement widening requires cutting and removal of the existing shoulder and the cutting and removal of adjacent soil to the limit of the new shoulder. As with clearing and grubbing, this will be accomplished with tracked end loaders and dump trucks.

Where existing levels of the ground surface are too low for the future roadway and must be built up, the fill itself is called “embankment”. Placement of embankment is carried up to the level of aggregate base that lies just beneath the roadway itself. Embankment may be material cut from elsewhere on the project, or imported fill. It is placed over native soil by dump trucks in thin “lifts” of approximately 6 inches. The lifts are spread by bulldozers or rubber-tired end-loaders and then compacted with wheeled vibratory equipment.

There will be stockpiling of material, dust control, temporary water pollution control, slope protection, permanent erosion control, and storm water treatment associated with the earthwork. Material will be stockpiled as it is cut and then either deposited nearby within the work zone or immediately transported for use in embankment or backfill elsewhere in the project area. Stockpiles will be limited in size to generally what will be removed or placed within a matter of days.

Temporary slope protection is accomplished by draping plastic tarps over exposed cuts until construction and backfilling are completed and proper drainage measures are in place. The same is done for stockpiled material, depending on the season. Temporary slope protection also includes use of fiber rolls, erosion control netting, and silt netting.

Retaining walls will be built in several locations within the project footprint. Depending on site conditions, construction activities within the footprint of the retaining wall work will include earthwork cutting or filling for the new shoulder paving. Cutting activities will involve excavation and hauling using excavators and small loaders. Filling activities will involve importation of fill material followed by compaction with heavy equipment. Dozers will be used to spread the material and various types of equipment will be used to achieve compaction requirements. The contractor will access work sites via the roadway.

To the extent possible, material from cuts will be used for fill and backfill purposes. Any surplus excess cut material will be disposed off-site at an approved upland location or shall become the property of the contractor and disposed of outside Caltrans right-of-way. For some retaining walls, fill material behind the walls may be a combination of cut material and imported “structural fill”. Structural fill is a stable natural material composed of some combination of sand, gravel or crushed stone. It has a high degree of uniformity that allows it to be readily compacted without danger of later swelling or shrinking. Compaction of fill material, whether cut from the site or imported structural fill, will be accomplished by mechanical means with a combination of “jumping jacks” for narrow areas and wheeled, vibratory compactors for the remainder.

Lane closures utilizing K-rail or other approved types of barriers will be required for these tasks to proceed or for safety purposes. The closures will be conducted overnight and on weekends when traffic is lighter than daytime weekday traffic in order to minimize interference with periods of high traffic volume. This is expected to be true for nearly all aspects of retaining wall construction, striping and pavement activities.

Retaining walls will be constructed to either retain a cut slope or fill beneath the new roadway. Retaining-wall construction can be either “bottom-up” or “top-down.” Final determination of wall type will occur during the Design phase of project development.

For bottom-up construction, existing earthwork material will be excavated to the bottom of footing depth. Temporary shoring may be constructed along the edge of traveled way to stabilize the work zone. The footing will be constructed next, followed by the vertical portion of the retaining wall. The retaining wall construction will require setting plywood forms, installing rebar, and pouring the structural concrete. After the forms are removed, the retaining wall will be backfilled with structural fill and compacted in lifts up to the subgrade level. From there, the roadway structural section will be constructed. Construction of these walls will require a five-to-fifteen-foot-wide temporary construction zone extending outwards from the outside face of the retaining wall.

‘Soil nail’ retaining walls, which retain cut slopes using a steel-reinforced concrete wall held in place by means of rods that are inserted into pre-drilled holes into the hillside, are constructed top-down. A three-axle truck-mounted drill rig will drill holes that are slightly larger than the diameter of the rods, typically 6-8 inches. The rod, or ‘nail’, is placed so that it projects slightly out of the cut slope, so that steel reinforcing bar can be attached to the nail. After grout is pumped into the vacant spaces of the borehole, the concrete wall is poured over the steel reinforcing bar, completing the mechanical fastening of the wall to the nail.

In order for the construction equipment to reach the area for wall-building activities, a working bench must be created by filling the area between the hillside and the roadside traffic barriers. The bench will be 15 feet high, or more if required for construction. Once a desired height of construction bench is reached, the placing of 15-foot sections of stabilizing rods into a hill would begin. Typically, the bench is 10 to 15 feet wide and a few hundred feet in length, depending on the length of the retaining wall. Equipment used to construct these benches will include dozers, loaders, compactors, and the hauling trucks that would bring the material to the site. This equipment will also be used to remove the benches after the soil nail wall installation operations are finished.

Roadway work will follow earthwork as described and proceed once cutting or filling as appropriate is complete. The first step is placement of new granular base material. This material will be imported by semi-trailer dump trucks and placed in layers for compaction by lifts, similar to the process described for embankment fill. This new base material will be compacted most likely using wheeled vibratory compactors.

Pavement work will proceed once a sufficient amount of base is ready to allow continuous paving. Paving machines are usually automated, string-guided machines on crawler treads. Asphalt will be transferred into paving machines by hauling trucks. This work is not likely to extend beyond the limits of the new roadway.

In the areas of where shoulders will be constructed, saw cutters will be used to provide a clean transition at the edge of traveled way and proposed new shoulders. Old asphalt concrete (AC) will be removed by loaders and taken from the site by trucks. The shoulder area will be prepared for new structural section by compacting the base and covering with AC. Shoulders will be covered by AC and will be compacted by vibratory rollers to the final profile grade/elevation. Then the new structural section will be placed, and paved by placing of the AC to a finished grade using pavers, and trucks

to carry the AC. AC is compacted by vibratory rollers to the finished grade. Striping and delineation is done as soon as the new section is completed and the surface passes inspection. A truck-mounted specialty sprayer with compressor will complete the striping operations. Delineators, such as buttons, are mounted by hand with adhesive placed on the AC surface. Roadway appurtenances will include new and relocated roadway signs, highway lighting, and guard barriers.

## **2.4.2 Measures to Minimize Construction Impacts**

### **2.4.2.1 Environmentally Sensitive Areas**

Caltrans will fence off Environmentally Sensitive Areas (ESAs) with appropriate posts and flagging. The highway right of way shall be used only for purposes that are necessary to perform the required work, and no State-owned parcels adjacent to the right of way are available for the exclusive use of the construction crew within the contract limits.

### **2.4.2.2 Construction Noise**

Construction activities for the proposed project could result in noise levels greater than the existing noise levels. Since construction activities will move around the respective project areas as construction proceeds, it is unlikely that any one location will experience high noise levels continuously for extended periods of time.

Construction noise is unavoidable and could adversely affect some nearby members of the public during daytime hours. However, the impact will be temporary and limited to the time of the construction in any one location.

All construction equipment shall be required to conform to the provisions in Section 7 1.01I of the applicable edition of Standard Specifications<sup>6</sup> to minimize noise from construction activities, such as maintaining equipment mufflers in proper operating order. Caltrans will implement time-of-day noise-control restrictions on work, such as removing concrete, cold planing pavement, grooving and grinding concrete pavement, sawcutting portland cement concrete, and driving piles, that exceeds 86 dBa at 50 feet.

### **2.4.2.3 Air Quality**

During construction, the proposed project will generate air pollutants, including hydrocarbons, nitrogen oxides, carbon monoxide, and particulates. Most of the pollution will consist of wind-blown dust generated by excavation, grading, hauling, and various other activities. The impacts from the above activities will vary from day to day as construction progresses. The Environmental Protection Agency (EPA) considers construction impacts to be temporary and unavoidable. Caltrans Standard Specifications and Special Provisions for construction contracts include dust control measures. Water or other palliatives will be applied to control and prevent dust nuisance.

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6 [http://www.dot.ca.gov/hq/esc/oe/specs\\_html/2006\\_specs.html](http://www.dot.ca.gov/hq/esc/oe/specs_html/2006_specs.html)

#### **2.4.2.4 Contaminated Materials**

Caltrans shall implement spill and leak prevention procedures when chemicals or hazardous substances are stored and prevent spills from entering storm water runoff before and during cleanup. Plastic sheets shall be placed under paving equipment when not in use to catch drips. Caltrans shall identify contaminated soil from spills or leaks and, if levels of contamination are found to be hazardous, the soil shall be handled and disposed of as hazardous waste. Caltrans shall prevent water, including ground water, from mixing with contaminated soil.

#### **2.4.2.5 Traffic**

Since SR-84 is a narrow two-lane winding road, construction will require the closure of one or both lanes within the project limits and it is possible that motorists/bicyclists will be detoured. All efforts will be made to minimize lane closures or detours to reduce impacts to the traveling public. Night-time work and lane closures can be expected during construction. Flaggers and message signs may be used to warn travelers of anticipated delays or closures. These issues will be addressed in the Traffic Management Plan (TMP) to be developed prior to construction.

A minimum of one paved traffic lane, not less than 12 feet wide, shall be open for use by the public. Under one-way reversible traffic control operations, traffic may be stopped in one direction for periods not to exceed 5 minutes. During blasting, hauling, slide removal excavation operations, the road may be closed and traffic stopped for periods not to exceed 30 minutes. After one closure, accumulated traffic shall be allowed through the work area before another closure is allowed. The full width of the traveled way shall be available for use by the public when construction operations are not actively in progress.

#### **2.4.2.6 Water Quality**

A Stormwater Pollution Prevention Plan will be prepared and standard construction stormwater Best Management Practices (BMPs) will be applied; see section 2.2.2.

## **2.5 CUMULATIVE IMPACTS**

### **2.5.1 Regulatory Setting**

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

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of

migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

This cumulative effects section identifies past, present, and reasonably anticipated future projects that could result in cumulative impacts on resources (e.g., wetlands and cultural resources) and traffic-related impacts (e.g., noise and air quality). The analysis considers other Caltrans projects and projects proposed by other outside agencies and developers.

Data for this cumulative impacts analysis were obtained from Alameda County, from environmental documents for local projects archived by Caltrans, and from the State Clearinghouse's online database, CEQAnet. The project area has few development proposals.

- Niles Canyon Quarry expansion, to the south of Paloma Way near the community of Sunol, included construction of the existing earthen berms near the frontage of Paloma Way to screen quarry activities from the view of motorists on Paloma Way.
- San Francisco Public Utilities Commission (SFPUC) Fish Passage project will remove barriers to fish passage along Alameda Creek, once a migration route for breeding anadromous fish. The partial removal of Sunol Dam is complete; partial removal of Niles Dam will follow.

Also, several nearby Caltrans highway improvement projects are recently constructed or will undergo project review in the future:

#### **The Rosewornes Realign and Improve Sight Distance project**

This project is on SR-84, west of the current project, bounded by Union City and Fremont from Rosewornes Underpass to beyond Farwell Underpass. It will include road widening, horizontal realignment, retaining walls, a "railroad catcher" (seismic safety) addition beneath the Rosewornes railroad underpass, and an uphill rock bolt wall. The project is scheduled to begin construction in 2010.

#### **Route 84 Alameda Creek Bridge and Overhead Retrofit (BR 33-0039)**

This project was a seismic retrofit of a 14-span, reinforced concrete box girder bridge about a mile and a half eastward from Palomares Road. The project was completed in January 2005.

#### **Route 84 Alameda Creek Bridge (BR 33-0036) Replacement**

This project proposes to replace the existing two-lane bridge, about a quarter of a mile east of the Palomares Road intersection on Route 84. The structure crosses over the Union Pacific Railroad tracks and the Alameda Creek.

## **2.5.2 Affected Environment**

### **2.5.2.1 Visual/Aesthetics**

The study area for cumulative visual impacts is Niles Canyon between Union City and I-680. This is the scenic highway area. West of this area, the visual character becomes urban past Mission Boulevard. East of the area, the road passes through the freeway interchange and then through an area with roadside businesses characterized by large-scale nurseries. This landscape of freeway scenes and low-unity horticultural uses comprises the eastern boundary of the visual study area.

The visual quality of the project area is very high and has been so for many years. Future trends include continued preservation of high visual quality. Programs in place to preserve aesthetic values include the SFPUC's Watershed Management Plan, land use controls associated with the Scenic Corridor Protection Plan, and the Scenic Highway Program's requirements for Caltrans projects. See Section 2.1.1 for a description of these programs.

The visual effects of projects in the corridor will combine with the visual effects of the present Niles Canyon Widening project within the same immediate SR-84 scenic corridor, with a potential to result in cumulative adverse visual impacts. Effective measures are available to reduce the impacts of any road project, including revegetation and the implementation of context-sensitive retaining-wall treatments.

The quarry expansion project south of Paloma Way previously approved by Alameda County has visual impacts in the same area as the proposed highway project. To prevent visual intrusion of quarry activities on the Paloma Way area, the quarry project has required construction of earthen berms near the frontage of Paloma Way, and has planted landscaping on the berms. These effects will combine with the visual effects of the proposed highway project, which would remove some of the existing trees on Paloma Way. Thus, in the short term a cumulative decline in visual quality will be anticipated in this segment of the highway. In the long term, the combined compensation measures implemented under the two projects will result in an improved overall visual setting on Paloma Way.

### **2.5.2.2 Biological Resources**

In the immediate project area, biological resources are not suffering from the same development pressures as many other natural areas of the Bay Area, partly because of local jurisdictions' land use policies and because the SFPUC owns much of the surrounding land. In fact, resources associated with Alameda Creek are receiving beneficial attention from government agencies and other groups. For instance, the SFPUC has approved a project that will increase the biological values of Alameda Creek by partially removing the Sunol Dam and the Niles Dam.

Terrestrial habitat of endangered species such as the California Red-legged Frog, the Alameda Whipsnake and the California Tiger Salamander extend beyond the protected areas of Niles Canyon, and are diminishing due to development pressures throughout their ranges.

Protective programs are in place for these species, which are listed as 'endangered' under the federal Endangered Species Act.

### **2.5.2.3 Cultural Resources**

The resource study area for cumulative impacts to cultural resources is the geographic corridor generally defined by State Route 84 from Mission Boulevard in Fremont to its intersection with Interstate 680 east of Sunol. Historic resources include two railroads, features associated with conveying water via the Sunol Aqueduct, a dam on Alameda Creek, and structures associated with the highway. See Section 2.1.3.2 for discussions of these resources. These structures were located here because Niles Canyon provided a comparatively easy way to convey things – railroad trains, cars, water – between the San Francisco Bay Area and the Livermore Valley. That makes the corridor a logical unit for a cumulative analysis of impacts.

Protective programs are in place for any identified historic resource that is eligible for listing on the National Register of Historic Places, which includes all the resources in the previous paragraph. Public agencies' permitting authority, as well as funding authority, is subject to specific laws listed in Section 2.1.3.1, such as the federal National Historic Preservation Act or the California Environmental Quality Act. Projects such as those identified in this analysis are covered by these requirements.

### **2.5.2.4 Hazards and Hazardous Materials**

Effective regulatory and implementation systems are in place for responding to the discovery of a hazardous materials release, whether historical or recent. With the implementation of these measures, any impacts related to hazardous materials will be localized in extent and quickly remediated. Therefore, there will be no cumulative impacts.

### **2.5.2.5 Hydrology**

Any of these projects' potential to change flood levels, channel flow velocity, or erosion is very small compared to the area's capacity to carry floodwaters. Each project's contribution to an impact would be minimal.

### **2.5.2.6 Water Quality**

Each of the projects identified in the cumulative analysis is subject to the water quality permitting requirements of the Regional Water Quality Control Board, so effective programs are in place to protect against cumulative impacts. In addition, Caltrans has a statewide NPDES Permit Order No. 99-06-DWQ, which governs the facility after construction. This permit requires Caltrans to implement BMPs, as necessary, to meet water quality standards. If water quality degrades, Caltrans would implement additional BMPs to achieve water quality standards. Consequently, Caltrans does and would continue to manage its facilities to mitigate for cumulative impacts in the Alameda Creek watershed. Therefore, Caltrans' adherence to the RWQCB-approved statewide NPDES program would address cumulative impacts to stormwater quality, pollutant loading, and drainage impacts from the highway project.

### **2.5.2.6 Transportation/Traffic**

Traffic issues resulting from by construction of the project will be temporary in nature. The construction period of this project will not overlap with construction of any of the other proposed projects, so traffic impacts due to construction will not be additive.

# **Chapter 3 – California Environmental Quality Act (CEQA) Evaluation**

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## **3.1 DETERMINING SIGNIFICANCE UNDER CEQA**

The proposed project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other action required in accordance with NEPA and other applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 U.S.C. 327. Caltrans is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or some lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) as a whole has the potential to “significantly affect the quality of the human environment.” The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each “significant effect on the environment” resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

## **3.2 DISCUSSION OF SIGNIFICANCE OF IMPACTS**

### **3.2.1 Visual/Aesthetic**

The principal visual and aesthetic impacts of this project derive from the removal of trees and other vegetation, and the construction of a number of retaining walls in Niles Canyon. For the details of the aesthetic impacts of this project, please see the Visual/Aesthetic section in Chapter 2.

### **3.2.2 Less-than-Significant Effects of the Proposed Project**

Please see the discussion at the beginning of Chapter 2.

### **3.3.3 Significant Environmental Effects of the Proposed Project**

Although no one retaining wall will result in a significant negative impact to the Niles Canyon Landscape Unit (see 2.1.2), due to their considerable height, individual and combined lengths, and number, the proposed upslope walls will remain a highly prominent and, in some locations, visually dominant feature of the Niles Canyon corridor. In the context of relatively high viewer sensitivity associated with the highway's scenic status, all the proposed retaining walls considered together will represent a significant negative visual impact.

The allée of trees in the Sunol Landscape Unit (see section 2.1.2.2.2) is a scenic resource within a state scenic highway. The removal of these trees would eliminate a notable gateway feature and represent a strong decline in visual quality.

Currently, the Alameda Creek Bridge project (see Cumulative Impacts, section 2.5) is anticipated to propose extending uphill retaining Wall R1. This extension could result in increased wall height as well as length to Wall R1. These effects will contribute cumulatively to the increased overall extent of visual intrusion within the designated scenic highway corridor, and to the associated substantial project impacts to the corridor described in this visual impact assessment. Thus, while the Rosewanes project alone was not determined to have significant impacts, the Niles Canyon, Alameda Creek Bridge, and Rosewanes projects in combination, and in the context of relatively high viewer sensitivity associated with the highway's scenic status, will likely cause significant cumulative impacts to the visual environment.

### **3.3.4 Unavoidable Significant Environmental Effects**

The visual impact of the construction of a large number of retaining walls in an area largely untouched by development for most of the twentieth century can be reduced by employing context-sensitive solutions for the design of wall-surface treatments (see discussion, section 2.1.2.4). This will moderate the impact of the retaining walls, but will not eliminate it; the impact will remain significant.

### **3.3.5 Climate Change**

#### **3.3.5.1 Regulatory Setting**

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include carbon

dioxide (CO<sub>2</sub>), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. Assembly Bill 1493 requires the California Air Resources Board (CARB) to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the U.S. Environmental Protection Agency (EPA). The waiver was denied by Environmental Protection Agency in December 2007 and efforts to overturn the decision had been unsuccessful. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. However, on January 26, 2009, it was announced that EPA would reconsider their decision regarding the denial of California’s waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 mpg fuel economy standard for automobiles and light duty trucks which will take effect in 2012. On June 30, 2009 EPA granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California’s GHG emissions to: 1) 2000 levels by 2010, 2)

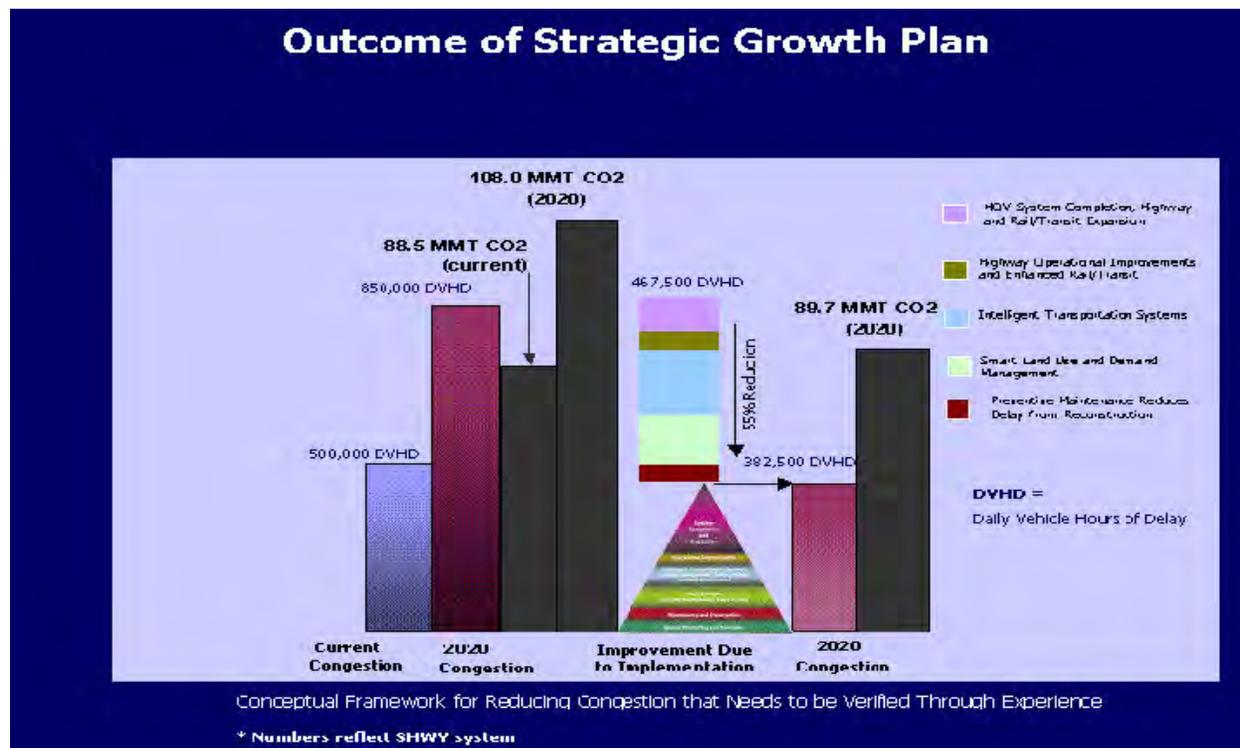


Figure 3.2 Outcome of Strategic Growth Plan

1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state’s Climate Action Team.

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

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

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

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>)--in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA’s *proposed greenhouse gas emission standards for light-duty vehicles*, which were jointly proposed by EPA and the Department of Transportation’s National Highway Safety Administration on September 15, 2009.<sup>7</sup>

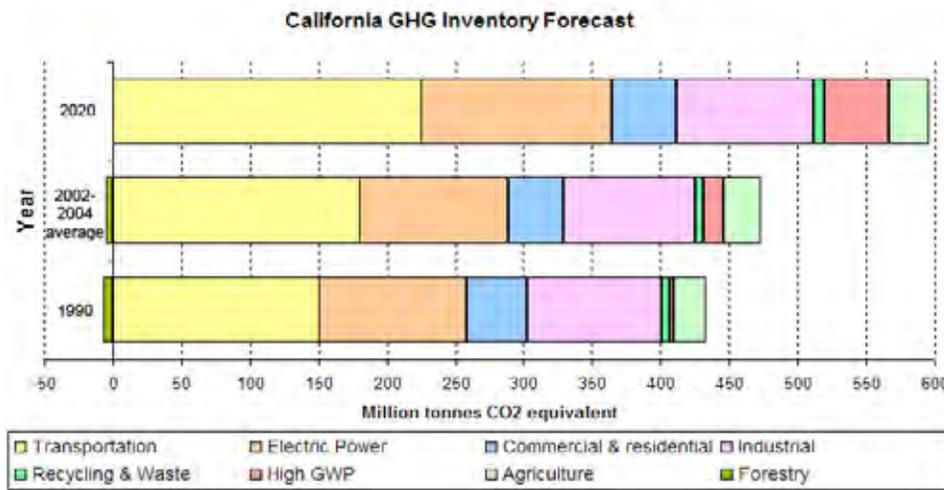
According to Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate change in CEQA Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable.” See CEQA Guidelines sections 15064(i)(1) and 15130. To make this determination the incremental impacts of the project must

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7 <http://www.epa.gov/climatechange/endangerment.html>

be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft Scoping Plan, CARB recently released an updated version of the GHG inventory for California (June 26, 2008). Shown below is a graph from that update that shows the total GHG emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.



taken from : <http://www.arb.ca.gov/cc/inventory/data/forecast.ntm>

Figure 3.1 California Greenhouse Gas Inventory

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California’s GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation (see Climate Action Program at Caltrans (December 2006), Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006. This document can be found at: <http://www.dot.ca.gov/docs/ClimateReport.pdf>

### 3.3.5.2 Project Analysis

As a safety project that does not increase capacity, the project has little to no potential for climate change effects. The project will remove vegetation and increase asphalted surface area, but the effects of decreased albedo on climate change are not known and the areas involved are very small. Project greenhouse gas emissions will temporarily increase due to construction machinery and idling motorists during lane closures, but the latter will be reduced to the extent feasible with the implementation of a traffic management plan.

### 3.3.5.3 Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as

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

#### **3.3.5.14 AB 32 Compliance**

Caltrans continues to be actively involved on the Governor's Climate Action Team as CARB works to implement the Governor's Executive Orders 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 the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a \$222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including \$100.7 billion in transportation funding during the next decade. As shown on the figure below, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

As part of the Climate Action Program at Caltrans (December 2006, <http://www.dot.ca.gov/docs/ClimateReport.pdf>), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by EPA and CARB. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the UC Davis.

Table 3.1 summarizes the Department and statewide efforts that Caltrans is implementing in order to reduce GHG emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006); it is available at <http://www.dot.ca.gov/docs/ClimateReport.pdf>

Table 3.1 Climate Change Strategies

Strategy	Program	Partnership		Method/ Process	Estimated CO2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Inter-Governmental 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	.007	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	0.0045	0.0065 0.45 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34

Strategy	Program	Partnership		Method/ Process	Estimated CO2 Savings (MMT)	
		Lead	Agency		2010	2020
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % lime-stone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2.36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

### 3.3 MITIGATION MEASURES FOR SIGNIFICANT IMPACTS UNDER CEQA

In order to minimize the significant visual impacts and cumulative visual impacts of the construction of the retaining walls in Niles Canyon, Caltrans will employ “Context Sensitive Solutions” in devising an aesthetic treatment for the wall surfaces and to coordinate wall and barrier texture treatments so as to carry consistent themes throughout the corridor. These solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. This will reduce but not eliminate the significance of the impacts.

Context sensitive solutions are reached through a collaborative, interdisciplinary approach involving all stakeholders. As the canyon is unpopulated and so resident stakeholders are few, Caltrans has developed initial context-sensitive treatments which, depending on the setting, will employ a naturalistic carved rock texture and color treatment to reflect the surrounding natural setting, or in areas where the railroad is prominent, reflect the historic era of the railroad by emulating historic construction methods and incorporating a rough surface texture and darkened or variegated coloring achieved by staining or other color treatment to reduce overall color contrast of the walls. Integral coloring will be employed in the bottom barrier portions of upslope retaining walls.

In addition, Caltrans shall pursue permission from the SFPUC to install replacement planting of the tree row removed due to highway widening, outside of the Caltrans ROW. The replacement trees will be planted north of the existing ROW, so as to reproduce the original allée effect along Paloma Way, meet Caltrans safety standards, and avoid future tree disfigurement by cable operators. With this measure, the long-term effects of the project will be beneficial, since it will replace existing disfigured trees with healthy, undamaged ones, in a similar allée configuration to that currently existing.

Caltrans may implement design exceptions, alter design elements, or choose alternate construction methods to avoid removal of significant existing vegetation. Design exceptions may include reducing the width of the standard grading catch line to minimize vegetation removal; steepening of cut and fill slopes; installing guardrails around selected trees to allow retention at the shoulder;

or other measures as recommended in the visual impact assessment or as determined during the project design or construction phases. Soldier-pile construction of downslope walls may be used in selected locations. If, under final project design, specific, particularly outstanding riparian tree stands are identified that would require removal with standard construction techniques, the technique of constructing from the road will be considered in order to avoid their removal. Wherever feasible, slope lines will be adjusted to avoid the removal of trees and other desirable vegetation.



# **Chapter 4 – Comments and Coordination**

## **4.1 REGULATORY SETTING**

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 compensation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: project development team meetings, interagency coordination meetings, and informal contact such as telephone calls with the County Planning Department. This chapter summarizes the results of Caltrans's efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

## **4.2 FORMAL SCOPING**

A scoping meeting was held on December 1, 2009 at Caltrans's offices in Oakland. The following agencies and entities were invited to review initial project plans and provide comment on potential environmental concerns: Alameda County Planning Department, Alameda County Public Works Agency, Alameda County Water District, California Department of Fish and Game, East Bay Bicycle Coalition, East Bay Regional Parks District, National Marine Fisheries Service, Pacific Locomotive Association Niles Canyon Railway, Regional Water Quality Control Board, San Francisco District U.S. Army Corps of Engineers, San Francisco Public Utilities Commission, United States Fish and Wildlife Service Pacific Southwest Region (Region 8). Of these, only the U.S. Army Corps of Engineers attended; they expressed no concerns regarding resources in the project area within the Corps' jurisdiction. The Regional Board also submitted a comment letter outlining its concerns with respect to the project's potential to affect water quality. The Alameda County Water District's comment letter pointed out concerns regarding water quality and practical considerations regarding the District's operations. Caltrans used this information while planning and preparing the draft EIR/EA.

Caltrans Biology, through its consultant, URS Corp., has consulted with Chris Nagano and Jerry Roe of the USFWS regarding primary constituent elements of designated critical habitat for the Alameda whipsnake, and conducted electronic database queries for USFWS species lists.

## **4.3 PERMITS AND APPROVALS NEEDED**

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

Agency	Permit/Approval	Status
United States Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species Review and Comment on 404 Permit	Biological Assessment Submitted March 2010
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States.	Jurisdictional wetland delineation completed 2006; not yet submitted to the USACE for verification.
California Department of Fish and Game	1602 Agreement for Streambed Alteration Section 2080.1 Agreement for Threatened and Endangered Species	Application will be prepared when design details are available
Regional Water Quality Control Board	Waste Discharge Requirements Clean Water Act Section 401 Certification	Application will be prepared when design details are available

## **Chapter 5 – List of Preparers**

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### **Office of Environmental Analysis**

Valerie Heusinkveld  
Oliver Iberien  
Craig Jung  
Maureen A. Murphy

### **Office of Natural Sciences and Permits**

Kevin Melanephy  
John Yeakel

### **Office of Water Quality**

Wilfong Martono

### **Office of Cultural Resources**

Brett Rushing  
Mary K. Smith

### **Office of Hazardous Materials**

Ana Uribe

### **Office of Landscape Architecture**

Bryan Walker  
Keith Suzuki

### **Division of Design East Alameda 1**

Shankar Kutty  
Andrey “Andy” Wolny  
Tony Wong

### **Office of Traffic Safety**

Saïf Mamoon  
Emily Tang

### **Office of Hydraulics**

Craig Tomimatsu



# **Chapter 6 – Distribution List**

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## **Federal Elected Officials**

Honorable Jerry McNerny, Representative in Congress, 11st District

Honorable Pete Stark, Representative in Congress, 13th District

Honorable Barbara Boxer, United States Senator

Honorable Diane Feinstein, United States Senator

## **State Elected Officials**

Honorable Joan Buchanan, California Assembly, 15th District

Honorable Ellen M. Corbett, California Senator, 10th District

## **Local Elected Officials**

Mr. Scott Haggerty, Board of Supervisors, Alameda County

## **Federal Agencies**

U.S. Army Corps of Engineers Regulatory Branch, San Francisco District

U.S. Department of Agriculture Natural Resources Conservation Service

U.S. Fish and Wildlife Service Pacific Southwest Region (Region 8)

## **State Agencies**

California Department of Fish and Game Fisheries, Wildlife, and Environmental Programs

California Energy Commission

California Highway Patrol, Office of Special projects

California State Lands Commission

Office of Historic Preservation

Public Utilities Commission

California Department of Conservation, Division Of Land Resource Protection

## **Regional Agencies**

Association of Bay Area Governments

Metropolitan Transportation Commission

Regional Water Quality Control Board, San Francisco Bay District

**Local Agencies**

Alameda County Planning Department

Alameda County Public Works Agency

Alameda County Water District

East Bay Bicycle Coalition

East Bay Regional Parks District

San Francisco Public Utilities Commission

# APPENDICES

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# Appendix A. CEQA Checklist

Supporting documentation of all CEQA checklist determinations is provided in Chapter 2 of this Environmental Impact Report/Environmental Assessment. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or compensation measures is under the appropriate topic headings in Chapter 2.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

## Environmental Checklist

	Potentially Significant Impact	Less Than Significant 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 checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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:				

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) 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"/>
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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a) Conflict with or obstruct implementation of the applicable air-quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or 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"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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 this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.			
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓
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 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 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"/>	✓
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"/>	✓

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<b>X. LAND USE AND PLANNING: Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XI. MINERAL RESOURCES: Would the project:</b>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XII. NOISE: Would the project result in:</b>				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XIII. POPULATION AND HOUSING: Would the project:</b>				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<b>XIV. PUBLIC SERVICES:</b>				
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 type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XV. RECREATION:</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XVI. TRANSPORTATION/TRAFFIC: Would the project:</b>				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<b>XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>XVIII. MANDATORY FINDINGS OF SIGNIFICANCE</b>				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

# **Appendix B: Section 4(f) Evaluation**

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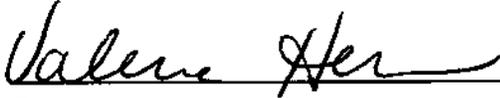
State Route 84 Niles Canyon Safety Improvement project

DRAFT SECTION 4(f) DE MINIMIS FINDING

Alameda County, California EA 04-2A3300

May 2010

Approved :



Date

June 30, 2010

Valerie Heusinkveld  
Senior Environmental Planner  
Environmental Analysis Caltrans, District 4

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

## **INTRODUCTION**

This project proposes roadway widening to facilitate shoulder improvements and curve correction in a rural portion of Alameda County on State Route (SR) 84, between Alameda Creek Bridge (approximately PM 13.6) and the SR-84/I-680 Separation (PM 18.0) in Sunol. The project will widen the existing highway section and construct retaining walls where hillsides are removed to accommodate widening, and where the roadway will be widened adjacent to Alameda Creek.

In August 2005, President Bush signed into law a federal transportation reauthorization bill called the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Two sections of the law allow Caltrans to assume the Federal Highway Administration's (FHWA) responsibilities under the National Environmental Policy Act (NEPA) and other federal environmental laws. This NEPA assignment became effective July 1, 2007, and Caltrans is the federal lead agency for the proposed project.

## **SECTION 4(F) DE MINIMIS IMPACT EVALUATION REQUIREMENTS**

In 2005, SAFETEA-LU Section 6009(a) amended existing legislation, allowing the "use" of protected Section 4(f) lands or resources by the U.S. Department of Transportation (DOT), but only if the use is "de minimis", or minimal in nature. Section 4(f) protects significant publicly owned parks, recreation areas, and wildlife and waterfowl refuges, as well as significant historic sites, regardless of whether those historic sites or properties are publicly or privately owned. Prior to 2005, Section 4(f) legislation did not allow the "use" of protected land and/or resources by the U.S. DOT unless it could be shown that there was no feasible and prudent alternative. Regarding protected historic sites, a finding of "de minimis" can be made by the agency only if (either) there will be no historic properties affected by the transportation project, or if consultation completed under Section 106 of the National Historic Preservation Act for the project resulted in a finding of no adverse effect. As the NEPA-delegated lead federal agency, Caltrans must evaluate impacts that a proposed undertaking will cause to Section 4(f) resources.

De minimis impacts on publicly owned parks, recreation areas, and wildlife and waterfowl refuges, as well as historic sites, are defined as those that do not adversely affect the activities, features, and attributes of the 4(f) resource. The official(s) with jurisdiction over the property must provide written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f), and the public must be afforded the opportunity to review and comment on the effects of the project on the identified 4(f) resource(s). When identifying de minimis impacts on publicly owned parks, recreation areas, and wildlife and waterfowl refuges, or historic sites, it is important to distinguish the activities, features, and attributes of a Section 4(f) resource that are important to protect from those that can be "used" without resulting in impairing or diminishing the resource involved.

When Caltrans determines that a transportation use of a Section 4(f) property, after consideration of any impact avoidance, minimization, and compensation or enhancement measures, results in a de minimis impact on that property, no further Section 4(f) evaluation is required.

## **PROJECT DESCRIPTION**

This project proposes roadway widening to facilitate shoulder improvements in a rural portion of Alameda County on State Route (SR) 84, between Alameda Creek Bridge (approximately PM 13.6) and the SR-84/I-680 Separation (PM 18.0) in Sunol. The purpose of the project is to improve safety on Route 84 within the project limits by improving sight distances, providing refuge for errant vehicles that might otherwise cross the centerline, providing means of warning drivers who may approach curves at unsafe speeds or whose vehicles may stray over the center or fog lines, and providing a safer traveled way for bicyclists.

The project will widen the existing highway section by a maximum of 18' to accommodate a 2' soft median barrier, one standard 12' lane in each direction, and standard 8-foot shoulders. The project also involves construction of five retaining walls where the uphill embankment will be cut back to accommodate widening, and nine retaining walls below the highway grade where the road is located adjacent to Alameda Creek. At those nine locations, 10-foot wide shoulders with metal-beam guardrail will be constructed on the side of the highway next to the proposed wall.

At three of the five locations involving slope cuts next to and above the roadway, retaining walls will need to be installed along the north side of the highway adjacent to the railroad bed utilized by the Niles Canyon Railroad. At one of the three locations, the retaining wall will be constructed in the immediate vicinity of a stone culvert, which is a contributing element of the historic Western Pacific/Central Pacific/Niles Canyon Railroad. The construction of retaining walls along the north side of the highway adjacent to the Niles Canyon Railroad tracks will also involve relocation of four abandoned power poles that are contributing elements of the historic railroad. In the western section of the project, the historic Sunol Aqueduct crosses underneath the roadway and existing shoulders in two different locations. The proposed shoulder improvement in those two areas, which consists of minor pavement removal, pavement overlay and installation of metal beam guardrail, will not reach or exceed the depth of the aqueduct and will not impact the historic resource.

## **DESCRIPTION OF SECTION 4(F) RESOURCES**

The proposed project involves three Section 4(f) resources; the Western Pacific/Central Pacific/Niles Canyon Railroad located on the north side of Niles Canyon, the Sunol Aqueduct, and the Western Pacific/Union Pacific Railroad (and associated tunnels) located on the south side of Niles Canyon. For additional information, see section 2.1.3.

The Western Pacific/Central Pacific/Niles Canyon Railroad was determined eligible for listing in the National Register of Historic Places on December 30, 2004 through coordination with the state historic preservation office (SHPO) regarding another Caltrans project. It is eligible under National Register Criterion A at the local and regional level of significance for its association with the Transcontinental Railroad and the associated history of transportation, commerce and settlement. It is also eligible under National Register Criterion C at the local and regional level for its association with the design and construction of the Transcontinental Railroad, and as a significant example of nineteenth century railroad engineering, particularly in terms of railroad bridge technology. The Western Pacific/Central Pacific Railroad was completed in Niles Canyon

in 1869 as part of the Transcontinental Railroad. Construction of the railroad was a monumental engineering feat that involved years of surveying to establish a feasible route. Most of the line through Niles Canyon, which was then known as Alameda Canyon, was built along the north side of the canyon. Early work on the railroad took place between 1865-66, and only extended part of the way through the canyon from west to east. All work was halted around 1867 due to ongoing financial problems that plagued the owners of the Western Pacific. The Central Pacific acquired the struggling Western Pacific Railroad and completed work in Niles Canyon late in 1869, connecting it to the line they were already building across the Central Valley from Sacramento. The Central Pacific route through Niles Canyon formed a dramatic gateway for those traveling long distance by train from the Midwest and the East Coast to the Bay Area. The period of significance for the WP/CP Railroad is: 1865-1912. The boundary of the Western Pacific/Central Pacific in Niles Canyon extends approximately six miles from the Niles Railroad Station at the western end of the canyon, east to the Sunol Railroad Station in Sunol. (In the mid-1980s, commercial railroad operations ceased on the line and the land reverted back to Alameda County.) The land and the existing tracks, rolling stock and equipment is currently leased to the Pacific Locomotive Association, a non-profit organization that maintains and operates the Niles Canyon Railroad and runs excursion trains between Niles and Sunol.

The Sunol Aqueduct was determined eligible for listing in the National Register of Historic Places on December 3, 1998 through coordination with SHPO regarding another Caltrans project. The resource is eligible under National Register Criterion A at the local and regional level of significance due to its association with the history of the development of urban water supplies in the Bay Area. The Sunol Aqueduct, which extends from the Sunol Dam near Sunol, west to a reservoir in Niles, is part of a much larger water filtration and delivery system that was developed by the Spring Valley Water Company (SVWC) during the late 19th and early 20th century to deliver clean water to San Francisco and other cities on the peninsula. The SVWC's Alameda Creek System took advantage of a natural geologic feature, extensive underground beds of gravel located along the north side of Alameda Creek at the east end of Niles Canyon, to naturally filter their water. A series of underground filter galleries were built between the gravel beds and Alameda Creek to intercept filtered water. Depending on demand, the water could be released back into Alameda Creek and stored behind the Sunol Dam, or it could be routed west through the Sunol Aqueduct along the south side of Niles Canyon. After reaching Niles, the water was stored in the Niles Reservoir, or it was pumped through pipelines spanning the southern end of San Francisco Bay to San Francisco. From the 1870s to the late 1890s, a series of wood flumes carried SPWC water west through Alameda Canyon. In 1900, the Sunol Aqueduct was completed. In 1923, the aqueduct was modified and reinforced in order to increase its capacity. The Sunol Aqueduct was constructed of concrete, and consists of a six-mile long series of enclosed contiguous box flumes. Where topography prevented placement of the aqueduct on the canyon floor, it was carried on a shelf carved into nearby hillsides, or on top of a raised concrete viaduct. In two locations, the aqueduct tunnels into the hillsides along the south side of the canyon to avoid obstacles, including Western Pacific/Union Pacific Tunnel #1. Near the west end of the project, the aqueduct passes underneath the highway and adjacent shoulder in two different places. The period of significance for the Sunol Aqueduct is: 1900-30.

The Western Pacific/Union Pacific Railroad (and associated tunnels) was determined eligible for listing in the National Register of Historic Places (NRHP) on December 3, 1998 through coordination with SHPO regarding another Caltrans project. The resource is eligible under National Register

A-14 *Niles Canyon Safety Improvement Project Draft EIR/EA*

Criterion A at the local level of significance, as the completion of the Western Pacific/Union Pacific line broke the stranglehold that the powerful Southern Pacific Railroad had had on the Oakland waterfront for many years. The Western Pacific/Union Pacific Railroad (and associated tunnels) was constructed on the south side of Niles Canyon between 1909-10, and was part of a 930-mile freight and passenger rail line between Salt Lake City and Oakland.

The project will not change the use of existing neighborhood and regional parks or other recreational facilities. An area popularly known as Sims Park on Niles Canyon Road, owned by the Alameda County Water District, could possibly be affected by access restrictions due to construction, but is not in public use and public access to it is currently blocked. Vargas Plateau Regional Park is closed to the public.

## **POTENTIAL IMPACTS TO SECTION 4(F) LANDS IN PROJECT VICINITY**

### **The Western Pacific/Central Pacific/Niles Canyon Railroad**

This project involves roadway and shoulder widening, and will require installation of retaining walls either above (up the slope from) the road, or below (down the slope from) the road. For the most part, these retaining walls will be installed in areas of cut or fill. Five of the retaining wall locations involve cuts into the uphill slope adjacent to the roadway. In three of those five locations, the walls will be constructed along the north side of the highway within 50-75 feet (or less) of the tracks of the Western Pacific/Central Pacific/Niles Canyon Railroad, and will involve excavation into the nearby hillside or the (railroad) track embankment. One of the three retaining wall locations is adjacent to a stone railroad culvert that has been identified as a contributor to the historic engineering resource. The shoulder widening and retaining wall construction will also require the purchase of additional right-of-way (ROW) at four locations on the north side of the highway (adjacent to the Western Pacific/Central Pacific/Niles Canyon Railroad) from parcels owned by Alameda County. (Alameda County leases the land to the Pacific Locomotive Association, which operates and maintains the Niles Canyon Railroad.) These four locations of additional ROW total approximately 86,065 square feet in area.

The proposed widening of the shoulder and installation of related retaining walls adjacent to the Western Pacific/Central Pacific/Niles Canyon Railroad is a minor change that will not directly affect the railroad; furthermore, the existing recreational use of the railroad would not be affected. The purchase of additional ROW along the north side of the highway from parcels owned by Alameda County and leased to the Pacific Locomotive Association, will not impact the tracks, or the operation or maintenance of the Niles Canyon Railroad. An ESA (Environmentally Sensitive Area in which no construction activities are allowed) will be established around the stone railroad culvert in order to protect it from possible impacts from the construction of nearby retaining walls and widened shoulder section.

The roadway and shoulder widening improvements will also require the removal of four abandoned power poles that are associated with the historic Western Pacific/Central Pacific/Niles Canyon Railroad. According to a recent survey of railroad-related resources in Niles Canyon, the four

poles date from the early 20th century and were installed by either the Western Pacific or the Southern Pacific Railroad to supply power to operate the railroad's automatic block signal system, which was an important safety feature vital to the operation of the line. In order to avoid the adverse effect which the complete removal of the four power poles would cause to the historic railroad, the subject poles will be moved to another location that is satisfactory to the Pacific Locomotive Association.

### **The Sunol Aqueduct**

The historic Sunol Aqueduct crosses underneath the roadway and shoulder in two different locations in the western section of the project. The proposed shoulder improvements in these areas will consist of removal of pavement, placement of new pavement, and installation of metal beam guardrail. The proposed shoulder work will not reach or exceed the depth of the Sunol Aqueduct and will not impact the historic resource. The project also involves purchase of additional right-of-way (ROW) from the San Francisco Public Utilities Commission, which owns the Sunol Aqueduct, totaling approximately 41,481 square feet in area. Although the additional ROW area includes partial sections of the aqueduct structure, the purchase of the additional ROW does not involve a change in ownership of the aqueduct, or involve impacts to the aqueduct itself.

### **The Western Pacific/Union Pacific Railroad**

The proposed widening and shoulder improvements will require the purchase of additional right-of-way (ROW) from the Union Pacific Railroad totaling approximately 14,828 square feet in area. Although the Western Pacific/Union Pacific Railroad is a historic resource, the purchase of additional ROW from the Union Pacific Railroad will not involve any significant elements that contribute to the resource, and will not impact the operation of the railroad or related maintenance activities.

## **DISCUSSION OF COORDINATION ACTIVITIES**

Caltrans is consulting with Alameda County, which owns the land leased to the organization that operates the Niles Canyon Railroad, seeking their concurrence that the proposed project will have a Section 4(f) de minimis impact on the Western Pacific/Central Pacific/Niles Canyon Railroad.

Caltrans is also consulting with the San Francisco Public Utilities Commission (SFPUC), which owns the Sunol Aqueduct, seeking their concurrence that the proposed project will have a Section 4(f) de minimis impact on the Sunol Aqueduct, and on the larger Alameda Creek System to which it contributes.

The public is being offered the opportunity to comment on this Section 4(f) De Minimis Finding in conjunction with the comment period for the Draft Environmental Impact Report/Environmental Assessment (EIR/EA) for the Niles Canyon Safety Improvement project. A public notice was published in newspapers serving the project area for the Draft EIR/EA and Section 4(f) De Minimis Finding at the beginning of the public comment period. Caltrans will make a final decision based on the information presented above and the public comments as to whether the effects of this proposed safety improvement project (on the three historic resources noted above) constitute a de minimis Section 4(f) impact and the requirements of 23 U.S.C. 138 and 149 U.S.C. 303 have been satisfied.

# Appendix B. Title VI Policy Statement

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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNDT SCHWARZHEGGER, Governor

**DEPARTMENT OF TRANSPORTATION**  
OFFICE OF THE DIRECTOR  
1120 N STREET  
P. O. BOX 942873  
SACRAMENTO, CA 94273-0001  
PHONE (916) 654-5266  
FAX (916) 654-6608  
TTY (916) 653-4086

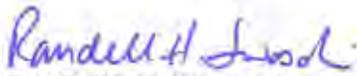


*"Use your power"  
Be energy efficient!*

August 25, 2009

## TITLE VI POLICY STATEMENT

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

  
RANDELL H. IWASAKI  
Director

*"California improves quality across California"*



# Appendix C. NRCS Farmlands Evaluation

U.S. Department of Agriculture							
FARMLAND CONVERSION IMPACT RATING							
<b>PART I (To be completed by Federal Agency)</b>				Date Of Land Evaluation Request <u>12/16/09</u>			
Name of Project <u>Niles Canyon Safety Improv. Proj</u>				Federal Agency Involved <u>FHWA</u>			
Proposed Land Use <u>Transportation</u>				County and State <u>Alameda, CA</u>			
<b>PART II (To be completed by NRCS)</b>				Date Request Received By NRCS <u>1/2/2010</u>		Person Completing Form <u>Terry Hatt</u>	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)				YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated <u>10480</u>	Average Farm Size <u>563</u>
Major Crop(s) <u>Cropes Hay Grain</u>		Farmable Land In Govt. Jurisdiction Acres: <u>41553</u> % <u>8.8</u>		Amount of Farmland As Defined in FPPA Acres: <u>10348</u> % <u>2.2</u> %			
Name of Land Evaluation System Used <u>Ca Revised Storie Index</u>		Name of State or Local Site Assessment System <u>none</u>		Date Land Evaluation Returned by NRCS <u>2/4/2010</u> <u>TH</u>			
<b>PART III (To be completed by Federal Agency)</b>				Alternative Site Rating			
				Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				<u>0.6</u>			
B. Total Acres To Be Converted Indirectly				<u>0.0</u>			
C. Total Acres In Site				<u>0.6</u>			
<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>							
A. Total Acres Prime And Unique Farmland				<u>0.4</u>			
B. Total Acres Statewide Important or Local Important Farmland				<u>0</u>			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				<u>0.00014</u>			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				<u>Data not available</u>			
<b>PART V (To be completed by NRCS) Land Evaluation Criterion</b>							
Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)				<u>95</u>			
<b>PART VI (To be completed by Federal Agency) Site Assessment Criteria</b>							
(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)							
1. Area In Non-urban Use				(15)			
2. Perimeter In Non-urban Use				(10)			
3. Percent Of Site Being Farmed				(20)			
4. Protection Provided By State and Local Government				(20)			
5. Distance From Urban Built-up Area				(15)			
6. Distance To Urban Support Services				(15)			
7. Size Of Present Farm Unit Compared To Average				(10)			
8. Creation Of Non-farmable Farmland				(10)			
9. Availability Of Farm Support Services				(5)			
10. On-Farm Investments				(20)			
11. Effects Of Conversion On Farm Support Services				(10)			
12. Compatibility With Existing Agricultural Use				(10)			
TOTAL SITE ASSESSMENT POINTS				160			
<b>PART VII (To be completed by Federal Agency)</b>							
Relative Value Of Farmland (From Part V)				100	<u>95</u>		
Total Site Assessment (From Part VI above or local site assessment)				160			
TOTAL POINTS (Total of above 2 lines)				260			
Site Selected:		Date Of Selection		Was A Local Site Assessment Used?			
				YES <input type="checkbox"/> NO <input type="checkbox"/>			
Reason For Selection:							
Name of Federal agency representative completing this form:						Date:	
(See Instructions on reverse side)						Form AD-1006 (03-02)	



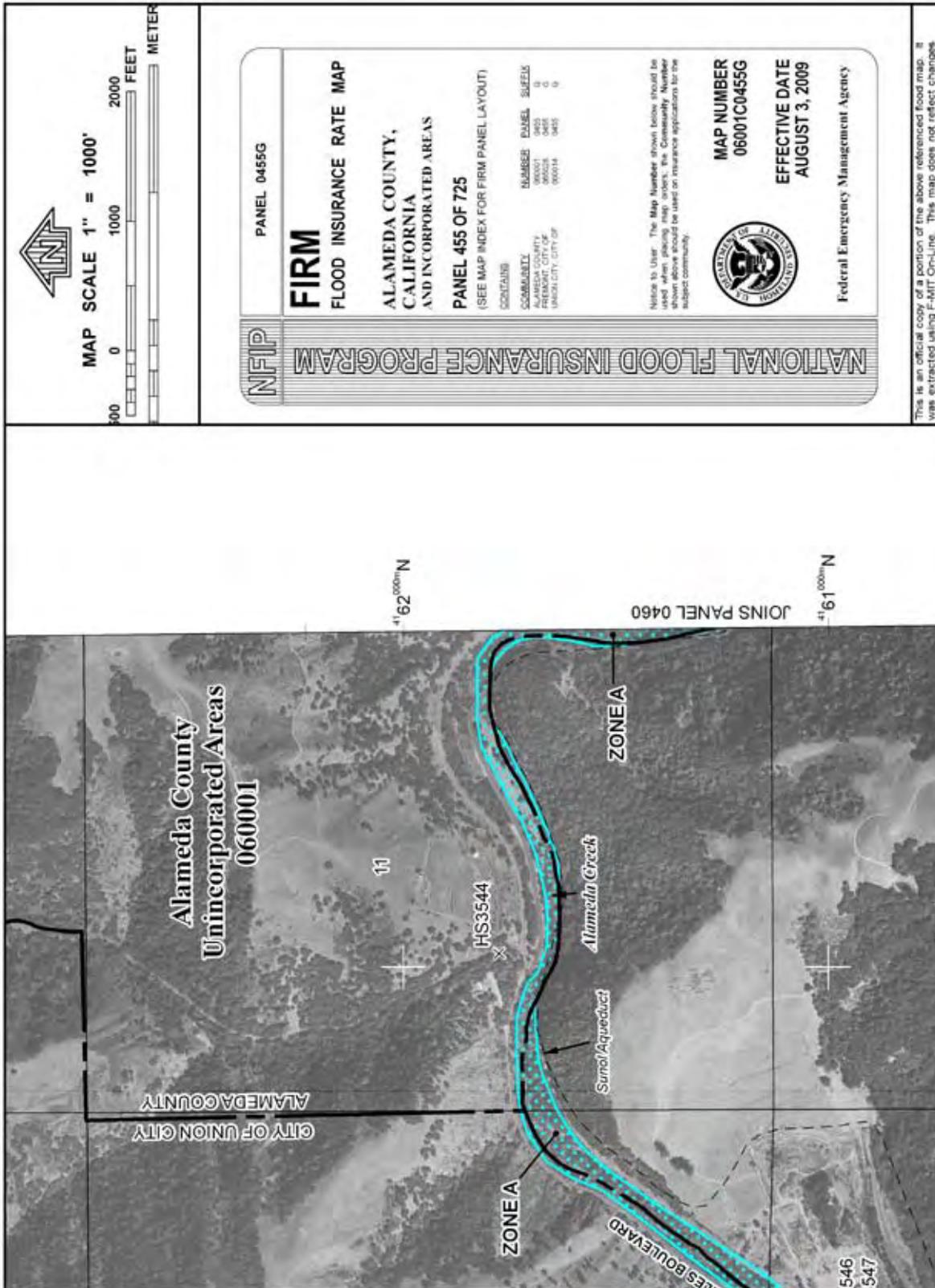
## **Appendix D. Minimization and/or Mitigation Summary**

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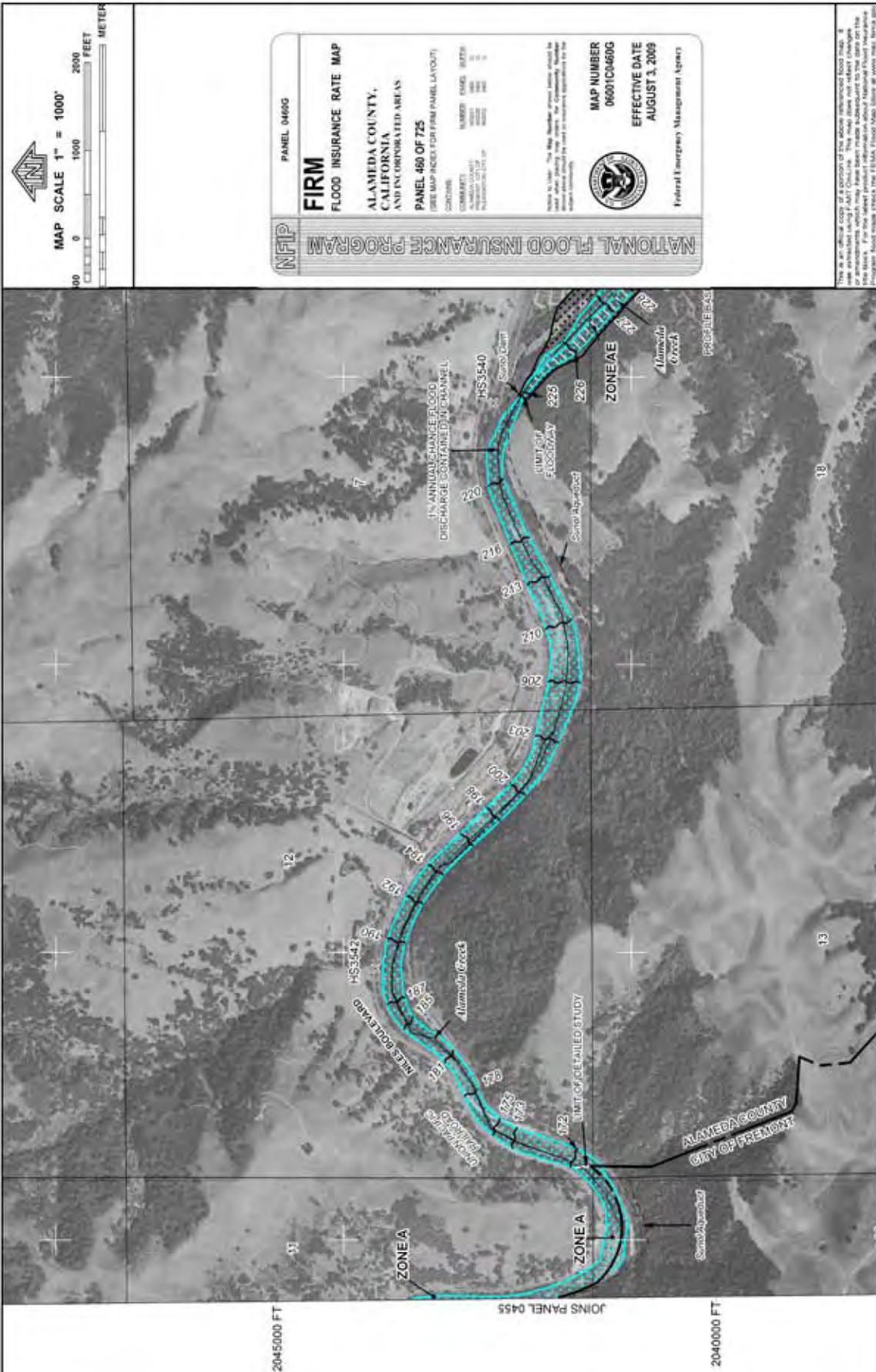
This document includes proposals to avoid and minimize environmental impacts documented in the sections of Chapter 2 and 3. After the public has had an opportunity to comment on the impact and the proposed avoidance, minimization, and compensation measures, Caltrans will develop a record of the environmental commitments it is making for this project.

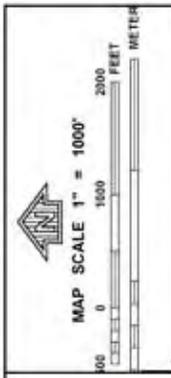


# Appendix E. FEMA Floodplain Mapping



This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes.





**NFIP** NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0469G

**FIRM**  
FLOOD INSURANCE RATE MAP

ALAMEDA COUNTY,  
CALIFORNIA  
AND INCORPORATED AREAS

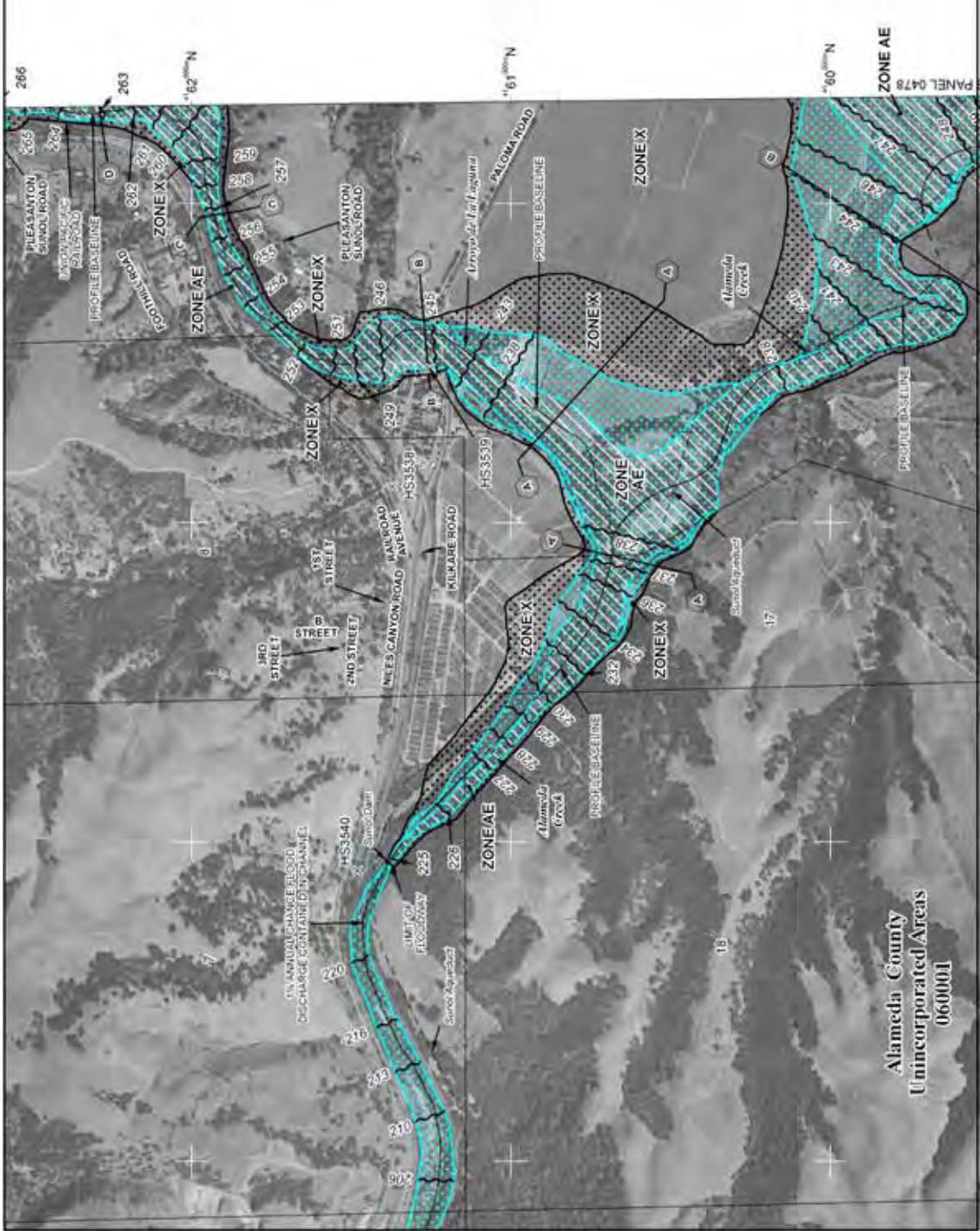
PANEL 460 OF 725  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTRACT NUMBER	DRAWING NUMBER	DATE
66001C0469G	0001	08/03/2009

Map Number: 06001C0469G  
Effective Date: AUGUST 3, 2009

Federal Emergency Management Agency

Alameda County  
Unincorporated Areas  
0600001



This is an official map of a portion of the above referenced flood zone. It is not intended to be used for any purpose other than to provide information about National Flood Insurance Program. For the latest product information about National Flood Insurance Program, please contact FEMA at 1-800-453-3346, United States District Court, 800 North 19th Street, Norfolk, VA 23502.



## **Appendix H: List of Technical Studies**

---

Alameda County, 1994. East County Area Plan.

Alameda County, 1994. Scenic Routes Element, General Plan (as amended).

Alameda County, Cities of Fremont and Union City, 2003. Niles Canyon Road, State Route 84, Application for State Scenic Highway Designation, Resolution Package.

Alameda County, Cities of Fremont and Union City, 2006. Scenic Corridor Protection Plan, Niles Canyon Road and Paloma Way Portion of California State Route 84.

California Department of Transportation (Caltrans), 1998. Historic Property Survey Report for the Seismic Retrofit of Alameda Creek Bridge and Overhead (Bridge #33-039).

California Department of Transportation (Caltrans), 2002. California Highway Barrier Aesthetics.

California Department of Transportation (Caltrans), 2003. Stacked Stone Texture on Concrete Barrier Type 60. Office of Landscape Architecture.

California Department of Transportation (Caltrans), 2005. Textured Barrier Type 60 – Slip Form Method. Landscape Architecture Program.

California Department of Transportation (Caltrans), 2006. Standard Environmental Reference, Chapter 27: Visual and Aesthetics Review.

California Department of Transportation (Caltrans), 2007. Tree Survey for Niles Canyon Safety Widening project.

California Department of Transportation (Caltrans), 2009. Scenic Highway Guidelines. [http://www2.dot.ca.gov/hq/LandArch/scenic\\_highways/scenic\\_hwy.htm](http://www2.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm).

East Bay Regional Park District (EBRPD), 1997. Master Plan 1997.

Federal Highway Administration (FHWA), 1988. Visual Impact Assessment for Highway projects.

Fremont, City of, 2007. Municipal Code (Title VIII, Planning and Zoning, Article 17.1, 18.2).

Greenhouse gases related to human activity, as identified in AB 32, include: Carbon dioxide, Methane, Nitrous oxide, Tetrafluoromethane, Hexafluoroethane, Sulfur hexafluoride, HFC-23, HFC-134a\*, and HFC-152a\*.

Hendrix, Michael and Wilson, Cori. Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents (March 5, 2007), p. 2.

Krase, Elizabeth, Historian, Caltrans District 4, 2007. Telephone Conversation, October 18, 2007.

Leising, Kirsten, Associate Biologist, Office of Biological Sciences and Permits, Caltrans District 4. Natural Environment Survey, ALA 84 Shoulder Widening from Alameda Creek Bridge to Interstate 680. June 2010.

Rushing, Brett., Associate Environmental Planner, Office of Cultural Resources, Caltrans District 4. Archaeological Survey Report (ASR), November 2007.

San Francisco Public Utility Commission (SFPUC), 2001. Alameda Watershed Management Plan.

Smith, Mary K., Associate Environmental Planner, Office of Cultural Resources, Caltrans District 4. Historic Property Survey Report (HPSR), 11/20/07.

Smith, Mary K., Associate Environmental Planner, Office of Cultural Resources, Caltrans District 4. Historic Resources Evaluation Report (HRER), 10/15/07.

Smith, Mary K., Associate Environmental Planner, Office of Cultural Resources, Caltrans District 4. Finding of Effect Report (FOE) January, 2010.

Suzuki, Keith, Landscape Associate, Office of Landscape Architecture, Caltrans District 4. Visual Impact Assessment,. ALA 84 Shoulder Widening from Alameda Creek Bridge to Interstate 680. February 2010.

Tomimatsu, Craig, Office of Hydraulics, Caltrans District 4. Location Hydraulic Study, November 2009.

Townsend, Jim, Regional Trails Manager, East Bay Regional Parks District, 2007. Telephone Conversation, October 1, 2007.

U.S. Department of Interior (USDI), 1997. How to Apply the National Register Criteria for Evaluation, National Register Bulletin 15.

# **Appendix I: US Fish and Wildlife Service Letter and Species List**

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# United States Department of the Interior



## FISH AND WILDLIFE SERVICE



Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825

May 13, 2010

Document Number: 100513030708

Jessie Golding  
URS Corporation  
1333 Broadway  
Oakland, CA 94612

Subject: Species List for New Niles Canyon Safety Improvement Project

Dear: Ms. Golding

We are sending this official species list in response to your May 13, 2010 request for information about endangered and threatened species. The list covers the California counties and or U.S. Geological Survey 7<sup>1/2</sup>-minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be August 11, 2010.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at [www.fws.gov/sacramento/es/branch.html](http://www.fws.gov/sacramento/es/branch.html).

Endangered Species Division



## U.S. Fish & Wildlife Service

### Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in  
or may be Affected by Projects in the Counties and/or  
U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 100513030708

Database Last Updated: April 29, 2010

#### Quad Lists

##### Listed Species

###### Invertebrates

- *Branchinecta conservatio*  
Conservancy fairy shrimp (E)
- *Branchinecta lynchi*  
vernal pool fairy shrimp (T)
- *Euphydryas editha bayensis*  
bay checkerspot butterfly (I)
- *Lepidurus packardii*  
Critical habitat, vernal pool tadpole shrimp (N)

- vernal pool tadpole shrimp (E)

#### Fish

- *Hypomesus transpacificus*
  - delta smelt (T)
- *Oncorhynchus mykiss*
  - Central California Coastal steelhead (T) (NMFS)
  - Central Valley steelhead (T) (NMFS)
- *Oncorhynchus tshawytscha*
  - Central Valley spring-run chinook salmon (T) (NMFS)
  - winter-run chinook salmon, Sacramento River (E) (NMFS)

#### Amphibians

- *Ambystoma californiense*
  - California tiger salamander, central population (T)
- *Rana draytonii*
  - California red-legged frog (T)
  - Critical habitat, California red-legged frog (X)

#### Reptiles

- *Masticophis lateralis euryxanthus*
  - Alameda whipsnake [=striped racer] (T)
  - Critical habitat, Alameda whipsnake (X)

#### Birds

- *Sternula antillarum* (=Sterna, =albifrons) brownii
  - California least tern (E)

#### Mammals

- *Reithrodontomys raviventris*
  - salt marsh harvest mouse (E)
- *Vulpes macrotis mutica*
  - San Joaquin kit fox (E)

#### Plants

- *Lasthenia conjugens*
  - Contra Costa goldfields (E)

Critical habitat, Contra Costa goldfields (X)

#### Proposed Species

##### Amphibians

- Rana draytonii  
Critical habitat, California red-legged frog (PX)

##### Quads Containing Listed, Proposed or Candidate Species:

NILES (446C)

LA COSTA VALLEY (446D)

#### County Lists

No county species lists requested.

#### Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

#### Important Information About Your Species List

##### How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7<sup>1/2</sup> minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

#### Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

#### Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

#### Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

**Take incidental to an otherwise lawful activity may be authorized by one of two procedures:**

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.
- During formal consultation, the Federal agency, the applicant and the Service

work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.
- Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

#### **Critical Habitat**

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

#### **Candidate Species**

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

#### **Species of Concern**

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation.

efforts. [More info](#)

#### **Wetlands**

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

#### **Updates**

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be August 11, 2010.