

Route 101 San Francisquito Creek Bridge Replacement Project

SAN MATEO AND SANTA CLARA COUNTIES, CALIFORNIA
DISTRICT 4 – SM – 101 (PM 0.0)
DISTRICT 4 – SCL – 101 (PM 52.5)
235620

Initial Study with Negative Declaration/Environmental Assessment with Finding of No Significant Impact



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 USC 327.



October 2011

Page is left intentionally blank.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Melanie Brent, Office Chief, Division of Environmental Planning & Engineering, California Department of Transportation, 111 Grand Avenue, Mail Station 8B, Oakland, CA 94612; (510) 286-5231 Voice, or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

Page is left intentionally blank.

SCH# 2011042065
04-SM-101-PM 0.0
04-SCL-101-PM 52.5
0400000678/EA 235620

Replacement of the San Francisquito Creek Bridge on Route 101 at San Francisquito Creek, which divides both the Cities of East Palo Alto and Palo Alto and the Counties of San Mateo (Post Mile 0.0) and Santa Clara (Post Mile 52.5).

INITIAL STUDY with Negative Declaration/Environmental Assessment

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C)

THE STATE OF CALIFORNIA
Department of Transportation

10/31/11
Date of Approval


BIJAN SARTIPI
District Director
California Department of Transportation

Page is left intentionally blank.

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT**

FOR

Route 101 San Francisquito Creek Bridge Replacement Project

The California Department of Transportation (Caltrans) has determined the proposed project will have no significant impact on the human environment. This FONSI is based on the attached EA, which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an EIS is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA.

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.

Date

10/31/11


BIJAN SARTIPI
District Director
California Department of
Transportation

Page is left intentionally blank.

NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (the Department) proposes to demolish the San Francisquito Creek Bridge on Route 101, which includes portions of two frontage roads on each side of Route 101, and replace it with a longer bridge at San Francisquito Creek, which divides the Cities of East Palo Alto and Palo Alto, and the Counties of San Mateo and Santa Clara.

Determination

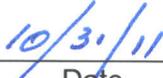
The Department has prepared an Initial Study for this project, and held a public review period; and consequently determined that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on air quality, land use, growth, housing, noise, visual/aesthetics, cultural resources, public services, utilities and service systems, geological, agricultural or recreational resources.

In addition, the proposed project would have no significant effect on hazardous waste, floodplains, water quality, wetlands and biological resources.



BIJAN SARTIPI
District Director
California Department of Transportation



Date

Page is left intentionally blank.

|

SUMMARY

The project proposes to demolish the San Francisquito Creek Bridge (Bridge No. 35-0013), which is located between the University Avenue interchange and the Embarcadero Road interchange on Route 101, and replace it with a longer bridge.

This Negative Declaration/Finding of No Significant Impact (ND/FONSI) represents the final environmental document. The Initial Study/Environmental Assessment (IS/EA) was approved in March 2011 and circulated for public review from April 19, 2011 to May 19, 2011. Changes to the previously circulated IS/EA reflect comments submitted during the public review period, project scope changes and editorial revisions to improve overall readability. No significant impacts are anticipated for this project. Vertical lines in the left margin denote the major changes.

Table of Contents

CHAPTER 1 – PROPOSED PROJECT	1
1.1 Introduction	1
Figure 1 – Project Vicinity Map	2
Figure 2 – Preliminary Project Plan	3
1.2 Purpose and Need	3
1.3 Project Description	5
1.4 Alternatives	6
1.5 Alternatives Considered but Eliminated from Discussion	8
1.6 Permits and Approvals Needed	8
CHAPTER 2 – AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES	9
Human Environment	11
2.1 Environmental Justice	11
2.2 Utilities/Emergency Services	12
2.3 Traffic and Transportation/Pedestrian and Bicycle Facilities	13
2.4 Cultural Resources	14
Physical Environment	17
2.5 Hydrology and Floodplain	17
Figure 3 – Floodplain Evaluation Report Summary	18
Figure 4 - Project Base Flood Encroachment Map	19
Table 1 – 100-Year Storm Event with Bridge Replacement/Extension	21
2.6 Water Quality and Storm Water Runoff	22
2.7 Geology/Soils/Seismic/Topography	27
2.8 Hazardous Waste/Materials	28
Biological Environment	32
2.9 Natural Communities	32
Table 2 – Effects to Natural Communities and Other Areas	35
2.10 Wetlands and other waters	37
Table 3 – Effects to wetlands and other waters	40
Figure 5 – Locations of wetlands and other waters	41
2.11 Plant Species	44
2.12 Animal Species	49
2.13 Threatened and Endangered Species	56
2.14 Invasive Species	66
Construction Impacts	67
Cumulative Impacts	70
CHAPTER 3 - California Environmental Quality Act (CEQA) Evaluation	73
Climate Change	74
Figure 6 – California Greenhouse Gas Inventory	78
Figure 7 – Mobility Pyramid	80
Table 4 – Climate Change Strategies	82
CHAPTER 4 – COMMENTS AND COORDINATION	85
CHAPTER 5 – LIST OF PREPARERS	130
CHAPTER 6 – DISTRIBUTION LIST	131
Appendix A – CEQA Checklist	133
Appendix B – Resources Evaluated Relative to the Requirements of Section 4(f)	143
Appendix C – Title VI Policy Statement	144
Appendix D – Avoidance and Minimization Summary	145
Appendix E – List of Technical Studies	157
Appendix F – U. S. Fish & Wildlife Service Species List	158
Appendix G – National Oceanic and Atmospheric Administration’s National Marine Fisheries Service Biological Opinion	162

Page is left intentionally blank.

Chapter 1 – Proposed Project

1.1 Introduction

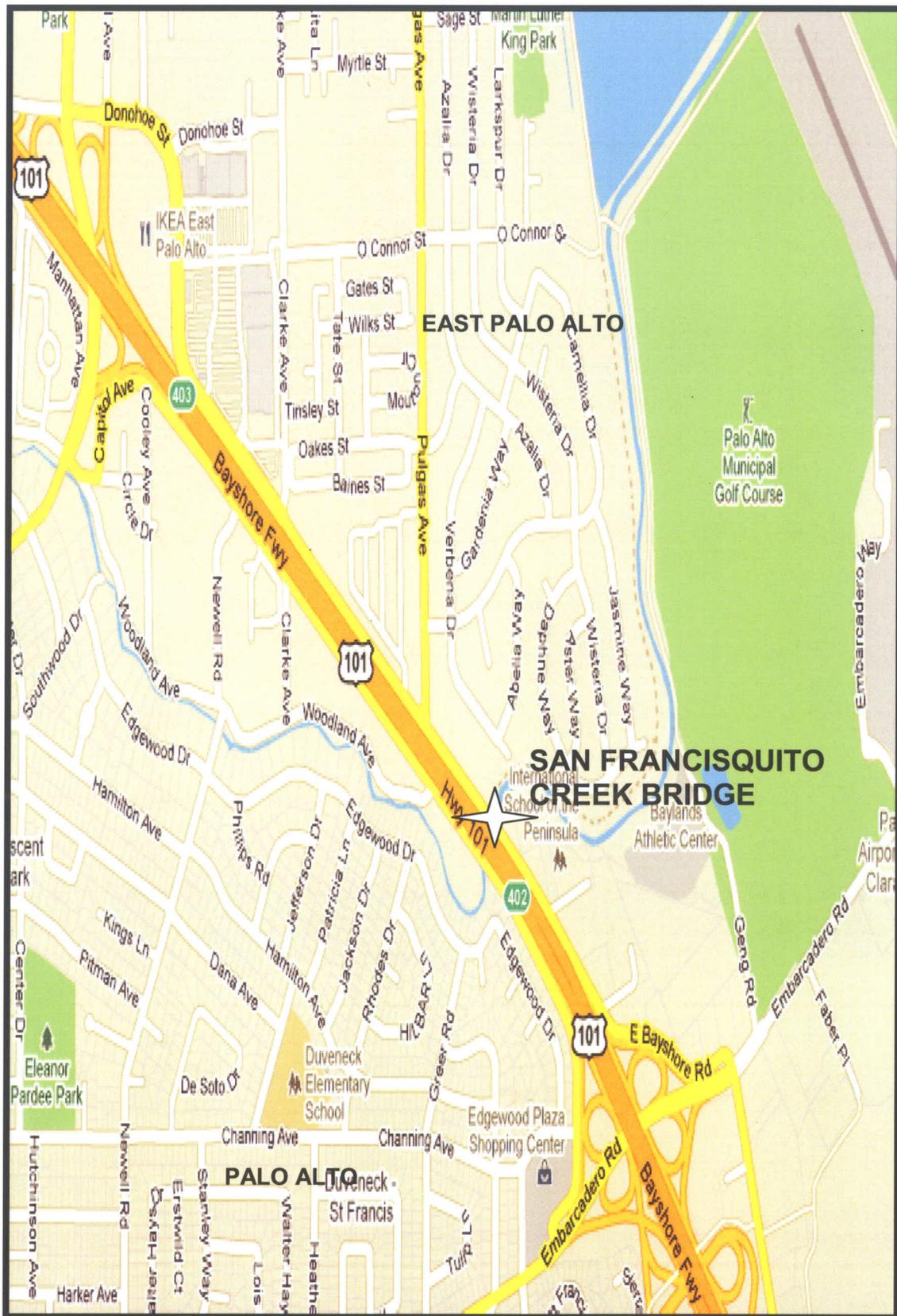
The Department of Transportation (Department or Caltrans) is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The Department proposes to demolish the San Francisquito Creek Bridge (Bridge No. 35-0013), which is located between the University Avenue interchange and the Embarcadero Road interchange on Route 101, and replace it with a longer and slightly wider bridge. The current bridge carries four lanes of traffic and is 83 feet long by 232 feet wide. San Francisquito Creek is the boundary of the Cities of Palo Alto and East Palo Alto, and the Counties of Santa Clara and San Mateo.

The proposed bridge will be 126 feet long and 244 feet wide and, upon completion of the Route 101 Auxiliary Lanes project discussed below, will carry five lanes of traffic in each direction on Route 101. The reinforced concrete foundation, piers (or structural supports for the bridge) and wing walls (or smaller walls attached to the bridge structure) of the existing bridge not only support the Route 101 freeway, but also the frontage roads on each side of Route 101. This Bridge Replacement project therefore includes the demolition and in-kind replacement of the portions of these two-lane frontage roads on either side of Route 101 (East Bayshore Road and West Bayshore Road) that cross over San Francisquito Creek. Figure 1 shows the project location.

This project lies within the limits of the proposed Route 101 Auxiliary Lanes project (Expenditure Authorization 235610). It was initially proposed that the bridge be widened as part of the Auxiliary Lanes project to provide standard inside shoulder widths, and to better accommodate the additional lanes and shoulders necessary for the Auxiliary Lanes project, but that option was dropped in favor of complete bridge replacement. In addition, the replacement of San Francisquito Creek Bridge is now proposed as a separate and independent project because a formal Section 7 Endangered Species Act consultation process for threatened and endangered species with the National Oceanic and Atmospheric Administration (NOAA)'s National Marine Fisheries Service is required and this precluded the Auxiliary Lanes project from meeting its stipulated Corridor Mobility Improvement Program (CMIA) project schedule.

The project is programmed in the 2010 State Highway Operation and Protection Program (SHOPP) and will be funded in the 2011/2012 SHOPP with a total estimated cost of \$9.320 million.

FIGURE 1 – PROJECT VICINITY MAP



Route 101 freeway continuously to maintain mobility, accessibility and safety of the travelling public.

Condition of Existing Bridge

The existing bridge is 83 feet long by 232 feet wide and carries four lanes of traffic. The foundation of the bridge serves to support the freeway and the two adjacent frontage roads. The freeway portion of the bridge was built in 1931. The freeway structure was widened, and the East Bayshore Road and West Bayshore Road frontage roads were added, in 1957. These portions of East Bayshore Road and West Bayshore Road are within State right of way.

The Department's Office of Structures Maintenance has determined that the portion of the bridge built in 1931 needs to be replaced due to its deteriorated condition. Since the remainder of the structure is over 50 years old, it has been determined that the complete structure, including both frontage roads, should be replaced.

Recent inspections of the bridge indicate large vertical and horizontal cracks throughout the right concrete baluster (or support) rail, a 4-inch diameter deck spall (or crack) located over the pier of northbound lane 3, and a 1/32-inch full height vertical crack in the upstream side of two pier walls.

Previous bridge inspection reports, located in the Department's Bridge Inspection Records Information System, also indicate that the right approach baluster rail on the East Bayshore frontage road is approximately two inches lower than the bridge deck rail. There are transverse cracks sized up to 0.08-inches, predominately over the piers, with pattern cracks forming between them. The deck cracking in the northbound lanes of Route 101 is more severe with edge spalls, and has been treated with methacrylate, a type of resin. Most of the timber lagging, or timber used to prevent rocks from falling, is missing in one abutment, exposing the severely corroded steel sheet piling, or rows of piles driven side by side to retain earth or prevent seepage. There are other spalls and vertical cracks at various locations within the structure. These cracks, spalls and corrosion indicate the poor condition of the existing bridge which needs to be replaced to ensure safety of the traveling public.

Hydraulic Capacity

The project vicinity has a history of flooding with Route 101 and adjacent properties flooding during severe storms. Most recently, flood waters forced a temporary closure of Route 101 at this location in 1998.

San Francisquito Creek is a tidal creek that discharges water into the lower end of San Francisco Bay. There has been a lengthy history of flooding along the banks of the creek due to its limited hydraulic capacity. Currently, the channel flow capacity is less than half of what is needed to accommodate a 100-year flood event.

The San Francisquito Creek Joint Powers Authority (SFCJPA), a government agency formed in 1999 by the cities of Palo Alto, Menlo Park and East Palo Alto, and the Santa Clara Valley Water District and San Mateo County Flood Control District, has proposed improvements to the creek to improve flow capacity upstream and downstream from Route 101. The SFCJPA approached the Department to request that this Bridge

Replacement project also increase the capacity of San Francisquito Creek to accommodate a greater flow at this location. In the spring of 2009, the Department agreed to improve the floodwater capacity of the bridge structure to provide flood protection necessary should a 100-year flood event occur at the same time as a high-tide event. It is therefore proposed that the new bridge will be lengthened to the southeast (Palo Alto, Santa Clara County) of the existing facility to facilitate the increase in creek flow based on 100-year flood projections, and to accommodate other SFCJPA projects planned for San Francisquito Creek. The Department will continue to cooperate with the SFCJPA in this effort. There will be less obstruction in the watercourse, allowing more water to flow at all times and to decrease flooding during high tides and storms.

Independent Utility and Logical Termini

The Federal Highway Administration (FHWA) regulations outline three general principles at 23 CFR (Code of Federal Regulations) 771.111(f) that are to be used to frame a highway project. In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated shall:

- (1) Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- (2) Have independent utility or independent significance (i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made); and
- (3) Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts. The environmental impact review frequently covers a broader geographic area than the strict limits of the transportation improvements. In the past, the most common termini have been points of major traffic generation, especially intersecting roadways.

The project has logical termini because the project limits include only the area required to replace the San Francisquito Creek Bridge. The project also has independent utility as it will address the need for replacing the bridge whether or not any other project is developed and other projects would not be required in order to realize the benefits of the proposed improvements. The Route 101 Auxiliary Lanes project is not dependent on this bridge replacement project for its development; and this project is not dependent on the Route 101 Auxiliary Lanes project. The auxiliary lanes can be added to Route 101 under non-standard design criteria (i.e., non-standard shoulders) if the bridge is not replaced.

1.3 Project Description

The Department proposes to replace the San Francisquito Creek Bridge (Bridge No. 35-0013), which is located between the University Avenue interchange and the Embarcadero Road interchange on Route 101. San Francisquito Creek marks the boundary of the cities of Palo Alto and East Palo Alto, and the counties of San Mateo

and Santa Clara. The proposed bridge will be 126 feet long and 244 feet wide and will carry five lanes of traffic in each direction. This project also includes demolishing and replacing those portions of the two-lane frontage roads on both sides of Route 101 (East Bayshore Road and West Bayshore Road) that cross over San Francisquito Creek. The frontage roads utilize the same reinforced concrete foundations, piers and wing walls as the San Francisquito Creek Bridge, and are considered to be part of the same structure. This project will not involve excavating the creek itself.

It is proposed that the existing San Francisquito Creek Bridge be demolished and that a reinforced concrete slab structure with 12 feet in additional width and 46 feet in additional length than the existing structure be constructed to accommodate the standard lane requirements of the Auxiliary Lanes Project and the anticipated increased flow capacity of San Francisquito Creek. The added length to the bridge will necessitate that three pier walls, resulting in four cells (spans) in the after condition, be constructed in San Francisquito Creek instead of the two in the existing condition. In addition, the freeway profile on each side of the bridge will be modified to conform to the new bridge deck; and the soundwall on the bridge that separates southbound Route 101 from West Bayshore Road will be shifted to conform to the wider roadway.

The purpose of this project is to correct the structural deterioration of the San Francisquito Creek Bridge while also increasing the hydraulic capacity of San Francisquito Creek. This bridge replacement project does not study, propose, include or address any improvements to highway capacity, highway operation deficiencies, transportation demand, system linkages or air quality.

1.4 Alternatives

The alternatives for this project are the Build Alternative and the No Build Alternative. The Department has selected the Build Alternative as the preferred alternative.

This project, the Build Alternative, will involve the following activities:

- Install cofferdams, watertight enclosures pumped dry to permit construction work below the water line, and construct a temporary creek diversion channel through the project site so that the area can be dewatered. Cofferdams may be constructed using sheet piles, gravel bags or some other comparable method that prevents tidal flow. The diversion channel will allow fish to travel through the work area during construction. Water pumped out of the project area before and during construction will be stored in tanks pending water-quality analysis.
- Demolish and remove the existing bridge using a mounted hydraulic jackhammer, an excavator and dump trucks.
- Install wooden platforms as needed to support the weight of the equipment in the creek.
- Excavate soil for abutments using an excavator and install steel pier piles with pile drivers.

- | - Construct falsework (temporary framing used for support during construction) and pour pile cap (the topmost portion of a pier), pier walls and bridge deck using a concrete pump truck and cement mixer.
 - | - Install tangent pile walls, consisting of rows of piles driven side by side to retain earth and/or prevent seepage, upstream and downstream of the bridge to maintain bank stability. A project to widen the creek downstream so that it will conform to the new bridge opening will be constructed by the SFCJPA. Subsequently, the SFCJPA will widen the creek upstream as well.
 - | - Remove the falsework, cofferdams, wooden platforms and the water diversion channel.
- | Construction is currently proposed to begin in 2013. Since construction time within the creek is limited by environmental constraints, it is estimated that the project will take up to three construction seasons to construct. Work in San Francisquito Creek will only be permitted from June 15 to October 15 of any year and the project is scheduled to conclude in 2014 or 2015. All temporary items in the creek (cofferdams, falsework, wooden platforms) will have to be removed at the end of the construction season and then reinstalled in the spring so that work can continue.

| The proposed stage construction is located in the Construction Impacts section (Chapter 2) of this document.

| Utility relocations will include a 96-inch City of Palo Alto storm drain as well as a Pacific Gas & Electric (PG&E) electrical overhead line along East Bayshore Road and a City of Palo Alto street light on West Bayshore Road. Potential stockpile sites will be located within the stage construction areas discussed in Chapter 2.

| The new fourth cell of the bridge will be closed off by sheet piles on both sides until downstream improvements are completed by the SFCJPA. It cannot be assumed at this time that the downstream SFCJPA project will be completed concurrently or prior to this project. Water will be allowed to flow into the closed cell through openings in the pier wall. The openings can be screened to prevent fish from entering the closed cell. Please see Figure 2 – Preliminary Project Plan, for a depiction of this new, fourth cell.

Since it has not been verified that the cofferdam installation and water diversion construction can be accomplished from the frontage road bridges, it must be assumed that up to four temporary construction easements (TCE's) will be necessary for access to the creek. No other temporary or permanent right of way acquisitions are anticipated for this project.

No Build Alternative

The No Build Alternative compares project conditions if the proposed improvements are not constructed. The San Francisquito Creek Bridge would continue to deteriorate in its existing condition under the No Build Alternative as its structural deficiencies will not be resolved or addressed. The capacity of San Francisquito Creek would also be constrained at this location. The Department's Office of Structures Maintenance recommendation for bridge replacement would be rejected. Presumably, the bridge condition will continue to deteriorate so that the Department would eventually close the

bridge to traffic. Since this bridge carries Route 101 across San Francisquito Creek, the freeway would have to be closed with severe traffic consequences for the region such as detouring traffic to El Camino Real, a route that runs roughly parallel to Route 101, but is not a freeway.

1.5 Alternatives Considered but Eliminated from Further Discussion

The Build Alternative and the No Build Alternative are the only alternatives for this project and no other alternatives were considered. Within this Build Alternative, the design variation consisting of an in-kind replacement of the San Francisquito Creek Bridge (or slightly wider replacement to better accommodate the auxiliary lanes) was proposed to fulfill the initial purpose of addressing its structural deficiencies. Subsequently, the design variation of extending the bridge was proposed to fulfill the revised purpose and need, which now includes the secondary purpose of addressing the hydraulic capacity of San Francisquito Creek.

The City of East Palo Alto approached the Department in May 2010 with the possibility of adding pedestrian access to this San Francisquito Creek Bridge Replacement Project. This began a dialogue between the Department, the City of East Palo Alto and the San Francisquito Creek Joint Powers Authority that is discussed in more detail in Chapter 4, Comments and Coordination. This discussion contains responses by the Department as part of this proposal. The discussion concludes that the Department, in conjunction with the San Francisquito Creek Joint Powers Authority (SFCJPA), analyzed the feasibility of a pedestrian undercrossing at this location and determined that it was infeasible. The Department continues to work with the City of East Palo Alto in the identification of potential funding sources, design and other potential locations for a pedestrian overcrossing as a separate, independent project.

1.6 Permits and Approvals Needed

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

Agency	Permit/Approval	Status
National Oceanic and Atmospheric Administration (NOAA)'s National Marine Fisheries Service	Section 7 Consultation for Threatened and Endangered Species Biological Opinion	NOAA Fisheries has issued its Biological Opinion
United States Army Corps of Engineers (USACE)	Section 404 Permit for placement of fill in waters of the United States	Application pending (Design phase)
California Department of Fish and Game (CDFG)	Section 1602 Lake and Streambed Alteration Agreement	Application pending (Design phase)
San Francisco Bay Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification Dewatering Permit	Application pending (Design phase)
Santa Clara Valley Water District	Encroachment and Construction Permit	Application pending (Design phase)
City of Palo Alto	Encroachment Permit	Application pending (Design phase)
City of East Palo Alto	Encroachment Permit	Application pending (Design phase)

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

The analyses discussed are based on supporting technical studies and other reference materials not attached to this document. They are available for examination and copying at the following address: California Department of Transportation, District 4, Office of Environmental Analysis, 111 Grand Avenue, Oakland California, 94623-0660.

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.

- *Air Quality* – The project is exempt from the requirement of an air quality conformity determination. Neither an air quality technical study nor a mobile source air toxics analysis is required. This bridge replacement project does not propose to modify highway capacity, operation or accessibility, though it is within the limits of the Route 101 Auxiliary Lanes project discussed in Chapter 1. (Air Quality for the Auxiliary Lanes project is discussed in that project’s approved Initial Study with Negative Declaration/Environmental Assessment with Finding of No Significant Impact.) The Construction Impacts section of Chapter 2 includes a discussion of avoidance and minimization measures related to temporary air quality effects during construction.
- *Community Character and Cohesion* – The proposed project will not alter the character or cohesiveness of existing neighborhoods or communities. The project will be constructed within existing right of way with the exception of up to four temporary construction easements.
- *Consistency with State, Regional and Local Plans and Programs* – The proposed project, under its purpose and need, is consistent with state, regional and local plans and programs, as well as transportation plans and programs. It has been determined that the project does not lie within the jurisdictional limits of the Bay Conservation and Development Commission (BCDC). Chapter 4, Comments and Coordination, includes a discussion related to bicycle/pedestrian improvements as part of this project.
- *Existing and Future Land Use* – The project does not affect existing or future land uses. No acquisition of residential or commercial structures is anticipated, and the project will not alter community interaction patterns.
- *Farmlands and Timberlands* – There are no farmlands or timberlands within the project vicinity.
- *Growth* – Future growth in the region is highly constrained; and the project does not propose to modify highway capacity, operation or accessibility and has no potential to influence growth. (The Route 101 Auxiliary Lanes project proposes to add auxiliary lanes between existing interchanges and therefore is not considered a

project with the potential to increase mainline highway capacity or to modify accessibility). Therefore, project related growth is not reasonably foreseeable.

- *Mineral Resources* – There are no mining resources within the project vicinity.
- *Noise* – The project has no potential to increase noise and does not qualify as a Type I project under 23 CFR (Code of Federal Regulations) 772. The Construction Impacts section of Chapter 2 includes a discussion of avoidance and minimization measures related to temporary noise effects during construction.
- *Paleontology* – The project will not affect paleontological resources.
- *Parks and Recreation* – There are no parks or recreational facilities affected by the project.
- *Relocations and Real Property Acquisition* – No permanent part- or full-take acquisitions are proposed, but up to four temporary construction easements (TCEs) are proposed on a single-family residential property at 1941 Edgewood Drive (Palo Alto), a multi-family residential (condominium) property at 1982 West Bayshore Road (East Palo Alto), and on commercial upholstery and auto body shops at 2023/2025 East Bayshore Road (Palo Alto), and a self-storage facility at 1985 East Bayshore Road (East Palo Alto), of which some portions of properties used for vehicular parking may be temporarily affected. The TCE requirements (sizes, durations, etc.) will be finalized by the design/right of way phase of the project. There will be an appraisal and inspection of each proposed TCE by the Department; and there will be future meetings between the affected property owners and Department Right of Way representatives to discuss compensation. These owners, tenants, businesses or persons may qualify for relocation assistance benefits under the Uniform Relocation Assistance and Real Property Act (RAP) of 1970 for the possible relocation of any personal property within TCE areas encountered during inspection.
- *Visual/Aesthetics* – The project will not adversely affect existing aesthetics or visual resources. San Francisquito Creek is not a scenic resource, is not visible to motorists on southbound Route 101, and is visible to those on the northbound side only momentarily. This section of Route 101 is not an officially designated scenic highway. The Department completed a Scenic Resource Evaluation in December 2010; and the Evaluation recommends minor visual enhancements that will be incorporated into the project including colored concrete for the new bridge piers and more aesthetically pleasing bridge railing that will be further evaluated and incorporated during the design phase of the project. Such enhancements will not substantially affect the appearance of the highway corridor and will be visually consistent with the character of the surrounding area.

Human Environment

2.1 ENVIRONMENTAL JUSTICE

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2011, this was \$22,350 for a family of four.

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

Affected Environment

This project straddles the cities of Palo Alto and East Palo Alto. The City of East Palo Alto has a high concentration of low income and minority residents based on available United States Census information. The 2000 median household income of East Palo Alto was \$44,006 (2010 data not available) compared to \$119,046 in Palo Alto and \$82,609 in adjacent Menlo Park. The 2010 population count for East Palo Alto indicates the City was 28.8% White, 16.7% African American, 3.8% Asian, 7.5% Pacific Islander, and 64.5% Hispanic or Latino of any race. The 2010 population count for Palo Alto indicates the City was 64.2% White, 1.9% African American, 27.1% Asian, and 6.2% Hispanic or Latino of any race; and in Menlo Park, the population distribution was 70.2% White, 4.8% African American, 9.9% Asian, and 18.4% Hispanic or Latino of any race.

The project is located adjacent to one 90-unit multi-family residential complex in East Palo Alto at 1982 West Bayshore Road. No specific demographic information is available for this property since data is currently not available at the census tract/block level for the 2010 Census, and this complex was constructed in 2002 and was not accounted for in the 2000 Census. A temporary construction easement is currently proposed on a portion of the parking and landscaped areas of the property; and no residents of this complex will be displaced.

No minority or low-income populations that would be adversely affected by the proposed project have been identified as determined above. Therefore, this project is not subject to the provisions of EO 12898.

Environmental Consequences

While the City of East Palo Alto has a high concentration of low income and minority residents, this project is located where it is because of the structural deficiency of San

Francisquito Creek Bridge which supports Route 101. This project will not disproportionately affect low income or minority residents. The bridge is going to be in the same location and will not be moved or realigned by this project.

The City of East Palo Alto approached the Department in May 2010 with the possibility of adding pedestrian access to this San Francisquito Creek Bridge Replacement Project. This began a dialogue between the Department, the City of East Palo Alto and the San Francisquito Creek Joint Powers Authority that is discussed in more detail in Chapter 4, Comments and Coordination. This discussion contains responses by the Department related to the consideration of environmental justice as part of this proposal. The discussion concludes that the Department, in conjunction with the San Francisquito Creek Joint Powers Authority (SFCJPA), analyzed the feasibility of a pedestrian undercrossing at this location and determined that it was infeasible. The Department continues to work with the City of East Palo Alto in the identification of potential funding sources, design and other potential locations for a pedestrian overcrossing as a separate, independent project.

Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, the Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations as per EO 12898 regarding environmental justice.

2.2 UTILITIES/EMERGENCY SERVICES

Affected Environment

A 96-inch City of Palo Alto storm drain, a Pacific Gas & Electric (PG&E) overhead line along East Bayshore Road and a City of Palo Alto street light on West Bayshore Road lie within the project limits.

Environmental Consequences

Utility relocations will include the PG&E line, and City of Palo Alto storm drain and street light noted above.

West Bayshore Road will be closed three to four months (one construction season) during Construction Stage 3. Detour signs will be in place to provide an alternative route for law enforcement, fire, and other emergency services. The Department and/or its contractor will notify the local emergency service providers of its intent to close West Bayshore Road and provide detour information. Access to adjacent private properties will be maintained during construction.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

2.3 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

Regulatory Setting

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

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

Affected Environment

This bridge replacement project does not propose to modify highway capacity, operation or accessibility, though it is within the limits of the Route 101 Auxiliary Lanes project discussed in Chapter 1. Traffic and transportation for the Auxiliary Lanes project is discussed in that project's approved Initial Study with Negative Declaration/Environmental Assessment with Finding of No Significant Impact. The project therefore does not permanently affect traffic and transportation (i.e., levels of service, etc.).

There is pedestrian/bicycle access including sidewalks on both frontage roads, East Bayshore Road and West Bayshore Road. Public parking is also available on these roads.

Environmental Consequences

The project proposes to temporarily affect pedestrian and bicycle facilities on West Bayshore Road, which will be closed three to four months (one construction season) during construction stage 3.

The City of East Palo Alto approached the Department in May 2010 with the possibility of adding pedestrian access to this San Francisquito Creek Bridge Replacement Project. This began a dialogue between the Department, the City of East Palo Alto and the San Francisquito Creek Joint Powers Authority that is discussed in more detail in Chapter 4, Comments and Coordination. This discussion contains responses by the Department related to the consideration of bicycle/pedestrian improvements as part of this proposal. The discussion concludes that the Department, in conjunction with the San Francisquito Creek Joint Powers Authority (SFCJPA), analyzed the feasibility of a pedestrian undercrossing at this location and determined that it was infeasible. The Department continues to work with the City of East Palo Alto in the identification of potential funding sources, design and other potential locations for a pedestrian overcrossing as a separate, independent project.

Avoidance, Minimization, and/or Mitigation Measures

A Transportation Management Plan (TMP) that includes coordination with the Cities of East Palo Alto and Palo Alto for issues related to West Bayshore Road, as well as communication between adjacent residents, businesses and the Resident Engineer for construction-related issues, will be implemented and completed during the design phase of the project. This plan will address matters such as residential and non-residential parking and pedestrian/bicycle access on West Bayshore Road, and will include press releases to notify and inform motorists, businesses, community groups, local entities and emergency services of upcoming closures and detours. Residents and businesses adjacent to the project area will be invited to attend future pre-construction/constructability meetings with the Resident Engineer and/or contractor.

Detour signs will be in place to provide an alternative route for motorists and pedestrians affected by the temporary closure of West Bayshore Road. West Bayshore Road is also currently being proposed as a construction staging area and therefore may temporarily affect on-street parking.

2.4 CULTURAL RESOURCES

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, FHWA, State Historic Preservation Officer (SHPO), and the Department 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 the Department. The FHWA’s responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 327) (July 1, 2007).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties.

Historical resources are 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 the Department to inventory state-owned structures in its rights-of-way.

Affected Environment

A Historic Property Survey Report (HPSR) was completed for the project in November 2010. The Department's Office of Cultural Resources has completed this report to ensure that the project is carried out in a manner consistent with Department responsibilities under the January 2004 *Programmatic Agreement under the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA) for compliance with Section 106 of the National Historic Preservation Act (NHPA).

The Area of Potential Effects (APE) has been established in consultation with Department staff. For archaeology, the APE was established based on the limits of construction proposed for the project. The historic architecture APE was established based on the physical limits of the project and by parcel (legal ownership) limits within the project area.

The San Francisquito Creek Bridge (#35-0013) is within the project limits. It is a Category 5 structure in the Department Historic Highway Bridge Inventory and is not eligible for listing on the National Register of Historic Places (NRHP).

The Department has determined that no properties requiring NRHP evaluation are present within the APE, and that no State-owned cultural resources are present within the APE.

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

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 (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Jennifer Darcangelo, Office Chief, Office of Cultural Resource Studies, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 will be followed as applicable.

Environmental Consequences

The Department's determination is that this project will have no potential to affect historic properties. In accordance with the PA, the HPSR will not need to be submitted to the State Office of Historic Preservation for review as the undertaking has a Finding of No Historic Properties Affected. The Section 106 process is complete for this project. However, if project plans should change, additional studies may be required.

The project would not affect or use any Section 4(f) historic resource since no such uses were identified within the project limits.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

Physical Environment

2.5 HYDROLOGY AND FLOODPLAIN

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. 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.”

Affected Environment

The Department completed a Floodplain Evaluation Report Summary (Figure 3) that addresses the analysis of each subject above in order to comply with 23 CFR 650 Subpart A. The Department prepared Location Hydraulic Study for the Route 101 Auxiliary Lanes Project in December 2007, and a Final Hydraulic Report that is specific to this project in December 2010.

This project lies within the 100-year floodplain designated on the latest FEMA Flood Insurance Rate Maps (FIRM). Figure 4 is the Project Base Floodplain Encroachment Map. The Mean Higher High Water (MHHW) at the elevation of +7.1 feet (North American Vertical Datum (NAVD) of 1988) was recorded at the nearest tidal station (Redwood City- Station ID: 9414523), and is the highest water elevation expected at the creek mouth that affects the water level in the creek, per the aforementioned Noble Consultants, Inc. study.

The San Francisquito Creek watershed is approximately 45 square miles in extent, commencing at the rugged hillsides of the Santa Cruz Mountains and extending to San Francisco Bay. The creek begins at the base of Searsville Dam at Stanford University and flows all the way into San Francisco Bay, a distance of 14 miles. Tributary streams include West Union Creek, Bear Gulch Creek, Corte Madera Creek, Sausal Creek, and Los Trancos Creek. Downstream of the confluence with Los Trancos Creek, the creek forms the boundary between San Mateo and Santa Clara Counties,

Floodplain Evaluation Report Summary

Dist. 04 Co. San Mateo & Santa Clara Rte. 101 P.M. 0.00
 Project No. EA 04-235620 Bridge No. 35-0013

Floodplain Description

The San Francisquito Creek Watershed encompasses an area of 45 square miles and extends from the Santa Cruz Mountains to the San Francisco Bay. The creek flows through five municipalities (Palo Alto, East Palo Alto, Menlo Park, Portola Valley, and Woodside) and forms the boundary between two counties (Santa Clara and San Mateo). This region includes a wide variety of land uses and natural habitats including residential, a major university, commercial shopping centers, open space preserves, grazing land, and a biological preserve. The area is also home to a diversity of socio-economic ranges, new development, and historic beauty.

	Yes	No
1. Is the proposed action a longitudinal encroachment of the base floodplain?	<u>X</u>	_____
2. Are the risks associated with the implementation of the proposed action significant?	_____	<u>X</u>
3. Will the proposed action support probable incompatible floodplain development?	_____	<u>X</u>
4. Are there any significant impacts on natural and beneficial floodplain values?	_____	<u>X</u>
5. Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	_____	<u>X</u>
6. Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).	_____	<u>X</u>
7. Are Location Hydraulic Studies that document the above answers on file? If not explain.	<u>X</u>	_____

PREPARED BY:

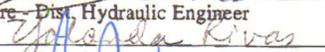
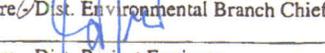
	12-17-10
Signature - Dist. Hydraulic Engineer	Date
	12-21-10
Signature - Dist. Environmental Branch Chief	Date
	12-21-10
Signature - Dist. Project Engineer	Date

FIGURE 3 – Floodplain Evaluation Report Summary



FIGURE 4 - Project Base Flood Encroachment Map

which is within the Santa Clara Valley Water District's northwest Flood Control Zone and San Mateo County's San Francisquito Creek Flood Control Zone.

Elevations of the watershed range from sea level to about 2,200 feet above sea level in the Santa Cruz Mountains. However, San Francisquito Creek exists in the foothills above Stanford University for only a few miles before it flattens to a gentler slope as it

crosses the valley floor. The upland portion of the watershed consists of low-density residential development and is characteristic of brushy woodlands; while the relatively flat valley floor has been extensively developed and is typical of most urbanized areas. The watershed includes a wide variety of land uses and natural habitats including residential in five municipalities (Palo Alto, East Palo Alto, Menlo Park, Portola Valley and Woodside), a major university (Stanford University), commercial shopping centers, open space preserves, grazing land, and a biological preserve. The majority of residential development and the majority of properties are within the base floodplain boundary determined by studies that began in 1995 sponsored by the Federal Emergency Management Act (FEMA).

There has been a lengthy history of flooding in the project vicinity due to the bridge, many of which cannot handle the flow capacity along with low levees which do not contain higher flow. To relieve the discharge into San Francisquito Creek and reduce local flooding, a 96-inch storm drain was built in 1971 to handle some of the overland flow from a Palo Alto residential area. The outfall with a flapped gate is located downstream of the East Bayshore Road frontage road bridge, and discharges into San Francisquito Creek. The storm drain originally discharged by gravity to the creek through an outfall with a flapped gate downstream of the East Bayshore Road frontage road bridge.

The storm drain was modified to direct runoff to a storm water pump station constructed by the City of Palo Alto in 2009 at 2027 East Bayshore Road. Storm runoff from the 96-inch storm drain is now discharged to the creek via the pump station, with the original gravity outfall serving only as a secondary discharge point. The 96-inch storm drain will be realigned by the City of Palo Alto. The project will provide a 36-inch storm drain connection to the creek (through the south bridge abutment wall) as a replacement for the existing secondary storm water discharge point. The Santa Clara Valley Water District improved the levees along San Francisquito Creek in 2004 to restore them to their original as-built (1958) condition. These levee improvements do not, however, provide protection from the 100-year flood event.

The latest report to determine the flow capacity for the existing structures over the San Francisquito Creek is the Final Report of the San Francisquito Creek Development and Calibration/Verification of Hydraulic Model, prepared by Noble Consultants, Inc. for the U. S. Army Corps of Engineers (USACE) on April 17, 2009. According to this report, most existing structures including the San Francisquito Creek Bridge “are incapable of carrying the 100-year flow”. The peak flow rates at Route 101 are estimated at 4,800 cubic feet per second (cfs) for a 10-year storm, and 9,300 cfs for a 100-year storm.

The Department has consulted with the San Francisquito Creek Joint Powers Authority (SFCJPA) and other local agencies to coordinate San Francisquito Creek improvement efforts. The designed discharge will be 9,300 cfs. The Department has also agreed to replace the San Francisquito Creek Bridge with an extension of one span (cell) to its southeasterly side that will be initially blocked, but subsequently opened upon completion of the SFCJPA’s downstream improvements project.

Environmental Consequences

The Floodplain Evaluation Report Summary indicates the following conclusions. The proposed project of bridge replacement is not a significant encroachment on the 100-

year floodplain. The proposed action is a longitudinal encroachment of the base floodplain, which is an encroachment that is parallel to the direction of flow. The existing bridge is already a longitudinal encroachment and the new bridge will be in essentially the same location. The risks associated with the implementation of the project are not significant; and there are no significant impacts on natural and beneficial floodplain values.

Analysis of the California Flood Insurance Rate Maps (FIRM) reveals the following information for the project vicinity. The proposed project is located on the boundary between two cities, and is in a flood hazard area inundated by the 100-year flood with two different zonings. The first zoning is "ZONE A, No base flood elevation determined" as shown on the East Palo Alto City, FIRM, Community-Panel Number 060708-0001B, and dated August 23, 1999. The second zoning is "ZONE AE, Base flood elevation determined" as shown on the Santa Clara County, FIRM, Community Panel Number 06085C-0030H, and dated May 18, 2009. The current 100-year flood elevation is at 11.0 feet (NAVD 88) as shown on Santa Clara County 2009 flood map.

The extension of the bridge, which includes the addition of a third pier wall and fourth span (cell), will improve the channel capacity. The channel width will be at least 120 feet, and the depth will be at least 12 feet, both upstream and downstream. In the Final Hydraulic Report, the normal depth method was used in an analysis and a hydraulic modeling computer program was used for analyzing the 100-year storm event. The result is summarized in the Table 1 below.

100-year storm discharge (cfs)	Water surface elevation (feet)	Average velocity (feet per second)	Minimum freeboard (Feet)	
9,300	18.12	6.82	1.6 (upstream)	0.0 (downstream)

TABLE 1 – 100-Year Storm Event with Bridge Replacement/Extension (NAVD 88)

The Final Hydraulic Report indicates that the hydraulic capacity of the creek would be improved by more than twenty percent. Also, the minimum upstream freeboard, the vertical distance between the 100-year flood elevation and the elevation of the lowest point of the bridge, shows a marked improvement in the bridge's capability to handle a 100-year storm event.

There is currently a staggered soundwall on the San Francisquito Creek Bridge that is designed to allow floodwaters to pass through State right of way during a flood event. This project proposes to shift this soundwall on the bridge that separates southbound Route 101 from West Bayshore Road to conform to the wider roadway. The Department's Hydraulics staff has recommended that the openings in the sound walls need to be maintained to allow flow onto the freeway. The openings will be narrower. The lengthening of the bridge will ultimately result in increasing the creek's flow capacity and lowering the water surface elevation when downstream channel improvements are completed by the SFCJPA and the fourth span (cell) is open.

The proposed project will not result in significantly or adversely impacting the existing FEMA 100-year floodplain; however, portions of Route 101 will still be inundated during a major 100-year flood event since the Department cannot protect this section from extreme flood events.

Avoidance, Minimization, and/or Mitigation Measures

As explained in the preceding section, there has been substantial effort to consider and minimize flooding in the design of this project through agreeing to replace the bridge with an extension of one span (cell). No additional avoidance, minimization and/or mitigation measures are necessary or proposed per Question # 5 of the Floodplain Evaluation Report Summary.

2.6 WATER QUALITY AND STORM WATER RUNOFF

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, the Federal Water Pollution Control Act was amended, making the discharge of pollutants to the waters of the United States from any point source unlawful, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The Federal Water Pollution Control Act was subsequently amended in 1977, and was renamed the Clean Water Act (CWA). The CWA, as amended in 1987, directed that storm water discharges are point source discharges. The 1987 CWA amendment established a framework for regulating municipal and industrial storm water discharges under the NPDES program. Important CWA sections are as follows:

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for any federal project that proposes an activity, which may result in a discharge to waters of the United States to obtain certification from the State that the discharge will comply with other provisions of the act.
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) into waters of the United States. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) establishes addresses storm water and non-storm water discharges.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the U.S. Army Corps of Engineers (ACOE).

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

State Requirements: Porter-Cologne Water Quality Control Act (California Water Code)

California’s Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a “Report of Waste Discharge” for

any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state.

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

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

- **NPDES Program**

The SWRCB adopted Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ) on July 15, 1999. This permit covers all Department rights-of-way, properties, facilities, and activities in the State. NPDES permits establish a 5-year permitting time frame. NPDES permit requirements remain active until a new permit has been adopted.

In compliance with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices (BMPs). The proposed Project will be programmed to follow the guidelines and procedures outlined in the 2003 SWMP to address storm water runoff or any subsequent SWMP version draft and approved.

- **Municipal Separate Storm Sewer System Program**

The U.S. EPA defines a Municipal Separate Storm Sewer System (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or

conveying storm water. As part of the NPDES program, U.S. EPA initiated a program requiring that entities having MS4s apply to their local RWQCBs for storm water discharge permits. The program proceeded through two phases. Under Phase I, the program initiated permit requirements for designated municipalities with populations of 100,000 or greater. Phase II expanded the program to municipalities with populations less than 100,000.

- **Construction Activity Permitting**

Section H.2, Construction Program Management of the Department's NPDES permit states: "The Construction Management Program shall be in compliance with requirement of the NPDES General Permit for Construction Activities (Construction General Permit)". Construction General Permit (Order No. 2009-009-DWQ, adopted on September 2, 2009, will become effective on July 1, 2010. The permit will regulate storm water discharges from construction sites that result in a DSA of 1 acre or greater, and/or are part of a common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit.

The newly adopted permit separates projects into Risk Levels 1 – 3. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring. Risk levels are determined during the design phase and are based on potential erosion and transport to receiving waters. Applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPP).

Caltrans Statewide NPDES Permit requires the Department to submit a Notice of Construction (NOC) to the RWQCB to obtain coverage under the Construction General Permit. Upon project completion, a Notice of Completion of Construction (NOCC) is required to suspend coverage. This process will continue to apply to Department projects until a new Caltrans Statewide NPDES Permit is adopted by the SWRCB. An NOC or equivalent form will be submitted to the RWQCB at least 30 days prior to construction if the associated DSA is 1 acre or more. In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is used for projects with DSA less than 1-acre.

During the construction phase, compliance with the permit and the Department's Standard Special Conditions requires appropriate selection and deployment of both structural and non-structural BMPs. These BMPs must achieve performance standards of Best Available Technology economically achievable/Best Conventional Pollutant Control Technology (BAT/BCT) to reduce or eliminate storm water pollution.

Affected Environment

The Natural Environmental Study (NES) was completed in December 2010 and consulted for this section. A Storm Water Data Report continues to be developed and

updated during the environmental document phase of the project and as the project proceeds into the design phase.

This project is located in the San Francisco Bay Regional Water Quality Control Board (RWQCB Region 2). San Francisquito Creek is a perennial stream that drains an approximate 45 to 47 square mile watershed composed of sub-watersheds distributed along the eastern side of the Santa Cruz Mountains. The sub-watersheds of Bear Creek, Corte Madera Creek, and Los Trancos Creek converge to form San Francisquito Creek, which drains eastward to San Francisco Bay. Waters from 23 creeks in these sub-watersheds constitute the overall San Francisquito Creek watershed. San Francisquito Creek is an impaired water body, or a water body that does not meet established water quality standards. It discharges water into the lower end of the San Francisco Bay, and is tidally influenced in the project area.

Environmental Consequences

The increased impervious surface area will be less than one acre as a result of this project. The total disturbed soil area is estimated to be 1.7 acres.

A Clean Water Act Section 401 Certification from the Regional Water Quality Control Board (RWQCB), United States Army Corps of Engineers (USACE) Section 404 Nationwide Permit, and California Department of Fish and Game Section 1602 Streambed Alteration Agreement are anticipated. A dewatering permit is also required for this project.

A possible, but temporary effect is the presence of pollutants in storm water discharges throughout construction.

Avoidance, Minimization, and/or Mitigation Measures

The project will comply with the Department's Statewide General Construction Permit for storm water discharges from construction sites where, for example, clearing, grading, stockpiling, and/or excavation result in soil disturbances of at least one acre or more. To comply with the conditions of the Department NPDES Permit and address the temporary water quality effects resulting from construction activities in this project, Standard Special Provision (SSP) 07-345 will be implemented during the design phase. This SSP will address the preparation of the SWPPP document and the implementation of SWPPP during construction.

Appropriate measures will be implemented to comply with the conditions of NPDES permit and the Construction General Permit. The Department's District 4 Storm Water Coordination Branch will assess potential water quality impacts of the project through geometric design and investigate the potential incorporation of permanent treatment Best Management Practices (BMPs) into the project to reduce the discharge of pollutants during and after construction to the Maximum Extent Practicable. The Department will review and enforce these BMPs that the contractor will implement. These BMPs fall into four categories: Temporary Construction Site BMPs (BMPs that are applied during construction activities to control sedimentation, erosion, and the discharge of other pollutants), Permanent Design Pollution BMPs (BMPs to improve water quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces), Permanent Treatment BMPs (BMPs to receive storm water run-off

from traveled ways and to treat prior to discharging beyond the highway right of way), and Maintenance BMPs.

The Department's approved Permanent Treatment BMPs include: biofiltration systems (biofiltration strips and swales), infiltration basins, detention basins, traction, sand traps, dry weather flow diversions, media filters, gross solids removal devices, multi-chamber treatment trains and wet basins.

BMPs for erosion and sediment control will be implemented to minimize the potential for impacts to water quality in San Francisquito Creek. These BMPs include, but are not limited to:

- No fill material other than clean, silt-free gravel or river rock will be placed in the channel of San Francisquito Creek.
- The Department will exercise every reasonable precaution to protect San Francisquito Creek or any jurisdictional waters from pollution from fuels, oils, bitumens, calcium chloride, and other materials that are harmful to aquatic life.
- A plan for the emergency cleanup of any spills of fuel or other material will be available on-site at all times.
- Equipment will be refueled and serviced at designated construction staging areas. All construction material and fill will be stored and contained in a designated area that is 50 feet away from San Francisquito Creek to prevent transport of materials into the stream. A sediment barrier will be installed to collect any discharge, and adequate materials for spill cleanup will be maintained on-site.
- Construction vehicles and equipment will be maintained to prevent contamination of soil or water (from external grease and oil or from leaking hydraulic fluid, fuel, oil, or grease).
- Good housekeeping practices and use of safer alternative products (i.e., biodegradable hydraulic fluids) will be employed where feasible. Employees will be trained to prevent or reduce the discharge of pollutants from construction activities to waters and to take appropriate measures should a spill occur.
- All trash will be placed in secure containers with secure lids and removed from the site daily. Trash dumping, firearms, open fires, hunting, and pets will be prohibited from the project area.
- In the event of a spill or discharge of harmful material into potentially suitable habitat for special-status species, the spill or discharge will be immediately contained, cleaned up, and/or removed. All work will be stopped immediately and the National Oceanic Atmospheric and Administration's National Marine Fisheries Service (NOAA Fisheries), U.S. Fish & Wildlife Service (USFWS) and the California Department of Fish & Game (CDFG) will be notified.

2.7 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

Regulatory Setting

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

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

Affected Environment

The Department prepared the *Preliminary Geotechnical Report: Auxiliary Lanes from Embarcadero Road to Marsh Road, 04-SM-101 PM 0.0/3.6, SCL-101 PM 52.3/52.6, 04-235610* in July 2007. This project lies within the study area which was analyzed in the report prepared for the Route 101 Auxiliary Lanes Project. It was determined that a report specific to this project is not necessary. The Natural Environment Study (NES), completed in December 2010, was also consulted.

The project area lies on the floodplain deposits to the west of San Francisco Bay. Alluvial fans and late Quaternary deposits coalesce in the plain. Route 101 lies on areas with moderate to high susceptibility to liquefaction, or conversion of soil into a fluid-like mass during an earthquake or other seismic event.

The existing physical conditions of the project vicinity include the structure of the stream bed and banks, the substrate and soil types, and the bridge structure. San Francisquito Creek is tidally influenced; and sediments carried from upstream in the watershed to the project site are subject to the hydrological forces of the tides as well as the discharge of water flowing down San Francisquito Creek. Based on the surveys of the site, the bottom substrate of San Francisquito Creek was composed primarily of silt and clay in the downstream section of the project area east of the bridge and composed of more sand in the upstream portion.

Online soil surveys from both Santa Clara and San Mateo Counties were used to identify the soil types within the project vicinity. The majority of the soils are classified as loam, poorly drained clay and urban fill soils with poor permeability. These soil types are on nearly level terraces and fans. Novato clay, which is associated with the lower bed and banks of San Francisquito Creek, is listed as a hydric soil within California. The Federal Register has defined a hydric soil as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic (absence of oxygen) conditions in the upper part, which indicates a condition for wetlands.

The Route 101 bridge measurements are 16 feet in elevation on the west side and 14 feet in elevation on the east side. The San Francisco Bay Area is highly seismically active, with numerous large regional faults. The project site is located 3.9 miles north of the Cascade Fault, 6.4 miles west of the Silver Creek Fault, and 7.4 miles east of the San Andreas Fault (Peninsula section). San Andreas Fault, Silver Creek Fault, and Cascade Fault are active faults with Maximum Magnitude (Mmax) of 7.9, 7.1, and 6.9 in order. No known active or potentially active faults cross Route 101 within the project limits.

Environmental Consequences

A search of Department records indicates that there have been no major slipouts, landslides, or other geotechnical problems in the immediate project area.

Geotechnical exploration is necessary to determine groundwater levels, soil types and strengths, corrosion, susceptibility to liquefaction and settlement and any areas that require dewatering. Several investigative methods shall be used, including but not limited to geologic mapping, soil borings, cone penetrometry studies and geophysical studies.

The United States Geological Survey (USGS) assigns a 62 percent probability that a major earthquake will occur on a fault in the San Francisco Bay Area within the next thirty years. A major earthquake could result in severe ground shaking and trigger secondary damage such as liquefaction or settlement within the project vicinity. The Department will design the project to withstand the Maximum Credible Earthquake.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed. The project area is likely to experience seismic activity in the future. BMPs for erosion and sediment control are noted in the Water Quality section of this document.

2.8 HAZARDOUS WASTE/MATERIALS

Regulatory Setting

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

The 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.

Affected Environment

A hazardous materials database search was conducted in October 2000 for the purpose of providing an indication of the likelihood of encountering contamination from hazardous materials during construction. The database search yielded over 290 sites within a half-mile radius of Route 101 from the Embarcadero Road interchange to the Marsh Road interchange, where hazardous materials are generated, used, or stored and/or where some type of spill, leakage and/or contamination has occurred.

An *Initial Site Assessment* (ISA) of hazardous waste potential was performed in January 2003. A *Corridor Study Report* was prepared in September 2002. The findings of the ISA were used to develop the scope of work for the subsurface investigation covering the area of the Route 101 Auxiliary Lane Project that originally included the replacement of the San Francisquito Creek Bridge. This subsurface investigation was completed in 2009. Leading up to the investigation, current environmental regulatory information on the project area (in addition to the ISA conclusions) was checked repeatedly for project updates, especially when finalizing the work plan for the 2009 site investigation.

Environmental Consequences

Many of the 290 sites on the hazardous materials database search noted above are listed simply because they use or store hazardous materials, not because there is any hazardous waste contamination.

The *Corridor Study Report* noted above indicates the following:

- No properties located within the project vicinity are referenced on the United States Environmental Protection Agency's (EPA) National Priority List, Resource Conservation Recovery Act (RCRA) Corrective Actions and Violations, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), Treatment Storage and Disposal Facility and Toxic Release Inventory listings.
- One site is referenced on the California Department of Toxic Substances Control (DTSC) State Equivalent CERCLIS (SCL) listing within the project vicinity. This site is located at 119 Independence Drive, Menlo Park, and is occupied by Siebert Machine Corporation.
- There are thirty-one facilities located within the project vicinity that are referenced on the California Leaking Underground Storage Tank (LUST), Cortese list (California Environmental Protection Agency/Office of Emergency Information Hazardous Waste and Substances Sites List), and Underground Storage Tank (UST) listings. No aboveground storage tanks (AST) are listed.
- No properties were referenced on the California Solid Waste Landfill (SWLF) listing.

There is the potential to encounter contamination during construction near the Cavallino Collision Center, 1880 West Bayshore Road, East Palo Alto. This is an auto body repair shop. The facility was identified in the *Corridor Study Report* as a site that generates small quantities of hazardous waste. The County of San Mateo has listed the facility as having a Hazardous Material Business Plan on file.

The known contaminated sites within a quarter-mile of the site that were identified and examined in 2002 for possible effect on the project vicinity are still the only three San Francisco Bay RWQCB-listed sites within a quarter-mile of the project:

1. Rainer Service Station, 1905 East Bayshore Road, East Palo Alto (800 feet northwest of San Francisquito Creek Bridge): Storage tank site has gasoline and diesel that has leaked into subsurface. Groundwater flow direction at this site tends to be predominately towards the east-northeast, which means there is virtually no threat posed to the San Francisquito Creek Bridge site and no threat when the distance between the two sites is considered.
2. United States Postal Service, 2085 East Bayshore Road, Palo Alto (670 feet southeast of San Francisquito Creek Bridge): Leaking fuel storage tank site was studied in Caltrans' 2002 ISA. In October 2004 the last tank was removed from the site, with soil and groundwater samples collected. The site was certified by Santa Clara County regulators in 2005 as not needing further study.
3. Dyna Bell, 151 Laura Lane, Palo Alto (800 feet southeast of San Francisquito Creek Bridge): Gasoline storage tank was removed in 1986. Monitoring wells were subsequently used to sample the groundwater. Groundwater flow direction was reported to be to the east, away from San Francisquito Creek Bridge site. The Bay Area Water Board closed this site's case in 1991.

Material contaminated with aerially deposited lead (ADL) is likely to be present within the project limits because of the high traffic volumes on the Route 101 freeway.

Avoidance, Minimization, and/or Mitigation Measures

Any ADL encountered will be managed in such a way as to prevent it from coming into contact with people or the environment. The Department will look for a location in the highway corridor where the ADL material can be used as fill. Alternatively, it can be sent to a facility authorized to manage lead contamination.

During construction there will be a water truck on-site at all times for dust control during soil-disturbing activities and provide the general order to prevent visible dust at all times. Construction will proceed under a lead compliance plan prepared and signed by a certified industrial hygienist that stipulates sufficient on-site air monitoring to protect workers and construction site perimeter air monitoring to protect the community. If the lead measurements are found at anytime to be excessive, work must stop and adjustments will be made to bring the operation into compliance with the air quality requirements.

The Department adheres to very specific requirements for minimizing dust and the associated lead exposure during construction of the project. The protection from exposure for the workers and the surrounding community is specifically addressed in the construction contract provisions and multiple work plans that the contractor must follow. The prevention of "fugitive" dust starts with standards and requirements that are part of the construction contract documents put out for bids from contractors.

The perimeter monitoring includes upwind and downwind sampling stations to clearly quantify the dust-related contribution from the construction work. For lead concentrations, the contract specifications allow a maximum daily average of up to 1.5 micrograms of lead per cubic meter of air. This threshold is a California 30-day average normally applied to region-wide ambient measurements; to apply this standard to a single construction site on a daily basis is very protective of the immediate area. Furthermore, the specifications require the 90-day rolling average for lead readings to be below 0.15 micrograms per cubic meter of air, which is a national standard for 90-day region-wide measurements.

Biological Environment

2.9 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. Wetlands and other waters are also discussed below in the Wetlands and Other Waters section.

Affected Environment

The Natural Environment Study (NES) was completed in December 2010. The biological study area (BSA) for the project is 6.04 acres, which includes all the areas that may be affected during replacement of the San Francisquito Creek Bridge.

The banks upstream of the bridge contain non-native and ruderal annual grassland and mixed non-native shrubland on the north bank, and cement riprap and coast live oak woodland on the south bank. Downstream of the bridge, the north bank has iceplant, non-native and ruderal annual grassland, and coast live oak woodland. The woodland is associated with a dirt road and open lot. The south bank of the project area downstream of the bridge has disturbed annual grassland, a stand of mixed non-native forest composed of tree of heaven (*Ailanthus altissima*) and Lombardi poplar (*Populus nigra*), and a Santa Clara Valley Water District stormwater outfall. An access road and an area with riparian vegetation surround the outfall drainage. The wetland types associated with the lower bank edges of San Francisquito Creek include perennial pepperweed (*Lepidium latifolium*) and brackish cattail (*Typha latifolia*) upstream of the bridge and perennial pepperweed, brackish cattail, gumplant (*Grindelia stricta* var. *angustifolia*), and one small patch of pickleweed (*Salicornia virginica*) downstream of the bridge.

Upland Plant Communities

There are seven upland plant communities observed in the BSA. These areas are described below.

California Annual Grassland

This plant community is dominated by annual exotic grasses, including Italian ryegrass (*Lolium multiflorum*), annual fescue (*Vulpia myuros*), wild oats (*Avena barbata*), and riggut brome (*Bromus diandrus*). Other herbs and grasses that form a component of this community in places include wild lettuce (*Lactuca serriola*), sow thistle (*Sonchus oleraceus*), and sweet fennel (*Foeniculum vulgare*). The annual grassland community primarily occurs on the upper northern stream banks and terraces within the BSA and provides foraging habitat for species including

white-tailed kite, red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*). Other wildlife species that use this habitat include California vole (*Microtus californicus*) and field mice (*Peromyscus* sp.).

Disturbed Annual Grassland

This community is present on the north bank downstream of the bridge and is similar in species composition to the California annual grassland community, but has more extensive areas of bare ground and is more heavily disturbed. Annual grassland offers reduced quality habitat for similar wildlife species found in the California annual grassland community because it has less cover and forage for small mammals and birds.

Iceplant-Landscaped

One area of landscaped stream bank on the north bank of the creek downstream of the bridge is dominated by fig-marigold or iceplant (*Carpobrotus edulis*), a non-native horticultural species. This steep embankment offers minimal value to locally occurring wildlife.

Introduced Perennial Grassland

Introduced perennial grassland habitats within the BSA are dominated by non-native species such as smilo grass (*Piptatherum milliaceum*) and harding grass (*Phalaris aquatica*), which occur on stream banks and terraces. Associated herbaceous species include mugwort (*Artemisia douglasiana*), sweet fennel, and poison hemlock (*Conium maculatum*). These areas have a similar function for wildlife as the California annual grassland community.

Coast Live Oak Woodland

This area is dominated by coast live oak (*Quercus agrifolia*). Coast live oak woodland occurs on a portion of the south bank, upstream of the bridge, on a steep riparian slope. A larger area occurs on the downstream northern bank and borders a residential neighborhood. Both stands are dominated by non-native herbaceous species, though the shrubs associated with this community include coyote brush (*Baccharis pilularis*), a native species. The layers of these stands are dominated by non-native grasses such as ripgut brome and smilo grass.

Mixed Non-Native Forest Series

Riparian forests in the study area are dominated by non-native and invasive species, such as blackwood acacia (*Acacia melanoxydon*), tree of heaven (*Ailanthus altissima*), and ornamental wattle (*Acacia* sp.). Native species associated with this community include Oregon ash (*Fraxinus latifolia*) with the largest area of this vegetation type occurring on the south bank of the creek east of the bridge. Other species include blue elderberry (*Sambucus mexicana*) and escaped horticultural and/or landscaped shrubs.

Mixed Non-Native Shrubland

Riparian scrub within the study area is dominated by non-native shrub species, including New Zealand myoporum (*Myoporum laetum*), English ivy, cotoneaster (*Cotoneaster pannosa*), tree tobacco (*Nicotiana glauca*), and Himalayan blackberry (*Rubus discolor*). Native shrubs associated with these areas include blue elderberry.

Wetland Plant Communities

There are four wetland plant communities observed in the BSA. These areas are described below.

Pickleweed Saltmarsh Wetland

A small wetland area dominated by pickleweed (*Salicornia virginica*) is present on the tidally influenced north bank, downstream of the bridge. Associated herbaceous species include tall whitetop mustard (*Lepidium latifolium*) and marsh gumplant (*Grindelia stricta* var. *angustifolia*). This vegetation type is considered rare and its occurrence is tracked by CDFG in the CNDDDB.

Gumplant Wetland

A wetland stand dominated by marsh gumplant occupies the lower north bank of San Francisquito Creek downstream of the bridge. Gumplant is the primary species found in these stands.

Brackish Cattail Wetland

Small wetland stands dominated by broadleaf-leaf cattail (*Typha latifolia*) occur in portions of San Francisquito Creek, typically along the high-tide line of the stream bank. This vegetation type qualifies as a wetland indicator, as defined by the USACE, and is considered rare by CDFG.

Perennial Pepperweed Wetland

Components of the estuarine wetlands along the lower banks of San Francisquito Creek are dominated by perennial pepperweed, which is also called tall whitetop mustard, a non-native species. This species has become a prevalent invasive in many freshwater, saltmarsh, and estuarine habitats throughout California. Other herbaceous species associated with this type include spearscale (*Atriplex triangularis*) and mugwort.

Environmental Consequences

The potential temporary and permanent effects are presented in Table 2 below. Temporary effects to habitat are those that can be restored and revegetated within one year after the completion of construction. Permanent effects to habitat include those areas lost due to activities such as increased paved surface, which will remain after construction is complete, or effects that will last more than one year. These effects are neither significant nor adverse.

Vegetation Type or Other Area	Acres (square feet)		
	Temporary	Permanent	Total
Upland Vegetation			
California annual grassland	0.008 (359)	0.016 (684)	0.024 (1,043)
Coast live oak woodland	0.072 (3,113)	0	0.072 (3,113)
Disturbed annual grassland	0.011 (459)	0	0.011(459)
Iceplant – landscaped	0.022 (939)	0.019 (808)	0.041 (1,747)
Introduced perennial grassland	0.031 (1,366)	0.0	0.031 (1,366)
Mixed non-native forest	0.009 (391)	0.0	0.009 (391)
Mixed non-native shrubland	0	0.0	0.0
<i>Upland Vegetation Subtotal</i>	<i>0.152 (6,627)</i>	<i>0.035 (1,492)</i>	<i>0.186 (8,119)</i>
Wetland Vegetation			
Brackish cattail wetland	0.004 (151)	0.0	0.004 (151)
Gumplant wetland	0.0	0.0	0.0
Perennial pepperweed wetland	0.007 (305)	0.011 (459)	0.017 (721)
Pickleweed saltmarsh wetland	0.0	0.0	0.0
<i>Wetland Vegetation Subtotal</i>	<i>0.010 (456)</i>	<i>0.011 (459)</i>	<i>0.021 (915)</i>
Other Areas			
Bare ground	0.099 (4,306)	0	0.099 (4,306)
Cement riprap	0.019 (833)	0.020 (862)	0.039 (1,695)
Commercial or industrial	0.154 (6,704)	0.009 (370)	0.163 (7,074)
Pavement	0.629 (27,394)	0.299 (13,008)	0.928 (40,402)
Residential	0.129 (5,600)	0.018 (782)	0.147 (6,382)
<i>Other Areas Subtotal</i>	<i>1.029 (44,837)</i>	<i>0.346 (15,022)</i>	<i>1.374 (59,859)</i>
Total	1.192 (51,920)	0.392 (16,973)	1.582 (68,893)

TABLE 2 – Effects to Natural Communities and Other Areas

There are two natural communities that the California Department of Fish and Game (CDFG) recognize as sensitive communities and tracks in the California Natural Diversity Database (CDFG 2003) in the project area, specifically pickleweed saltmarsh and brackish cattail wetlands. As indicated in Table 2, no effects to the pickleweed saltmarsh wetland are proposed. A small area of pickleweed covers 43 square feet, or less than 0.10 acres, occurs within the project area on the lower north bank of the creek, east of the bridge. No direct impacts to the downstream north bank at or near the pickleweed area or adjacent uplands are proposed. Also indicated in Table 2, there are minimal effects to the brackish cattail wetland with 194 square feet or less than 0.01 acres affected by the project.

Avoidance, Minimization, and/or Mitigation Measures

No compensatory mitigation is proposed for the pickleweed saltmarsh or brackish cattail wetland communities because there will be no temporary or permanent effects to the pickleweed saltmarsh and minimal effects to the brackish cattail wetland in the project vicinity. These pickleweed areas described above are several hundred feet outside of the project footprint and will be excluded from the work area with exclusion fencing.

The Department will prevent the construction process from having impacts to biological communities. Some key protective measures are the establishment of environmentally

sensitive areas, which are delineated areas where no construction activities are allowed; scheduling construction activities to occur during months when biological communities are least sensitive to disruption; and preventing sediment from entering the creek.

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources include the following:

1. Worker environmental awareness training will be conducted for all construction crews and contractors. The training will be conducted before the start of work and on the arrival of any new worker. The Department will maintain a record of all the workers that have completed the program.

The training will provide a brief review of all special-status species and other sensitive resources that may exist in the pickleweed salt marsh wetland community in the project area. The review will also provide information about the life history, field identification, and habitat requirements of these species and resources, the locations of sensitive biological resources, and their legal status and protection under the Federal Endangered Species Act (FESA). In addition, the training will cover the avoidance and conservation measures, environmental permits, and regulatory compliance requirements associated with the project.

2. Additional training will be conducted, as needed. The Department will maintain records of all personnel receiving the additional training during the project; and these records will be made available for compliance verification.

3. All practicable best management practices (BMPs) for erosion and sediment control will be implemented to minimize the potential for effects to water quality in San Francisquito Creek. These BMPs include, but are not limited to:

- No fill material other than clean, silt-free gravel or river rock will be placed in the channel of San Francisquito Creek.
- The Department will exercise every reasonable precaution to protect San Francisquito Creek or any jurisdictional waters from pollution from fuels, oils, bitumens, calcium chloride, and other materials that are harmful to aquatic life.
- A plan for the emergency cleanup of any spills of fuel or other material will be available on-site at all times.
- Equipment will be refueled and serviced at designated construction staging areas. All construction material and fill will be stored and contained in a designated area that is 50 feet away from San Francisquito Creek to prevent transport of materials into the stream. A silt fence or sediment barrier will be installed to collect and discharge, and adequate materials for spill cleanup will be maintained on-site.
- Construction vehicles and equipment will be maintained to prevent contamination of soil or water (from external grease and oil or from leaking hydraulic fluid, fuel, oil, or grease).

- Good housekeeping practices and use of safer alternative products (i.e., biodegradable hydraulic fluids) will be employed where feasible. Employees will be trained to prevent or reduce the discharge of pollutants from construction activities to waters and to take appropriate measures should a spill occur.
 - All trash will be placed in secure containers with secure lids and removed from the site daily. Trash dumping, firearms, open fires, hunting, and pets will be prohibited from the project area.
 - In the event of a spill or discharge of harmful material into potentially suitable habitat for special-status species, the spill or discharge will be immediately contained, cleaned up, and/or removed. All work will be stopped immediately and the National Oceanic Atmospheric and Administration's National Marine Fisheries Service (NOAA Fisheries) and/or U.S. Fish & Wildlife Service (USFWS) will be notified.
4. The pickleweed area and adjacent upland grassland on the north bank will be delineated and conspicuously fenced off to prevent impacts to these resources. This sensitive area will be designated as an environmentally sensitive area (ESA) and exclusion fencing installed 200 feet upstream of the area will prevent any access from crews or equipment during construction.
 5. As needed during phases of construction and on project completion, erosion control mulch (e.g., certified noxious weed-free straw, StrawNet [straw pellets that are not subject to wind dispersion], or Hydrostraw) with a native erosion control grass seed mix that complements the native vegetation of adjacent habitats will be applied to all disturbed areas. All erosion control materials will be composed of natural materials that will biodegrade.
 6. All temporary disturbance areas will be revegetated with appropriate combinations of species native to the community on completion of construction.
 7. All applicable State and federal agency permit conditions and reporting conditions will be implemented.
 8. Construction will be timed to minimize potential impacts to sensitive biological resources.

2.10 WETLANDS AND OTHER WATERS

Regulatory Setting

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

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

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the Environmental Protection Agency (EPA).

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 California Department of Fish and Game (CDFG), the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify 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. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the ACOE 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. Please see the Water Quality section for additional details.

Affected Environment

The Natural Environment Study (NES) was completed in December 2010. The USACE approved the Jurisdictional Delineation Report (JDR) in March 2011.

Approximately 1.47 acres of potentially jurisdictional wetlands and "other waters of the United States" were identified in the project area. Jurisdictional waters in the project area function as a perennial channel with emergent and tidally influenced wetlands occurring within the ordinary high water mark and/or the mean high tide line. The project area also includes an intermittent, tidally influenced storm water drainage that is within and along the main stream channel.

Other Waters of the United States

San Francisquito Creek (OW-1) and the Santa Clara Valley Water District stormwater drainage (OW-2) are the other waters of the U.S. that were identified within the BSA. See Figure 3 for the location of these other waters of the United States.

San Francisquito Creek (OW-1): This channelized and tidally influenced perennial stream (1.29 acres, 55,669.7 square feet) is located within a man-altered channel composed of natural bank, retaining walls, cement, and riprap. The stream has natural meander with deeply cut banks and the bed of the channel is occupied by sand, gravel, and mud. The water level in the channel fluctuates significantly based on tide, precipitation, and season.

Intermittent Drainage (OW-2): This newly constructed and tidally influenced intermittent stream (0.074 acre, 3,204.8 square feet) is located on the southern bank of San Francisquito Creek and approximately 200 ft east of the existing bridge. This feature was recently constructed by the Santa Clara Valley Water District and conveys collected stormwater from Palo Alto into an earthen channel that drains to San Francisquito Creek.

Wetlands

Several wetland areas occur along the lower stream banks within the BSA. These perennial tidal wetlands are vegetated with pickleweed, sparscale, broadleaf cattail, and tall whitetop (water pepperweed). See Figure 3 for the location of these wetlands.

WL-1: This estuarine wetland (0.07 acres, 3077.2 square feet) is composed of pickleweed, tall whitetop, and marsh gumplant. The wetland occurs along the north bank of the creek, east of the bridge.

WL-2: This estuarine wetland (0.02 acres, 753.6 square feet) is composed of sparscale and tall whitetop. The wetland occurs along the south bank of the creek, east of the bridge.

WL-3: This estuarine wetland (0.02 acres, 975.4 square feet) is composed of broadleaf cattail, sparscale, and tall whitetop. The wetland occurs along the north bank of the creek, just west of the bridge.

WL-4: This estuarine wetland (<0.01 acres, 193 square feet) is composed of tall whitetop and occurs along the south bank of the creek, just west of the bridge.

Environmental Consequences

Table 3 below describes the extent of temporary and permanent effects to jurisdictional wetlands and “other waters of the United States” in the project area. The locations of these wetlands and “other waters of the United States” are shown in Figure 3.

Feature ID	Acres, rounded (square feet)		
	Temporary	Permanent	Total
Other Waters of the United States			
OW-1 perennial estuarine stream (San Francisquito Creek)	0.93 (40,639)	0.02 (1,063)	0.96 (41,702)
OW-2 intermittent stream (Santa Clara Valley Water District stormwater drainage)	0.0	0.0	0.0
<i>Subtotal: Other Waters of the United States</i>	<i>0.93 (40,639)</i>	<i>0.02 (1,063)</i>	<i>0.96 (41,702)</i>
Wetlands			
WL-1 estuarine wetland	<0.01 (194)	0.0	<0.01 (194)
WL-2 estuarine wetland	0.01 (202)	0.0	0.01 (202)
WL-3 estuarine wetland	0.01 (437)	0.01 (297)	0.02 (734)
WL-4 estuarine wetland	0.0	<0.01 (193)	<0.01 (193)
WL-5 estuarine wetland	0.0	0.0	0.0
<i>Subtotal: Wetlands</i>	<i>0.02 (833)</i>	<i>0.01 (490)</i>	<i>0.03 (1,323)</i>
Total	0.74 (32,196)	0.03 (1,361)	0.77 (33,557)

TABLE 3 – Effects to wetlands and other waters

Permanent effects include filling or removal of wetlands within the cut-and-fill limits. Temporary effects may occur at construction access routes and staging areas, and could include sediment discharge, removal of vegetation, and soil compaction. Indirect effects to wetlands are those effects that may result upon project completion (i.e., altered hydrology and introduction of invasive and non-native species).

The removal of the two existing piers in San Francisquito Creek that support the existing bridge will result in the removal of approximately 0.02 acres of existing permanent fill. The proposed project will also permanently affect approximately 0.02 acres of potentially jurisdictional “other waters of the United States”. Temporary effects to wetlands include approximately 0.72 acres of potentially jurisdictional “other waters of the United States” and approximately 0.03 acres of jurisdictional wetlands.

This project will require one or more permits from the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA), a Water Quality Certification from the San Francisco Bay Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA, and a Lake and Streambed Alteration Agreement from the California Department of Fish & Game pursuant to Section 1602 of the California Fish and Game Code. These permits will be applied for during the design phase of the project.

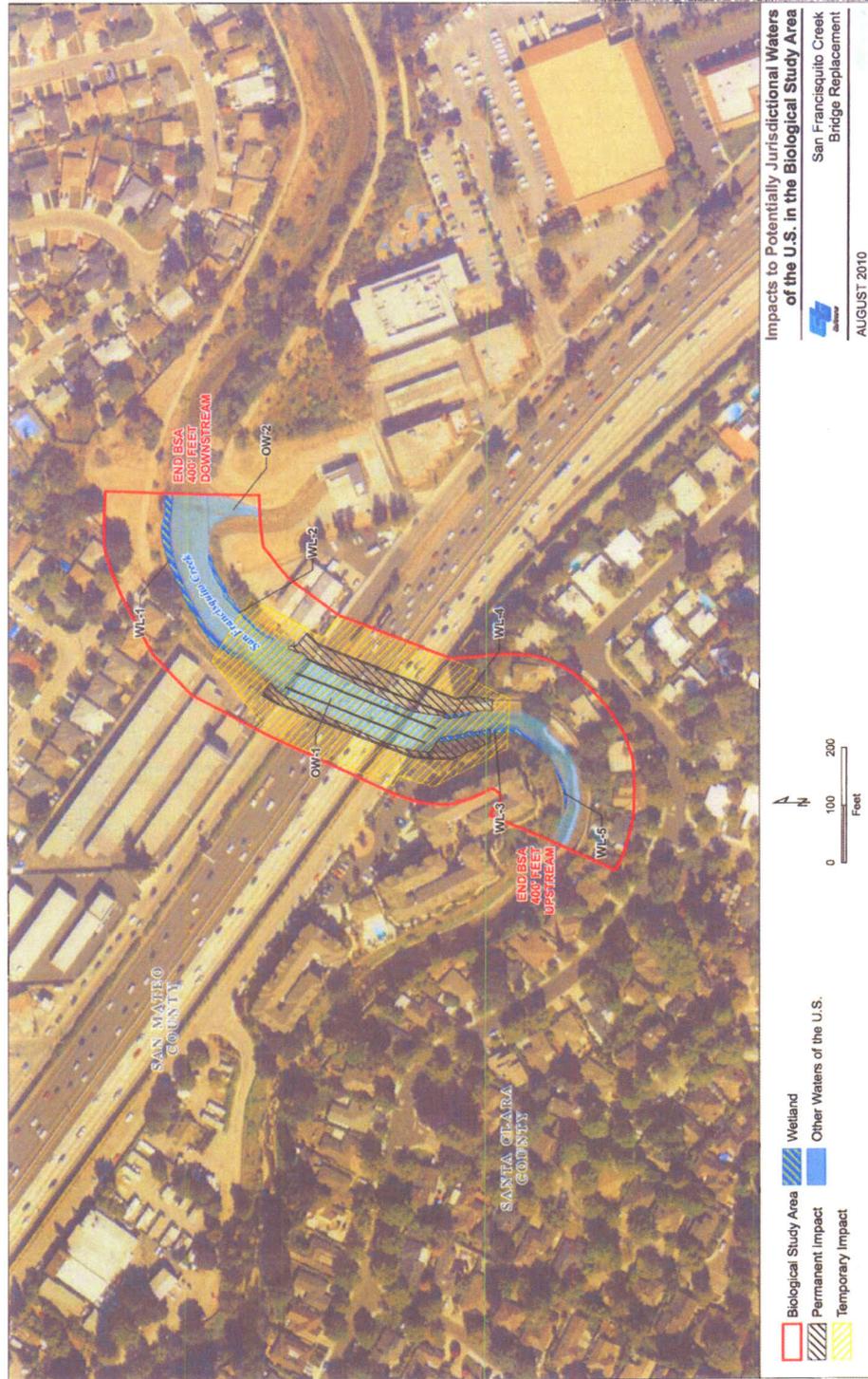


FIGURE 3 – LOCATIONS OF WETLANDS AND OTHER WATERS

Avoidance, Minimization, and/or Mitigation Measures

On completion of the project, all areas that have been temporarily impacted by the project will be restored to their approximate original conditions. Measures will be employed to prevent any construction material or debris from entering surface waters or their channels. Best Management Practices (BMPs) for erosion control will be implemented and in place before, during, and after construction to ensure that no silt or sediment enters surface waters.

The Department's Standard Specifications require the contractor to submit a Water Pollution Control Plan. This plan must meet the standards and objectives set forth in Section 7-1.01G of the Department's Standard Specifications to minimize water pollution impacts. The Water Pollution Control Plan must also be in compliance with the goals and restrictions identified in the San Francisco Bay Regional Water Quality Control Board (RWQCB)'s Basin Plan. If any additional measures are included in the 401 Certification, 1602 Agreement, or 404 Permit, the contractor will also comply with these standards and objectives, referred to as BMPs. These BMPs include but are not limited to the following:

- Where working areas encroach on live or dry streams, lakes, or wetlands, RWQCB-approved physical barriers adequate to prevent the flow or discharge of sediment into these systems shall be constructed and maintained between working areas and streams, lakes, and wetlands. Discharge will be contained through the use RWQCB-approved measures that will keep sediment from entering jurisdictional waters beyond the project limits.
- Oily or greasy substances originating from the contractor's operations shall not be allowed to enter or be placed where they will later enter a live or dry stream, pond, or wetland.
- Asphalt concrete shall not be allowed to enter a live or dry stream, pond, or wetland.
- All off-road construction equipment is to be cleaned of potential noxious-weed sources (e.g., mud, vegetation) before entry into the project area and after entering a potentially infested area before being moved to another area to help ensure that noxious weeds from outside the project area are not introduced into the project area. The contractor shall employ whatever cleaning methods (typically, with the use of a high-pressure water hose) are necessary to ensure that equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not identify such material. Disassembly of equipment components or specialized inspection tools is not required. Equipment washing stations shall be placed in areas that afford easy containment and monitoring (preferably outside of the project area), and that do not drain into the forest or sensitive (e.g., riparian, wetland) areas.
- To further minimize the risk of introducing non-native species into the area, only native plant species appropriate for the project area will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and weed-free straw shall be required where erosion control straw is to be used. In addition, any hydro-seed mulch used for revegetation activities must be weed-free.

- Additional direct and indirect impacts to sensitive biological resources, including wetlands and jurisdictional waters, throughout the project area will be avoided or minimized by designating these features outside of the construction impact area as environmentally sensitive areas (ESAs) on project plans and in project specifications. ESA information will be shown on contract plans and discussed in the special provisions. ESA provisions may include, but are not limited to, the use of temporary orange fencing to delineate the proposed limits of work in areas adjacent to sensitive resources or to delineate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be restricted (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions shall be implemented as a first order of work and shall remain in place until all construction activities are complete and then be removed completely.

As the delegated federal action agency under the National Environmental Policy Act of 1969 (NEPA), the Department will follow the Federal Highway Administration (FHWA) policy of offsetting for impacts to natural lands. The exact acreage, location, and type of compensation for these impacts are to be determined.

Because the existing bridge is adjacent to wetlands, and because the replacement bridge needs to continue to connect to the existing highway, there is no avoidance alternative or feasible alternative that completely avoids wetlands. The Department will consult with USACE, and comply with the USACE policy of “no net loss” of wetlands for both permanent and temporary effects. Compensation for potential impacts to jurisdictional waters of the United States includes a possible combination of the following measures:

- Restore wetlands off-site at the Department’s Foster City Wetland Mitigation Site, an approximately 7-acre site adjacent to San Francisco Bay directly south of the San Mateo County Golf Course and northwest of the intersection of 3rd Avenue and Mariners Island Boulevard in Foster City, San Mateo County.
- Purchase of wetland creation credits from a local mitigation bank approved by the USACE.
- Purchase of wetland preservation or enhancement credits from a USACE-approved mitigation bank.
- On-site creation, restoration or enhancement of wetlands.
- Off-site creation, restoration or enhancement of wetlands.

The Department will propose off-site compensation for all permanent effects to wetlands at a possible 2:1 ratio, while temporary effects may be compensated on-site at a possible ratio of 1:1.

Wetlands Only Practicable Finding

E.O. 11990 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. These practicable measures to minimize harm include the minimization efforts previously described.

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

2.11 PLANT SPECIES

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 the Threatened and Endangered Species Section in this document 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 (USC), 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.

Affected Environment

The Natural Environment Study (NES) was completed in December 2010. There are seven special-status plant species that are recognized by the California Native Plant Society, but are not federally or state listed, that have ranges that overlap the project area and/or have potentially suitable habitat within the project area. These species include the San Francisco collinsia, Point Reyes birds-beak, western leatherwood, fragrant fritillary, Loma Prieta hoita, arcuate bush mallow, and hairless popcorn flower. Other tree species of interest include the coast live oak and tree of heaven. For each species, the affected environment, environmental consequences, and avoidance, minimization and/or mitigation measures are discussed below with more detailed information contained in the NES. No special-status plant species were observed during the three rounds of rare plant surveys.

San Francisco collinsia

Affected Environment

San Francisco collinsia is an annual member of the figwort family, which is endemic to California. The species is known from closed-cone coniferous forests, and coastal scrub in Monterey, Santa Clara, Santa Cruz, San Francisco, and San Mateo Counties, and is sometimes found on serpentinite or rock composed of serpentine minerals. The species blooms from March to May. Potential habitat in the project area includes non-native riparian scrub near the coast. Given the disturbed condition of the upland habitats in the project area, the dominance of fill soils, and the prevalence of non-native or invasive species, the potential for this species to occur is low.

No San Francisco collinsia or related plants were observed within the project area during surveys conducted within the bloom period. This species is typically found in less-disturbed settings. Although potential suitable habitat is present in the project area, the species is not expected to occur in the project area.

Environmental Consequences

The project will not have any effect on the San Francisco collinsia because it is not present in the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

Point Reyes birds-beak

Affected Environment

The Point Reyes birds-beak, an annual herbaceous member of the figwort family, is considered hemi-parasitic, an organism that may be either free-living or parasitic. It occurs rarely in coastal salt marshes and swamps at elevations below 35 feet. The species is known from Humboldt, Marin, and Sonoma Counties and is considered extirpated in Alameda, Santa Clara, and San Mateo Counties. The species is also known and State listed as endangered in Oregon. The species blooms from June through October. The most significant threats to the survival of the species are development, foot traffic, non-native plants, altered hydrology and cattle grazing. Given the disturbed condition of the upland habitats in the project area, the dominance of fill soils and the prevalence of non-native or invasive species, the potential for this species to occur is low.

No Point Reyes birds-beaks were located within the project area during surveys within the bloom period. Only limited portions of the project area provide potential habitat for this species. The species is not expected to occur in the project area.

Environmental Consequences

The project will not have any effect on the Point Reyes birds-beak because it is not present in the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

Western leatherwood

Affected Environment

The western leatherwood, a deciduous shrub, is in the mezereum family. The flowers are yellow and pendent and the species blooms from January through April. The species is identifiable outside of the bloom period. The species is known from upland forests, chaparral, woodland, riparian scrub and riparian woodland in the San Francisco Bay Area including Alameda, Contra Costa, Marin, Santa Clara, San Mateo and Sonoma Counties. Given the disturbed condition of the upland habitats in the project area, the dominance of fill soils and the prevalence of non-native or invasive species, the potential for this species to occur is low.

No western leatherwood shrubs were located within the project area. Even though it is identifiable outside of the bloom period by vegetative characteristics, the species is not expected to occur in the project area.

Environmental Consequences

The project will not have any effect on the western leatherwood because it is not present in the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

Fragrant fritillary

Affected Environment

The fragrant fritillary, a perennial herbaceous species, is a member of the lily family and blooms from February to April. The species is bulbiferous and has small white to cream flowers. It is known to occur rarely in California in Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, San Francisco, San Mateo, Solano and Sonoma Counties. It occurs in woodlands, coastal prairie, coastal scrub, and grasslands and is often associated with serpentinite or rock composed of serpentine minerals. Given the disturbed condition of the upland habitats in the project area, the dominance of fill soils and the prevalence of non-native or invasive species, the potential for this species to occur is low.

No occurrences of fragrant fritillary were located during focused surveys in 2008. The project area contains poor quality grassland and scrub habitat for this species. The species is not expected to occur in the project area.

Environmental Consequences

The project will not have any effect on the fragrant fritillary because it is not present in the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

Loma Prieta hoita

Affected Environment

The Loma Prieta hoita is a perennial herbaceous species and member of the pea family. It is currently known to occur only from Santa Clara and Santa Cruz Counties in California. The historic range of the species also includes Alameda and Contra Costa Counties. The species has blue to purple flowers and occurs in chaparral and oak woodland habitats. It is sometimes associated with wet sites on serpentinite or rock composed of serpentine minerals. The plants bloom from May through October. Given the disturbed condition of the upland habitats in the project area, the dominance of fill soils and the prevalence of non-native or invasive species, the potential for this species to occur is low.

No Loma Prieta hoita were located within the project area during surveys within the bloom period. The project area contains low quality potential habitat for this species. The species is not expected to occur in the project area.

Environmental Consequences

The project will not have any effect on the Loma Prieta hoita because it is not present in the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

Arcuate bush mallow

Affected Environment

The arcuate bush mallow is an evergreen shrub with palmate leaves in the mallow family. The species is only known to occur in Santa Clara, Santa Cruz and San Mateo Counties. It occurs in oak woodland and chaparral habitats and blooms from April through September. The disturbed condition of the upland habitats in the project area, along with the dominance of fill soils and the prevalence of non-native or invasive species, indicate the potential for this species to occur is low.

No arcuate bush mallow shrubs were located within the project area during surveys within the bloom period. The project area contains low quality potential habitat for this species. The species is not expected to occur in the project area.

Environmental Consequences

The project will not have any effect on the arcuate bush mallow because it is not present in the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

Hairless popcorn flower

Affected Environment

The hairless popcorn flower, an annual herbaceous member of the borage family, is presumed extinct. The historic range of the species included alkaline meadows and seeps, and coastal salt marshes and swamps in Alameda, Merced, Marin, San Benito, and Santa Clara Counties. The species was last seen in 1954 near Hollister. The species blooms from March to May. Potential habitat in the project area includes annual grasslands and coastal estuarine habitats along San Francisquito Creek. The disturbed condition of the upland habitats in the project area, along with the dominance of fill soils and the prevalence of non-native or invasive species, indicate the potential for this species to occur is low.

No hairless popcorn flowers were located within the project area during surveys within the bloom period. The project area contains low quality potential habitat for this species. The species is not expected to occur in the project area.

Environmental Consequences

The project will not have any effect on the hairless popcorn flower because it is not present in the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are proposed.

Coast live oak

Affected Environment

There are eight native coast live oak trees that were noted during surveys in the project area and they ranged from 4 to 21 inches in diameter at breast height (dbh), some with multiple trunks. Three of these coast live oak trees occur within residential yards on the southwestern side of the San Francisquito Creek Bridge and could not be measured due to right of entry issues. Two coast live oak trees located within Department right of way occur southwest and upstream of the bridge and have dbh measurements of 11.30 and 13.66 (two trunks for one tree) and 16.34, 21.26, 12.60 and 18.50 (four trunks for one tree). Three more coast live oak trees are located northwest and downstream of the bridge and have dbh measurements of 3.94, 7.87 and 15.50 (one trunk on each tree).

Environmental Consequences

One of the three coast live oak trees located outside Department right of way is within the project footprint, and has the potential to be trimmed, removed, or affected by the proposed project if access (via a temporary construction easement) within the residential property is required. The tree is in a residential yard on the southwest, upstream side of the bridge at 1941 Edgewood Drive, Palo Alto. The size of this coast live oak tree is undetermined, but is estimated to be approximately 40 inches. Effects to this oak may include damage to the root zone due to excavation or compaction from construction activities. The Department, as a State agency, is not subject to local tree ordinances for properties located in, or proposed to be in, Department right of way (temporary construction easement in this case).

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section are appropriate protections for the coast live oak.

Though not a species of concern, it is Department policy to compensate for trees that are removed for construction. The Department will attempt to avoid and/or minimize any effects to this tree if at all possible. However, if avoidance is not possible, then the Department will replace the tree at a 5:1 ratio, which has been agreed upon with CDFG consultation. Replacement planting would be located at the Pacheco Creek Mitigation Area, a 55.4-acre parcel in Santa Clara County.

2.12 ANIMAL SPECIES

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The US 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 the Threatened and Endangered Species section 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.

Federal laws and regulations pertaining to wildlife 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

Affected Environment

The Natural Environment Study (NES) was completed in December 2010. There are nine special-status animal species that are not federally or state listed, and these were studied for their potential to occur within the project area. These species include the following reptile: Western pond turtle; birds: California yellow warbler, San Francisco common yellowthroat, loggerhead strike, Alameda song sparrow; and mammals: pallid bat, hoary bat, Yuma myotis, and salt marsh wandering shrew. For each species, the affected environment, environmental consequences, and avoidance, minimization and/or mitigation measures are discussed below with more detailed information contained in the NES.

Western pond turtle

Affected Environment

The northwestern pond turtle and southwestern pond turtle are subspecies of the western pond turtle. Both subspecies are listed as species of special concern by the California Department of Fish & Game (CDFG). There are small morphological differences between the subspecies which are thought to intergrade or merge gradually one with another through a continuous series of forms over a broad range. The western pond turtle was historically found in most Pacific drainages from Oregon to Baja California. Western pond turtles are thoroughly aquatic, leaving the water to reproduce and to spend summer and winter. Females move to upland locations to lay eggs in shallow nests during the summer months. Nests are typically constructed on unshaded slopes with clay or silt. Hatchlings are thought to overwinter in the nest and emerge in the spring, moving to aquatic habitats. Western pond turtles require slow or slack (still) water habitat with available basking sites, such as logs and floating vegetation.

The nearest occurrence of this species to the project area is recorded within San Francisquito Creek, approximately three miles upstream of the project area. The western pond turtle was not observed during surveys of the project area conducted for other species. Suitable habitat for this species exists in the project area, including both aquatic and some upland habitats.

Environmental Consequences

Potential effects to the western pond turtle include direct mortality; removal, or degradation of habitat; and creation of barriers to movement and dispersal. The potential for habitat loss or degradation, or any other adverse effects, is likely to be minor due to the small area of aquatic habitat in the project area relative to the adjacent area. The measures noted below will substantially reduce the potential for direct mortality.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the western pond turtle.

In addition, the following minimization measure will be implemented for this species:

Prior to construction work within aquatic habitats, a qualified biologist will conduct a visual survey of the work area. If a western pond turtle is observed, the biologist will relocate the turtle upstream to a safe off-site location with appropriate habitat.

California yellow warbler

Affected Environment

The California yellow warbler is a State species of concern. This species ranges across much of the State, with the exception of the deserts of the States interior. However, this species has been extirpated from much of the Central Valley due to land use practices. This species utilizes a variety of riparian habitats, provided dense woody cover is present, for both nesting and foraging, and feeds on a variety of insects and other invertebrates. The California yellow warbler displays a high degree of site fidelity, and usually produces one brood per year.

Within the California Natural Diversity Database (CNDDDB), there are no records of this species occurring within five miles of the project area. No focused surveys were conducted for the California yellow warbler; and this species was not observed during field visits to the project area. Suitable habitat for nesting and foraging are present within the project area.

Environmental Consequences

Implementation of the project has the potential to affect the California yellow warbler through the disturbance of nesting birds, resulting in the abandonment of nests. However, implementation of the measures noted below will reduce the potential for adverse effects to this species.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the California yellow warbler.

In addition, the following avoidance measure will be implemented for this species:

Pre-construction surveys for nesting birds will be conducted if work will occur during the nesting season (February 15 through August 31). These surveys will include the identification of any California yellow warbler nests. If nests are identified, the Department will consult with CDFG to determine an appropriate approach to the occupied nest that may include establishing a buffer around the nest where work will not occur.

San Francisco common yellowthroat

Affected Environment

The San Francisco common yellowthroat or saltmarsh common yellowthroat, a State species of concern, is one of four subspecies of common yellowthroat occurring within California. This species is endemic to the San Francisco Bay region, occupying marshes of Point Reyes, San Francisco Bay, and the west coast of San Mateo County. The San Francisco common yellowthroat typically uses three habitat types: brackish marshes, freshwater marshes, and woody swamps. About 60 percent of known populations occur in brackish marsh areas. This species feeds on a variety of insects and invertebrates within the ecotone or transitional zone between the adjacent moist and upland natural landscapes, and nests in dense riparian vegetation near the ground.

The nearest observation of this species in the CNDDDB was recorded from San Francisquito Creek, approximately one mile downstream of the project area. No focused surveys were conducted for San Francisco common yellowthroat and this species was not observed during field visits to the project area. Suitable habitat for nesting and foraging are present in the project area.

Environmental Consequences

Implementation of the project has the potential to affect the San Francisco common yellowthroat through the disturbance of nesting birds, resulting in the abandonment of nests. However, implementation of the measures noted below will reduce the potential for adverse effects to this species.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the San Francisco common yellowthroat.

In addition, the following avoidance measure will be implemented for this species:

Pre-construction surveys for nesting birds will be conducted if work will occur during the nesting season (February 15 through August 31). These surveys will include the identification of any San Francisco common yellowthroat nests. If nests are identified, the Department will consult with CDFG to determine an appropriate approach to the occupied nest that may include establishing a buffer around the nest where work will not occur.

Loggerhead shrike

Affected Environment

The loggerhead shrike is a State species of special concern. The range of the species includes much of the United States, northern Mexico, and southern Canada, with the exception of the heavily forested portions of this range. The loggerhead shrike forages

and nests in a wide variety of open habitats with scattered shrubs or trees and areas of bare ground. This species will use agricultural and rural areas, and will take a variety of prey, including insects, reptiles, amphibians, small rodents, and birds, usually hunting from a perch. The species nests in shrubs and similar vegetation, and will persistently re-nest after failure of a brood.

There are no CNDDDB records of loggerhead shrike within the project area; however, habitat for this species is present within the project area and this species has the potential to occur. No focused surveys were conducted for loggerhead shrike and this species was not observed during field visits to the project area. Suitable habitat for nesting and foraging are present in the project area.

Environmental Consequences

Implementation of the project has the potential to affect the loggerhead shrike through the disturbance of nesting birds, resulting in the abandonment of nests. However, implementation of the measures noted below will reduce the potential for adverse effects to this species.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the loggerhead shrike.

In addition, the following avoidance measure will be implemented for this species:

Pre-construction surveys for nesting birds will be conducted if work will occur during the nesting season (February 15 through August 31). These surveys will include the identification of any loggerhead shrike nests. If nests are identified, the Department will consult with CDFG to determine an appropriate approach to the occupied nest that may include establishing a buffer around the nest where work will not occur while the nest is occupied.

Alameda song sparrow

Affected Environment

The Alameda song sparrow, a State species of special concern, is one of 9 subspecies of song sparrow found within California. The Alameda song sparrow is endemic to salt marshes of the south and eastern borders of San Francisco Bay. The Alameda song sparrow uses habitat that forms at the marsh-high marsh or upland areas that are only prone to flooding during unusually strong storms and/or high tides. This includes the borders of tidally influenced sloughs or sloughs that are subject to periodic inundation of seawater due to the rise and fall of tides, such as the lower reach of San Francisquito Creek. This species nests in shrubs or tall herbaceous growth above the high water line for the creek. The bulk of the Alameda song sparrows' diet is vegetable (including seeds), but animals are also consumed, particularly in May.

The nearest observation of this species in the CNDDDB was recorded from San Francisquito Creek, approximately 0.3 miles downstream from the project area. No focused surveys were conducted for Alameda song sparrow and this species was not

observed during field visits to the project area. Suitable habitat for nesting and foraging are present in the project area.

Environmental Consequences

Implementation of the project has the potential to affect the Alameda song sparrow through the disturbance of nesting birds, resulting in the abandonment of nests. However, implementation of the measures noted below will reduce the potential for adverse effects to this species.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the Alameda song sparrow.

In addition, the following avoidance measure will be implemented for this species:

Pre-construction surveys for nesting birds will be conducted if work will occur during the nesting season (February 15 through August 31). These surveys will include the identification of any Alameda song sparrow nests. If nests are identified, the Department will consult with CDFG to determine an appropriate approach to the occupied nest that may include establishing a buffer around the nest where work will not occur.

Pallid bat, hoary bat, and Yuma myotis bat

Affected Environment

Several species of bat, including pallid bat (State species of concern), hoary bat, and Yuma myotis bat (State species of concern) have the potential to occur within the study area. Bats may forage within the project area, and may roost under the bridge.

The pallid bat is a locally common species found in low elevations in California, occupying grasslands, shrublands, woodlands, and forests. The pallid bat roosts in caves, crevices, mines, and hollow trees. One bat was found approximately ten miles southwest of the project vicinity in a house on Morgan Valley Road.

The hoary bat occurs in a wide variety of habitat mosaics throughout California. Optimal habitats include trees which provide suitable roosting areas. This species prefers to roost in trees with dense foliage, often on the edges of forests. The CNDDDB records observations of this species approximately two miles west of the project area.

The Yuma myotis bat is widespread in California and can occur in a wide range of habitats, but optimal habitat consists of open forests and woodlands with sources of water in which to feed. The Yuma myotis bat roosts in buildings, mines, caves, and crevices. No occurrences of this species are known in the project vicinity.

Despite regular flooding, special-status bats have the potential to roost under the San Francisquito Creek Bridge. Limited evidence of bat usage of the bridge, in the form of guano, was observed during surveys in 2008. The current bridge structure was

constructed overtop of an older bridge structure. This configuration has resulted in small gaps and airspaces that may harbor bat roosts. Focused surveys were conducted for these special-status bat species. The results of these surveys show that only a small number of bats are using the bridge structure as a night roost. Two to four species of bats were detected, and the Yuma myotis bat is the only species of special concern that may use the bridge. Since work to the bridge is expected to occur during the day, construction is not expected to affect bat roosting or foraging behavior in the project vicinity. The bridge will be replaced with a similar structure that provides the same potential habitat for bats. Therefore, the project will not result in any permanent effects to bats.

Environmental Consequences

These species, Pallid bat, hoary bat and Yuma myotis bat, are not likely to be affected by the proposed project with the implementation of the proposed avoidance and minimization efforts discussed below.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the pallid bat, hoary bat and Yuma myotis bat.

Salt marsh wandering shrew

Affected Environment

The salt marsh wandering shrew is a California State species of special concern. This subspecies of the vagrant shrew occurs only within salt marsh areas bordering the south arm of San Francisco Bay. This species is associated with salt marshes containing pickleweed mats. This species forages on a variety of insects and other invertebrates. Found within higher marsh areas that are not regularly inundated, this species also forages among piles of driftwood and other debris. Nests are constructed of dry plant matter.

The nearest observation of this species in the CNDDDB is recorded from salt marshes located approximately three miles northeast of the project area. No focused surveys were conducted for salt marsh wandering shrew; and this species was not observed during field visits to the project area. A tiny fragment (5 foot by 8 foot) of pickleweed mat on the north bank of San Francisquito Creek in the project area was evaluated for its potential to provide habitat for salt marsh wandering shrew. No piles of driftwood or other debris that can be used for cover and forage are located in the project area. The project lies approximately one mile upstream from restored salt marsh habitats that may support salt marsh wandering shrew, and the species is currently known present in salt marsh habitats 3 miles northeast of the project area. Salt marsh wandering shrew is not expected to occur in the project area because of the limited extent and isolated nature of the pickleweed area in the project area, the lack of suitable habitat conditions occurring upstream of the project area, and existing barriers to movement that exist downstream.

Environmental Consequences

The proposed project does not have the potential to affect the salt marsh wandering shrew because the species is unlikely to occur in the project area and the proposed project will not affect potential habitat for the species.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are proposed.

2.13 THREATENED AND ENDANGERED SPECIES

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 USC 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 US 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 statement. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (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.

Affected Environment

The Natural Environment Study (NES) was completed in December 2010. Appendix F – U. S. Fish & Wildlife Service Species List is a summary of USFWS threatened and endangered species with the potential to occur within the project area. The California sea-blite is the endangered plant species listed under the FESA; the southern green sturgeon and Central California Coast steelhead are listed as threatened under the

FESA; the white-tailed kite is a fully protected species in California; and the salt marsh harvest mouse is an endangered species under the FESA and CESA. Each of these species was studied for their potential for occurrence within the project area. For each species, the affected environment, environmental consequences, and avoidance, minimization and/or mitigation measures are discussed below with more detailed information contained in the NES.

Formal consultation with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) has been conducted for potential effects to the southern green sturgeon and the central California coast steelhead, and designated critical habitat for both of these species. A Biological Assessment (BA) was prepared and approved by the Department for this purpose in November 2010. NOAA Fisheries issued its Biological Opinion (BO) in March 2011, which is located in Appendix G. The BO concludes that the project may affect, but will not adversely affect the designated critical habitat of the southern green sturgeon and the central California coast steelhead under the FESA.

In addition, a CDFG Section 1602 Lake and Streambed Alteration Agreement will be pursued during the design phase of the project. Neither a CDFG-issued consistency determination nor incidental take permit is required as a result of the formal Section 7 consultation with NOAA Fisheries.

California sea-blite

Affected Environment

The California sea-blite, a federally endangered low-growing evergreen shrub, is a member of the goosefoot family. The species was formerly known to occur in the San Francisco Bay Area including Santa Clara and Alameda counties, but is currently only known to occur in Morro Bay in San Luis Obispo County. It occurs in coastal salt marsh and swamps at elevations below 20 feet. The plant blooms from July through October. The limited salt marsh habitat along the lower banks of San Francisquito Creek represents potential habitat for this species. However, the disturbed condition of the upland habitats in the project area along with the dominance of fill soils and the prevalence of non-native or invasive species, indicate the potential for this species to occur is low.

No California sea-blite plants were located within the project area during floristic-level botanical surveys within its bloom period. Only limited portions of the project area could provide marginal potential habitat for this species.

Environmental Consequences

The project is not expected to have any effect on this species under the FESA. The California sea-blite is not expected to occur in the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are necessary.

Southern green sturgeon

Affected Environment

Green sturgeon populations have been divided into Distinct Population Segments (DPS). The southern DPS green sturgeon was listed as federally threatened on April 6, 2006 by the National Marine Fisheries Service. This DPS of green sturgeon consists of all coastal and Central Valley populations south of the Eel River, with the only known spawning population in the Sacramento River.

The green sturgeon is a long-lived, slow-growing species. It is an anadromous species, coming into rivers primarily to spawn. Juveniles rear in fresh water for as long as two years. They are found throughout San Francisco Bay and the Delta. Adults feed on benthic invertebrates and to a lesser extent, small fish. Juveniles feed on opossum shrimp and amphipods in the San Francisco Estuary. The green sturgeon is thought to spawn every 3 to 5 years in deep pools with turbulent water velocities and cobble surfaces, but substrate can range from clean sand to bedrock. Females produce 60,000-140,000 eggs which are broadcast to settle into the spaces in between cobbles. Spawning in the Sacramento River occurs in late spring and early summer (March-July).

The green sturgeon is the most broadly distributed, wide-ranging, and most marine-oriented species of the sturgeon family. The species ranges from Mexico to Alaska in marine waters, and is observed in bays and estuaries up and down the west coast of North America. Sturgeon that are tagged in the Sacramento River are primarily captured in coastal and estuarine waters to the north. The principal factor for decline of the Southern DPS is the reduction of the spawning area which is now only a limited area of the Sacramento River. A number of presumed spawning populations (Eel River, South Fork Trinity River, and San Joaquin River) have been lost in the past 25-30 years.

No fisheries surveys were conducted for the proposed project. The green sturgeon is not known to occur within San Francisquito Creek. However, it does occur within South San Francisco Bay and it is conceivable that juvenile sturgeon may enter the stream to forage. While possible, the potential for sturgeon to occur is low when considering the highly modified condition found within the project area. However, the project is located within an area subject to tidal influence and will be treated as potential habitat.

Temporary effects to the stream channel and flow are expected to occur as a result of the bridge construction activities. The flow of the creek is expected to be diverted, re-routed and confined to a section of the current streambed that will allow for construction on the exposed streambed outside the diversion channel. Diversion of the stream in the construction area is expected to occur only in the dry summer months between June 15th and October 15th when flows in San Francisquito Creek will be greatly reduced. The effects of rerouting the creek are expected to be minimal, and the main purpose is to ensure that a corridor for green sturgeon migration remains intact during construction.

If for some reason the entire width of the stream needs to be dewatered, the construction of cofferdams and dewatering of the stream reach used for construction

will terminate natural stream flow for a short period of time. This option is not preferred, and will only be used if it is not feasible to complete the construction work by routing the stream channel into temporary diversion channels. Because the construction period is during a time in which steelhead are not normally migrating, the effects to migrating steelhead are minimized. In addition, proposed protocols for fish relocation will be implemented should steelhead be found in portions of the creek channel that are dewatered. These protocols will be described in a fish relocation plan, which will be followed to reduce the potential adverse effects of the construction work on the green sturgeon.

Critical habitat has been designated for the southern green sturgeon. Its habitat includes San Francisco Bay and tidal sloughs and estuaries up to the elevation of the mean higher high tide mark. The portion of San Francisquito Creek in the BSA is included in this critical habitat designation because the creek is tidally influenced. The following elements are essential for the conservation of Southern green sturgeon in estuarine areas:

- Abundant food sources within estuarine habitats and substrates for juvenile, subadult, and adult life stages. Prey species for juvenile, sub-adult, and adult green sturgeon within bays and estuaries primarily consist of benthic invertebrates and fishes, including crangonid shrimp, burrowing thalassinidean shrimp (particularly the burrowing ghost shrimp), amphipods, isopods, clams, annelid worms, crabs, sand lances, and anchovies. These prey species are critical for the rearing, foraging, growth, and development of juvenile, sub-adult, and adult green sturgeon within the bays and estuaries.

- Sufficient flow into the bay and estuary to allow adults to successfully orient to the incoming flow and migrate upstream to spawning grounds.

- Water quality, including temperature, salinity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages.

- A migratory pathway necessary for the safe and timely passage of southern DPS green sturgeon within estuarine habitats and between estuarine and riverine or marine habitats.

- A diversity of water depths necessary for shelter, foraging, and migration during the juvenile, sub-adult, and adult life stages.

- Sediment quality (i.e., chemical characteristics) necessary for normal behavior, growth, and viability during all life stages. Sediment quality includes sediments free of elevated levels of contaminants (i.e., selenium, pesticides, etc.) that can cause adverse effects on all life stages of green sturgeon.

Essential Fish Habitat (EFH) has not been designated for the southern DPS green sturgeon, though the species is managed under the Magnuson-Stevens Fisheries Conservation and Management Act, also known as the Sustainable Fisheries Act. The EFH provisions of the Sustainable Fisheries Act are designed to protect fisheries habitat from being lost due to disturbance and degradation.

Environmental Consequences

The effects to southern green sturgeon habitat are expected to be minimal, and neither adverse nor significant. They are determined to be 31,226.9 square feet (0.717 acres) of temporary effects, and 1,060.8 square feet (0.024 acres) of permanent effects, for a total of 32,287.7 square feet (0.741 acres). The project required formal consultation with NOAA Fisheries pursuant to Section 7 of the FESA. The effect finding is that the proposed project may affect, but will not adversely affect its designated critical habitat.

There is a slight potential that direct mortality may result if a southern DPS green sturgeon enters the stream during construction activities. Additionally, there is some potential for degradation or loss of habitat during construction through modification of the stream channel or through the accidental release of sediments or hazardous materials. The proposed avoidance and minimization measures noted below will substantially reduce the potential for direct mortality. Through the use of the described erosion and spill prevention controls, the potential for habitat loss or degradation is expected to be minor.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the southern green sturgeon.

In addition, the following measures will be implemented to minimize the effects to the southern green sturgeon:

A pre-construction survey will be conducted by a NOAA pre-approved biologist immediately prior to project disturbance activities for the presence of special-status species. These surveys shall be conducted immediately prior to disturbance activities such as the installation and removal of diversion facilities. Prior to all dewatering activities a USFWS pre-approved biologist will survey the water using appropriate survey techniques to capture and relocate all vertebrate species. If a federally protected species is observed, it will be relocated by the USFWS pre-approved biologist, and work will continue once the biologist approves the conditions.

Prior to any in-stream work within the bed and banks of San Francisquito Creek that would require the construction of cofferdams and dewatering of the creek bed, construction crews must review the stream relocation plan. The procedures of the stream relocation plan shall be followed exactly as worded in the plan including ensuring that a qualified fisheries biologist is present during the closing and dewatering of all cofferdams, ensuring that all pump intakes are screened according to NOAA criteria, and having qualified fisheries biologists collect, handle and relocate fish in dewatered areas.

Diversion and routing of the stream channel to a temporary diversion channel to allow construction work within the existing channel shall be supervised by a qualified fisheries biologist. The diversion and routing shall not maintain a continuous connection between the upstream reaches and the lower reaches of the creek. The existing channel shall remain untouched until the temporary diversions are constructed and the erosion control measures are in place. Diversion channels shall be opened

from the downstream end first and only clean washed material shall be used to close existing channels to divert water to temporary diversion channels. The temporary diversion channel shall be designed to accommodate the flow of expected storm events and tidal flows and with gradient controls to ensure that diversion channel slopes correspond to the existing channel gradients.

Central California coast steelhead

Affected Environment

Steelhead populations have been divided into Distinct Population Segments (DPS). Steelhead that may occur within San Francisquito Creek are within the central California coast DPS. This DPS was listed as a federally threatened species on August 18, 1997; threatened status was reaffirmed on January 5, 2006. This central California coast steelhead DPS occupies river basins from the Russian River, Sonoma County to Aptos Creek, Santa Cruz County, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River. The Sacramento-San Joaquin River Basin in the Central Valley of California is excluded.

In general, adult steelhead return to rivers and creeks in the region from the ocean between October and April. Spawning takes place in the rivers from December to April, with most spawning activity occurring between January and March. Juvenile steelhead remain in fresh water for one to four years before they migrate into the open ocean during spring and early summer. However, juveniles can spend up to seven years in fresh water before moving downstream. Steelhead can spend up to three years in saltwater before returning to freshwater to spawn. Because juvenile steelhead remain in the creeks year-round, adequate flows, suitable water temperatures, and an abundant food supply are necessary throughout the year in order to sustain steelhead populations. The most critical period is in the summer and early fall when these conditions become limiting. Potential spawning areas require gravel bottoms and specific water conditions. Spawning habitat conditions are strongly affected by water flow and quality, especially temperature, dissolved oxygen, and silt load, all of which can greatly affect the survival of eggs and larvae.

Migratory corridors start downstream of the spawning areas and allow the upstream passage of adults and the downstream emigration of juveniles. Migratory habitat conditions are strongly affected by the presence of barriers, which can include dams, culverts, flood control structures, unscreened or poorly screened diversions, and degraded water quality. Both spawning areas and migratory corridors comprise rearing habitat for juveniles, which feed and grow before and during their migration.

Intermittent tributary streams also may be used for juvenile rearing. Rearing habitat condition and function may be affected by annual and seasonal flow and temperature characteristics. Specifically, the lower reaches of streams often become less suitable for juvenile rearing during the summer.

No fish surveys were conducted for the proposed project. However, steelhead are known to occur within San Francisquito Creek. The creek contains one of the last remaining viable steelhead runs in southern San Francisco Bay. However, the project area does not contain suitable spawning habitat. Steelhead are expected to use the project area primarily as a migratory corridor to more suitable upstream spawning habitat, and potentially for some limited juvenile rearing during emigration. Habitat

within the project area consists of a tidally influenced, channelized stream with relatively warm water and a mud bottom. Steelhead require cool, clean water for spawning. Steelhead spawning is not expected to occur within the project area. Depending on the timing of construction, juvenile or adult steelhead may be migrating through the project area.

Temporary effects to the stream channel and flow are expected to occur as a result of the bridge construction activities. The flow of the creek is expected to be diverted, rerouted and confined to a section of the current streambed that will allow for construction outside the diversion channel. Diversion of the stream in the construction area is expected to occur only in the dry months between June 15th and October 15th when flows in San Francisquito Creek will be greatly reduced. The effects of rerouting the creek are expected to be minimal, and the main purpose is to ensure that a corridor for steelhead migration remains intact during construction.

If for some reason the entire width of the stream needs to be dewatered, the construction of cofferdams and dewatering of the stream reach used for construction will terminate natural stream flow for a short period of time. This option is not preferred, and will only be used if it is not feasible to complete the construction work by routing the stream channel into temporary diversion channels. Because the construction period is during a time in which steelhead are normally not migrating, the effects to potential migrating steelhead are minimized. In addition, proposed protocols for fish relocation will be implemented should steelhead be found in portions of the creek channel that are dewatered. These protocols will be described in a fish relocation plan, which will be followed to reduce the potential adverse effects of the construction work on steelhead.

Critical habitat has been designated for the central California coast steelhead. It includes stream channels within designated stream reaches and a lateral extent as defined by the ordinary high-water line (NOAA Fisheries 2005). San Francisquito Creek is included in this critical habitat designation. The following primary constituent elements are essential for the conservation of fish within the DPS and support one or more life stages:

1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development;
2. Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
3. Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

4. Estuarine areas free of obstruction and excessive predation with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation (NOAA Fisheries 2005).

Essential Fish Habitat (EFH) has not been designated for the central California coast steelhead, though the species is managed under the Magnuson-Stevens Fisheries Conservation and Management Act, also known as the Sustainable Fisheries Act. The EFH provisions of the Sustainable Fisheries Act are designed to protect fisheries habitat from being lost due to disturbance and degradation.

Environmental Consequences

The effects to the central California coast DPS steelhead habitat are neither adverse nor significant, and are determined to be 31,226.9 square feet (0.717 acres) of temporary effects, and 1,060.8 square feet (0.024 acres) of permanent effects, for a total of 32,287.7 square feet (0.741 acres). The project required formal consultation with NOAA Fisheries pursuant to Section 7 of the FESA. The effect finding is that the proposed project may affect, but will not adversely affect its designated critical habitat.

Potential effects to the central California coast DPS steelhead include direct mortality, removal, or degradation of habitat and barriers to movement and dispersal. The proposed avoidance and minimization measures noted below will substantially reduce the potential for direct mortality. Through the use of the described erosion and spill prevention controls, the potential for habitat loss or degradation is expected to be minor.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the central California coast DPS steelhead.

In addition, the following measures will be implemented to minimize the effects to the central California coast DPS steelhead and its designated critical habitat:

A pre-construction survey will be conducted by a NOAA pre-approved biologist immediately prior to project disturbance activities for the presence of special-status species. These surveys shall be conducted immediately prior to disturbance activities such as the installation and removal of diversion facilities. Prior to all dewatering activities a USFWS pre-approved biologist will survey the water using appropriate survey techniques to capture and relocate all vertebrate species. If a federally protected species is observed, it will be relocated by the USFWS pre-approved biologist, and work will continue once the biologist approves the conditions.

Prior to any in-stream work within the bed and banks of San Francisquito Creek that requires the construction of cofferdams and dewatering of the creek bed, construction crews must review the stream relocation plan. The procedures of the stream relocation

plan shall be followed exactly as worded in the plan including ensuring that a qualified fisheries biologist is present during the closing and dewatering of all cofferdams, ensuring that all pump intakes are screened according to NOAA criteria, and having qualified fisheries biologists collect, handle and relocate fish in dewatered areas.

Diversion and routing of the stream channel to a temporary diversion channel to allow construction work within the existing channel shall be supervised by a qualified fisheries biologist. The diversion and routing shall not disrupt the connectivity of the upstream reaches with the lower reaches of the creek. The existing channel shall remain untouched until the temporary diversions are constructed and the erosion control measures are in place. Diversion channels shall be opened from the downstream end first and only clean washed material shall be used to close existing channels to divert water to temporary diversion channels. The temporary diversion channel shall be designed to accommodate the flow of expected storm events and tidal flows and with gradient controls to ensure that diversion channel slopes correspond to the existing channel gradients.

White-tailed kite

Affected Environment

The white-tailed kite is a fully protected species in California. This bird is an uncommon, year-round resident in coastal and valley lowlands (mostly non-migratory in California), rarely found away from open areas. It makes a nest of loosely piled sticks and twigs lined with grass, straw, or rootlets. The nest is typically located near the top of dense oak, willow, or other trees. Typical prey of this raptor or bird of prey includes voles and other small, diurnal (active during the day) mammals, although the white-tailed kite occasionally preys on birds, insects, reptiles, and amphibians. The white-tailed kite forages in open grasslands, meadows, farmlands, and emergent wetlands. This kite species breeds from February to October. There are no California Natural Diversity Database (CNDDDB) records for the white-tailed kite in the study area; however, the species has the potential to forage and nest in the project area.

This species was not observed during field visits to the project area. Marginally suitable habitat for nesting and foraging are present in the study area. A few large trees provide potential nesting sites within the project area, and a thin strip of ruderal/annual grassland habitat provides limited foraging habitat.

Environmental Consequences

The project is not expected to have any effect on this species under the CESA. Implementation of the project has the potential to affect the white-tailed kite through the disturbance of nesting birds, resulting in the abandonment of nests. However, implementation of the measures noted below will reduce the potential for adverse effects to this species.

Avoidance, Minimization, and/or Mitigation Measures

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted in the previous Natural Communities section will provide protections for the white-tailed kite.

In addition, the following avoidance measure will be implemented for this species:

Pre-construction surveys for nesting birds will be conducted if work will occur during the nesting season (February 15 through August 31). These surveys will include the identification of any white-tailed kite nests. If nests are identified, the Department will consult with CDFG to determine an appropriate approach to the occupied nest that may include establishing a buffer around the nest where work will not occur while the nest is occupied.

Salt marsh harvest mouse

Affected Environment

The salt marsh harvest mouse was listed as an endangered species by the USFWS in October of 1970. It is also listed as a State endangered species under the CESA and is a California State fully protected species. No critical habitat has been designated for the salt marsh harvest mouse. The mouse is a “cover dependent” species that inhabits tidal and diked salt marshes characterized by dense stands of pickleweed. There may be some daily movement between marsh to high elevation grasslands in spring or summer or when adjacent grasslands provide protection from predators during high tide or flood events. The salt marsh harvest mouse is specially adapted to tolerate high concentrations of salt in food and water. The mice have been known to drink and survive on salt water or brackish water for long periods of time, which has given them a great advantage in the Bay’s salty tidal marshes. Unlike most rodents, they do not reproduce quickly. Breeding is from spring to fall, with one to two litters of three to four offspring. The salt marsh harvest mouse is a short-lived species, often living less than 8 months, but they can live as long as one year. Salt marsh harvest mouse is thought to feed on seed, grass, and forbs, including pickleweed and saltgrass. In winter, they are known to consume fresh grass. Juvenile members of this species have shown an ability to migrate great distances, but only do so through vegetated buffer areas along salt marshes.

The nearest observation of this species in the CNDDDB was recorded from salt marshes along San Francisco Bay approximately one mile east of the project area. No focused surveys were conducted for salt marsh harvest mouse. This species was not observed during field visits to the project area. Limited suitable habitat containing one pickleweed mat covering an approximately five foot by eight foot area is present in the study area on the lower north bank downstream of the bridge. This habitat fragment, located 250 feet downstream of the proposed project footprint, is not sufficient to support a population of salt marsh harvest mice.

This species prefers large, dense pickleweed salt marsh with intact upland borders. The project lies approximately one mile upstream from restored salt marsh habitats that are known to support the salt marsh harvest mouse. Potential for this species to disperse into the project area is limited by a lack of continuous suitable habitat or continuous cover along the narrow banks of San Francisquito Creek. Potential for movement from occupied downstream habitat is further reduced by the presence of a physical barrier along the north bank in the form of a 56 foot wide water outfall structure with vertical sidewalls, located approximately one mile downstream of the project area (no pickleweed or marsh habitat occurs on the south bank in the project area). The San Francisquito Bridge and surrounding urban development forms

another barrier that would be impassable to this species. Therefore, due to the limited extent and isolated nature of the pickleweed area in the project area, the lack of suitable habitat conditions occurring upstream of the project area, and existing barriers to movement that exist downstream, this species is not expected to be present in the project area.

Environmental Consequences

The project is not expected to have any effect on this species under the FESA and CESA. The proposed project does not have the potential to affect the salt marsh harvest mouse because the species is unlikely to occur in the project area; and the proposed project will not affect any potential habitat for the species.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are included for the salt marsh harvest mouse.

2.12 INVASIVE SPECIES

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.

Affected Environment

The Natural Environment Study (NES) was completed in December 2010.

Several invasive, non-native plant species occur within the project area, including poison hemlock, sweet fennel, giant reed, yellow star-thistle, Cape ivy, tree of heaven, Himalayan blackberry, English ivy, and blackwood acacia.

Environmental Consequences

There are two trees of heaven along the south bank, downstream from San Francisquito Creek Bridge, that have the potential to be removed during construction.

None of the species on the California list of noxious weeds is currently used by the Department for erosion control or landscaping.

Avoidance, Minimization, and/or Mitigation Measures

Although it is Department policy to replace or provide compensation for trees that are removed for construction, trees of heaven are a non-native, invasive species and will not be replaced unless determined to provide habitat. If so, they will be replaced with native species. The exact location and type of compensation for impacts to these trees of heaven are to be determined with consultation with the CDFG. Removal of such specimens would be considered an environmental benefit.

Measures will be implemented to reduce the spread of invasive/non-native plant species, including use of native, non-invasive species for erosion control.

Construction Impacts

Construction Phasing

Freeway traffic will be shifted to allow construction of the project. The proposed stage construction is as follows:

Stage 1 – Construct previously discussed Auxiliary Lanes between University Avenue and Embarcadero Road.

Stage 2 - Shift northbound freeway traffic to the east and southbound freeway traffic to the west away from the center median. Remove the median barrier and level the freeway.

Stage 3 - Shift southbound freeway traffic to the east. Close West Bayshore Road and provide one way traffic control for East Bayshore Road. Replace the existing freeway bridge and soundwall to the west with a new bridge and soundwall. Replace the bridge carrying the northbound portion of East Bayshore Road with a new bridge. Install tangent pile walls upstream and downstream of the bridge to maintain creek bank stability.

Stage 4 – Shift southbound traffic to the freeway bridge constructed in Stage 3. Open West Bayshore Road and restore two-way traffic to East Bayshore Road. Replace existing freeway bridge in the median with a new bridge.

Stage 5 - Shift northbound freeway traffic to the freeway bridge constructed in stage 4. Provide one way traffic control on East Bayshore Road. Replace the existing freeway and frontage road bridges between Stage 3 and Stage 4 construction with a new bridge.

Stage 6 - Reconstruct the median barrier between University Avenue and Embarcadero Road and overlay freeway. Restripe the northbound and southbound freeway lanes and frontage roads to standard.

The project proposes to temporarily affect pedestrian and bicycle facilities on West Bayshore Road, which will be closed three to four months (one construction season) during construction stage 3. Detour signs will be in place to provide an alternative route for motorists and pedestrians affected by the temporary closure of West Bayshore Road. West Bayshore Road is also currently being proposed as a construction staging area and therefore may temporarily affect on-street parking.

Transportation Management Plan

A Transportation Management Plan (TMP) that includes coordination with the Cities of East Palo Alto and Palo Alto for issues related to West Bayshore Road, as well as communication between adjacent residents, businesses and the Resident Engineer for construction-related issues, will be implemented and completed during the design phase of the project. This TMP will address matters such as residential and non-residential parking on West Bayshore Road, and will include press releases to notify and inform motorists, businesses, community groups, local entities and emergency services of upcoming closures and detours. Residents and businesses adjacent to the project area will be invited to attend future pre-construction/constructability meetings with the Resident Engineer and/or contractor.

Construction Scheduling

The majority of construction activities will take place during daylight hours. Construction activity at night will be avoided as much as possible, but is likely unavoidable at times. Night work may consist of the following activities: moving/placing k-rail, restriping the freeway, asphalt concrete overlay of the freeway and delivery of equipment and materials. Lighting will be necessary for the safety of workers. Therefore, lighting and noise (see *Noise* discussion below) may be unavoidable effects during construction at night.

Air Quality/Hazardous Waste

Trucks and construction equipment emit hydrocarbons, oxides of nitrogen, carbon monoxide and particulates. Most pollution will consist of wind-blown dust generated by excavation, grading, hauling and various other activities. The effects from these activities will vary from day to day as construction progresses. The Special Provisions and Standard Specifications will include requirements to minimize or eliminate dust during construction through the application of water or dust palliatives.

Any ADL encountered will be managed in such a way as to prevent it from coming into contact with people or the environment. The Department will look for a location in the highway corridor where the ADL material can be used as fill. Alternatively, it can be sent to a facility authorized to manage lead contamination.

During construction there will be a water truck on-site at all times for dust control during soil-disturbing activities and provide the general order to prevent visible dust at all times. Construction will proceed under a lead compliance plan prepared and signed by a certified industrial hygienist that stipulates sufficient on-site air monitoring to protect workers and construction site perimeter air monitoring to protect the community. If the lead measurements are found at anytime to be excessive, work must stop and

adjustments will be made to bring the operation into compliance with the air quality requirements.

The Department adheres to very specific requirements for minimizing dust and the associated lead exposure during construction of the project. The protection from exposure for the workers and the surrounding community is specifically addressed in the construction contract provisions and multiple work plans that the contractor must follow. The prevention of "fugitive" dust starts with standards and requirements that are part of the construction contract documents put out for bids from contractors.

The perimeter monitoring includes upwind and downwind sampling stations to clearly quantify the dust-related contribution from the construction work. For lead concentrations, the contract specifications allow a maximum daily average of up to 1.5 micrograms of lead per cubic meter of air. This threshold is a California 30-day average normally applied to region-wide ambient measurements; to apply this standard to a single construction site on a daily basis is very protective of the immediate area. Furthermore, the specifications require the 90-day rolling average for lead readings to be below 0.15 micrograms per cubic meter of air, which is a national standard for 90-day region-wide measurements.

Noise

While construction noise could at times reach levels higher than the existing traffic noise, these effects would be temporary and can be reasonably minimized by implementing provisions in Section 1.01I, "Sound Control Requirements: of the Department Standard Specifications and the following measures that are specifically mentioned on Page 13 of the Department-prepared *Traffic Noise Study Report* for the Route 101 Auxiliary Lanes Project in this same vicinity:

1. Avoid construction activities during nighttime and weekends, when possible.
2. Consider constructing noise barriers as first items of work, where feasible.
3. Use of stockpiled dirt as earthen berms, where feasible.
4. Erect temporary noise barriers, if necessary.
5. Keep noisy equipment and haul roads away from sensitive receptors, where feasible.
6. Keep the community informed of upcoming especially noisy construction activities and (possibly) establish a field office to handle noise complaints.

In addition, the project will be subject to local noise ordinances. While the most intensive forms of construction noted in the letter will take place strictly during daylight hours (i.e., pile driving), it is unlikely that all work can be confined to weekday, daylight hours since freeway traffic lanes can only be closed at night.

Cumulative Impacts

REGULATORY SETTING

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts 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. The analysis considers other Department projects and projects proposed by other outside agencies and developers.

Data for this cumulative impacts analysis were obtained from San Mateo and Santa Clara Counties, from environmental documents for local projects archived by the Department, and from the State Clearinghouse's online database, CEQAnet. The project area is largely built out and, consequently, has few development proposals.

The following resource areas were determined to have no direct or indirect impacts under the Build Alternative, and were not discussed within Chapter 2 of this report: air quality, community character and cohesion, consistency with state, regional and local plans and programs, existing and future land use, farmlands and timberlands, growth, mineral resources, noise, paleontology, parks and recreation, visual/aesthetics and relocations. Therefore, these resources are not discussed in this section.

Similarly, the following topics were discussed within Chapter 2, and because the project will have no potentially significant direct or indirect impacts on a resource, will not contribute to a cumulative impact on a resource for the Build Alternative, and they will not be further evaluated: utilities/emergency services, environmental justice, traffic and transportation/pedestrian and bicycle facilities, cultural resources, geology/soils/seismic/topography, and hazardous waste/materials.

The remaining topics discussed within this document are hydrology/floodplain, water quality, biological resources, and wetlands and other waters. Further analysis was completed to investigate the possibility of cumulative impacts to these resources.

Route 101 Auxiliary Lanes Project

As previously discussed in Chapter 1, the Department is currently planning the Route 101 Auxiliary Lanes project, which lies within the limits of this project. The Auxiliary Lanes project will have a less than significant impact to transportation and traffic related to the increase in traffic and levels of service at interchanges. Otherwise, the Auxiliary lanes project not contribute to any cumulative impacts since the project does not have any effects or impacts to any resources individually, or cumulatively, as identified in its approved Initial Study with Negative Declaration/Environmental Assessment with Finding of No Significant Impact.

San Francisquito Creek Joint Powers Authority Projects

The San Francisquito Creek Joint Powers Authority (SFCJPA) is initiating projects to increase San Francisquito Creek's flow capacity both downstream and upstream of the Route 101 San Francisquito Creek Bridge.

The scope of work in the downstream project which, according to the SFCJPA website, will extend from the San Francisquito Creek Bridge to San Francisco Bay, includes: widening the creek channel within reach to convey peak flows for 100-year storm events, removing an abandoned levee-type structure to allow flood flows from the creek channel into the Palo Alto Baylands Preserve north of the creek, and constructing an outlet structure for the Department's enlargement of the San Francisquito Creek Bridge. This SFCJPA project may or may not be constructed concurrently with the San Francisco Creek Bridge Replacement Project. The SFCJPA filed a Notice of Preparation of Environmental Impact Report with the State Clearinghouse for their project on September 15, 2010.

The scope of work in the upstream project remains largely undetermined, but any improvements to the flow capacity would not be constructed until this San Francisquito Creek Bridge replacement project and SFCJPA's downstream project are completed.

Hydrology/floodplain: As discussed in the Project Description of Chapter 1 and the Hydrology/Floodplain of Chapter 2, the Department has agreed to extend the bridge and add a fourth span (cell) in San Francisquito Creek, thus improving flow capacity and reducing flood effects in a 100-year flood event. Therefore, effects to hydrology/floodplain are cumulatively considerable but, in this context, are positive and will benefit San Francisquito Creek.

Water Quality: Each project will be subject to applying for Section 401 Regional Water Quality Control Board permits that will minimize the deterioration of water quality. Furthermore, the Department will have Best Management Practices (BMPs) in place as discussed in the water quality and storm water run-off section of Chapter 2. Any similar BMPs proposed by the SFCJPA for their project are likely to be similar in purpose, but nonetheless unknown at this time. For these reasons, effects to water quality are not cumulatively considerable.

Biological Resources: The SFCJPA projects have the potential to result in unavoidable cumulative impacts to sensitive natural resources within the project area, including riparian and tidally influenced estuarine habitats, fisheries habitats and associated sensitive species, including those mentioned in the biological resource sections of Chapter 2, when combined with this project. However, the effects to biological resources because of this San Francisquito Creek Bridge project are expected to be minimal and therefore, contribute minimally to the effects of the SFCJPA projects. Furthermore, each project will be subject to formal Section 7 consultation requirements with the appropriate agencies (NOAA Fisheries, USFWS, etc.) in order to avoid, minimize and/or mitigate effects to these resources. For these reasons, effects to biological resources are not cumulatively considerable.

Wetlands and other waters: Each project will be subject to applying for Section 404 U.S. Army Corps of Engineers (USACE) permits, and consulting with the USACE to mitigate for potential impacts to jurisdictional waters. The estimated impacts for this project are summarized in the wetlands and other waters in Chapter 2. The estimated impacts to the SFCJPA projects are unknown at this time. For these reasons, effects to water quality are not cumulatively considerable.

San Francisquito Creek Pump Station Installation Project

The City of Palo Alto proposed this San Francisquito Creek Pump Station Installation Project located east of East Bayshore Road, southwest of San Francisquito Creek Bridge. The purpose of the proposed pump station is to absorb storm water runoff and drainage from surrounding sources, and convey water into San Francisquito Creek. The City submitted its Notice of Determination to the State Clearinghouse for this project on April 23, 2007.

This pump station project, though bordering San Francisquito Creek and consequently the SFCJPA's downstream project, is not contiguous to the San Francisquito Creek Bridge. Any impacts associated with the pump station are likely to be confined to its construction; and the pump station was completed in April 2009. For these reasons, the potential for cumulative impacts is low.

Chapter 3 – California Environmental Quality Act (CEQA) Evaluation

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 the Department under its assumption of responsibility pursuant to 23 USC 327. The Department 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 Environmental Impact Statement (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 the Department 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 Environmental Impact Report (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.

A CEQA Environmental Checklist, which identifies physical, biological, social and economic factors that may be affected by the proposed project, is located in Appendix A.

Wetlands and Other Waters

The proposed project will permanently impact 0.024 acres of potentially jurisdictional non-wetland waters of the United States. The project will also temporarily affect approximately 0.716 acres of potentially jurisdictional non-wetland waters of the United States and 0.030 acres of jurisdictional wetlands.

Because of their small size and nature, these effects to wetlands and other waters are less than significant.

Plant Species – Coast Live Oak

One coast live oak tree is within the project footprint, and has the potential to be trimmed, removed, or affected by the proposed project if access (via a temporary construction easement) within the residential property is required. The tree is in a residential yard on the southwest, upstream side of the bridge at 1941 Edgewood Drive, Palo Alto. The size of this coast live oak tree is undetermined, but is estimated to be approximately 40 inches. Effects to this oak may include damage to the root zone due to excavation or compaction from construction activities. The Department, as a State agency, is not subject to local tree ordinances for properties located in, or proposed to be in, Department right of way (temporary construction easement in this case).

The general measures that the Department will implement during construction to avoid and minimize effects to biological resources noted previously in the Natural Communities section are appropriate protections for the coast live oak.

Though not a species of concern, it is Department policy to compensate for trees that are removed for construction. The Department will attempt to avoid and/or minimize any effects to this tree if at all possible. However, if avoidance is not possible, then the Department will replace the tree at a 5:1 ratio, which has been agreed upon with CDFG consultation. Replacement planting would be located at the Pacheco Creek Mitigation Area, a 55.4-acre parcel in Santa Clara County.

The small size and nature (one tree) deems this effect as less than significant.

Climate Change

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

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization's in 1988, has led to increased efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs related to human activity that include carbon dioxide (CO₂), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 – tetrafluoroethane), and HFC-152a (difluoroethane).

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas (GHG) Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation," refers to the effort of planning for and adapting to impacts due to climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)¹.

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

Transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source (second to electricity generation) of greenhouse gas emitting sources. Conversely, the main source of GHG emissions in the United States (U.S.) is electricity generation followed by transportation. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improve system and operation efficiencies, 2) reduce growth of vehicle miles traveled (VMT) 3) transition to lower GHG fuels and 4) improve vehicle technologies. To be most effective all four should be pursued collectively. The following regulatory setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level.

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases (AB 1493), 2002: requires the California Air Resources Board (ARB) 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. In June 2009, the U.S. Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with Federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

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

AB32 (AB 32), the Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in Executive Order S-3-05, 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.

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 ten percent by 2020.

Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines

for addressing greenhouse gas emissions. The Amendments became effective on March 18, 2010.

Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are, no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (<http://www.fhwa.dot.gov/hep/climate/index.htm>), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

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

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the interagency Climate Change Adaptation Task Force, which is engaged in developing a U.S. strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

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

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)--in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding:** The Administrator found 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.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's *Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles*, which was published on September 15, 2009². On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a memorandum on May 21, 2010.³

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon (MPG) if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On January 24, 2011, the U.S. EPA along with the U.S. Department of Transportation and the State of California announced a single timeframe for proposing fuel economy and greenhouse gas standards for model years 2017-2025 cars and light-trucks. Proposing the new standards in the same timeframe (September 1, 2011) signals continued collaboration that could lead to an extension of the current National Clean Car Program.

Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG.⁴ In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act (CEQA)

² <http://www.epa.gov/climatechange/endangerment.html>

³ <http://epa.gov/otaq/climate/regulations.htm>

⁴ This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the SCAQMD (Chapter 6: : The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Guidelines sections 15064(h)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

The AB 32 Scoping Plan contains the main strategies California will use to reduce GHG. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California (Forecast last updated: 28 October 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

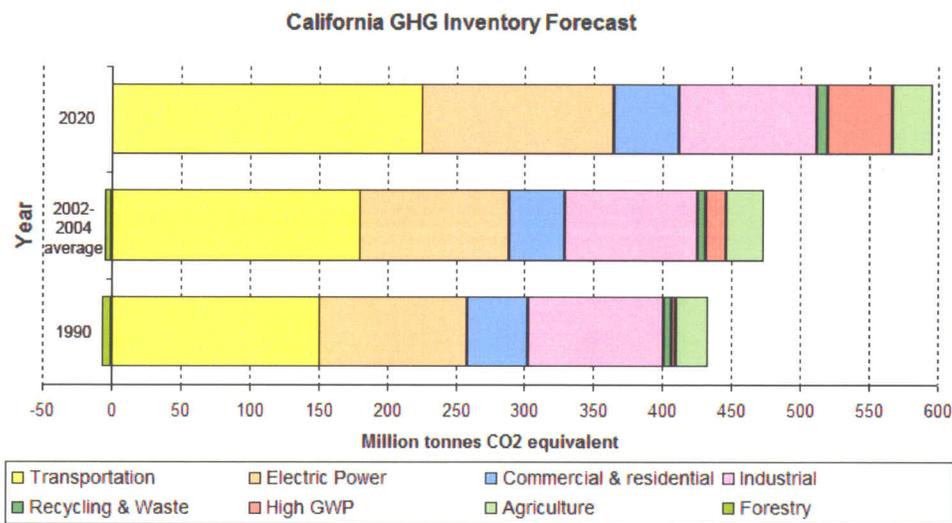


FIGURE 6 – California Greenhouse Inventory

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

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>

Project Analysis

The purpose of this project is to improve safety for the traveling public and improve structural integrity by replacing the San Francisquito Creek Bridge. Construction GHG emissions are unavoidable but the project as proposed will not increase or change

long-term traffic volumes and is not expected to cause an overall increase in operational GHG emissions.

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 lines, 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.

Measures integrated into the project which help limit/minimize construction-related GHG emissions include reducing traffic delays. A Transportation Management Plan (TMP) is developed during the PS&E phase of a project. A TMP is a method for minimizing traffic delay and collisions related to Caltrans-approved activities by the effective application of traditional traffic handling practices and an innovative combination of public and motorist information, demand management, incident management, system management, construction strategies, alternate routes and other strategies. All TMPs share the common goal of relieving congestion during a project period by managing traffic flow and balancing traffic demand with highway capacity through the project area, or by using an entire corridor.

Caltrans policy states: “The Department minimizes motorist delays when implementing projects or performing other activities on the state highway system. This is accomplished without compromising public or worker safety, or the quality of the work being performed.”

A TMP implements a variety of strategies, which may include these actions:

- A public awareness campaign.
- A public outreach program.
- Changeable message signs.
- Construction area signs.
- Signs provided at decision points for all routes.
- Advance notification signs before construction.
- Planned lane closure website.
- Caltrans Highway Information Network.

- Construction Zone Enhanced Enforcement Program (COZEEP).
- Lane and ramp closure charts (provided at PS&E).
- Reduced lane widths are acceptable if they are at least 11 feet wide.
- If the contractor chooses to accomplish work that requires an alternative route the contractor must develop a plan and have it approved by the Caltrans Resident Engineer.

CEQA Conclusion

While construction will result in a slight increase in GHG emissions during construction, it is anticipated that any increase in GHG emissions due to construction will be offset by improvement in operational GHG emissions. While it is the 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 impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

AB 32 Compliance

The Department continues to be actively involved on the Governor's Climate Action Team as ARB works to implement the Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help

meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Former 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.



Figure 7: Mobility Pyramid

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 are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO₂ reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in Figure 7: The Mobility Pyramid.

The Department 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. The Department is working closely with local jurisdictions on planning activities; however, the Department does not have local land use planning authority. The Department 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; the Department 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 U.S. EPA and ARB. 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 4 summarizes the Department and statewide efforts that the Department is implementing in order to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 4 – Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.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 Replacement B20 B100	0.0045	0.0065 0.45 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

To the extent that it is applicable or feasible for the project and through coordination with the project development team, measures that will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project are to be determined.

Adaptation Strategies

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

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

On November 14, 2008, Governor Schwarzenegger signed Executive Order S-13-08 which directed a number of state agencies to address California’s vulnerability to sea level rise caused by climate change.

The California Resources Agency [now the Natural Resources Agency, (Resources Agency)], through the interagency Climate Action Team, was directed to coordinate with local, regional, state and federal public and private entities to develop a state Climate Adaptation Strategy. The Climate Adaptation Strategy will summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency.

As part of its development of the Climate Adaptation Strategy, Resources Agency was directed to request the National Academy of Science to prepare a *Sea Level Rise Assessment Report* by December 2010 to advise how California should plan for future sea level rise. The report is to include:

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

Furthermore Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system and economy of

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

Prior to the release of the final *Sea Level Rise Assessment Report*, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. However, all projects that have filed a Notice of Preparation, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects as of the date of Executive Order S-13-08 may, but are not required to, consider these planning guidelines. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data. (Executive Order S-13-08 allows some exceptions to this planning requirement.) The project is programmed in the 2010 State Highway Operation and Protection Program (SHOPP) and will be funded in the 2011/2012 SHOPP.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted as part of Governor's Schwarzenegger's Executive Order on Sea Level Rise and is mobilizing to be able to respond to the National Academy of Science report on *Sea Level Rise Assessment* which is due to be released by December 2010.

On August 3, 2009, Natural Resources Agency in cooperation and partnership with multiple state agencies, released the 2009 California Climate Adaptation Strategy Discussion Draft, which summarizes the best known science on climate change impacts in seven specific sectors and provides recommendations on how to manage against those threats. The release of the draft document set in motion a 45-day public comment period. Led by the California Natural Resources Agency, numerous other state agencies were involved in the creation of discussion draft, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The discussion draft focuses on sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. The strategy is in direct response to Gov. Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings. A revised version of the report was posted on the Natural Resource Agency website on December 2, 2009; it can be viewed at: <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>.

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

Chapter 4 – Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation, the level of analysis required, and to identify potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: project development team meetings, interagency coordination meetings and public open houses/map displays. This chapter summarizes the results of the Department's efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

The Department has held and continues to hold near monthly Project Development Team (PDT) meetings since the project was initiated as a separate project from the Route 101 Auxiliary Lane Project in 2008. Public outreach efforts are discussed later in this Chapter. As previously explained in the Project Description of Chapter 1 as well as the Hydrology/Floodplain section of Chapter 2, the Department has and continues to coordinate closely with the San Francisquito Creek Joint Powers Authority in its effort to increase the hydraulic capacity of San Francisquito Creek and ultimately reduce the effects of flood waters. There is currently no known opposition to the project.

Consideration of a Pedestrian/Bicycle Undercrossing as part of this Project

The following information outlines communication that has taken place regarding the possibility of a pedestrian/bicycle undercrossing as part of this San Francisquito Creek Bridge Replacement Project.

May 27, 2010 – City of East Palo Alto (Vice-Mayor Carlos Romero, Anthony Docto and Brent Butler) mentioned the possibility of a trail for pedestrian access under Route 101 at a San Francisquito Creek Joint Powers Authority (SFCJPA) and Department of Transportation (Department) coordination meeting.

July 21, 2010 – City of East Palo Alto (Vice-Mayor Carlos Romero, Anthony Docto and Brent Butler) shared their desire for a pedestrian undercrossing under Route 101 at the SFCJPA – Department coordination meeting. This request is as a response to mobility and connectivity for the City of East Palo Alto. It was mentioned that a freeway crossing is particularly important since a major proportion of the residents live in high density housing on the west side of Route 101 and the majority of the services, schools and recreational opportunities are on the east side of Route 101. A discussion of the constraints included: hydraulic capacity encroachments, safety for residents and Department structural elements, lighting difficulties with limited natural light opportunities, vertical clearance limitations, complicated access to downstream trail over floodwall at an Americans with Disabilities (ADA) slope, complicated access to upstream private property, funding, schedule and budget implications for both the Department and SFCJPA projects that are underway. The Department agrees to analyze the feasibility of providing a pedestrian undercrossing.

August 26, 2010 – The Department – SFCJPA coordination teleconference included consideration of a pedestrian undercrossing. The City of East Palo Alto (City) provided a memorandum written to the SFCJPA and copied to the Department that reaffirms the City's interest in integrating a pedestrian / bicycle underpass into the design of the proposed bridge structure at San Francisquito Creek under Highway 101, and to provide a plan to link the underpass to the City's network of pedestrian and bicycle facilities. Attached to the

memorandum are photographs that show the City's proposal for connecting an undercrossing to an ascending pathway along a levee wall downstream (northeast) from the bridge, and a switchback ramp to connect the underpass to the sidewalk along West Bayshore Road upstream (southwest) from the bridge.

September 7, 2010 – Email from the Department (Ron Moriguchi, Project Manager) to the SFCJPA (Kevin Murray) expressing concerns with a pedestrian underpass that would need to be at a height so that it would not be inundated during high tides, and the resulting impact it would have on the hydraulic capacity of the structure and vertical clearances. The Department asked the SFCJPA if it has considered the impact that a pedestrian / bicycle trail on a berm would have on the hydraulic capacity of San Francisquito Creek downstream from the bridge. Since an August 25, 2010 memorandum from East Palo Alto was addressed to the SFCJPA, it was expected that a response would come from the SFCJPA to address the feasibility of having a pedestrian underpass under Route 101 and within San Francisquito Creek.

September 9, 2010 - Teleconference between the Department and the SFCJPA to discuss the information provided in the email on September 7, 2010. The SFCJPA was in agreement that the pedestrian underpass would not be feasible within the creek or under Route 101.

September 23, 2010 – SFCJPA and Department coordination meeting was held and the pedestrian undercrossing was on the agenda. The Department addressed the problems associated with a minimum of 8-foot high berm to be above the Mean High Water level. This causes the water surface elevation to rise above the soffit elevation further. Pressure flow becomes problematic. The option of a pedestrian overcrossing was discussed, but it would likely need to be placed at a different location and considered separately from this project. The City of East Palo Alto requested a formal response regarding the infeasibility of the undercrossing so that they can pursue other options.

October 13, 2010 – Email from the SFCJPA (Kevin Murray) to the Department (Ron Moriguchi) requesting information to provide in a memorandum that is being prepared in response to the August 25, 2010 memorandum from the City of East Palo Alto.

October 19, 2010 – Email from the Department (Ron Moriguchi) to the SFCJPA (Kevin Murray) that provides information regarding the analysis done that included modeling of the bridge with a pedestrian undercrossing berm in place. The analysis shows an increase in the water surface level, which is unacceptable since there is already no freeboard without the berm. The vertical clearance is also an issue with the berm at a height to keep it out of the tidal water level. Due to the history of debris getting caught in the channel, any decrease in the clear channel openings would worsen this problem and could further restrict hydraulic capacity. The email further states that the Department is not comfortable with an analysis of the feasibility of the pedestrian underpass under the structure with no clear direction on the feasibility of providing access down to the berm from either side of the bridge.

October 20, 2010 – Memorandum from the City of East Palo Alto (Anthony Docto, Brent Butler) to the SFCJPA (Kevin Murray, Len Materman) and copied to the Department that requests a detailed response concerning the feasibility of non-motorized accessibility, such as the incorporation of a pedestrian and bicycle underpass as part of this San Francisquito Creek Bridge Replacement Project. Also included in the request is design and build

estimates for a pedestrian overpass based on other projects that connect cities of similar size.

October 21, 2010 – SFCJPA and Department coordination meeting included an update on the status of the reply to the memorandum from the City of East Palo Alto regarding the pedestrian undercrossing.

October 21, 2010 – Email from the Department (Ron Moriguchi) to the SFCJPA (Kevin Murray) that provides a plan and cross sections of a pedestrian overcrossing that was designed and will be constructed over Route 101 in Menlo Park. The current cost estimate was also provided.

November 4, 2010 - SFCJPA (Len Materman) letter to the City of East Palo Alto (ML Gordon) in response to the August 25, 2010 memorandum regarding proposed pedestrian/bicycle access under Route 101 at San Francisquito Creek. The letter explains the difficult challenges with constructing a pathway under the bridge due to the daily high tide and the need to maximize the hydraulic capacity. Additionally, the letter explains the problem with an inboard ramp connecting to an underpass that would compromise floodwater conveyance in this area and reduce flood protection to East Palo Alto. The SFCJPA concludes the letter stating that they would like to explore options to build connectivity across the freeway as part of their comprehensive project for flood protection, ecosystem restoration and recreational enhancement along San Francisquito Creek.

November 7, 2010 – Email from the City of East Palo Alto (Brent Butler) requesting design drawings and cost estimates for the pedestrian overcrossing planned in Menlo Park. Also, the City requested information about Department Environmental Enhancement Mitigation grants related to trails and walkways.

November 18, 2010 – SFCJPA and Department coordination teleconference included a discussion of the pedestrian overcrossing information that was provided to the SFCJPA. An email from the Department to the City of East Palo Alto included information on the State Transportation Improvement Program-Transportation Enhancements (STIP-TE) that should be considered as a potential source of funding for a pedestrian overcrossing over Route 101. It was also suggested that the City contact the City/County Association of Governments of San Mateo County (C/CAG) and the San Mateo County Transportation Authority (SMCTA) to investigate potential sources of funding.

December 1, 2010 – Email exchange between the Department (Ron Moriguchi) and the City of East Palo Alto (Brent Butler) regarding information needed for a grant application for a proposed pedestrian overcrossing. The Department provided the City with plans and costs for a typical pedestrian overcrossing that could be used for grant applications.

December 27, 2010 – Email exchange between the Department (Beth Thomas, Pedestrian Coordinator) and the City of East Palo Alto (Brent Butler) to describe public outreach events that the City was planning for the general public to tour various pedestrian overcrossings. The City requested that the Department provide information about various pedestrian overcrossings in the San Francisco Bay Area, including location, length and cost. The Department provided information to the City as requested.

February 7, 2011 - Email exchange between the Department (Ron Moriguchi) and the City of East Palo Alto (Brent Butler) clarifying the cost estimate that was previously provided for a typical pedestrian overcrossing.

February 28, 2011 – Email exchange between the City of East Palo Alto (Brent Butler) and C/CAG (Tom Madalena) requesting information regarding funding under the Bicycle Transportation Account.

March 2, 2011 - List of recently constructed pedestrian overcrossings and associated costs provided to the City of East Palo Alto for consideration to be included in their public outreach event.

March 10, 2011 – Email invitation from the City of East Palo Alto (Brent Butler) to the Department (Beth Thomas) for the pedestrian overcrossing tour scheduled for March 12, 2011.

The Department has made reasonable, best efforts to consider and analyze the desire for pedestrian/bicycle access to connect both sides of Route 101 with an undercrossing at the San Francisquito Creek Bridge, and to include the City of East Palo Alto in discussions related to this consideration. The Department, in conjunction with the San Francisquito Creek Joint Powers Authority, analyzed the feasibility of a pedestrian undercrossing at this location and determined that it was infeasible for the reasons outlined above.

Furthermore, the Department, as indicated above, continues to work with the City of East Palo Alto in the identification of potential funding sources, design and other potential locations for a pedestrian overcrossing as a separate, independent project.

Coordination with National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries)

November 26, 2010 - NOAA Fisheries received the Department's November 18, 2010 letter requesting initiation of formal consultation pursuant to Section 7 of the Endangered Species Act of 1973, as amended, and the Essential Fish Habitat provisions of the Magnuson-Stevens Fisheries Conservation and Management Act, as amended.

December 2, 2010 - Staff from NOAA Fisheries, the Department and URS Corporation (Department contractor) conducted a site visit at the project location to discuss the general scope of the project, project timelines, and potential dewatering strategies. The Department had originally proposed an open diversion channel to bypass waters (tidal and freshwater) through the project site. NOAA Fisheries suggested that a closed pipe diversion would not only ensure better protection to aquatic species, but would also be more efficient thereby limiting the time required to complete the project. The Department agreed to use a closed pipe for their diversion, and on January 20, 2011, they provided NOAA Fisheries with a general design for their closed water diversion. After receiving the updated water diversion plans on January 20, 2011, NOAA Fisheries determined it had sufficient information to initiate consultation.

March 29, 2011 - NOAA Fisheries issued its Biological Opinion (BO) for the project, which is located in Appendix G of this document. The BO indicates that the proposed project may affect, but will not adversely affect the designated critical habitat of the southern green sturgeon and the central California coast steelhead.

Public Outreach

The Department published a “Notice of Availability of Draft Environmental Document and Intent to Adopt a Negative Declaration as well as Notice of Open House/Map Display on Changes Proposed for Route 101” on April 19, 2011 in the *San Mateo County Times* and *San Jose Mercury News* newspapers. Copies of the Draft Environmental Document (DED) were available at public libraries in East Palo Alto and Palo Alto. The Department also posted the DED on its Internet website.

The Notice included language that solicited comments from the public related to the DED and project. The public review and comment period began on April 19, 2011 and concluded on May 19, 2011. The Notice and proof of publication for each newspaper are included on the following pages.

San Mateo County Times

c/o Bay Area News Group-East Bay
 477 9th Ave., #110
 San Mateo, CA 94402
 Legal Advertising
 (800) 595-9595 opt. 4

CALIFORNIA DEPARTMENT OF TRANSPORTATION
 ATTN: THOMAS ROSEVEAR, PO BOX 23660
 Oakland CA 94623

PROOF OF PUBLICATION

FILE NO. T.Rosevear

In the matter of

San Mateo County Times

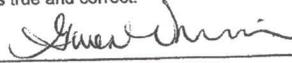
The undersigned deposes that he/she is the Public Notice Advertising Clerk of the SAN MATEO COUNTY TIMES, a newspaper of general circulation as defined by Government Code Section 6000, adjudicated as such by the Superior Court of the State of California, County of San Mateo (Order Nos. 55795 on September 21, 1951), which is published and circulated in said county and state daily (Sunday excepted).

The PUBLIC NOTICE

was published in every issue of the SAN MATEO COUNTY TIMES on the following date(s):

4/19/2011

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.



 Public Notice Advertising Clerk

PUBLIC NOTICE
 NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL DOCUMENT AND INTENT TO ADOPT A NEGATIVE DECLARATION AS WELL AS NOTICE OF OPEN HOUSE/MAP DISPLAY ON CHANGES PROPOSED FOR ROUTE 101



WHAT'S BEING PLANNED CALTRANS (California Department of Transportation) is proposing to replace the existing bridge with a new, extended bridge on Route 101 at San Francisquito Creek in East Palo Alto and Palo Alto, which is structurally deteriorating. The new bridge will also be designed to increase the hydraulic capacity of San Francisquito Creek at this location.

WHY THIS AD CALTRANS has studied the effects this project may have on the environment. Our studies show it will not significantly affect the quality of environment. The report that explains this is called a Negative Declaration/Initial Study/Environmental Assessment. This notice is to tell you of the preparation of the Proposed Negative Declaration and Initial Study/Environmental Assessment and of its availability for you to read and to offer a public open house/map display to attend.

WHAT'S AVAILABLE Maps for the Proposed Negative Declaration and Initial Study/Environmental Assessment and other project information are available for review and copying at the CALTRANS District 4 Office, 111 Grand Avenue, Oakland, California, on weekdays from 8:00 AM to 5:00 PM. The Proposed Negative Declaration and Initial Study/Environmental Assessment are also available at:

East Palo Alto Public Library 2415 University Avenue East Palo Alto, CA 94303	Palo Alto Main Public Library 213 Newell Road Palo Alto, CA 94303
---	---

On the Internet:
<http://www.dot.ca.gov/dist4/envdocs.htm>

WHERE YOU COME IN You are invited to review the Proposed Negative Declaration and Initial Study/Environmental Assessment for this San Francisquito Creek Bridge replacement project and provide comments to us. Please mail your comments to Yolanda Rivas, California Department of Transportation, District 4 Office of Environmental Analysis, Attn: Thomas Rosevear, P.O. Box 23660, Oakland, CA 94623 or email them to thomas_rosevear@dot.ca.gov. Your comments should be received no later than May 19, 2011.

WHEN AND WHERE **OPEN HOUSE/MAP DISPLAY**
 Date: Wednesday, May 4, 2011
 Time: 12:00 pm to 2:00 pm
 Place: East Palo Alto City Hall
 Community Room
 2415 University Avenue
 East Palo Alto, CA 94303

CONTACT For more information about this study or any transportation matter, call CALTRANS at (510) 286-4444. Individuals who require documents in alternative formats are requested to contact the District 4 Public Affairs Office at (510) 286-6445. TDD users may contact the California Relay Service TDD line at 1-800-735-2929 or Voice Line at 1-800-735-2922.



San Jose Mercury News

750 RIDDER PARK DRIVE
SAN JOSE, CALIFORNIA 95190
408-920-5332

PROOF OF PUBLICATION

IN THE
CITY OF SAN JOSE
STATE OF CALIFORNIA
COUNTY OF SANTA CLARA

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ATTN: THOMAS ROSEVEAR, PO BOX 23660
Oakland CA 94623

FILE NO. T.Rosevear

In the matter of

The San Jose Mercury News

The undersigned, being first duly sworn, deposes and says: That at all times hereinafter mentioned affiant was and still is a citizen of the United States, over the age of eighteen years, and not a party to or interested in the above entitled proceedings; and was at and during all said times and still is the principal clerk of the printer and publisher of the San Jose Mercury News, a newspaper of general circulation printed and published daily in the city of San Jose in said County of Santa Clara, State of California as determined by the court's decree dated June 27, 1952, case numbers 84096 and 84097, and that said San Jose Mercury News is and was at all times herein mentioned a newspaper of general circulation as that term is defined by Sections 6000 and following, of the Government Code of the State of California and, as provided by said sections, is published for the dissemination of local or telegraphic news and intelligence of a general character, having a bona fide subscription list of paying subscribers, and is not devoted to the interests or published for the entertainment or instruction of a particular class, professional, trade, calling, race or denomination, or for the entertainment and instruction of any number of such classes, professionals, trades, callings, races or denominations; that at all times said newspaper has been established, printed and published in the said city of San Jose in said County and State at regular intervals for more than one year preceding the first publication of the notice herein mentioned. Said decree has not been revoked, vacated or set aside.

I declare that the notice, of which the annexed is a true printed copy, has been published in each regular or entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

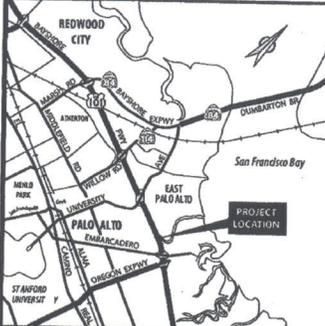
4/19/2011

Dated at San Jose, California
04/19/11

I declare under penalty of perjury that the foregoing is true and correct.

Signed *Thomas Rosevear*
Principal clerk of the printer and publisher of the San Jose Mercury News.

PUBLIC NOTICE
NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL DOCUMENT AND INTENT TO ADOPT A NEGATIVE DECLARATION AS WELL AS NOTICE OF OPEN HOUSE/MAP DISPLAY ON CHANGES PROPOSED FOR ROUTE 101



WHAT'S BEING PLANNED
CALTRANS (California Department of Transportation) is proposing to replace the existing bridge with a new, extended bridge on Route 101 at San Francisquito Creek in East Palo Alto and Palo Alto, which is structurally deteriorating. The new bridge will also be designed to increase the hydraulic capacity of San Francisquito Creek at this location.

WHY THIS IS AD
CALTRANS has studied the effects this project may have on the environment. Our studies show it will not significantly affect the quality of environment. The report that explains this is called a Negative Declaration/Initial Study/Environmental Assessment. This notice is to tell you of the preparation of the Proposed Negative Declaration and Initial Study/Environmental Assessment and of its availability for you to read and to offer a public open house/map display to attend.

WHAT'S AVAILABLE
Maps for the Proposed Negative Declaration and Initial Study/Environmental Assessment and other project information are available for review and copying at the CALTRANS District 4 Office, 111 Grand Avenue, Oakland, California, on weekdays from 8:00 AM to 5:00 PM. The Proposed Negative Declaration and Initial Study/Environmental Assessment are also available at:

East Palo Alto Public Library 2415 University Avenue East Palo Alto, CA 94303	Palo Alto Main Public Library 213 Newell Road Palo Alto, CA 94303
---	---

On the Internet:
<http://www.dot.ca.gov/dist4/envdocs.htm>

WHERE YOU COME IN
You are invited to review the Proposed Negative Declaration and Initial Study/Environmental Assessment for this San Francisquito Creek Bridge replacement project and provide comments to us. Please mail your comments to Yolanda Rivas, California Department of Transportation, District 4 Office of Environmental Analysis, Attn: Thomas Rosevear, P.O. Box 23660, Oakland, CA 94623 or email them to thomas_rosevear@dot.ca.gov. Your comments should be received no later than May 19, 2011.

WHEN AND WHERE
OPEN HOUSE/MAP DISPLAY
Date: Wednesday, May 4, 2011
Time: 12:00 pm to 2:00 pm
Place: East Palo Alto City Hall
Community Room
2415 University Avenue
East Palo Alto, CA 94303

CONTACT
For more information about this study or any transportation matter, call CALTRANS at (510) 286-4444. Individuals who require documents in alternative formats are requested to contact the District 4 Public Affairs Office at (510) 286-6445. TDD users may contact the California Relay Service TDD line at 1-800-735-2929 or Voice Line at 1-800-735-2922.



The open house/map display was held at the East Palo Alto City Hall, Community Room, 2415 University Avenue, East Palo Alto, California, on May 4, 2011 from 12:00 pm to 2:00 pm. While no formal presentation was given, the public had the opportunity to ask questions about the project and submit formal comments to the Department. The sign-in sheet for this May 4, 2011 open house/map display is posted on the following page.



San Francisquito Creek Bridge Project
 Public Meeting Sign-In Sheet
 Wednesday, May 04, 2011

Name	Organization/Agency	Email address
Anthony DeSto	APR 4 Env News Kth	adstoc@cityofpa.org
Matthew Toytes	ICF	mtoytes@icfi.com
Kevin Murray	SFC JPA	kmurray@sfcjpa.org
Kamal Fallaha	City of EPA	kfallaha@cityofepa.org
Stewart Hyland	Resident	stehyland@yahoo.com
Len Magerman	SFC JPA	len@sfcjpa.org
Bret Smith	SFC JPA	bbsmith@sfcjpa.org

The Department published a second “Notice of Availability of Draft Environmental Document and Intent to Adopt a Negative Declaration as well as Notice of Open House/Map Display on Changes Proposed for Route 101” on June 10, 2011 in the *San Mateo County Times* and *San Jose Mercury News* newspapers for the purpose of holding a second courtesy open house/map display during evening hours. The second open house/map display was held at the East Palo Alto City Hall, Community Room, 2415 University Avenue, East Palo Alto, California, on June 15, 2011 from 6:30 pm to 8:30 pm. While no formal presentation was given and the official comment period closed on May 19, 2011, the public had the opportunity to ask questions about the project and submit formal comments to the Department. Copies of the Notice were mailed to residences and businesses that are adjacent to the project. The Notice and proof of publication for both newspapers as well as the sign-in sheet for the second open house/map display are in the following section.

San Mateo County Times

c/o Bay Area News Group-East Bay
 477 9th Ave., #110
 San Mateo, CA 94402
 Legal Advertising
 (800) 595-9595 opt. 4

CALIFORNIA DEPARTMENT OF TRANSPORTATION
 ATTN: THOMAS ROSEVEAR, PO BOX 23660
 Oakland CA 94623

PROOF OF PUBLICATION

FILE NO. T.Rosevear

In the matter of

San Mateo County Times

The undersigned deposes that he/she is the Public Notice Advertising Clerk of the SAN MATEO COUNTY TIMES, a newspaper of general circulation as defined by Government Code Section 6000, adjudicated as such by the Superior Court of the State of California, County of San Mateo (Order Nos. 55795 on September 21, 1951), which is published and circulated in said county and state daily (Sunday excepted).

The PUBLIC NOTICE

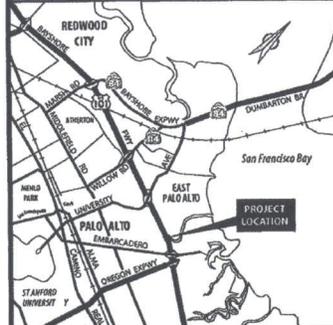
was published in every issue of the SAN MATEO COUNTY TIMES on the following date(s):

6/10/2011

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.



Public Notice Advertising Clerk

PUBLIC NOTICE			
NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL DOCUMENT AND INTENT TO ADOPT A NEGATIVE DECLARATION AS WELL AS NOTICE OF OPEN HOUSE/MAP DISPLAY ON CHANGES PROPOSED FOR ROUTE 101			
			
WHAT'S BEING PLANNED	CALTRANS (California Department of Transportation) is proposing to replace the existing bridge with a new, extended bridge on Route 101 at San Francisquito Creek in East Palo Alto and Palo Alto, which is structurally deteriorating. The new bridge will also be designed to increase the hydraulic capacity of San Francisquito Creek at this location.		
WHY THIS AD	CALTRANS has studied the effects this project may have on the environment. Our studies show it will not significantly affect the quality of environment. The report that explains this is called a Negative Declaration/Initial Study/Environmental Assessment. This notice is to tell you of the preparation of the Proposed Negative Declaration and Initial Study/Environmental Assessment and of its availability for you to read and to offer a public open house/map display to attend.		
WHAT'S AVAILABLE	Maps for the Proposed Negative Declaration and Initial Study/Environmental Assessment and other project information are available for review and copying at the CALTRANS District 4 Office, 111 Grand Avenue, Oakland, California, on weekdays from 8:00 AM to 5:00 PM. The Proposed Negative Declaration and Initial Study/Environmental Assessment are also available at: <table border="0" style="width: 100%;"> <tr> <td>East Palo Alto Public Library 2415 University Avenue East Palo Alto, CA 94303</td> <td>Palo Alto Main Public Library 213 Newell Road Palo Alto, CA 94303</td> </tr> </table>	East Palo Alto Public Library 2415 University Avenue East Palo Alto, CA 94303	Palo Alto Main Public Library 213 Newell Road Palo Alto, CA 94303
East Palo Alto Public Library 2415 University Avenue East Palo Alto, CA 94303	Palo Alto Main Public Library 213 Newell Road Palo Alto, CA 94303		
On the Internet: http://www.dot.ca.gov/dist4/envdocs.htm			
WHERE YOU COME IN	You are invited to review the Proposed Negative Declaration and Initial Study/Environmental Assessment for this San Francisquito Creek Bridge replacement project and provide comments to us at the Open House/Map Display.		
WHEN AND WHERE	OPEN HOUSE/MAP DISPLAY Date: Wednesday, June 15, 2011 Time: 6:30 pm to 8:30 pm Place: East Palo Alto City Hall Community Room 2415 University Avenue East Palo Alto, CA 94303		
CONTACT	For more information about this study or any transportation matter, call CALTRANS at (510) 286-4444. Individuals who require documents in alternative formats are requested to contact the District 4 Public Affairs Office at (510) 286-6445. TDD users may contact the California Relay Service TDD line at 1-800-735-2929 or Voice Line at 1-800-735-2922.		
			

San Jose Mercury News

750 RIDDER PARK DRIVE
SAN JOSE, CALIFORNIA 95190
408-920-5332

PROOF OF PUBLICATION

IN THE
CITY OF SAN JOSE
STATE OF CALIFORNIA
COUNTY OF SANTA CLARA

CALIFORNIA DEPARTMENT OF TRANSPORTATION
ATTN: THOMAS ROSEVEAR, PO BOX 23660
Oakland CA 94623

FILE NO. T.Rosevear

In the matter of

The San Jose Mercury News

The undersigned, being first duly sworn, deposes and says: That at all times hereinafter mentioned affiant was and still is a citizen of the United States, over the age of eighteen years, and not a party to or interested in the above entitled proceedings; and was at and during all said times and still is the principal clerk of the printer and publisher of the San Jose Mercury News, a newspaper of general circulation printed and published daily in the city of San Jose in said County of Santa Clara, State of California as determined by the court's decree dated June 27, 1952, case numbers 84096 and 84097, and that said San Jose Mercury News is and was at all times herein mentioned a newspaper of general circulation as that term is defined by Sections 6000 and following, of the Government Code of the State of California and, as provided by said sections, is published for the dissemination of local or telegraphic news and intelligence of a general character, having a bona fide subscription list of paying subscribers, and is not devoted to the interests or published for the entertainment or instruction of a particular class, professional, trade, calling, race or denomination, or for the entertainment and instruction of any number of such classes, professionals, trades, callings, races or denominations; that at all times said newspaper has been established, printed and published in the said city of San Jose in said County and State at regular intervals for more than one year preceding the first publication of the notice herein mentioned. Said decree has not been revoked, vacated or set aside.

I declare that the notice, of which the annexed is a true printed copy, has been published in each regular or entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

6/10/2011

Dated at San Jose, California
06/10/11

I declare under penalty of perjury that the foregoing is true and correct.

Signed 

Principal clerk of the printer and publisher of the San Jose Mercury News.

PUBLIC NOTICE
NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL DOCUMENT AND INTENT TO ADOPT A NEGATIVE DECLARATION AS WELL AS NOTICE OF OPEN HOUSE/MAP DISPLAY ON CHANGES PROPOSED FOR ROUTE 101



WHAT'S BEING PLANNED
CALTRANS (California Department of Transportation) is proposing to replace the existing bridge with a new, extended bridge on Route 101 at San Francisquito Creek in East Palo Alto and Palo Alto, which is structurally deteriorating. The new bridge will also be designed to increase the hydraulic capacity of San Francisquito Creek at this location.

WHY THIS AD
CALTRANS has studied the effects this project may have on the environment. Our studies show it will not significantly affect the quality of environment. The report that explains this is called a Negative Declaration/Initial Study/Environmental Assessment. This notice is to tell you of the preparation of the Proposed Negative Declaration and Initial Study/Environmental Assessment and of its availability for you to read and to offer a public open house/map display to attend.

WHAT'S AVAILABLE
Maps for the Proposed Negative Declaration and Initial Study/Environmental Assessment and other project information are available for review and copying at the CALTRANS District 4 Office, 111 Grand Avenue, Oakland, California, on weekdays from 8:00 AM to 5:00 PM. The Proposed Negative Declaration and Initial Study/Environmental Assessment are also available at:

East Palo Alto Public Library 2415 University Avenue East Palo Alto, CA 94303	Palo Alto Main Public Library 213 Newell Road Palo Alto, CA 94303
---	---

On the Internet:
<http://www.dot.ca.gov/dist4/eenvdocs.htm>

WHERE YOU COME IN
You are invited to review the Proposed Negative Declaration and Initial Study/Environmental Assessment for this San Francisquito Creek Bridge replacement project and provide comments to us at the Open House/Map Display.

WHEN AND WHERE
OPEN HOUSE/MAP DISPLAY
Date: Wednesday, June 15, 2011
Time: 6:30 pm to 8:30 pm
Place: East Palo Alto City Hall
Community Room
2415 University Avenue
East Palo Alto, CA 94303

CONTACT
For more information about this study or any transportation matter, call CALTRANS at (510) 286-4444. Individuals who require documents in alternative formats are requested to contact the District 4 Public Affairs Office at (510) 286-6445. TDD users may contact the California Relay Service TDD line at 1-800-735-2929 or Voice Line at 1-800-735-2922.





San Francisquito Creek Open House
 East Palo Alto City Hall, 2415 University Avenue
 Wednesday, June 15, 2011 - 6:30 pm to 8:00 pm
ATTENDEE SIGN-IN SHEET

Name	Organization (if Any)	E-mail address
Reynold Ewald	Woodside Garden Tour Festival	reynold.ewald@woodsidegarden.com
Joe Teresi	City of Palo Alto	joe.teresi@cityofpaloalto.org
Devin's Parker	Gardens Neighbor hood Assn	wisteria423@yahoo.com
ART KRASNER	CRESCENT PARK NEIGHBORHOOD ASSN	artkrasner@pacbell.net

Comment letters were received during the public circulation period of the Draft Environmental Document. The letters and the Department's response immediately following each letter are in the following section.

Comment Received by Usha Chatwani, Santa Clara Valley Water District



5750 ALMADEN EXPWY
SAN JOSE, CA 95118-3686
TELEPHONE (408) 265-2600
FACSIMILE (408) 266-0271
www.valleywater.org
AN EQUAL OPPORTUNITY EMPLOYER

File: 19239
San Francisquito Creek

May 4, 2011

Yolanda Riva
Office of Environmental Analysis
Attention: Thomas Rosevear
State of California
Department of Transportation
P. O. Box 23660
Oakland, CA 94623-0660

Subject: IS/ND Environmental Assessment for the Route 101 San Francisquito Creek
Bridge Replacement Project

Dear Mr. Rosevear:

The Santa Clara Valley Water District (District) staff reviewed the subject document received on April 19, 2011. The project includes demolition of an existing San Francisquito Creek Bridge located between the University Avenue interchange and the Embarcadero Road interchange on Route 101, and replacement of it with a longer bridge.

The District has fee and easement right of way encompassing the creek upstream and downstream of Route 101. It appears from the bridge replacement layout that the cofferdams and the temporary creek diversion system would be on District property and easement right of way. In accordance with the District Water Resources Protection Ordinance, an Encroachment and Construction Permit is required for work within the District right of way.

Section 1.6 on Page 6 must be revised to list the Santa Clara Valley Water District as a Responsible Agency. The District will rely on the State's environmental document for issuance of an Encroachment and Construction Permit. Please send the construction plans along with the completed Encroachment Permit Application for review and issuance of a permit.

Thank you for the opportunity to review the subject document. Please contact me either by phone at (408) 265-2607, extension 2731 or by email at uchatwani@valleywater.org with any further questions.

Sincerely,

Usha Chatwani, P.E.
Associate Civil Engineer
Community Projects Review Unit

cc: S. Tippets, C. Elias, M. Martin, U. Chatwani, File

19239_54126uc05-04

The mission of The Santa Clara Valley Water District is a healthy, safe and enhanced quality of living in Santa Clara County through watershed stewardship and comprehensive management of water resources in a practical, cost-effective and environmentally sensitive manner.



Department's Response to Usha Chatwani, Santa Clara Valley Water District

The Department recognizes that the Santa Clara Valley Water District (District) possesses fee and easement right of way both upstream and downstream from the project site. The Department will apply for an Encroachment and Construction Permit with the District for any work that is proposed on District right of way. Section 1.6 on Page 6 of this document has been amended to include the Santa Clara Valley Water District as a responsible agency.

Comment Received by Joe Teresi, City of Palo Alto

City of Palo Alto
Public Works Department

May 19, 2011

Ms. Yolanda Rivas
California Department of Transportation, District 4
Office of Environmental Analysis
P.O. Box 23660
Oakland, CA 94623
Attn: Thomas Rosevear

Subject: Review of Draft Negative Declaration for San Francisquito Creek Bridge Replacement Project

Divisions

Administration
650.329.2373
650.329.2299 fax

Engineering
650.329.2151
650.329.2299 fax

Environmental Compliance
650.329.2598
650.494.3531 fax

Equipment Management
650.496.6922
650.496.6958 fax

Facilities Management
650.496.6900
650.496.6958 fax

Operations
650.496.6974
650.852.9289 fax

Regional Water Quality Control
650.329.2598
650.494.3531 fax

Dear Mr. Rosevear:

I have reviewed the Draft Negative Declaration prepared by Caltrans for the San Francisquito Creek Bridge Replacement Project and submit the following comments on behalf of the City of Palo Alto:

1. I suggest that you consider the use of inflatable rubber bladder cofferdams to dewater the work zone during the active construction periods. You may contact Ray Bramer of the Santa Clara Valley Water District (rbramer@valleywater.org or (408) 265-2607 x2413) in order to discuss his experience with the use of inflatable rubber bladder cofferdams in San Francisquito Creek in the vicinity of your project. On multiple occasions, Ray and his crews have placed bladder dams in the creek in order to dewater the area to facilitate the removal of accumulated sediment just downstream of Highway 101.
2. Chapter 1.6: The project will also require an encroachment permit from the Santa Clara Valley Water District and encroachment/street work permits from the cities of Palo Alto and East Palo Alto.
3. The last sentence of the first paragraph on Page 14 should be modified to read: "The majority of residential development and the majority of properties are within the base floodplain boundary determined by studies that began in 1980 sponsored by the Federal Emergency Management Agency (FEMA).
4. The end of the third paragraph on Page 14 should be modified to read: "The storm drain originally discharged by gravity to the creek through an outfall with a flapped gate downstream of the East Bayshore Road frontage

P.O.Box 10250
Palo Alto, CA 94303

road bridge. The storm drain was modified to direct runoff to a storm water pump station constructed by the City of Palo Alto in 2009 at 2027 East Bayshore Road. Storm runoff from the 96-inch storm drain is now discharged to the creek via the pump station, with the original gravity outfall serving only as a secondary discharge point. The 96-inch storm drain will be realigned by the City of Palo Alto in order to eliminate the current positional conflict with the project elements. The project will provide a 36-inch storm drain connection to the creek (through the south bridge abutment wall) as a replacement for the existing secondary storm water discharge point. The Santa Clara Valley Water District improved the levees along San Francisquito Creek in 2004 to restore them to their original as-built (1958) condition. These levee improvements do not, however, provide protection from the 100-year flood event.”

5. The following sentence should be added to the end of the first full paragraph on Page 15: “On the south side of the creek, the zoning is “ZONE AH, Base Flood Elevation 10.5 (NAVD)” as shown on the Flood Insurance Rate Map (FIRM) Panel Number 06085C0010H, dated May 18, 2009.”
6. Page 15: Should openings be maintained in the soundwall along southbound Highway 101 in the vicinity of the creek in order to allow for the passage of floodwaters until the San Francisquito Creek JPA completes flood control improvements on San Francisquito Creek upstream of Highway 101?
7. Chapter 2.9 (Page 37): The report indicates that there are five native coast live oak trees within the project area ranging from 4 to 21 inches in diameter at breast height (dbh). One of these trees is within the project footprint at 1941 Edgewood Drive, Palo Alto. The report indicates that this tree has the potential to be trimmed, removed, or otherwise affected if access to the project site is required.

The coast live oak is a protected tree species in Palo Alto. Specifically, coast live oak trees that are 11.5 inches or greater in diameter (36-inches in circumference measured at 54-inches above natural grade) are protected trees and may not be removed or disfigured. Coast live oak trees that meet the size criteria described above are designated as Regulated Trees and must be maintained in accordance with the standards and regulations contained in the City of Palo Alto Tree Technical Manual (Manual), established within Title 8 of the Palo Alto Municipal Code. The Manual contains the requirements for tree protection during construction, removal and replacement, planting of trees, and tree maintenance guidelines.

The report does not specifically indicate the size of coast live oak tree at 1941 Edgewood Drive. City staff requests that a Tree Protection and Preservation Plan (TPPP), as defined in the Manual (and described in detail in Section 2.00 of the

Manual), be prepared for this tree and the four other trees within the project area that meet the minimum size requirements. The TPPP will be reviewed by the City of Palo Alto's Planning Division Arborist. The Planning Division Arborist may require conditions of approval consistent with the regulations contained within the Manual to ensure adequate tree protection during construction.

8. Chapter 2.11: Add discussion of potential project impacts to the endangered California Clapper Rail.
9. Page 72: Please change City of Palo Alto Public Works Department contact to Mike Sartor, Interim Director of Public Works.
10. Page 73: Please change City of Palo Alto Mayor to Sid Espinoza.

Thank you for the opportunity to provide comment on the Draft Negative Declaration for the San Francisquito Creek Bridge Replacement Project. If you have any questions or need further information, please contact me at (650) 329-2129.

Sincerely,



Joe Teresi
Senior Engineer
Engineering Division

cc: Steven Turner, Planning Division
Jaime Rodriguez, Transportation Division
Phil Bobel, Engineering Division
Kevin Murray, San Francisquito Creek JPA
Brent Butler, City of East Palo Alto Planning
Anthony Docto, City of East Palo Alto Public Works
Jason Christie, Santa Clara Valley Water District

Department's Response to Joe Teresi, City of Palo Alto (Responses to each numbered comment in the comment letter are made with its corresponding number below.)

1. It is possible, and consideration will be made, for the use of inflatable rubber bladder cofferdams to dewater the work zone during construction. This matter will be discussed at the pre-construction meeting with the contractor.
2. The Department acknowledges that an encroachment permit will be required from the Santa Clara Valley Water District as well as encroachment/street work permits from the cities of Palo Alto and East Palo Alto. Page 6, Section 1.6, has been revised to reflect this matter.
3. Based on the March 20, 1998 Reconnaissance Investigation Report of San Francisquito Creek which was prepared by the Coordinated Resource Management and Planning (CRMP) Flood and Erosion Control Task Force, page 14 stated "Figure 3 and the following flood damage analysis based on preliminary maps provided in 1996 from the FEMA studies that began in 1995."
4. The Department's Hydraulics staff concurs with this revision, and the revision has been made in the document text. The issue of long-term maintenance of the storm drain will still need to be resolved.
5. In accordance with the Department's Structure Final Hydraulic Report, the Flood Plain Encroachment on Page 15 has been amended as follows: The proposed project is located on the boundary between two cities, and is in a flood hazard area inundated by the 100-year flood with two different zonings. The first zoning is "ZONE A, No base flood elevation determined" as shown on the East Palo Alto City, California Flood Insurance Rate Map (FIRM), Community-Panel Number 060708-0001B, and dated August 23, 1999. The second zoning is "ZONE AE, Base flood elevation determined" as shown on the Santa Clara County, California Flood Insurance Rate Map (FIRM), Community Panel Number 06085C-0030H, and dated May 18, 2009. The current 100-year flood elevation is at 11.0 feet (NAVD 88) as shown on Santa Clara County 2009 flood map.
6. The Department's Hydraulics staff has recommended that the openings in the sound walls need to be maintained to allow flow onto the freeway. The openings will, however, be slightly narrower in the after-condition.
7. The Department plans to avoid and/or minimize any effects to the coast live oak tree at 1941 Edgewood Drive as indicated in this document, though the Department, as a State agency, is not subject to local tree ordinances for properties located in, or proposed to be in, Department right of way (temporary construction easement in this case). The size of the coast live oak tree in question is undetermined, but is estimated to be approximately 40 inches. If the tree cannot be avoided it will be replaced at a 5:1 ratio that is consistent with Federal Highway Administration (FHWA) policy.
8. There are no potential project impacts to the endangered California Clapper Rail. The Natural Environment Study conducted for this project indicates that the biological study area analyzed for this project does not provide suitable habitat for the California Clapper Rail and therefore warrants no discussion.
9. Revision made to Mike Sartor, Interim Director of Public Works.

10. Revision made to Mayor Sid Espinoza.

Comment Received by Brent Butler, City of East Palo Alto



CITY OF EAST PALO ALTO
Community Development Department—Planning Division
1960 Tate Street • East Palo Alto, CA 94303
Tel: (650) 853-3185 • Fax: (650) 853-3179

May 19, 2011

Thomas Rosevear
Office of Environmental Analysis
Department of Transportation
Post Office Box 23660
Oakland, California 94623-0660

Re: Route 101 San Francisco Creek Bridge Replacement Project

Dear Mr. Rosevear:

The City of East Palo Alto Planning Division is writing to provide official comments on the above project.

The Division's comments are largely drawn from 2010 memoranda, and field visits to the project site by the City of East Palo Alto Community Services and Public Works Departments, and the Planning Division. The City investigated whether a non-motorized connection, such as the Highway 101 Adobe Creek (Benjamin Lefkowitz) pedestrian and bicycle undercrossing, could be accommodated underneath Highway 101 at San Francisquito Creek as part of the bridge widening and expansion project. The City of East Palo Alto Bay Access Master Plan, adopted 2007, envisions just such a connection.

The benefits of such a connection were that residents in two city neighborhoods, accounting for nearly 40% of the City's population on the west side of Highway 101, would be connected by a safe route to open space, basic and affordable services, government facilities, including schools, health-care, the Government Center and emergency shelters. Since no study of this connection appears anywhere in the project, including page 6, *1.5 Alternatives Considered but Eliminated from Further Discussion* the analysis does not appear to address a City of East Palo Alto strategic goal to create a healthy and safe community. For this reason, the Division recommends **option 2, do additional environmental studies.**

Finding 1 - Investigation of Alternatives is Inadequate

While the attached comments were provided at regular project review meetings attended by the City of East Palo Alto, Caltrans, and San Francisquito Creek Joint Powers Authority (SFCJPA) staff, none of the environmental analysis completed for this project incorporates the City's express wish to integrate active transportation opportunities that connect the east and west sides of Highway 101. The City strategic

goal 'to create a healthy and safe community' guides the Planning Division's comment. It argues for consideration of ways to increase active transportation, while also reducing other unwanted project impacts such as noise and toxic air contaminants (TAC). To Caltrans' credit, the Route 101 Auxiliary Lanes Project, (District 4 – SCL – 101, KP 84.2/84.6 (PM 52.3/52.6), originally included three alternatives, but was later narrowed to consideration of two. Alternative 2, which is described in Section 1.5.3 *Alternatives Considered but Eliminated from Further Discussion*, was identified in the Project Study report approved on September 24, 2004. Why there is no consideration of a third alternative to integrate active transportation is unclear.

Justification for additional studies

Since this project forecloses the opportunity of providing East Palo Alto, which is an environmental justice community, increased access to the San Francisco Bay, essential public services, and health care, these health impacts should be quantified. Perhaps, by assessing decreased life expectancy associated with physical inactivity and obesity, or through use of some other measurement tool, these impacts can be measured.

In the event that this is not reviewed and/or included in the project, the Division recommends that Caltrans provide mitigation funds equal to 5% of the project cost to the City of East Palo Alto for a pedestrian overcrossing to reconnect the two halves of the city. Two other projects, including the Stanford University Medical Center Facilities Renewal and Replacement Project, and the Facebook project suggest that while this project alone may not warrant mitigation, the cumulative impact of these three projects on non-motorized mobility argue for consideration of a third alternative that integrates the city's need for non-motorized connection between the east and west side of Highway 101.

Finding 2 - East Palo Alto is an Environmental Justice Community

The city's recently adopted Housing Element illustrates that the city is approximately 79% low income, and more than 90% of the residents are Latino or African American. Furthermore, physical inactivity is a noted problem, which has led to negative health outcomes including higher rates of obesity in the City's Ravenswood School District. This information is readily available from information provided by the San Mateo County Health Systems in the document Blueprint for Childhood Obesity.

The City of East Palo Alto must bear a greater share of traffic, noise, and cut-through vehicles on its side streets than other comparable cities on the peninsula. In fact, it is the only city of which the Division is aware where more than 35 or 40% of its residents are cut off from affordable health care, food, and government services by a major barrier, Highway 101, which separates the city's dense multifamily housing located to the west of Highway 101 from the basic services and open space to the east. While the City of East Palo Alto Planning Division recognizes the difficulty in balancing competing needs, few needs are as important as a safe and healthy community. By not considering these issues, the document does not address the express wishes of the community, which were provided during monthly meetings held at Caltrans

headquarters at which the City's Mayor, Public Works Director, and Planning Director participated. These meetings and the subsequent work that was done by the respective Divisions represent resource expenditure by the City.

Finding 3 - Not consistent with the California Transportation Plan, or the Bay Access Master Plan (BAMP)

The California Transportation Plan identifies the need to ensure that projects incorporate the ideas, and aspirations of environmental justice communities. No improvements for pedestrians or bicyclists, or other active transportation users are addressed.

Previous Comments

Through the Planning Division, the City of East Palo Alto has consistently provided comments as part of the monthly meetings facilitated by Caltrans District 4 and the SFPC. At previous meetings, the East Palo Alto Mayor participated by phone to emphasize the importance that the City places upon establishing a connection between the east and west side of Highway 101 as part of this project.

Consistency with East Palo Alto's Bay Access Master Plan

The BAMP states:

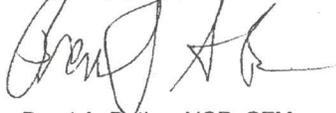
"Trail Segment T7 = Highway 101 Pedestrian Crossing: This proposed segment will provide a pedestrian crossing at Highway 101. As of this time, it is not known if the connection will be over or under Highway 101. More analysis is necessary to determine the feasibility and alignment. The Woodland neighborhood does not have a single park. A pedestrian crossing of Highway 101 will significantly improve the quality of life by providing pedestrian access to the Bay Trail, Palo Alto Baylands, MLK park, Cooley Landing, and the pocket parks proposed as part of the BAMP."

Proposed for other bridges further upstream in the City of Palo Alto, such an undercrossing was deemed to have beneficial impacts on the community's health and recreational opportunities. In the converse, the failure to include such a connection is likely to foreclose this connection for future generations, as the current bridge's lifecycle of 50 years would also be anticipated for any future bridge.

The comments provided by the City have consistently stated that there is a need to improve connectivity for the parts of the city to east of Highway 101 with those areas lying to the west. Frequent meetings with bicyclists and pedestrians identified this connection as a critical public infrastructure need.

For the foregoing reasons, the City of East Palo Alto would ask that analysis of active transportation associated with an expanded bridge or alternatively provisioning of Caltrans mitigation funds be undertaken.

Very truly yours,

A handwritten signature in black ink, appearing to read "Brent A. Butler".

Brent A. Butler, AICP, CFM

Planning Manager

cc: City of East Palo Alto Planning Commission
City of East Palo Alto City Council
SFCJPA

Department's Response to Brent Butler, City of East Palo Alto

The Department recognizes the desire of the City of East Palo Alto, bicyclists and pedestrians to connect both sides of Route 101 with a pedestrian/bicycle facility. Though such a facility is neither a purpose nor a need for this San Francisquito Creek Bridge Replacement Project and therefore not considered a project "alternative" that needs to be addressed in Chapter 1 of this document, the Department invites all stakeholders to participate in the scoping process for its projects. The Department also recognizes the City of East Palo Alto Bay Access Master Plan, the California Transportation Plan and the Bay Access Master Plan; and acknowledges that East Palo Alto is an environmental justice community.

The City of East Palo Alto approached the Department in May 2010 with the possibility of adding pedestrian access to this San Francisquito Creek Bridge Replacement Project. This began a dialogue between the Department, the City of East Palo Alto and the San Francisquito Creek Joint Powers Authority, which is summarized below. Although not summarized in the Draft Environmental Document, this document has now been modified to include a discussion of these coordination efforts that have taken place and has now been added at the beginning of this Chapter (Chapter 4 – Comments and Coordination).

Summary of Coordination

May 27, 2010 – City of East Palo Alto (Vice-Mayor Carlos Romero, Anthony Docto and Brent Butler) mentioned the possibility of a trail for pedestrian access under Route 101 at a San Francisquito Creek Joint Powers Authority (SFCJPA) and Department of Transportation (Department) coordination meeting.

July 21, 2010 – City of East Palo Alto (Vice-Mayor Carlos Romero, Anthony Docto and Brent Butler) shared their desire for a pedestrian undercrossing under Route 101 at the SFCJPA – Department coordination meeting. This request is as a response to mobility and connectivity for the City of East Palo Alto. It was mentioned that a freeway crossing is particularly important since a major proportion of the residents live in high density housing on the west side of Route 101 and the majority of the services, schools and recreational opportunities are on the east side of Route 101. A discussion of the constraints included: hydraulic capacity encroachments, safety for residents and Department structural elements, lighting difficulties with limited natural light opportunities, vertical clearance limitations, complicated access to downstream trail over floodwall at an Americans with Disabilities (ADA) slope, complicated access to upstream private property, funding, schedule and budget implications for both the Department and SFCJPA projects that are underway. The Department agrees to analyze the feasibility of providing a pedestrian undercrossing.

August 26, 2010 – The Department – SFCJPA coordination teleconference included consideration of a pedestrian undercrossing. The City of East Palo Alto (City) provided a memorandum written to the SFCJPA and copied to the Department that reaffirms the City's interest in integrating a pedestrian / bicycle underpass into the design of the proposed bridge structure at San Francisquito Creek under Highway 101, and to provide a plan to link the underpass to the City's network of pedestrian and bicycle facilities. Attached to the memorandum are photographs that show the City's proposal for connecting an undercrossing to an ascending pathway along a levee wall downstream (northeast) from the bridge, and a switchback ramp to connect the underpass to the sidewalk along West Bayshore Road upstream (southwest) from the bridge.

September 7, 2010 – Email from the Department (Ron Moriguchi, Project Manager) to the SFCJPA (Kevin Murray) expressing concerns with a pedestrian underpass that would need to be at a height so that it would not be inundated during high tides, and the resulting impact it would have on the hydraulic capacity of the structure and vertical clearances. The Department asked the SFCJPA if it has considered the impact that a pedestrian / bicycle trail on a berm would have on the hydraulic capacity of San Francisquito Creek downstream from the bridge. Since an August 25, 2010 memorandum from East Palo Alto was addressed to the SFCJPA, it was expected that a response would come from the SFCJPA to address the feasibility of having a pedestrian underpass under Route 101 and within San Francisquito Creek.

September 9, 2010 - Teleconference between the Department and the SFCJPA to discuss the information provided in the email on September 7, 2010. The SFCJPA was in agreement that the pedestrian underpass would not be feasible within the creek or under Route 101.

September 23, 2010 – SFCJPA and Department coordination meeting was held and the pedestrian undercrossing was on the agenda. The Department addressed the problems associated with a minimum of 8-feet high berm to be above the Mean High Water level. This causes the water surface elevation to rise above the soffit elevation further. Pressure flow becomes problematic. The option of a pedestrian overcrossing was discussed, but it would likely need to be placed at a different location and considered separately from this project. The City of East Palo Alto requested a formal response regarding the infeasibility of the undercrossing so that they can pursue other options.

October 13, 2010 – Email from the SFCJPA (Kevin Murray) to the Department (Ron Moriguchi) requesting information to provide in a memorandum that is being prepared in response to the August 25, 2010 memorandum from the City of East Palo Alto.

October 19, 2010 – Email from the Department (Ron Moriguchi) to the SFCJPA (Kevin Murray) that provides information regarding the analysis done that included modeling of the bridge with a pedestrian undercrossing berm in place. The analysis shows an increase in the water surface level, which is unacceptable since there is already no freeboard without the berm. The vertical clearance is also an issue with the berm at a height to keep it out of the tidal water level. Due to the history of debris getting caught in the channel, any decrease in the clear channel openings would worsen this problem and could further restrict hydraulic capacity. The email further states that the Department is not comfortable with an analysis of the feasibility of the pedestrian underpass under the structure with no clear direction on the feasibility of providing access down to the berm from either side of the bridge.

October 20, 2010 – Memorandum from the City of East Palo Alto (Anthony Docto, Brent Butler) to the SFCJPA (Kevin Murray, Len Materman) and copied to the Department that requests a detailed response concerning the feasibility of non-motorized accessibility, such as the incorporation of a pedestrian and bicycle underpass as part of this San Francisquito Creek Bridge Replacement Project. Also included in the request is design and build estimates for a pedestrian overpass based on other projects that connect cities of similar size.

October 21, 2010 – SFCJPA and Department coordination meeting included an update on the status of the reply to the memorandum from the City of East Palo Alto regarding the pedestrian undercrossing.

October 21, 2010 – Email from the Department (Ron Moriguchi) to the SFCJPA (Kevin Murray) that provides a plan and cross sections of a pedestrian overcrossing that was designed and will be constructed over Route 101 in Menlo Park. The current cost estimate was also provided.

November 4, 2010 - SFCJPA (Len Materman) letter to the City of East Palo Alto (ML Gordon) in response to the August 25, 2010 memorandum regarding proposed pedestrian/bicycle access under Route 101 at San Francisquito Creek. The letter explains the difficult challenges with constructing a pathway under the bridge due to the daily high tide and the need to maximize the hydraulic capacity. Additionally, the letter explains the problem with an inboard ramp connecting to an underpass that would compromise floodwater conveyance in this area and reduce flood protection to East Palo Alto. The SFCJPA concludes the letter stating that they would like to explore options to build connectivity across the freeway as part of their comprehensive project for flood protection, ecosystem restoration and recreational enhancement along San Francisquito Creek.

November 7, 2010 – Email from the City of East Palo Alto (Brent Butler) requesting design drawings and cost estimates for the pedestrian overcrossing planned in Menlo Park. Also, the City requested information about Department Environmental Enhancement Mitigation grants related to trails and walkways.

November 18, 2010 – SFCJPA and Department coordination teleconference included a discussion of the pedestrian overcrossing information that was provided to the SFCJPA. An email from the Department to the City of East Palo Alto included information on the State Transportation Improvement Program-Transportation Enhancements (STIP-TE) that should be considered as a potential source of funding for a pedestrian overcrossing over Route 101. It was also suggested that the City contact the City/County Association of Governments of San Mateo County (C/CAG) and the San Mateo County Transportation Authority (SMCTA) to investigate potential sources of funding.

December 1, 2010 – Email exchange between the Department (Ron Moriguchi) and the City of East Palo Alto (Brent Butler) regarding information needed for a grant application for a proposed pedestrian overcrossing. The Department provided the City with plans and costs for a typical pedestrian overcrossing that could be used for grant applications.

December 27, 2010 – Email exchange between the Department (Beth Thomas, Pedestrian Coordinator) and the City of East Palo Alto (Brent Butler) to describe public outreach events that the City was planning for the general public to tour various pedestrian overcrossings. The City requested that the Department provide information about various pedestrian overcrossings in the San Francisco Bay Area, including location, length and cost. The Department provided information to the City as requested.

February 7, 2011 - Email exchange between the Department (Ron Moriguchi) and the City of East Palo Alto (Brent Butler) clarifying the cost estimate that was previously provided for a typical pedestrian overcrossing.

February 28, 2011 – Email exchange between the City of East Palo Alto (Brent Butler) and C/CAG (Tom Madalena) requesting information regarding funding under the Bicycle Transportation Account.

March 2, 2011 - List of recently constructed pedestrian overcrossings and associated costs provided to the City of East Palo Alto for consideration to be included in their public outreach event.

March 10, 2011 – Email invitation from the City of East Palo Alto (Brent Butler) to the Department (Beth Thomas) for the pedestrian overcrossing tour scheduled for March 12, 2011.

Conclusion

The Department has made reasonable, best efforts to consider and analyze the desire for pedestrian/bicycle access to connect both sides of Route 101 with an undercrossing at the San Francisquito Creek, and to include the City of East Palo Alto in discussions related to this consideration. The Department, in conjunction with the San Francisquito Creek Joint Powers Authority, analyzed the feasibility of a pedestrian undercrossing at this location and determined that it was infeasible for the reasons outlined above.

Furthermore, the Department, as indicated above, continues to work with the City of East Palo Alto in the identification of potential funding sources, design and other potential locations for a pedestrian overcrossing as a separate, independent project. Therefore, the Department will not be “provide(-ing) mitigation funds equal to 5% of the project cost to the City of East Palo Alto for a pedestrian overcrossing to reconnect the two halves of the city”. It is also not necessary to study “decreased life expectancy associated with physical inactivity or obesity...” since this Bridge Replacement Project does not propose to modify the existing condition of pedestrian/bicycle facilities at this location.

The fact that a pedestrian undercrossing at this location is infeasible and cannot be accommodated by this Bridge Replacement Project does not deem this project incompatible or “not consistent” with the East Palo Alto Bay Access Master Plan, California Transportation Plan, the Bay Access Master Plan or any other state, regional and local plans and programs.

Comment Received by Andrew Boone

Subject: Highway 101 San Francisquito Creek Bridge Replacement Project, Initial Study with Proposed Negative Declaration/Environmental Assessment,
http://www.dot.ca.gov/dist4/documents/route_101_sf_creek.pdf
From: Andrew Boone, Resident of: East Palo Alto
Member of: East Palo Alto Bicycle Club, Silicon Valley Bicycle Coalition
To: Thomas Rosevear, California Department of Transportation (Caltrans)

Dear Mr. Rosevear,

Caltrans's Highway 101 San Francisquito Creek Bridge Replacement Project ("Caltrans project") proposes to replace the existing 80-ft long bridge with a 126-ft long bridge. Unfortunately, the inclusion of a bicycle and pedestrian path under the bridge was not considered in the proposed preliminary design of the bridge, even though such an undercrossing could be constructed at minimal additional cost to the project. Such undercrossings are the least expensive type of bicyclist/pedestrian highway crossing to construct and the most convenient way for bicyclists and pedestrians to cross Highway 101. Nearby bicyclist/pedestrian creek undercrossings of Highway 101 have been constructed at Adobe Creek in Palo Alto and Stevens Creek in Mountain View.

Many low-income residents of East Palo Alto, including myself, lack access to automobiles and must rely on bicycles and walking for transportation every day. The Woodland neighborhood, bounded by University Ave, Highway 101, and San Francisquito Creek is a high-density, low-income neighborhood composed primarily of apartment buildings. There are no schools, parks, or grocery stores in this neighborhood. Residents must cross Highway 101 daily access to these and many other services provided by East Palo Alto. We must use University Ave in East Palo Alto or Embarcadero Rd in Palo Alto to cross Highway 101, both of which are very dangerous for bicyclists and pedestrians due to the lack of bike lanes and high vehicle speeds.

East Palo Alto lacks the financial resources to construct a bicyclist/pedestrian overcrossing bridge over Highway 101 and grant funding from county, state, and federal sources is both insufficient and very competitive. Caltrans's Highway 101 San Francisquito Creek Bridge Replacement Project is a once-in-a-lifetime opportunity to construct a bicyclist/pedestrian *undercrossing* of Highway 101 at minimum additional cost to the project.

Chapter 2 of the *Initial Study with Proposed Negative Declaration/Environmental Assessment* lists the environmental issues that were considered thus far by Caltrans in its environmental analysis. One of these is "Consistency with State, Regional and Local Plans and Programs", which states "The proposed project is consistent with state, regional and local plans and programs, as well as transportation plans and programs." (http://www.dot.ca.gov/dist4/documents/route_101_sf_creek.pdf, page 7, 3rd bullet point) Due to the lack of consideration of a bicyclist/pedestrian undercrossing in the preliminary design on the new bridge, **the Caltrans project is not consistent with several state and local plans**, including the California Transportation Plan 2025, the East Palo Alto Bay Access Master Plan, the Palo Alto General Plan, and the Palo Alto Comprehensive Plan. The inconsistencies with each these plans are described below.

1. *California Transportation Plan 2025*. This plan, authored by Caltrans itself, includes six primary goals, and the Caltrans project is inconsistent with four of these six goals, which are:

- Goal 1. Improve Mobility and Accessibility - the project does not improve mobility or accessibility for bicyclists or pedestrians.
- Goal 4. Enhance Public Safety and Security - the project does not enhance safety of bicyclists or pedestrians wishing to cross Highway 101.

- Goal 5. Reflect Community Values - the project does not reflect the community values of East Palo Alto or Palo Alto as described in those cities' General Plans (see below).
- Goal 6. Enhance the Environment - the project does not enhance the environment because the lack of a bicyclist/pedestrian undercrossing will not result in any mode shift to bicycling and walking.

Source: California Transportation Plan 2025, Executive Summary, Page x
Webpage: http://www.dot.ca.gov/hq/tpp/offices/osp/ctp2025_files/cto02.pdf

2. *East Palo Alto Bay Access Master Plan*. The primary goal of this plan is to "improve and expand its residents' access to the [San Francisco] Bay." (page 3). A critical component to achieve this goal is the proposed Woodland Neighborhood Trails and Parks system, which includes a Highway 101 Pedestrian Crossing at San Francisquito Creek (page 33). The Caltrans project is not consistent with this local plan because it does not consider a bicyclist/pedestrian undercrossing in its proposed design.

Source: *East Palo Alto Bay Access Master Plan* (pages 3 and 33)
Webpage: <http://www.ci.east-palo-alto.ca.us/economicdev/images/BAMP%20Final%205%2023%2007.pdf>

3. *East Palo Alto General Plan, Circulation Element*. Goal 3 of this plan is to "Increase use of public transit and non-vehicular methods of travel." (page 6). A sub-goal of Goal 3, Policy 3.3, states "Provide and maintain a circulation system that supports bicycle and pedestrian travel." The Caltrans project is not consistent with this local plan because it does not increase non-vehicular methods of travel and it does not contribute to a circulation system that supports bicycle and pedestrian travel.

Source: *East Palo Alto General Plan, Circulation Element* (page 6)
Webpage: http://www.ci.east-palo-alto.ca.us/planningdiv/pdf/Economic_Circulation_Conservation_and_Open_Space.pdf

4. *Palo Alto Comprehensive Plan, Transportation Element*. The Caltrans project is inconsistent with several goals of this local plan, including:

- Goal T-1. Less Reliance on Single-Occupant Vehicles - the project does not result in less reliance on single-occupant vehicles.
- Goal T-3. Facilities, Services, and Programs that Encourage and Promote Walking and Bicycling - the project does not encourage or promote walking and bicycling.
- Goal T-4. An Efficient Roadway Network for All Users, which includes Policy T-25: "When constructing or modifying roadways, plan for usage of the roadway space by all users, including motor vehicles, transit vehicles, bicyclists, and pedestrians." - the project proposed to modify an existing roadway (Highway 101) does not plan for usage of the roadway space (the crossing of it) by all users (bicyclists and pedestrians).
- Goal T-6. A High Level of Safety for Motorists, Pedestrians, and Bicyclists on Palo Alto Streets. - the project does not result in any higher level safety for pedestrians or bicyclists on any Palo Alto street. Currently, the nearest crossing of Highway 101 to San Francisquito Creek is Embarcadero Rd in Palo Alto, which currently has a very low level of safety for pedestrians or bicyclists due to the lack of bicycle lanes and high vehicle speeds.

Source: *Palo Alto Comprehensive Plan, Transportation Element* (pages T-2, T-5, T-16, T-22).
Webpage: <http://www.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=8172>

I urge the California Department of Transportation to consider the inclusion of a bicyclist/pedestrian undercrossing in the design of the Highway 101 San Francisquito Creek Replacement Bridge in order to improve the health, safety, and environment of the low-income community of East Palo Alto and to comply with state and federal environmental laws which require projects to be consistent with state and local plans.

Sincerely, Andrew Boone.

Department's Response to Andrew Boone

The Department recognizes the desire of the City of East Palo Alto, bicyclists, bicycle clubs, residents and pedestrians to connect both sides of Route 101 with a pedestrian/bicycle facility. Though such a facility is neither a purpose nor a need for this San Francisquito Creek Bridge Replacement Project and therefore not considered a project "alternative" that needs to be addressed in Chapter 1 of this document, the Department invites all stakeholders to participate in the scoping process for its projects. The Department also recognizes the California Transportation Plan 2025; East Palo Alto Bay Access Master Plan; East Palo Alto General Plan, Circulation Element; and Palo Alto Comprehensive Plan, Transportation Element.

The City of East Palo Alto approached the Department in May 2010 with the possibility of adding pedestrian access to this San Francisquito Creek Bridge Replacement Project. This began a dialogue between the Department, the City of East Palo Alto and the San Francisquito Creek Joint Powers Authority, which is summarized below. Although not summarized in the Draft Environmental Document, this document has now been modified to include a discussion of these coordination efforts that have taken place and has now been added at the beginning of this Chapter (Chapter 4 – Comments and Coordination).

Summary of Coordination

May 27, 2010 – City of East Palo Alto (Vice-Mayor Carlos Romero, Anthony Docto and Brent Butler) mentioned the possibility of a trail for pedestrian access under Route 101 at a San Francisquito Creek Joint Powers Authority (SFCJPA) and Department of Transportation (Department) coordination meeting.

July 21, 2010 – City of East Palo Alto (Vice-Mayor Carlos Romero, Anthony Docto and Brent Butler) shared their desire for a pedestrian undercrossing under Route 101 at the SFCJPA – Department coordination meeting. This request is as a response to mobility and connectivity for the City of East Palo Alto. It was mentioned that a freeway crossing is particularly important since a major proportion of the residents live in high density housing on the west side of Route 101 and the majority of the services, schools and recreational opportunities are on the east side of Route 101. A discussion of the constraints included: hydraulic capacity encroachments, safety for residents and Department structural elements, lighting difficulties with limited natural light opportunities, vertical clearance limitations, complicated access to downstream trail over floodwall at an Americans with Disabilities (ADA) slope, complicated access to upstream private property, funding, schedule and budget implications for both the Department and SFCJPA projects that are underway. The Department agrees to analyze the feasibility of providing a pedestrian undercrossing.

August 26, 2010 – The Department – SFCJPA coordination teleconference included consideration of a pedestrian undercrossing. The City of East Palo Alto (City) provided a memorandum written to the SFCJPA and copied to the Department that reaffirms the City's interest in integrating a pedestrian / bicycle underpass into the design of the proposed bridge structure at San Francisquito Creek under Highway 101, and to provide a plan to link the underpass to the City's network of pedestrian and bicycle facilities. Attached to the memorandum are photographs that show the City's proposal for connecting an undercrossing to an ascending pathway along a levee wall downstream (northeast) from the bridge, and a switchback ramp to connect the underpass to the sidewalk along West Bayshore Road upstream (southwest) from the bridge.

September 7, 2010 – Email from the Department (Ron Moriguchi, Project Manager) to the SFCJPA (Kevin Murray) expressing concerns with a pedestrian underpass that would need to be at a height so that it would not be inundated during high tides, and the resulting impact it would have on the hydraulic capacity of the structure and vertical clearances. The Department asked the SFCJPA if it has considered the impact that a pedestrian / bicycle trail on a berm would have on the hydraulic capacity of San Francisquito Creek downstream from the bridge. Since an August 25, 2010 memorandum from East Palo Alto was addressed to the SFCJPA, it was expected that a response would come from the SFCJPA to address the feasibility of having a pedestrian underpass under Route 101 and within San Francisquito Creek.

September 9, 2010 - Teleconference between the Department and the SFCJPA to discuss the information provided in the email on September 7, 2010. The SFCJPA was in agreement that the pedestrian underpass would not be feasible within the creek or under Route 101.

September 23, 2010 – SFCJPA and Department coordination meeting was held and the pedestrian undercrossing was on the agenda. The Department addressed the problems associated with a minimum of 8-feet high berm to be above the Mean High Water level. This causes the water surface elevation to rise above the soffit elevation further. Pressure flow becomes problematic. The option of a pedestrian overcrossing was discussed, but it would likely need to be placed at a different location and considered separately from this project. The City of East Palo Alto requested a formal response regarding the infeasibility of the undercrossing so that they can pursue other options.

October 13, 2010 – Email from the SFCJPA (Kevin Murray) to the Department (Ron Moriguchi) requesting information to provide in a memorandum that is being prepared in response to the August 25, 2010 memorandum from the City of East Palo Alto.

October 19, 2010 – Email from the Department (Ron Moriguchi) to the SFCJPA (Kevin Murray) that provides information regarding the analysis done that included modeling of the bridge with a pedestrian undercrossing berm in place. The analysis shows an increase in the water surface level, which is unacceptable since there is already no freeboard without the berm. The vertical clearance is also an issue with the berm at a height to keep it out of the tidal water level. Due to the history of debris getting caught in the channel, any decrease in the clear channel openings would worsen this problem and could further restrict hydraulic capacity. The email further states that the Department is not comfortable with an analysis of the feasibility of the pedestrian underpass under the structure with no clear direction on the feasibility of providing access down to the berm from either side of the bridge.

October 20, 2010 – Memorandum from the City of East Palo Alto (Anthony Docto, Brent Butler) to the SFCJPA (Kevin Murray, Len Materman) and copied to the Department that requests a detailed response concerning the feasibility of non-motorized accessibility, such as the incorporation of a pedestrian and bicycle underpass as part of this San Francisquito Creek Bridge Replacement Project. Also included in the request is design and build estimates for a pedestrian overpass based on other projects that connect cities of similar size.

October 21, 2010 – SFCJPA and Department coordination meeting included an update on the status of the reply to the memorandum from the City of East Palo Alto regarding the pedestrian undercrossing.

October 21, 2010 – Email from the Department (Ron Moriguchi) to the SFCJPA (Kevin Murray) that provides a plan and cross sections of a pedestrian overcrossing that was designed and will be constructed over Route 101 in Menlo Park. The current cost estimate was also provided.

November 4, 2010 - SFCJPA (Len Materman) letter to the City of East Palo Alto (ML Gordon) in response to the August 25, 2010 memorandum regarding proposed pedestrian/bicycle access under Route 101 at San Francisquito Creek. The letter explains the difficult challenges with constructing a pathway under the bridge due to the daily high tide and the need to maximize the hydraulic capacity. Additionally, the letter explains the problem with an inboard ramp connecting to an underpass that would compromise floodwater conveyance in this area and reduce flood protection to East Palo Alto. The SFCJPA concludes the letter stating that they would like to explore options to build connectivity across the freeway as part of their comprehensive project for flood protection, ecosystem restoration and recreational enhancement along San Francisquito Creek.

November 7, 2010 – Email from the City of East Palo Alto (Brent Butler) requesting design drawings and cost estimates for the pedestrian overcrossing planned in Menlo Park. Also, the City requested information about Department Environmental Enhancement Mitigation grants related to trails and walkways.

November 18, 2010 – SFCJPA and Department coordination teleconference included a discussion of the pedestrian overcrossing information that was provided to the SFCJPA. An email from the Department to the City of East Palo Alto included information on the State Transportation Improvement Program-Transportation Enhancements (STIP-TE) that should be considered as a potential source of funding for a pedestrian overcrossing over Route 101. It was also suggested that the City contact the City/County Association of Governments of San Mateo County (C/CAG) and the San Mateo County Transportation Authority (SMCTA) to investigate potential sources of funding.

December 1, 2010 – Email exchange between the Department (Ron Moriguchi) and the City of East Palo Alto (Brent Butler) regarding information needed for a grant application for a proposed pedestrian overcrossing. The Department provided the City with plans and costs for a typical pedestrian overcrossing that could be used for grant applications.

December 27, 2010 – Email exchange between the Department (Beth Thomas, Pedestrian Coordinator) and the City of East Palo Alto (Brent Butler) to describe public outreach events that the City was planning for the general public to tour various pedestrian overcrossings. The City requested that the Department provide information about various pedestrian overcrossings in the San Francisco Bay Area, including location, length and cost. The Department provided information to the City as requested.

February 7, 2011 - Email exchange between the Department (Ron Moriguchi) and the City of East Palo Alto (Brent Butler) clarifying the cost estimate that was previously provided for a typical pedestrian overcrossing.

February 28, 2011 – Email exchange between the City of East Palo Alto (Brent Butler) and C/CAG (Tom Madalena) requesting information regarding funding under the Bicycle Transportation Account.

March 2, 2011 - List of recently constructed pedestrian overcrossings and associated costs provided to the City of East Palo Alto for consideration to be included in their public outreach event.

March 10, 2011 – Email invitation from the City of East Palo Alto (Brent Butler) to the Department (Beth Thomas) for the pedestrian overcrossing tour scheduled for March 12, 2011.

Conclusion

The Department has made reasonable, best efforts to consider and analyze the desire for pedestrian/bicycle access to connect both sides of Route 101 with an undercrossing at the San Francisquito Creek Bridge, and to include the City of East Palo Alto in discussions related to this consideration. The Department, in conjunction with the San Francisquito Creek Joint Powers Authority, analyzed the feasibility of a pedestrian undercrossing at this location and determined that it was infeasible for the reasons outlined above.

Furthermore, the Department, as indicated above, continues to work with the City of East Palo Alto in the identification of potential funding sources, design and other potential locations for a pedestrian overcrossing as a separate, independent project.

The fact that a pedestrian undercrossing at this location is infeasible and cannot be accommodated by this Bridge Replacement Project does not deem this project incompatible or “not consistent” with the goals and objectives of California Transportation Plan 2025; East Palo Alto Bay Access Master Plan; East Palo Alto General Plan, Circulation Element; and the Palo Alto Comprehensive Plan, Transportation Element; and other state, regional and local plans and programs.

Comment Received by Brenda Erwin, Woodland Creek Homeowners Association

WOODLAND CREEK HOMEOWNERS ASSOCIATION

Street Address: 1982 West Bayshore Road, East Palo Alto, CA 94303

Mailing Address: c/o CJM Association Services, Inc., P.O. Box 190, Pleasanton, CA 94566

June 28, 2011

Yolanda Rivas, Office of Environmental Analysis
Attention: Thomas Rosevear
Department of Transportation
P.O. Box 23660, Oakland, CA
94623-0660

**RE: Route 101 San Francisquito Creek Bridge Replacement Project
Initial Study with Proposed Negative Declaration/Environmental Assessment**

Dear Ms. Rivas:

The Woodland Creek Homeowners Association (HOA) represents 90 residential homes located at 1982 West Bayshore Road, East Palo Alto, CA 94303 (Woodland Creek). The Board of Directors on behalf of the homeowners are writing to provide comments to the above-referenced Initial Study with Proposed Negative Declaration/Environmental Assessment (Study) for the proposed Route 101 San Francisquito Creek Bridge Replacement Project (Project). While we appreciate that the Department of Transportation (Department) has analyzed certain potential impacts of the Project and consulted with a number of governmental agencies, we believe that analysis and mitigation of the impacts of the Project's construction activities on neighboring communities, specifically Woodland Creek, have been seriously inadequate.

Woodland Creek's 90 residences are immediately adjacent to, and will be directly and significantly affected by, the Project's estimated 12 months of construction activities (noise, dust, etc). Further, our property is specifically identified in the Study as the site of a proposed temporary construction easement (TCE). We object to (i) inadequate notice of the Project; (ii) the proposed negative declaration of the project; and (iii) lack of mitigation measures to avoid and minimize the impacts of construction activities on Woodland Creek residents and property.

I. About Woodland Creek

Woodland Creek consists of 90 one, two, and three bedroom homes located at 1982 West Bayshore Road, East Palo Alto, CA 94303. Woodland Creek is bordered by San Francisquito Creek, West Bayshore Road (part of the Project), and Woodland Avenue. Our community includes seniors and families with small children. The HOA is governed by an elected Board of Directors, and the property is managed by CJM Association Services, Inc. Our homes are fully occupied, primarily by owners, and the property, including landscaping, is professionally maintained. Our community includes market-rate and below-market-rate (low-income) homes. The only access to our homes is via West Bayshore Road. **Significantly, all the homes on the east side of Woodland Creek have bedroom windows facing east/southeast (towards the Project) and will be particularly sensitive to noise, dust and light associated with construction activities.**

WOODLAND CREEK HOMEOWNERS ASSOCIATION

Street Address: 1982 West Bayshore Road, East Palo Alto, CA 94303
Mailing Address: c/o CJM Association Services, Inc., P.O Box 190, Pleasanton, CA 94566

II. Objections

A. Objection to Inadequate Notice

The HOA did not receive notice of the Project, despite the fact that Woodland Creek is immediately adjacent to the Project and identified as the site of a proposed TCE (*Study*, 8). In June 2011, a number of Woodland Creek residents received a "Notice of Availability of Draft Environmental Document and Intent to Adopt a Negative Declaration As Well As Notice of Open House/Map Display on Changes Proposed for Route 101." This notice was not dated. Based on envelope postmark it appears to have been mailed on June 10, 2011, well after the public comment deadline of May 19, 2011 referenced in the Study. Several residents subsequently attended the Open House held on June 15, 2011 (Open House) to learn more about the Project and consider its potential impacts on our community. Given the significance of the construction impacts on Woodland Creek and the proposed TCE, we request that you extend the comment period and fully address all of our comments and concerns.

Please provide copies of all future notices, studies, reports, communications and the like regarding the Project to:

Woodland Creek HOA
c/o CJM Association Services, Inc.
Attn: Charlene Marquez
P.O Box 190, Pleasanton, CA 94566

With copy to: WoodlandCreekHOA@gmail.com

B. Objection to Proposed Negative Declaration

The Proposed Negative Declaration states:

The proposed project would have no effect on air quality, land use, growth, housing, noise, visual/aesthetics, cultural resources, public services, utilities and service systems, geological, agricultural or recreational resources.

We object to the finding of "no effect" with regard to air quality, land use, noise, and visual/aesthetics. As described in more detail below, Project construction will clearly have effects on these resources, as well as other impacts, and the Study should be revised to include both quantitative analysis of the impacts as well as mitigation measures.

C. Objection to Lack of Mitigation Measures

The Study fails to analyze a number of construction impacts, including a proposed TCE on our private property, noise, air pollution, traffic disruption, etc. (see in Part III below). **The Department should analyze these impacts, and specifically state on Appendix E what measures will be implemented during construction to avoid and minimize such impacts on our community.**

WOODLAND CREEK HOMEOWNERS ASSOCIATION

Street Address: 1982 West Bayshore Road, East Palo Alto, CA 94303

Mailing Address: c/o CJM Association Services, Inc., P.O. Box 190, Pleasanton, CA 94566

III. Comments and Summary of Impacts

A. Temporary Construction Easement:

- The Study references a proposed TCE at 1982 West Bayshore Road (Woodland Creek) to enable access to the creek (*Study*, 8). This TCE would be on our private property. Other than noting that some portions of properties used for vehicular parking may be temporarily affected, no details are provided and no map showing the proposed TCE is provided. This is not acceptable, and based on this lack of information, we **object** to the TCE and request that the Department conduct further review/analysis.
- If upon further review/analysis, the Department determines that the TCE may be necessary, we need to understand, before the Study is finalized, the estimated scope and duration of the proposed TCE and how it will affect our community. Please note that the section of the property abutting the Project includes homes with bedrooms/living rooms facing the bridge as well as parking spaces (very heavily used), mature landscaping, hardscape features (benches, pavement), and wrought-iron fencing.
- Before the Study is finalized, the Department should inform us of what the potential impacts would be, when they would occur, and how our community will be consulted and compensated.

B. Noise and Vibration:

- The Project is estimated to take up to 3 seasons to construct (*Study*, 5). Seasons would run for four months (June 15 to October 15) for three years (2012-2015). Therefore, for up to **12 months of construction**, activities will include demolition and removal of existing structures using a mounted hydraulic jackhammer, an excavator, and dump trucks as well as installation of steel pier walls with pile drivers. During Stage 3 and potentially during other Stages, this activity will occur directly in front of Woodland Creek homes.
- The intensity and duration of the construction noise and vibration should be analyzed, quantified, and described in further detail in the Study, and the Department should specify mitigation measures on Appendix E to protect sensitive receptors, which include our community. For example, there should be no construction activity in early morning, during night/evening, or on weekends. And we will need written assurance from the Department or its contractors, before construction begins, that vibration (particularly from pile driving) will be closely monitored and will not directly or indirectly cause structural damage to our property.

WOODLAND CREEK HOMEOWNERS ASSOCIATION

Street Address: 1982 West Bayshore Road, East Palo Alto, CA 94303
Mailing Address: c/o CJM Association Services, Inc., P.O. Box 190, Pleasanton, CA 94566

C. Closure of West Bayshore Road/Traffic Impacts:

- The Study anticipates the full closure of West Bayshore Road during Stage 3. As the only access to Woodland Creek homes is via West Bayshore Road, we assume that residents will continue to have unobstructed access to on-street parking on West Bayshore Road as well as the Woodland Creek parking lot and garages. Please confirm.
- Non-Woodland Creek traffic should be diverted at the West Bayshore Road/Woodland Ave. intersection. We are concerned that motorists who are not diverted at this intersection will use our property to turn around once they encounter the blocked bridge. There should be signage posted at the University Ave./Woodland Ave. and Newell St. bridge/Woodland Ave. intersections, as well as along West Bayshore Road, alerting motorists that there will be no through traffic.
- Please note that the diversion of southbound West Bayshore traffic (heading to Channing or Embarcadero/101) north to University Ave. will likely exacerbate existing traffic jams and delays at the University Ave./Woodland Ave. intersection.

D. Air Pollution – Dust and Aerially Deposited Lead:

- The Study mentions that the construction will generate dust and potentially disturb material contaminated with aerially deposited lead (ADL) (*Study*, 24). Particulate matter and lead dust are known health hazards, particularly for the seniors, children, and people with lung conditions (e.g., asthma) who reside at Woodland Creek. All the Study currently says is that “[a]ny ADL material encountered would be managed in such a way as to prevent it from coming into contact with people or the environment.” The lack of detail in the Study on the air-pollution risks is unacceptable. **In addition to protecting workers, the Department must analyze and eliminate the air pollution risks to the community.** The Study should specify what expert analysis has been done, what qualifications it will require the contractor to have (e.g., certified lead monitoring and remediation expertise), and what specific measures will be implemented to monitor and eliminate air pollution risks (e.g., tenting).

E. Clarification of Bridge Expansion Details and Permanent Relocation of Soundwall:

- The Study states that the bridge will be expanded. The maps in the Study are confusing as to which direction the bridge will expand. At the Open House, representatives of the Department indicated that the expansion will lengthen the bridge to the *south*. Please confirm in writing that the additional length of the bridge will not affect Woodland Creek’s property, which lies to the *north*.
- The Study states that the Project proposes to shift the staggered soundwall on the bridge that separates southbound Route 101 from West Bayshore Road to conform and connect it with existing soundwalls on both ends of the bridge. Please confirm in writing that the soundwall will be shifted to the *east*, that there will be no narrowing

WOODLAND CREEK HOMEOWNERS ASSOCIATION

Street Address: 1982 West Bayshore Road, East Palo Alto, CA 94303

Mailing Address: c/o CJM Association Services, Inc., P.O Box 190, Pleasanton, CA 94566

of West Bayshore Road, and that the only portion of the soundwall affected is the portion on the bridge. As the staggered soundwall was originally designed to allow passage of floodwaters, please also address whether the proposed permanent relocation could put Woodland Creek at increased risk of flood (due to the fact that there will no longer be a gap for water to flow through).

F. Visual - Light:

- The Study implies that there may be some construction activity at night. Please clarify. **We oppose night construction due to the adverse impact of bright lights and noise on dozens of residents who sleep in bedrooms facing the Project.**

G. Biological Resources (Steelhead & Migratory Birds); Habitat (Wetlands):

- Our community greatly values the diversity of native wildlife, including plants, birds, bats, and fish, that inhabit the creek and its environs. We appreciate and strongly support the Department's and other agencies' efforts to protect wildlife during construction.
- We also strongly support the Department's efforts to avoid/minimize loss of wetlands, and we encourage the Department to adopt a compensatory solution that is on-site so that wetland habitat in and around the creek is preserved.
- We urge the Department to avoid a complete dewatering of the creek, which is critical habitat for Steelhead (*Study*, 51).
- Woodland Creek residents have, for many years, observed a number of bird species active in the creek that are protected under the Migratory Bird Treaty Act (MBTA). These include: Snowy Egret, Great Blue Heron, Black-Crowned Night Heron, and Red-tailed Hawk. These birds are not mentioned in the Study, even though they are listed under the MBTA. In addition, swallows have been observed foraging in the creek, and we have been informed that they are nesting under the bridge. **Since the construction will occur during nesting season, the Department should require a survey by a qualified ornithologist before construction begins to ensure that protections are implemented.**

H. Enhancements:

- We support the safety and visual enhancements to the bridge and related structures referenced in the Study.

I. Water Quality Impacts:

- The Study discusses potential impacts on water quality extensively and lists a number of "Best Management Practices" (BMPs) (*Study*, 19-20, 87). We are concerned that

WOODLAND CREEK HOMEOWNERS ASSOCIATION

Street Address: 1982 West Bayshore Road, East Palo Alto, CA 94303

Mailing Address: c/o CJM Association Services, Inc., P.O. Box 190, Pleasanton, CA 94566

the Study merely says that the BMPs "should" be implemented. We request confirmation that the BMPs "will" be implemented.

J. Designated Construction Staging Area/Equipment Washing Station:

- The Study doesn't specify where the construction staging areas will be. While we understand that some details will need to be worked out in the design phase and that the contractor will need to be able to operate efficiently, please confirm that West Bayshore Road *north* of the bridge will be off limits to construction equipment (other than pollution mitigation/safety equipment). Using any part of the stretch of West Bayshore Road north of the bridge as a staging area would disrupt parking and traffic, interfere with ingress/egress to our property, and create noise and dust impacts on residents.

K. Hazardous Waste Study/Database Search:

- The Study indicates that the last search was conducted in October 2000 (*Study*, 22-3). There has been a lot of change in the area in the last 10 plus years. From a safety perspective, we believe that the Department should be using more current data.

L. Alternatives:

- The Study only considers a build and no-build alternative. We query why the Department did not consider a "repair" alternative.

Thank you in advance for your consideration of and response to the above comments.

Sincerely,



Brenda Erwin

President, Board of Directors

Woodland Creek Homeowners Association

cc: Board of Directors, Woodland Creek Homeowners Association
CJM Association Services
Distribution List (*Study*, 72)

Department's Response to Brenda Erwin, Woodland Creek Homeowners Association

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

EDMUND G. BROWN, JR., Governor

DEPARTMENT OF TRANSPORTATION

111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-6216
TTY 711



*Flex your power!
Be energy efficient!*

August 25, 2011

Ms. Brenda Erwin
President, Board of Directors
Woodland Creek Homeowners Association
P.O. Box 190
Pleasanton, CA 94566

Dear Ms. Erwin,

Thank you for your comment letter regarding the Route 101 San Francisquito Creek Bridge Replacement Project Initial Study (IS) with Proposed Negative Declaration/Environmental Assessment (ND/EA). This project is extremely important to the more than 200,000 travelers per day who use this segment of the Route 101 corridor. The replacement bridge will also provide improved flood water conveyance that benefits the many residents who live in the floodplains surrounding the creek. Your comments and those of the Woodland Creek Homeowners' Association are an important part of the environmental process and we appreciate your bringing your concerns to our attention to provide further input into the decisionmaking process. The comments and responses contained in this letter will become part of the public record.

The responses below correspond to the paragraph references in your comment letter:

II A. The initial public comment period for the review of the IS with Proposed ND/EA began on April 19, 2011, and concluded on May 19, 2011. There was an open house/map display during this period on May 4, 2011 from 12:00 PM to 2:00 PM. Subsequently, the Department of Transportation (Department) planned and conducted an additional open house/map display on June 15, 2011, from 6:30 PM to 8:30 PM. Responses to written comments received during the public comment period, during both public meetings, and your letter are being included in the IS with ND/EA. The Department will also address any comments received subsequent to the IS with ND/EA. The Department will make every effort to send all future correspondence with you regarding the project to the address and email noted.

II B. The noted effects on the environment are temporary and limited to construction. The construction effects are among those that are typical to the majority of Department projects regardless of the level of environmental document. The Proposed Negative Declaration is correct in its current statement because replacing the bridge would not permanently or adversely affect the resources noted. Effects to the environment that are not significant under the California Environmental Quality Act (CEQA) and/or the National Environmental Policy Act (NEPA) do not

"Caltrans improves mobility across California"

Ms. Brenda Erwin
August 25, 2011
Page 2

require mitigation, but the Department implements avoidance and minimization measures wherever practicable.

II C. Although mentioned separately at the beginning of Chapter 2 under each subject area, these avoidance and minimization measures are addressed in the responses below and will also be included in Appendix E of the IS with ND/EA, summarizing the avoidance and minimization measures that will be applicable to the project.

III A. The Department cannot give specific responses to the questions raised concerning the potential temporary construction easement (TCE) until the design phase of the project, following the approval of the environmental document. The aspects of the design that affect the size and duration of any proposed TCEs are not yet finalized, but efforts will be made to minimize the TCE area so as to least affect the Woodland Creek residents during construction.

Construction of a secant pile wall adjacent to the Woodland Creek complex is expected to take only one construction season of up to four months. The Department is currently analyzing a potential TCE on the Woodland Creek complex on the southeastern edge of the property adjacent to San Francisquito Creek and West Bayshore Road. It is unknown how many parking spaces may be affected at this time. However, once the size and duration of the TCE are finalized, a Department Right of Way representative will contact the appropriate representative of the complex for matters related to compensation as well as an inspection of the property (TCE) and a determination of any affected parking spaces. It is Department policy that no negotiations begin or occur prior to approval of this environmental document; otherwise funding for the project may be in jeopardy. The Department will coordinate with Woodland Creek complex representatives as well as representatives from the City of East Palo Alto during the design phase to implement possible measures to minimize any effects to on-site parking spaces (i.e., possibly providing designated space on West Bayshore Road for resident parking).

III B. While construction noise could at times reach levels higher than the existing traffic noise, these effects would be temporary and can be reasonably minimized by implementing provisions in Section 1.01I, "Sound Control Requirements: of the Department Standard Specifications and the following measures that are specifically mentioned on Page 13 of the Department-prepared *Traffic Noise Study Report* for the Route 101 Auxiliary Lanes Project in this same vicinity:

1. Avoid construction activities during nighttimes and weekends, when possible.
2. Consider constructing noise barriers as first items of work, where feasible.
3. Use of stockpiled dirt as earthen berms, where feasible.
4. Erect temporary noise barriers, if necessary.
5. Keep noisy equipment and haul roads away from sensitive receptors, where feasible.
6. Keep the community informed of upcoming especially noisy construction activities and (possibly) establish a field office to handle noise complaints.

These avoidance and minimization measures will be noted in Appendix E of the IS with ND/EA. In addition, the project will be subject to local noise ordinances.

While the most intensive forms of construction noted in the letter would take place strictly during daylight hours (i.e., pile driving), it is unlikely that all work can be confined to weekday, daylight

"Caltrans improves mobility across California"

Ms. Brenda Erwin
August 25, 2011
Page 3

hours since freeway traffic lanes can only be closed at night. (See response to III F below for construction activities that are typically performed at night). Therefore, the Department will implement measure #6 (above) to enhance communication between Woodland Creek residents and representatives, the Department's Resident Engineer and Department's Public Information Officer for monitoring matters such as night work. Representatives and/or residents of the Woodland Creek complex will be invited to attend future pre-construction/constructability meetings with the Resident Engineer and/or contractor.

III C. Residents of the Woodland Creek complex would have unobstructed access to the Woodland Creek complex parking lot and garages. West Bayshore Road is currently being proposed as a construction staging area and therefore may temporarily affect on-street parking. A Transportation Management Plan (TMP) that includes coordination with the City of East Palo Alto for issues related to West Bayshore Road, as well as communication between the Woodland Creek complex and the Resident Engineer for construction-related issues, will be implemented and completed during the design phase of the project. This TMP will address matters such as residential and non-residential parking on West Bayshore Road, and posting of signs for detours of through traffic during the temporary closure of West Bayshore Road. Representatives and/or residents of the Woodland Creek complex will be invited to attend future pre-construction/constructability meetings with the Resident Engineer and/or contractor.

III D. In addition to the information provided in the environmental document, the Department adheres to very specific requirements for minimizing dust and the associated lead exposure during construction of the project. The protection from exposure for the workers and the surrounding community is specifically addressed in the construction contract provisions and multiple work plans that the contractor must follow. The prevention of "fugitive" dust starts with standards and requirements that are part of the construction contract documents put out for bids from contractors. These specifications require, for instance, that the contractor have a water truck on-site at all times for dust control during soil-disturbing activities and provide a general order to prevent visible dust at all times. The specifications go further to mandate that the contractor operate under a lead compliance plan prepared and signed by a certified industrial hygienist that stipulates sufficient on-site air monitoring to protect workers and construction site perimeter air monitoring to protect the community. These measures are stated in Section 2.6, Hazardous Waste/Materials, of the IS with ND/EA.

The perimeter monitoring must have upwind and downwind sampling stations to clearly quantify the dust-related contribution from the construction work. For lead concentrations, the contract specifications allow a maximum daily average of up to 1.5 micrograms of lead per cubic meter of air. This threshold is a California 30-day average normally applied to region-wide ambient measurements; to apply this standard to a single construction site on a daily basis is very protective of the immediate area. Furthermore, the specifications require the 90-day rolling average for lead readings to be below 0.15 micrograms per cubic meter of air, which is a national standard for 90-day region-wide measurements. Again, it is very protective locally to apply ambient standards to a single site.

If the lead measurements are found at anytime to be excessive, the specifications require the contractor to promptly stop work and propose modifications that will bring the operation into

"Caltrans improves mobility across California"

Ms. Brenda Erwin
August 25, 2011
Page 4

compliance with the air quality requirements. Continuing air monitoring will determine if the efficacy of the modifications is sufficient.

III E. The bridge will be lengthened to the south in the City of Palo Alto. This additional length will not affect the Woodland Creek complex, which lies to the north of the bridge. Section 2.3, the Hydrology/Floodplain section of the IS with ND/EA, has been modified to convey that the staggered soundwall will remain staggered and will not be connected to the soundwalls on each end of the bridge. West Bayshore Road will not be narrowed as a result of the realigned soundwalls.

III F. Construction activity at night will be avoided as much as possible, but is likely unavoidable at times. Night work may consist of the following activities: moving/placing k-rail, restriping the freeway, asphalt concrete overlay of the freeway and delivery of equipment and materials. Lighting will be necessary for the safety of workers. Therefore, lighting and noise may be unavoidable effects during construction at night. The previously discussed avoidance and minimization measures related to construction noise will be implemented as feasible. The Resident Engineer will be in communication with representatives of the Woodland Creek complex during construction regarding the dates, times, locations and specific activities planned of work at night.

III G. The Department may not be able to implement an on-site, compensatory solution and may need to adopt other measures listed in the Avoidance and Minimization and/or Mitigation Measures subsection of the Wetlands and Other Waters section of this document. These other measures include restoration of wetlands off-site and the purchase of wetland creation/preservation credits from a mitigation bank. However, the ultimate expansion of San Francisquito Creek will create and enhance wetlands and wildlife habitat.

San Francisquito Creek will not be completely dewatered during construction. A temporary creek diversion will be constructed that will allow fish to travel through the work area during construction. The Department will comply with the Migratory Bird Treaty Act (MBTA). Individual bird species that are protected under the MBTA, but are otherwise not special-status species, need not be studied or mentioned in this document. Pre-construction surveys for all nesting birds will be conducted by a qualified biologist when work occurs during the nesting season of February 15 to August 31.

III I. The noted text has been modified from "should" to "will". The Department will review and enforce these BMPs that the contractor will implement.

III J. Construction staging areas are still being considered for the project that may include West Bayshore Road north of the bridge. The staging areas will not be finalized until the design phase of the project. Your concerns related to construction staging areas will be considered during the decision making process. Ingress/egress to the Woodland Creek complex from West Bayshore Road will remain intact during construction if West Bayshore Road is needed for staging. A Transportation Management Plan that includes coordination with the City of East Palo Alto for issues related to West Bayshore Road, as well as communication between the Woodland Creek complex and the Resident Engineer for construction-related issues, will be implemented and completed during the design phase of the project.

III K. The initial research of contamination issues possibly affecting this bridge replacement project was indeed done between late 2000 and 2002, during the nascent planning stages of the project. The

"Caltrans improves mobility across California"

Ms. Brenda Erwin
August 25, 2011
Page 5

Project Development Team also based its findings on a January 2003 initial site assessment (ISA) to support a subsurface investigation for a related project, namely, the Route 101 auxiliary lane project that originally included the replacement of the San Francisquito Creek Bridge. This subsurface investigation was completed in 2009. Leading up to the investigation, current environmental regulatory information on the project area (in addition to the ISA conclusions) was checked repeatedly for project updates, especially when finalizing the work plan for the 2009 site investigation. I apologize for the oversight of not including this updated information, but this does not affect the description of potential impacts as stated in the IS with Proposed ND/EA.

III L. Chapter 1, Purpose and Need, outlines the structural deficiencies of the bridge. The existing bridge structure is beyond repair, therefore, retaining the structure is not a feasible project alternative. In general replacing structures that are beyond their design life is more cost-effective than maintenance. Furthermore, repair of the existing bridge does not address the need to accommodate a 100-year storm event to conform to the San Francisquito Creek Joint Powers Authority (SFCJPA) projects that address the hydraulic capacity deficiency of San Francisquito Creek.

Thank you for your interest and support for this project. We will look forward to working together to build a new bridge that will serve the traveling public for many years to come. If you should have any questions, please feel free to contact me at (510) 286-6216 or Ron Moriguchi, Regional Project Manager, at (510) 286-5073.

Sincerely,



YOLANDA RIVAS, Branch Chief
District 4 Office of Environmental Analysis
California Department of Transportation

c: Ron Moriguchi, Duat Dinh Nguyen, Robert Haus



JERRY BROWN
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



May 20, 2011

Yolanda Rivas
California Department of Transportation, District 4
P.O. Box 23660
Oakland, CA 94623-0660

Subject: Route 101 San Francisquito Creek Bridge Replacement Project
SCH#: 2011042065

Dear Yolanda Rivas:

The State Clearinghouse submitted the above named Negative Declaration to selected state agencies for review. The review period closed on May 19, 2011, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

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

Sincerely,

A handwritten signature in black ink that reads "Scott Morgan".

Scott Morgan
Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044

**Document Details Report
State Clearinghouse Data Base**

SCH# 2011042065
Project Title Route 101 San Francisquito Creek Bridge Replacement Project
Lead Agency Caltrans #4

Type **Neg** Negative Declaration
Description The California Department of Transportation proposes to demolish the San Francisquito Creek Bridge on Route 101, which includes portions of two frontage roads (East Bayshore Road and West Bayshore Road), and replace it with a longer bridge, at the coextensive boundaries of the Cities of East Palo Alto and Palo Alto, and the Counties of San Mateo and Santa Clara.

Lead Agency Contact

Name Yolanda Rivas
Agency California Department of Transportation, District 4
Phone (510) 286-6216 **Fax**
email
Address P.O. Box 23660
City Oakland **State** CA **Zip** 94623-0660

Project Location

County San Mateo, Santa Clara
City East Palo Alto, Palo Alto
Region
Lat / Long
Cross Streets West Bayshore Road, East Bayshore Road, University Avenue
Parcel No.

Township	Range	Section	Base

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use access controlled highway

Project Issues Biological Resources; Flood Plain/Flooding; Water Quality; Wetland/Riparian; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 3; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Regional Water Quality Control Board, Region 2; Department of Toxic Substances Control; Native American Heritage Commission

Date Received 04/20/2011 **Start of Review** 04/20/2011 **End of Review** 05/19/2011

Note: Blanks in data fields result from insufficient information provided by lead agency.

Chapter 5 – List of Preparers

Office of Environmental Analysis

Thomas Rosevear
Yolanda Rivas
Ed Pang

Office of Natural Sciences and Permits

Katie Thoreson
Amy Sparks
Margaret Gabil

Office of Cultural Resources

Maureen Zogg
Elizabeth Greene

Office of Landscape Architecture

Chris Else
Lorena Wong

Office of Environmental Engineering

Glenn Kinoshita
Christopher Wilson

Office of Design Peninsula

Stuart Goodson
Fitsum Worrede
Duat Nguyen
Gersey Modesto

Office of Project Management South

Ron Moriguchi

Office of Water Quality Program

Kamran Nakhjiri

Office of Design and Technical Services (Hydraulics)

Dixon Lau
John Pham
Joseph Peterson

URS Corporation

Casey Stewman
Michael Carbiener
Gary Halsey
Joe Bandel
Kevin Melanephy
Chuck Rambo
David Pecora

Chapter 6 – Distribution List

The Honorable Barbara Boxer
U. S. Senator
1700 Montgomery Street, Suite 240
San Francisco, CA 94111

The Honorable Anna Eshoo,
U. S. House of Representatives, 14th District
698 Emerson Street
Palo Alto, CA 94301

Jose Simitian, State Senate District 11
160 Town & Country Village
Palo Alto, CA 94301

Brent Butler, Planning Division
City of East Palo Alto
1960 Tate Street
East Palo Alto, CA 94303

Anthony Docto, Jr., Public Works Dept.
City of East Palo Alto
1960 Tate Street
East Palo Alto, CA 94303

Rose Jacobs Gibson, San Mateo County
Board of Supervisors, District 4
Hall of Justice
400 County Center
Redwood City, CA 94063

Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

James C. Porter, Department Director
San Mateo County Department of
Public Works
555 County Center, 5th Floor
Redwood City, CA 94063

Office of Planning and Research
State Clearinghouse
P. O. Box 3044
Sacramento, CA 95812

The Honorable Dianne Feinstein
U. S. Senator
1 Post Street, Suite 2450
San Francisco, CA 94104

Ira Ruskin, State Assembly District 21
5050 El Camino Real, Suite 117
Los Altos, CA 94022

Mike Sartor, Interim Director of Public
Works, City of Palo Alto
250 Hamilton Avenue
Palo Alto, CA 94301

Curtis Williams, Director of Planning
and Community Development
City of Palo Alto
250 Hamilton Avenue
Palo Alto, CA 94301

Liz Kniss, Santa Clara County Board of
Supervisors, District 5
270 Grant Avenue, Room 149
Palo Alto, CA 94306

San Francisquito Creek Joint Powers
Authority
1231 Hoover Street
Menlo Park, CA 94025

Steve Heminger, Executive Director
Metropolitan Transportation
Commission
101 8th Street
Oakland, CA 94607

Ezra Rapport, Executive Director
Association of Bay Area Governments
101 8th Street
Oakland, CA 94607

Will Travis, Executive Director
San Francisco Bay Conservation and
Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111

David E. Woods, Mayor
City of East Palo Alto
2415 University Avenue
East Palo Alto, CA 94303

Sid Espinoza, Mayor
City of Palo Alto
250 Hamilton Avenue
Palo Alto, CA 94301

National Marine Fisheries Service
Bay Area Office
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95402

California Transportation Commission
1120 N Street, MS-52
Sacramento, CA 95814

U. S. Army Corps of Engineers
Regulatory Branch
San Francisco District
1455 Market Street
San Francisco, CA 94103

Woodland Creek HOA
c/o CJM Association Services, Inc.
Attn: Charlene Marquez
P. O. Box 190
Pleasanton, CA 94566
Email: WoodlandCreekHOA@gmail.com

Andrew Boone
c/o Silicon Valley Bicycle Commission
1922 The Alameda
San Jose, CA 95126

Appendix A – CEQA Checklist

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

CEQA Environmental Checklist

04-SM-101; 04-SCL-101 0.0; 52.5 235620
 Dist.-Co.-Rte. P./M/P.M. E.A.

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.

	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 type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

US Route 101 San Francisquito Creek Bridge Replacement Project

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

US Route 101 San Francisquito Creek Bridge Replacement Project

	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 type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

VII. GREENHOUSE GAS EMISSIONS: Would the project:

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

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

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

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

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

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

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<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
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

US Route 101 San Francisquito Creek Bridge Replacement Project

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

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. PUBLIC SERVICES:

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

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects 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 – Resources Evaluated Relative to the Requirements of Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that the Secretary of Transportation may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

The Section 4(f) evaluation process for this project is complete and no further evaluations are necessary based on the following information.

The Area of Potential Effects (APE) has been established in consultation with Department staff. For archaeology, the APE was established based on the limits of construction proposed for the project. The historic architecture APE was established based on the physical limits of the project, and by parcel (legal ownership) limits within the project area.

The San Francisquito Creek Bridge (#35-0013) is within the project limits. It is a Category 5 structure in the Department Historic Highway Bridge Inventory and is not eligible for listing on the National Register of Historic Places (NRHP).

There are several public parks, recreational lands, and wildlife and waterfowl refuges within 0.5 miles of the project area. Bell Street Park, Jack Farell Park and University Square are located within the city of East Palo Alto. Bayfront Park, Kelly Park, Flood County Park and Willow Oaks Park are located within the city of Menlo Park. Eleanor Pardee Park, Greer Park and Rinconada Park are located within the city of Palo Alto. Baylands Nature Preserve is located within the cities of East Palo Alto and Palo Alto. None of the preceding parks, recreational lands, and wildlife and waterfowl refuges are impacted by the project and consequently do not need further evaluation under Section 4(f).

Appendix C – Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR
P.O. Box 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711



*Flex your power!
Be energy efficient!*

July 20, 2010

TITLE VI POLICY STATEMENT

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

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

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: charles_wahnon@dot.ca.gov.


CINDY MCKIM
Director

Appendix D – Avoidance and Minimization Summary

	<u>Reference</u>	<u>Responsible Party</u>	<u>Timing</u>
<p>Biology. Worker environmental awareness training will be conducted for all construction crews and contractors. The training will be conducted before the start of work and on the arrival of any new worker. The Department will maintain a record of all the workers that have completed the program. The training will provide a brief review of all special-status species and other sensitive resources that may exist in the pickleweed salt marsh wetland community in the project area. The review will also provide information about the life history, field identification, and habitat requirements of these species and resources, the locations of sensitive biological resources, and their legal status and protection under the Federal Endangered Species Act (FESA). In addition, the training will cover the avoidance and conservation measures, environmental permits, and regulatory compliance requirements associated with the project.</p>	<p>p. 36</p>	<p>Department, contractor</p>	<p>Pre-Const.</p>
<p>Biology. Additional training will be conducted, as needed. The Department will maintain records of all personnel receiving the additional training during the project; and these records will be made available for compliance verification.</p>	<p><u>Reference</u> p. 36</p>	<p><u>Responsible Party</u> Department, contractor</p>	<p><u>Timing</u> Pre-Const.</p>
<p>Biology/Water Quality. All practicable best management practices (BMPs) for erosion and sediment control will be implemented to minimize the potential for effects to water quality in San Francisquito Creek. These BMPs include, but are not limited to: No fill material other than clean, silt-free gravel or river rock will be placed in the channel of San Francisquito Creek; The Department will exercise every reasonable precaution to protect San Francisquito Creek or any jurisdictional waters from</p>	<p><u>Reference</u> p. 36-37; p. 26</p>	<p><u>Responsible Party</u> Department, contractor</p>	<p><u>Timing</u> Design, const.</p>

<p>pollution from fuels, oils, bitumens, calcium chloride, and other materials that are harmful to aquatic life; A plan for the emergency cleanup of any spills of fuel or other material will be available on-site at all times; Equipment will be refueled and serviced at designated construction staging areas; All construction material and fill will be stored and contained in a designated area that is 50 feet away from San Francisquito Creek to prevent transport of materials into the stream; A silt fence or sediment barrier will be installed to collect and discharge, and adequate materials for spill cleanup will be maintained on-site; Construction vehicles and equipment will be maintained to prevent contamination of soil or water (from external grease and oil or from leaking hydraulic fluid, fuel, oil, or grease); Good housekeeping practices and use of safer alternative products (i.e., biodegradable hydraulic fluids) will be employed where feasible; Employees will be trained to prevent or reduce the discharge of pollutants from construction activities to waters and to take appropriate measures should a spill occur; All trash will be placed in secure containers with secure lids and removed from the site daily; Trash dumping, firearms, open fires, hunting, and pets will be prohibited from the project area; In the event of a spill or discharge of harmful material into potentially suitable habitat for special-status species, the spill or discharge will be immediately contained, cleaned up, and/or removed. All work will be stopped immediately and the National Oceanic Atmospheric and Administration's National Marine Fisheries Service (NOAA Fisheries) and/or U.S. Fish & Wildlife Service (USFWS) will be notified.</p>			
<p>Biology. The pickleweed area and adjacent upland grassland on the north bank will be delineated and conspicuously fenced off to prevent</p>	<p><u>Reference</u> p. 37</p>	<p><u>Responsible Party</u> Department, contractor</p>	<p><u>Timing</u> Design, const.</p>

<p>impacts to these resources. This sensitive area will be designated as an environmentally sensitive area (ESA) and exclusion fencing installed 200 feet upstream of the area will prevent any access from crews or equipment during construction.</p>			
<p>Biology. As needed during phases of construction and on project completion, erosion control mulch (e.g., certified noxious weed-free straw, StrawNet [straw pellets that are not subject to wind dispersion], or Hydrostraw) with a native erosion control grass seed mix that complements the native vegetation of adjacent habitats will be applied to all disturbed areas. All erosion control materials will be composed of natural materials that will biodegrade.</p>	<p><u>Reference</u> p. 37</p>	<p><u>Responsible Party</u> Department, contractor</p>	<p><u>Timing</u> Design, const.</p>
<p>Biology. All temporary disturbance areas will be revegetated with appropriate combinations of species native to the community on completion of construction.</p>	<p><u>Reference</u> p. 37</p>	<p><u>Responsible Party</u> Contractor</p>	<p><u>Timing</u> Const.</p>
<p>Biology. All applicable State and federal agency permit conditions and reporting conditions will be implemented.</p>	<p><u>Reference</u> p. 37</p>	<p><u>Responsible Party</u> Department, contractor</p>	<p><u>Timing</u> Const.</p>
<p>Biology. Construction will be timed to minimize potential impacts to sensitive biological resources.</p>	<p><u>Reference</u> p. 37</p>	<p><u>Responsible Party</u> Department, contractor</p>	<p><u>Timing</u> Const.</p>
<p>Water Quality. The project will comply with the Department’s Statewide General Construction Permit for storm water discharges from construction sites where, for example, clearing, grading, stockpiling, and/or excavation result in soil disturbances of at least one acre or more. To comply with the conditions of the Department National Pollution Discharge Elimination System (NPDES) Permit and address the temporary water quality effects resulting from construction activities in this project, Standard Special Provision (SSP) 07-345 will be implemented during the design phase. This SSP will address the preparation of the Storm Water Pollution and</p>	<p><u>Reference</u> p. 25</p>	<p><u>Responsible Party</u> Department, contractor</p>	<p><u>Timing</u> Design, const.</p>

<p>Prevention Program (SWPPP) document and the implementation of SWPPP during construction.</p>			
<p>Water Quality. Appropriate measures will be implemented to comply with the conditions of NPDES permit and the Construction General Permit. The Department's District 4 Storm Water Coordination Branch will assess potential water quality impacts of the project alternatives through geometric design and investigate the potential incorporation of permanent treatment Best Management Practices (BMPs) into the project to reduce the discharge of pollutants during and after construction to the Maximum Extent Practicable. These BMPs fall into four categories: Temporary Construction Site BMPs that are applied during construction activities to control sedimentation, erosion, and the discharge of other pollutants, Permanent Design Pollution BMPs to improve water quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces), Permanent Treatment BMPs to receive storm water run-off from traveled ways and to treat prior to discharging beyond the highway right of way, and Maintenance BMPs. The Department's approved Permanent Treatment BMPs include: biofiltration systems (biofiltration strips and swales), infiltration basins, detention basins, traction, sand traps, dry weather flow diversions, media filters, gross solids removal devices, multi-chamber treatment trains and wet basins.</p>	<p><u>Reference</u> p. 25</p>	<p><u>Responsible Party</u> Department</p>	<p><u>Timing</u> Design</p>
<p>Wetlands and other Waters. On completion of the project, all areas that have been temporarily impacted by the project will be restored to their approximate original conditions. Measures will be employed to prevent any construction material or debris from entering surface waters or their channels. Best Management Practices (BMPs) for erosion control will be implemented and in place before,</p>	<p><u>Reference</u> p. 42</p>	<p><u>Responsible Party</u> Contractor, Department</p>	<p><u>Timing</u> Const.</p>

<p>during, and after construction to ensure that no silt or sediment enters surface waters.</p>			
<p>Wetlands and Other Waters. The Department's Standard Specifications require the contractor to submit a Water Pollution Control Plan. This plan must meet the standards and objectives set forth in Section 7-1.01G of the Department's Standard Specifications to minimize water pollution impacts. The Water Pollution Control Plan must also be in compliance with the goals and restrictions identified in the San Francisco Bay Regional Water Quality Control Board (RWQCB)'s Basin Plan. If any additional measures are included in the 401 Certification, 1602 Agreement, or 404 Permit, the contractor will also comply with these standards and objectives, referred to as BMPs. These BMPs include but are not limited to the following:</p> <ul style="list-style-type: none"> - Where working areas encroach on live or dry streams, lakes, or wetlands, RWQCB-approved physical barriers adequate to prevent the flow or discharge of sediment into these systems shall be constructed and maintained between working areas and streams, lakes, and wetlands. Discharge will be contained through the use RWQCB-approved measures that will keep sediment from entering jurisdictional waters beyond the project limits. - Oily or greasy substances originating from the contractor's operations shall not be allowed to enter or be placed where they will later enter a live or dry stream, pond, or wetland. - Asphalt concrete shall not be allowed to enter a live or dry stream, pond, or wetland. - All off-road construction equipment is to be cleaned of potential noxious- 	<p><u>Reference</u></p> <p>p. 42-43</p>	<p><u>Responsible Party</u></p> <p>Department, RWQCB, USACE</p>	<p><u>Timing</u></p> <p>Design, const.</p>

<p>weed sources (e.g., mud, vegetation) before entry into the project area and after entering a potentially infested area before being moved to another area to help ensure that noxious weeds from outside the project area are not introduced into the project area. The contractor shall employ whatever cleaning methods (typically, with the use of a high-pressure water hose) are necessary to ensure that equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not identify such material. Disassembly of equipment components or specialized inspection tools is not required. Equipment washing stations shall be placed in areas that afford easy containment and monitoring (preferably outside of the project area), and that do not drain into the forest or sensitive (e.g., riparian, wetland) areas.</p> <p>- To further minimize the risk of introducing non-native species into the area, only native plant species appropriate for the project area will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and weed-free straw shall be required where erosion control straw is to be used. In addition, any hydro-seed mulch used for revegetation activities must be weed-free.</p> <p>- Additional direct and indirect impacts to sensitive biological resources, including wetlands and jurisdictional waters, throughout the project area will be avoided or minimized by designating these features outside of the construction impact area as environmentally sensitive areas (ESAs) on project plans and in project specifications. ESA information will be shown on contract plans and discussed in the special provisions. ESA provisions</p>			
---	--	--	--

<p>may include, but are not limited to, the use of temporary orange fencing to delineate the proposed limits of work in areas adjacent to sensitive resources or to delineate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be restricted (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions shall be implemented as a first order of work and shall remain in place until all construction activities are complete and then be removed completely. Compensation for potential impacts to jurisdictional waters of the United States includes a combination of the following measures:</p> <ul style="list-style-type: none"> - Restore wetlands off-site at the Department's Foster City Wetland Mitigation Site, an approximately 7-acre site adjacent to San Francisco Bay directly south of the San Mateo County Golf Course and northwest of the intersection of 3rd Avenue and Mariners Island Boulevard in Foster City, San Mateo County. - Purchase of wetland creation credits from a local mitigation bank approved by the United States Army Corps of Engineers (USACE). - Purchase of wetland preservation or enhancement credits from a USACE-approved mitigation bank. - On-site restoration or enhancement of wetlands. - On-site creation of wetlands. The Department will propose off-site compensation for all permanent effects to wetlands at a possible 2:1 ratio, while temporary effects may be compensated on-site at a possible ratio of 1:1. 			
--	--	--	--

<p>Coast live oak. If avoidance of the coast live oak at 1941 Edgewood Drive, Palo Alto, is not possible, then the Department will replace the tree at a 5:1 ratio, which has been agreed upon with CDFG consultation. Replacement planting would be located at the Pacheco Creek Mitigation Area, a 55.4-acre parcel in Santa Clara County.</p>	<p><u>Reference</u> p. 49</p>	<p><u>Responsible Party</u> Department, CDFG</p>	<p><u>Timing</u> Pre-const., const.</p>
<p>Western pond turtle. Prior to construction work within aquatic habitats, a qualified biologist will conduct a visual survey of the work area. If a western pond turtle is observed, the biologist will relocate the turtle upstream to a safe off-site location with appropriate habitat.</p>	<p><u>Reference</u> p. 51</p>	<p><u>Responsible Party</u> Department</p>	<p><u>Timing</u> Pre-const., const.</p>
<p>California yellow warbler, San Francisco common yellowthroat, loggerhead strike, Alameda song sparrow, White-tailed kite. Pre-construction surveys for nesting birds will be conducted if work will occur during the nesting season (February 15 through August 31). These surveys will include the identification of any California yellow warbler nests. If nests are identified, the Department will consult with the CDFG to determine an appropriate approach to the occupied nest that may include establishing a buffer around the nest where work will not occur while the nest is occupied.</p>	<p><u>Reference</u> p. 51, 52, 53, 64</p>	<p><u>Responsible Party</u> Department, CDFG</p>	<p><u>Timing</u> Pre-const., const.</p>
<p>Southern green sturgeon, California coast steelhead. A pre-construction survey will be conducted by a NOAA pre-approved biologist immediately prior to project disturbance activities for the presence of special-status species. These surveys should be conducted immediately prior to disturbance activities such as the installation and removal of diversion facilities. Prior to all dewatering activities a USFWS pre-approved biologist will survey the water using appropriate survey techniques to capture and relocate all vertebrate species. If a federally protected species is observed, it will</p>	<p><u>Reference</u> p. 60-61, 63-64</p>	<p><u>Responsible Party</u> Department, USFWS</p>	<p><u>Timing</u> Pre-const., const.</p>

<p>be relocated by the USFWS pre-approved biologist, and work will continue once the biologist approves the conditions. Prior to any in-stream work within the bed and banks of San Francisquito Creek that requires the construction of cofferdams and dewatering of the creek bed, construction crews must review the stream relocation plan. The procedures of the stream relocation plan shall be followed exactly as worded in the plan including ensuring that a qualified fisheries biologist is present during the closing and dewatering of all cofferdams, ensuring that all pump intakes are screened according to NOAA criteria, and having qualified fisheries biologists collect, handle and relocate fish in dewatered areas. Diversion and routing of the stream channel to a temporary diversion channel to allow construction work within the existing channel shall be supervised by a qualified fisheries biologist. The diversion and routing shall not disrupt the connectivity of the upstream reaches with the lower reaches of the creek. The existing channel shall remain untouched until the temporary diversions are constructed and the erosion control measures are in place. Diversion channels shall be opened from the downstream end first and only clean washed material shall be used to close existing channels to divert water to temporary diversion channels. The temporary diversion channel shall be designed to accommodate the flow of expected storm events and tidal flows and with gradient controls to ensure that diversion channel slopes correspond to the existing channel gradients.</p>			
<p>Invasive Species. Although it is Department policy to replace or provide compensation for trees that are removed for construction, trees of heaven are a non-native, invasive species and will not be replaced unless determined to provide habitat.</p>	<p><u>Reference</u> p. 67</p>	<p><u>Responsible Party</u> Department, CDFG</p>	<p><u>Timing</u> Design</p>

<p>If so, they will be replaced with native species. The exact location and type of compensation for effects to trees of heaven are to be determined with consultation with the CDFG. Measures will be implemented to reduce the spread of invasive/non-native plant species, including use of native, non-invasive species for erosion control.</p>			
<p>Air Quality. The Special Provisions and Standard Specifications will include requirements to minimize or eliminate dust during construction through the application of water or dust palliatives.</p>	<p><u>Reference</u> p. 68</p>	<p><u>Responsible Party</u> Department</p>	<p><u>Timing</u> Design, const.</p>
<p>Noise. While construction noise could at times reach levels higher than the existing traffic noise, these effects would be temporary and can be reasonably minimized by implementing provisions in Section 1.011, "Sound Control Requirements: of the Department Standard Specifications and the following measures that are specifically mentioned on Page 13 of the Department-prepared <i>Traffic Noise Study Report</i> for the Route 101 Auxiliary Lanes Project in this same vicinity:</p> <ol style="list-style-type: none"> 1. Avoid construction activities during nighttimes and weekends, when possible. 2. Consider constructing noise barriers as first items of work, where feasible. 3. Use of stockpiled dirt as earthen berms, where feasible. 4. Erect temporary noise barriers, if necessary. 5. Keep noisy equipment and haul roads away from sensitive receptors, where feasible. 6. Keep the community informed of upcoming especially noisy 	<p><u>Reference</u> p. 69</p>	<p><u>Responsible Party</u> Department, contractor</p>	<p><u>Timing</u> Design, pre-const., const.</p>

<p>construction activities and (possibly) establish a field office to handle noise complaints.</p> <p>The project will be subject to local noise ordinances. While the most intensive forms of construction noted in the letter will take place strictly during daylight hours (i.e., pile driving), it is unlikely that all work can be confined to weekday, daylight hours since freeway traffic lanes can only be closed at night.</p>			
<p>Hazardous Waste. Any aerially deposited lead (ADL) material encountered will be managed in such a way as to prevent it from coming into contact with people or the environment. The Department will look for a location in the highway corridor where the ADL material can be used as fill material. Alternatively, the material can be sent to a facility authorized to manage lead contamination. Specifications require the contractor to have a water truck on-site at all times for dust control during soil-disturbing activities and provide the general order to prevent visible dust at all times. The contractor must operate under a lead compliance plan prepared and signed by a certified industrial hygienist that stipulates sufficient on-site air monitoring to protect workers and construction site perimeter air monitoring to protect the community. If the lead measurements are found at anytime to be excessive, the specifications require the contractor to promptly stop work and propose modifications that will bring the operation into compliance with the air quality requirements.</p>	<p><u>Reference</u></p> <p>p. 31, 68-69</p>	<p><u>Responsible Party</u></p> <p>Department, contractor</p>	<p><u>Timing</u></p> <p>Const.</p>

This page is left intentionally blank.

Appendix E – List of Technical Studies

Natural Environment Study, December 2010

Scenic Resource Evaluation, December 2010

Historic Property Survey Report, November 2010

Final Hydraulic Report, December 2010

Location Hydraulic Study, December 2007

Preliminary Geotechnical Report, July 2007

Initial Site Assessment, October 2002

Corridor Study Report, September 2002

Appendix F – U. S. Fish & Wildlife Service Species List

Sacramento Fish & Wildlife Office Species List

http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm

**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: 110712052735

Database Last Updated: April 29, 2010

Quad Lists

Listed Species

Invertebrates

- Euphydryas editha bayensis*
bay checkerspot butterfly (T)
Critical habitat, bay checkerspot butterfly (X)
- Lepidurus packardii*
vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris*
green sturgeon (T) (NMFS)
- Hypomesus transpacificus*
delta smelt (T)
- Oncorhynchus kisutch*
coho salmon - central CA coast (E) (NMFS)
- Oncorhynchus mykiss*
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (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)

Reptiles

- Thamnophis sirtalis tetrataenia*
San Francisco garter snake (E)

Birds

- Brachyramphus marmoratus*
marbled murrelet (T)
- Charadrius alexandrinus nivosus*
western snowy plover (T)
- Pelecanus occidentalis californicus*
California brown pelican (E)
- Rallus longirostris obsoletus*
California clapper rail (E)
- Sternula antillarum* (=Sterna, =albifrons) browni

California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Suaeda californica
California sea blite (E)

Quads Containing Listed, Proposed or Candidate Species:

MOUNTAIN VIEW (428A)

PALO ALTO (428B)

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 7½ 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) 414-6520.

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 October 10, 2011.

**Appendix G – National Oceanic and Atmospheric Administration’s
National Marine Fisheries Service Biological Opinion**

PLEASE SEE NEXT PAGE



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

March 29, 2011

In response refer to:
2010/06575

Jeffrey Jensen, Chief
Office of Biological Sciences and Permits
California Department of Transportation, District 4
101 Grand Avenue
Oakland, California, 94612

Dear Mr. Jensen,

Thank you for your letter of November 18, 2010, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). Effective July 1, 2007, the Federal Highway Administration (FHWA) assigned, and the California Department of Transportation (Caltrans) has assumed all responsibilities for consultation and approval on most highway projects in California. Therefore, Caltrans is now considered the federal action agency for ESA consultations with NMFS for federally funded projects. This letter transmits NMFS biological opinion (Enclosure 1) for Caltrans proposed U.S. Highway 101 Bridge replacement project on San Francisquito Creek located at the border between San Mateo and Santa Clara counties, California. The enclosed biological opinion describes NMFS' analysis of the effect of implementing the proposed project on the threatened Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS) and the threatened southern DPS of North American green sturgeon (*Acipenser medirostris*) and their designated critical habitats.

Based on the best available information, the enclosed biological opinion concludes the U.S. Highway 101 Bridge replacement over San Francisquito Creek may affect but is not likely to jeopardize the continued existence of CCC steelhead or the southern DPS of North American green sturgeon, and is not likely to result in the destruction or adverse modification of critical habitat for these species. An incidental take statement is included with the enclosed biological opinion. The incidental take statement includes non-discretionary terms and conditions that are expected to minimize the impacts of incidental take of listed salmonids and green sturgeon as a result of the bridge replacement activities. In addition, conservation recommendations have been included in the enclosed biological opinion.

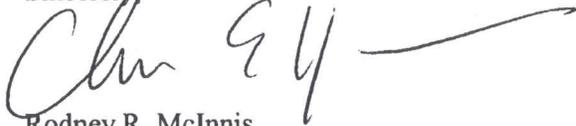
This letter also transmits NMFS' Essential Fish Habitat (EFH) conclusions pursuant to section 305(b) of the Magnuson-Stevens Fisheries Conservation and Management Act (MSFCMA) (Enclosure 2). San Francisquito Creek at the U.S. Highway 101 Bridge crossing includes areas identified as EFH for various life stages of species managed under the Pacific Groundfish,



Coastal Pelagic, and Pacific Coast Salmon Fishery Management Plans (FMPs). Based on our review, NMFS concludes that the U.S. Highway 101 Bridge replacement project has the potential to adversely affect EFH. However, the proposed action contains adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH. With the terms and conditions set forth in the biological opinion, NMFS has no additional EFH Conservation Recommendations to provide.

If you have any questions regarding the enclosed biological opinion, please contact Mr. Joel Casagrande at (707) 575-6016, or joel.casagrande@noaa.gov.

Sincerely

FOR 

Rodney R. McInnis
Regional Administrator

Enclosures

cc: Chris Yates, NMFS, Long Beach
Margaret Gabil, Caltrans Office of Biological Sciences and Permits, Oakland
Suzanne DeLeon, CDFG, Yountville
Copy to file 151422-SWR-2010-SR00494

BIOLOGICAL OPINION

ACTION AGENCY: California Department of Transportation (Caltrans)

ACTION: United States (U.S.) Highway 101 San Francisquito Creek Bridge Replacement Project

CONSULTATION CONDUCTED BY: National Marine Fisheries Service, Southwest Region

TRACKING NUMBER: 2010/05741

DATE ISSUED: March 29, 2011

I. CONSULTATION HISTORY

Caltrans will be acting as the lead agency as per the agreement with the Federal Highway Administration (FHWA) in accordance with Section 6005 (a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (PL-109-59) to assume the FHWA Secretary's responsibilities under the National Environment Policy Act of 1969 (42 USC § 4351, *et seq.*) and all or part of the FHWA Secretary's responsibilities for environmental review, consultation, or other action required under any environmental law with respect to one or more highway projects within the state.

On November 26, 2010, NMFS received Caltrans' November 18, 2010, letter requesting initiation of formal consultation pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1531 *et seq.*), and the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fisheries Conservation and Management Act, as amended, for the replacement of the U.S. Highway 101 Bridge over San Francisquito Creek. Caltrans determined that the project, as proposed, is likely to adversely affect listed Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS) and the southern DPS of North American green sturgeon (*Acipenser medirostris*), and may affect but will not adversely affect designated critical habitat for CCC steelhead and southern DPS green sturgeon.

On December 2, 2010, staff from NMFS, Caltrans, and URS Corporation (Caltrans contractor) conducted a site visit at the project location to discuss the general scope of the project, project timelines, and potential dewatering strategies. Caltrans had originally proposed an open diversion channel to bypass waters (tidal and freshwater) through the project site. NMFS suggested that a closed pipe diversion would not only ensure better protection to aquatic species, but would also be more efficient thereby limiting the time required to complete the project. Caltrans agreed to use a closed pipe for their diversion,

and on January 20, 2011, they provided NMFS with a general design for their closed water diversion. After receiving the updated water diversion plans on January 20, 2011, NMFS determined it had sufficient information to initiate consultation.

On February 11, 2011, Caltrans submitted updated information regarding the installation of sheet piles for bank stability. Caltrans had originally proposed to install sheet piles only at the upstream side of the bridge and for its cofferdams. However, Caltrans subsequently determined that the project will require the installation of additional sheet piles downstream of the bridge for temporary bank stability.

II. DESCRIPTION OF THE PROPOSED ACTION

Caltrans proposes to replace the U.S. Highway 101 Bridge over San Francisquito Creek on the border between San Mateo and Santa Clara Counties, at post mark (PM) SCL PM 101 52.5/SM 101 PM 0.0. The bridge consists of the U.S. Highway 101 bridge deck and the bridge decks for two frontage roads, East Bayshore Road and West Bayshore Road. These bridges were built over 50 years ago, have deteriorated, and need to be replaced. Much of the replacement work will be done by heavy construction equipment (excavators, dump trucks, etc.). The project is scheduled to last two to three years, and instream work will only occur between June 1 and October 15, unless a work window extension is granted by NMFS. Work outside of the live stream channel on the adjacent slopes, including bridge deck construction, vegetation clearing, and staging, will be conducted year round. The project is expected to start as early as 2011 and would be completed no later than 2014. There is one activity that is interrelated to this proposed action: the Route 101 Auxiliary Lanes-Embarcadero Road to Marsh Road Project (Auxiliary Lanes Project).

A. Description of Project Activities

The existing U.S. Highway 101 Bridge over San Francisquito Creek was originally built in the 1930's. In 1957, the freeway/bridge structure was widened and the East Bayshore and West Bayshore frontage roads were added. The East Bayshore and West Bayshore road bridges cross over the creek on the same pier walls (*i.e.*, bridge supports) as the U.S Highway 101 Bridge. The current U.S. Highway 101 Bridge is 232 feet long and 80 feet wide and consists of an abutment on each end with two pier walls that divide the channel beneath San Francisquito Creek into three flow "cells". The current East Bayshore Road Bridge is 80 feet long and 38 feet wide, while the West Bayshore Road Bridge is 80 feet long and approximately 35 feet wide. The creek channel beneath the bridges and downstream to San Francisco Bay has a long history of flooding due to the limited channel capacity. The portion of the bridge built in the 1930's is deteriorating and the remainder of the bridge is over 50 years old. Therefore Caltrans determined that the entire bridge should be replaced.

The bridge accommodates heavy traffic originating from the U.S. Highway 101 freeway on the west side of San Francisco Bay and the two frontage roads. The replacement of the bridge would coincide with the addition of auxiliary lanes, a component of a separate Route 101 Auxiliary Lanes-Embarcadero Road to Marsh Road Project (Auxiliary Lanes Project). The Auxiliary Lanes Project would involve widening U.S. Highway 101 between University Avenue and Embarcadero Road to accommodate the new auxiliary lanes between the on-ramps and off-ramps in both directions of the freeway. This project is proposed to be constructed concurrently with the proposed bridge replacements.

The proposed U.S. Highway 101 Bridge replacement project involves demolishing the existing U.S. Highway 101 Bridge over San Francisquito Creek, including the bridge deck and two existing pier walls, and replacing it with a new bridge that is 14 feet wider and 44 feet longer (94 feet wide and 276 feet long). The bridge will be constructed to satisfy the lane requirements of the 101 Auxiliary Lanes Project and to accommodate greater flow capacity in the creek channel. The added length to the bridge will require the addition of a new pier wall. The freeway profile on each side of the bridge will be modified to conform to the new bridge deck, and the soundwall location on the bridge (west side) will be shifted to conform to the wider roadway. The West Bayshore Road and East Bayshore Road bridge decks will also be demolished and replaced in order to provide increased flood flow conveyance. These two bridge decks will each be 44 feet wide and 126 feet long and will continue to utilize the same bridge supports as the U.S. Highway 101 Bridge.

The new U.S. Highway 101 Bridge and the creek channel beneath the bridge will be widened in order to coordinate with a separate project proposed by the San Francisquito Creek Joint Powers Authority (SFCJPA). The SFCJPA is a government agency represented by the cities of East Palo Alto, Palo Alto, and Menlo Park, as well as the Santa Clara Valley Water District (SCVWD) and the San Mateo County Flood Control District. They are proposing a major flood control project for the lower reaches of San Francisquito Creek. The new U.S. Highway 101 Bridge and the creek channel beneath the bridge will be widened to facilitate the proposed new channel widths and will allow for an increase in creek flow based on the 100-year flood projections. The SFCJPA flood control project is currently planned to begin within the next 5 years and will require further environmental review. As of March 2011, the SFCJPA was in the process of developing their environmental documents for this project.

1. Dewatering the Project Area

The action area is located in a reach of San Francisquito Creek that is influenced by tides and therefore, both a stream flow and tidal diversion will be necessary to dewater the project area. Waters will be diverted through the project area using cofferdams and a large corrugated pipe. During low tide, a cofferdam consisting of sheet piles will be installed at the downstream end of the work area to create a temporary barrier to tidal flow. During this time, the downstream portion of the diversion pipe will be installed and will remain sealed to prevent tidal waters from entering the project area. At the upstream

end, a similar cofferdam will be installed to create a check dam for outgoing stream flow. The upstream portion of the diversion pipe will be installed and will remain sealed to keep stream flows from entering the project work area. The cofferdams will be approximately six feet (ft) tall. Once the cofferdams are constructed, the remaining portions of the diversion pipe will be installed. After the diversion pipe is fully installed, it will be opened on both ends to allow tidal and stream flow exchange through the pipe. Caltrans anticipates using a 72-inch corrugated steel pipe, which will lie on the stream bed and would be staked into place using joint restrainer assemblies. Caltrans estimates that the cofferdams will take approximately one day each to install, while the installation of the diversion pipe will require approximately three days to install. The length of dewatered channel will be approximately 450-500 ft. The diversion will begin as early as June 1 and will extend to October 15 of each year unless a time extension is granted by NMFS. At the end of each dry season, the water diversion will be completely removed. If a pump is necessary to assist with dewatering of the action area, the pump(s) will be double-screened to prevent fish entrainment. The mesh on the screens will meet NMFS and California Department of Fish and Game (CDFG) guidelines for fish screening criteria (3/32 inches). Any water pumped from the creek prior to and/or during construction of the bridge will be stored in appropriate tanks pending water quality analysis. Caltrans will submit a stream water diversion plan for review no less than 30 days prior to beginning these activities.

2. Fish Collection and Relocation

Because the project will require water diversion, fish within the project area will be collected and relocated in order to minimize their risk of being harmed or killed. The fish collection and relocation activities will be conducted by a NMFS/CDFG-approved biologist. Methods used to capture and relocate fish in the project area may include dip net and seine. Due to the high conductivity of brackish waters, electrofishing will not be used. Caltrans will submit a fish relocation plan for review no less than 30 days prior to beginning these activities.

3. Bridge Demolition and Construction

The existing U.S. Highway 101 Bridge including the pier walls and the East Bayshore Road and West Bayshore Road decks will be demolished and removed using a mounted hydraulic jack hammer, an excavator, and dump trucks. Netting or suspended debris racks will be utilized to minimize the amount of debris falling into the creek channel and onto the water diversion pipe.

Once the channel is dewatered, timber pads will be laid down in the channel to support construction equipment. Approximately 200 piles (open pile class 200 alt. W) will be permanently installed. The piles will be approximately 80-90 feet long and 16 inches in diameter. The piles will be installed by pre-drilling through the sand layer of approximately 40 feet and then driven deeper into the mud layer using a pile driver. Approximately 6-8 piles per day will be installed. Pile driving is estimated to take

approximately 30 work days to complete and will occur approximately eight hours per day during the dry season. Falsework will be constructed and the pile cap, pier walls, and bridge deck will be poured using a concrete pump truck and cement mixer.

Sheet piles will be installed with a pile driver at five locations including each of the four corners of the new bridge. These will serve as temporary wing-walls and will provide stability to the exposed creek banks. The sections where sheet piles will be installed will range in length from 24 to 32 feet and will be between 15 and 17 feet tall. Some of the existing bridge foundation and sacked concrete retaining walls will be removed prior to sheet pile installation. The addition of a third pier wall will create a fourth flow cell beneath the bridge between the new pier and the bridge abutment. The fourth cell will need to remain sealed off until the channel upstream and downstream is widened to match the wider channel dimensions beneath the bridge. This will be done with sheet piles that will be installed to serve as temporary wing walls between the new pier and the creek bank. In order to maintain structural integrity (*i.e.*, equalize pressure from water against the new pier), temporary screened openings will be made in the new pier wall. The openings will be screened to keep fish and other organisms from accessing this new cell. A rubber gasket or other device will be used to waterproof all cell, abutment, and retaining wall connections that will be exposed to creek flow. The sheet piles will be left in place until the SFCJPA flood wall project is constructed. Once the SFCJPA flood protection project is completed, all of the sheet piles will be removed and the fourth flow cell will become fully accessible. All temporary materials in the channel, including the falsework, cofferdams, and the creek diversion pipe will be removed at the end of each dry season and the end of the project.

4. Proposed Best Management Practices and Conservation Measures

Caltrans will implement best management practices (BMPs) during project construction to avoid and/or minimize potential impacts to special-status species and their designated critical habitat. Soil stabilization measures, sediment control, waste management, and materials pollution control BMPs will be implemented to prevent sediment and other pollutants from entering the channel during project construction. All practicable erosion and sediment control BMPs will be implemented to minimize the potential for impacts to water quality in San Francisquito Creek.

In addition to the BMPs described above, Caltrans has proposed general conservation measures to protect special-status species, sensitive habitats and waters of the United States. These measures include worker environmental awareness training prior to start-of-work, fencing off sensitive habitats, and the use of natural erosion control methods (straw pellets, native grass seed mix, or mulch) on all disturbed areas. Caltrans (2010) also includes species-specific conservation measures for steelhead and green sturgeon, which include conducting preconstruction surveys for ESA-listed species by a NMFS pre-approved biologist.

B. Description of the Action Area

The action area includes “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR § 402.02). For this consultation the action area includes the channel banks and bottom from approximately 200 feet upstream of the existing U.S. Highway 101 Bridge to approximately 1,000 feet downstream of the new bridge. NMFS assumes suspended sediments (*i.e.*, turbidity) generated during the installation and removal of the water diversion facilities would settle or become diluted in the tidal channel at a distance of approximately 1,000 feet downstream. Caltrans has determined that the total project footprint is 2.34 acres (101,930 square feet), which includes upland areas, jurisdictional wetlands, and other waters of the U.S. The length of the dewatered channel will extend approximately 450-500 feet. The channel within the action area has a trapezoidal form and is located in a heavily urbanized area along the U.S. Highway 101 corridor. Some sections of the creek banks have been armored with concrete.

III. ANALYTICAL FRAMEWORK

A. Jeopardy Analysis

In accordance with policy and regulation, the jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which evaluates the range-wide conditions of the CCC steelhead DPS and the southern DPS green sturgeon, the factors responsible for that condition, and the species’ likelihood of both survival and recovery; (2) the Environmental Baseline, which evaluates the condition of these listed species in the action area, the factors responsible for that condition, and the relationship of the action area to the likelihood of both survival and recovery of these listed species; (3) the Effects of the Action, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on these species in the action area; and (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on these species.

The jeopardy determination is made by adding the effects of the proposed Federal action and any Cumulative Effects to the Environmental Baseline and then determining if the resulting changes in species status in the action area are likely to cause an appreciable reduction in the likelihood of both the survival and recovery of these listed species in the wild.

The jeopardy analysis in this biological opinion places an emphasis on the range-wide likelihood of both survival and recovery of these listed species and the role of the action area in the survival and recovery of these listed species. The significance of the effects of the proposed Federal action is considered in this context, taken together with cumulative effects, for purposes of making the jeopardy determination. We use a hierarchical approach that focuses first on whether or not the effects on steelhead and green sturgeon

in the action area will impact their respective populations. If the populations will be impacted, we assess whether this impact is likely to affect the ability of the populations to support the survival and recovery of the DPS.

B. Adverse Modification Determination

This biological opinion does not rely on the regulatory definition of destruction or adverse modification of critical habitat at 50 CFR 402.02¹. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

The adverse modification analysis in this biological opinion relies on four components: (1) the Status of Critical Habitat, which evaluates the range-wide condition of critical habitat for the CCC steelhead DPS and the southern DPS of green sturgeon in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended conservation value of the critical habitat overall; (2) the Environmental Baseline, which evaluates the condition of critical habitat in the action area, the factors responsible for that condition, and the conservation value of the critical habitat in the action area; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs in the action area and how that will influence the conservation value of affected critical habitat units; and (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the conservation value of affected critical habitat units.

For purposes of the adverse modification determination, we add the effects of the proposed Federal action on CCC steelhead and southern DPS green sturgeon critical habitats in the action area, and any Cumulative Effects, to the Environmental Baseline and then determine if the resulting changes to the conservation value of critical habitat in the action area are likely to cause an appreciable reduction in the conservation value of critical habitat range-wide. Similar to the hierarchical approach used above, if the proposed action will negatively affect PCEs of critical habitat in the action area we then assess whether the conservation value of the action area will be reduced. If the action area is likely to have its critical habitat value reduced, we then assess whether or not this reduction will impact the value of the DPS's critical habitat designation as a whole.

C. Use of Best Available Scientific and Commercial Information

To conduct the assessment, NMFS examined an extensive amount of information from a variety of sources. Detailed background information on the biology and status of the listed species and critical habitat has been published in a number of documents including peer reviewed scientific journals, primary reference materials, and governmental and non-governmental reports. Additional information regarding the effects of the project's

¹ This regulatory definition has been invalidated by Federal Courts.

actions on the listed species in question, their anticipated response to these actions, and the environmental consequences of the actions as a whole was formulated from the aforementioned resources, the biological assessment for this project, and project meeting notes if applicable. For information that has been taken directly from published, citable documents, those citations have been referenced in the text and listed at the end of this document.

IV. STATUS OF THE SPECIES/CRITICAL HABITAT

This biological opinion analyzes the effects of the proposed action on the steelhead and green sturgeon DPS's listed below:

- CCC steelhead DPS, listed as threatened under the ESA (71 FR 834), January 5, 2006
- Southern DPS of North American green sturgeon, listed as threatened under the ESA (71 FR 17757), April 7, 2006

The action area is within the designated critical habitat listed below:

- CCC steelhead critical habitat (70 FR 52488), September 2, 2005.
- Southern DPS of North American green sturgeon critical habitat (74 FR 52300), October 9, 2009.

A. Species Description, Life History, and Status

In this opinion, NMFS assesses four population viability parameters to help us understand the status of CCC steelhead and southern DPS green sturgeon and their populations' ability to survive and recover. These population viability parameters are: abundance, population growth rate, spatial structure, and diversity (McElhany *et al.* 2000). While there is insufficient information to evaluate these population viability parameters in a thorough quantitative sense, NMFS has used existing information to determine the general condition of each population and factors responsible for the current status of each DPS or ESU.

We use these population viability parameters as surrogates for numbers, reproduction, and distribution, the criteria found within the regulatory definition of jeopardy (50 CFR 402.20). For example, the first three parameters are used as surrogates for numbers, reproduction, and distribution. We relate the fourth parameter, diversity, to all three regulatory criteria. Numbers, reproduction, and distribution are all affected when genetic or life history variability is lost or constrained resulting in reduced population resilience to environmental variation at local or landscape-level scales.

1. Steelhead

a. General Life History

Steelhead are anadromous forms of *O. mykiss*, spending some time in both freshwater and saltwater. Steelhead young usually rear in freshwater for one to three years before migrating to the ocean as smolts, but rearing periods of up to seven years have been reported. Migration to the ocean usually occurs in the spring. Steelhead may remain in the ocean for one to five years (two to three years is most common) before returning to their natal streams to spawn (Busby *et al.* 1996). The distribution of steelhead in the ocean is not well known. Coded wire tag recoveries indicate that most steelhead tend to migrate north and south along the continental shelf (Barnhart 1986).

Steelhead can be divided into two reproductive ecotypes, based upon their state of sexual maturity at the time of river entry and the duration of their spawning migration: stream maturing and ocean maturing. Stream maturing steelhead enter fresh water in a sexually immature condition and require several months to mature and spawn, whereas ocean maturing steelhead enter fresh water with well-developed gonads and spawn shortly after river entry. These two reproductive ecotypes are more commonly referred to by their season of freshwater entry (*i.e.*, summer [stream maturing] and winter [ocean maturing] steelhead). The timing of upstream migration of winter steelhead is correlated with higher flow events, such as freshets or sandbar breaches. Adult summer steelhead migrate upstream from March through September. In contrast to other species of *Oncorhynchus*, steelhead may spawn more than one season before dying (iteroparity); although one-time spawners represent the majority.

Because rearing juvenile steelhead reside in freshwater all year, adequate flow and temperature are important to the population at all times (CDFG 1997). Outmigration appears to be more closely associated with size than age. In Waddell Creek, Shapovalov and Taft (1954) found steelhead juveniles migrating downstream at all times of the year, with the largest numbers of young-of-year (YOY) and age 1+ steelhead moving downstream during spring and summer.

Survival to emergence of steelhead embryos is inversely related to the proportion of fine sediment in the spawning gravels. However, steelhead are slightly more tolerant than other salmonids, with significant reductions in survival when fine materials of less than 0.25 inches in diameter comprise 20 to 25 percent of the substrate. Fry typically emerge from the gravel two to three weeks after hatching (Barnhart 1986).

Upon emerging from the gravel, fry rear in edgewater habitats and move gradually into pools and riffles as they grow larger. Older fry establish territories which they defend. Cover is an important habitat component for juvenile steelhead, both as a velocity refuge

and as a means of avoiding predation (Meehan and Bjornn 1991). Steelhead, however, tend to use riffles and other habitats not strongly associated with cover during summer rearing more than other salmonids. Young steelhead feed on a wide variety of aquatic and terrestrial insects, and emerging fry are sometimes preyed upon by older juveniles. In winter, juvenile steelhead become less active and hide in available cover, including gravel or woody debris.

Water temperature can influence the metabolic rate, distribution, abundance, and swimming ability of rearing juvenile steelhead (Barnhart 1986, Bjornn and Reiser 1991, Myrick and Cech 2005). Optimal temperatures for steelhead growth range between 10 and 20 degrees (°) Celsius (C) (Hokanson *et al.* 1977, Wurtsbaugh and Davis 1977, Myrick and Cech 2005). Fluctuating diurnal water temperatures are also important for the survival and growth of salmonids (Busby *et al.* 1996).

Suspended sediment concentrations, or turbidity, also can influence the distribution and growth of steelhead (Bell 1973, Sigler *et al.* 1984, Newcombe and Jensen 1996). Bell (1973) found suspended sediment loads of less than 25 milligrams per liter (mg/L) were typically suitable for rearing juvenile steelhead.

b. Status of the CCC Steelhead DPS and Critical Habitat

Historically, approximately 48 populations of steelhead existed in the CCC steelhead DPS (Bjorkstedt *et al.* 2005). Many of these populations (about 36) were independent, or potentially independent, meaning they had a high likelihood of surviving for 100 years absent anthropogenic impacts (Spence *et al.* 2008). The remaining populations were dependent upon immigration from nearby CCC steelhead DPS populations to ensure their viability (McElhaney *et al.* 2000, Bjorkstedt *et al.* 2005).

While historical and present data on abundance are limited, CCC steelhead numbers are substantially reduced from historical levels. A total of 94,000 adult steelhead were estimated to spawn in the rivers of this DPS in the mid-1960's, including 50,000 fish in the Russian River – the largest population within the DPS (Busby *et al.* 1996). Near the end of the 20th Century, McEwan (2001) estimated the wild run population in the Russian River Watershed was between 1,700-7,000 fish. Abundance estimates for smaller coastal streams in the DPS indicate low but stable levels with recent estimates for several streams (Lagunitas, Waddell, Scott, San Vicente, Soquel, and Aptos creeks) of individual run sizes of 500 fish or less (62 FR 43937). For more detailed information on trends in CCC steelhead abundance, see: Busby *et al.* 1996, NMFS 1997, and NMFS 2005.

Some loss of genetic diversity has been documented and attributed to previous among-basin transfers of stock and local hatchery production in interior populations in the Russian River (Bjorkstedt *et al.* 2005). Reduced population sizes and fragmentation of habitat in San Francisco streams has likely also led to loss of genetic diversity in these populations.

CCC steelhead have experienced a serious decline in abundance and long-term population trends suggest a negative growth rate. This indicates the DPS may not be viable in the long term. DPS populations that historically provided enough steelhead immigrants to support dependent populations may no longer be able to do so, placing dependent populations at increased risk of extirpation. However, because CCC steelhead have maintained a wide distribution throughout the DPS, roughly approximating the known historical distribution, CCC steelhead likely possess a resilience that is likely to slow their decline relative to other salmonid DPSs or ESUs in worse condition. The most recent status review concludes steelhead in the CCC steelhead DPS remain "likely to become endangered in the foreseeable future" (Good *et al.* 2005), a conclusion that was consistent with a previous assessment (Busby *et al.* 1996) and supported by the most recent NMFS Technical Recovery Team work (Spence *et al.* 2008). On January 5, 2006, NMFS issued a final determination that the CCC steelhead DPS is a threatened species, as previously listed (71 FR 834). Data from the 2008/09 and 2009/2010 adult CCC steelhead returns indicate a decline in returning adults across their range compared to other recent returns (*e.g.*, 2006/2007, 2007/2008) (Jeffrey Jahn, NMFS, personal communication, November 2010).

The condition of CCC steelhead critical habitat, specifically its ability to provide for their conservation, has been degraded from conditions known to support viable salmonid populations. NMFS has determined present depressed population conditions are, in part, the result of the following human-induced factors affecting critical habitat²: logging, agricultural and mining activities, urbanization, stream channelization, dams, wetland loss, and water withdrawals, including unscreened diversions for irrigation. Impacts of concern include alteration of stream bank and channel morphology, alteration of water temperatures, loss of spawning and rearing habitat, fragmentation of habitat, loss of downstream recruitment of spawning gravels and large woody debris, degradation of water quality, removal of riparian vegetation resulting in increased stream bank erosion, increases in sedimentation in streams from upland areas, loss of shade (higher water temperatures) and loss of nutrient inputs (Busby *et al.* 1996, 70 FR 52488). Depletion and storage of natural river and stream flows have drastically altered natural hydrologic cycles in many of the streams in the DPS. Alteration of flows results in migration delays, loss of suitable habitat due to dewatering and blockage; stranding of fish from rapid flow fluctuations; entrainment of juveniles into poorly screened or unscreened diversions, and increased water temperatures harmful to salmonids. Overall, current condition of CCC steelhead critical habitat is degraded, and may not provide the conservation value necessary for the recovery of the species.

² Other factors, such as over-fishing and artificial propagation have also contributed to the current population status of these species. All these human induced factors have exacerbated the adverse effects of natural environmental variability including drought and poor ocean conditions.

2. Green Sturgeon

a. *General Life History*

Adult green sturgeon are believed to spawn every 3 to 5 years and generally exhibit fidelity to their spawning site. Green sturgeon reach sexual maturity only after several years of growth; first spawning generally occurs at 15 years of age for males, and 17 years for females. The southern DPS green sturgeon spawn in the deep turbulent sections of the upper reaches of the Sacramento River. CDFG (2002) report southern DPS green sturgeon spawning occurs above Hamilton City and possibly as far upstream as Keswick Dam. Adults typically begin their upstream spawning migrations into the San Francisco Bay by late February to early March, reach Knights Landing by April, and spawn between March and July (Heublein *et al.* 2009). Peak spawning is believed to occur between mid-April to mid-June. Green sturgeon in the Sacramento River can display two outmigration strategies. Monitoring data reveals that post-spawned green sturgeon can leave the Sacramento River prior to September 1, or remain in the river for several additional months (Heublein *et al.* 2009).

Adult female green sturgeon produce between 60,000 and 140,000 eggs, depending on body size, with a mean egg diameter of 4.3 mm (Moyle *et al.* 1992, Van Eenennaam *et al.* 2001). Eggs are likely broadcast spawned over large cobble substrate where they settle into the spaces between the cobbles, but substrate can range from clean sand to bedrock (USFWS 2002). Like salmonids, green sturgeon require cool water temperatures for egg and larval development, with optimal temperatures ranging from 11 to 18°C.

Juvenile green sturgeon spend from one to three years in freshwater before they enter the ocean (Nakamoto *et al.* 1995, Adams *et al.* 2002). Based on Klamath River age distribution work by Nakamoto *et al.* (1995), the majority of fish entering the ocean are between 200 and 600 mm in length which suggests they are 2 to 3 years of age. The low abundance of juveniles smaller than 200 mm in the Delta indicates juvenile southern DPS green sturgeon likely hold in the mainstem Sacramento River, as suggested by Kyndard *et al.* (2005). Laboratory studies, conducted by Allen and Cech, Jr. (2007), also indicated juveniles spend approximately the first six months in fresh to brackish water and then transition into salt water at about 1.5 years of age.

Both adult and juvenile green sturgeon are benthic feeders (Moyle 2002). Adult green sturgeon are believed to feed primarily upon benthic invertebrates such as clams, mysid and grass shrimp, and amphipods (Radtko 1966, Adams *et al.* 2002), and to some extent on fish. Adults captured in the Sacramento-San Joaquin Delta are known to feed on invertebrates such as shrimp, mollusks, amphipods, and additionally upon small fish (Adams *et al.* 2002). Juvenile green sturgeon in the San Francisco Bay have been shown

to feed on opossum shrimp (*Neomysis mercedie*) and amphipods (*Corophium spp.*) (Moyle 2002).

Southern DPS green sturgeon are also known to inhabit nearshore marine waters, and are commonly observed in bays and estuaries. Kelly *et al.* (2007) studied the movement of six green sturgeon (one adult and five sub-adults) in the San Francisco Estuary (tagged in San Pablo Bay) and discovered while adults and sub-adults occupied shallow water depths, there were distinct directional movements. In contrast, when the fish exhibited non-directional movements, they remained close to the bottom. The movements were not found to be related to salinity, current, or temperature and the authors surmised they are related to food resource availability.

b. Status of Southern DPS Green Sturgeon and Critical Habitat

The southern DPS green sturgeon is considered vulnerable to catastrophic events due in part to a small estimated spawning population and drastic reductions in historically accessible spawning habitat. The precise population size of southern DPS green sturgeon is unknown, but it is likely to be much smaller than the northern DPS. Population abundance information concerning the southern DPS green sturgeon is described in the NMFS status reviews (Adams *et al.* 2002, NMFS 2005). Abundance information is limited, coming mainly from three sources: 1) incidental captures in the CDFG white sturgeon monitoring program, 2) fish monitoring efforts associated with two diversion facilities on the upper Sacramento River, and 3) fish salvage operations at the water export facilities on the Sacramento-San Joaquin Delta. These data are insufficient in a variety of ways (short time series, non-target species, etc.) and do not support more than a qualitative evaluation of changes in green sturgeon abundance.

Some population abundance information comes from incidental captures of southern DPS green sturgeon from the white sturgeon monitoring program by the CDFG sturgeon tagging program (CDFG 2002). CDFG (2002) utilizes a multiple-census or Peterson mark-recapture method to estimate the legal population of white sturgeon captures in trammel nets. By comparing ratios of white sturgeon to green sturgeon captures, CDFG provides estimates of adult and sub-adult southern DPS green sturgeon abundance. Estimated abundance between 1954 and 2001 ranged from 175 fish to more than 8,000 per year and averaged 1,509 fish per year. Unfortunately, there are many biases and errors associated with these data, and CDFG does not consider these estimates reliable. Fish monitoring efforts at the Red Bluff Diversion Dam (RBDD) and Glenn-Colusa Irrigation District (GCID) on the upper Sacramento River have captured between 0 and 2,068 juvenile southern DPS green sturgeon per year (Adams *et al.* 2002).

Green sturgeon salvage numbers are recorded at California State (1968-present) and Federal (1980-present) water export facilities on the Sacramento-San Joaquin Delta. The average number of southern DPS green sturgeon taken per year at the state facility prior to 1986 was 732; from 1986 to 2001, the average per year was 47 (70 FR 17386). For the Federal facility, the average number prior to 1986 was 889; from 1986 to 2001 the

average was 32 (70 FR 17386). Additional analysis of southern DPS green sturgeon indicate a downward trend in the number of green sturgeon per acre-foot of exported water at state and Federal facilities since 1974 and 1983 respectively. Direct capture in salvage operations is a small component of the overall effect of water export facilities on southern DPS green sturgeon; entrained juvenile green sturgeon are exposed to potential high levels of predation by exotic predators, disruption in migratory behavior, and poor habitat quality. Delta water exports have increased substantially over the last ten years and it is likely that this has contributed to negative trends in the abundance of migratory fish that utilize the delta, including the southern DPS green sturgeon. Catches of sub-adult and adult southern DPS green sturgeon by the Interagency Ecological Program between 1996 and 2004 ranged from 1 to 212 green sturgeon per year (212 occurred in 2001), however, the portion of these captures consisting of southern DPS green sturgeon is unknown as the fish were primarily captured in San Pablo Bay which is known to consist of a mixture of northern and southern DPS green sturgeon.

Recent spawning population estimates using sibling based genetics by Israel (2006) indicates a maximum spawning population of 32 spawners in 2002, 64 in 2003, 44 in 2004, 92 in 2005, and 124 in 2006 above RBDD (with an average of 71). Based on the length and estimated age of post-larvae captured at RBDD (approximately two weeks of age) and GCID (downstream; approximately three weeks of age), it appears the majority of southern DPS green sturgeon are spawning above RBDD.³

The most recent status review update concluded the southern DPS green sturgeon is likely to become endangered in the foreseeable future due to the substantial loss of spawning habitat, the concentration of a single spawning population in one section of the Sacramento River, and multiple other risks to the species such as stream flow management, degraded water quality, and introduced species (NMFS 2005). Based on this information, the southern DPS green sturgeon was listed as threatened on April 7, 2006 (71 FR 17757).

Critical habitat was designated for the southern DPS of green sturgeon on October 9, 2009 (74 FR 52300) and includes coastal United States marine waters within 60 fathoms depth from, and including, Monterey Bay, California, north to Cape Flattery, Washington, including the Strait of Juan de Fuca, Washington, to its United States boundary. The project's action area (*i.e.*, tidal portion of San Francisco Creek) is located within designated critical habitat for southern DPS green sturgeon. Primary constituent elements of designated critical habitat in the action area include adequate food resources and foraging habitat; and the estuarine water column, which includes suitable depth, sediment, and water quality.

³ There are many assumptions with this interpretation (*i.e.*, equal sampling efficiency and distribution of post-larvae across channels) and this information should be considered cautiously.

The current condition of critical habitat for the southern DPS of green sturgeon is degraded over its historical conditions. It does not provide the full extent of conservation values necessary for the recovery of the species, particularly in the upstream riverine habitat of the Sacramento River. In particular, passage and water flow PCEs have been impacted by human actions, substantially altering the historical river characteristics in which the southern DPS of green sturgeon evolved. In addition, the alterations to the Sacramento-San Joaquin River Delta may have a particularly strong impact on the survival and recruitment of juvenile green sturgeon due to their protracted rearing time in the delta and estuary. Loss of individuals during this phase of the life history of green sturgeon represents losses to multiple year classes rearing in the Delta, which can ultimately impact the potential population structure for decades to come.

B. Factors Responsible for Steelhead and Sturgeon Stock Declines

NMFS cites many reasons (primarily anthropogenic) for the decline of steelhead (Busby *et al.* 1996) and southern DPS of green sturgeon (Adams *et al.* 2002, NMFS 2005). The foremost reason for the decline in these anadromous populations is the degradation and/or destruction of freshwater and estuarine habitat. Additional factors contributing to the decline of these populations include: commercial and recreational harvest, artificial propagation, natural stochastic events, marine mammal predation, and reduced marine-derived nutrient transport.

The following section details the general factors affecting the CCC steelhead and southern green sturgeon in California. The extent to which there are species specific differences in these factors is not clear; however, the freshwater ecosystem characteristics necessary for the maintenance of self-sustaining populations of steelhead and green sturgeon are similar. Therefore, most of these factors below affect both steelhead and green sturgeon.

1. Habitat Degradation and Destruction

The best scientific information presently available demonstrates a multitude of factors, past and present, have contributed to the decline of west coast salmonids by reducing and degrading habitat by adversely affecting essential habitat features. Most of this habitat loss and degradation has resulted from anthropogenic watershed disturbances caused by urban development, agriculture, poor water quality, water resource development, dams, gravel mining, forestry (Busby *et al.* 1996, Adams *et al.* 2002, Good *et al.* 2005), and lagoon management (Smith 1990, Bond 2006).

2. Commercial and Recreational Harvest

Ocean salmon fisheries off California are managed to meet the conservation objectives for certain stocks of salmon listed in the Pacific Coast Salmon Fishery Management Plan, including any stock that is listed as threatened or endangered under the ESA. Early records did not contain quantitative data by species until the early 1950's. In addition,

the confounding effects of habitat deterioration, drought, and poor ocean conditions on salmonids make it difficult to assess the degree to which recreational and commercial harvest have contributed to the overall decline of salmonids and green sturgeon in West Coast rivers.

3. Artificial Propagation

Releasing large numbers of hatchery fish can pose a threat to wild salmon and steelhead stocks through genetic impacts, competition for food and other resources, predation of hatchery fish on wild fish, and increased fishing pressure on wild stocks as a result of hatchery production (Waples 1991).

4. Natural Stochastic Events

Natural events such as droughts, landslides, floods, and other catastrophes have adversely affected salmon and steelhead populations throughout their evolutionary history. The effects of these events are exacerbated by anthropogenic changes to watersheds such as logging, roads, and water diversions. These anthropogenic changes have limited the ability of salmon and steelhead to rebound from natural stochastic events and depressed populations to critically low levels.

5. Marine Mammal Predation

The population of some marine mammal species, such as the Harbor seal (*Phoca vitulina*) and California sea lion (*Zalophus californianus*), have increased along the Pacific Coast (NMFS 1999). Although predation by these mammals is not believed to be a major factor in overall population decline, there may be substantial localized impacts on salmonids particularly during the migration season (Hanson 1993).

6. Reduced Marine-Derived Nutrient Transport

Marine-derived nutrients from adult salmon carcasses have been shown to be vital for the growth of juvenile salmonids and the surrounding terrestrial and riverine ecosystems (Bilby *et al.* 1996, Bilby *et al.* 1998, Gresh *et al.* 2000). Declining salmon and steelhead populations have resulted in decreased marine-derived nutrient transport to many watersheds. This has contributed to the further decline of ESA-listed salmonid populations (Gresh *et al.* 2000).

7. Ocean Conditions

Recent evidence suggests poor ocean conditions played a significant role in the low number of returning adult fall run Chinook salmon to the Sacramento River in 2007 and 2008 (Lindley *et al.* 2009). The decline in ocean conditions likely affected ocean survival of all west coast salmonid populations (Good *et al.* 2005, Spence *et al.* 2008).

C. Global Climate Change

The acceptance of global climate change as a scientifically valid and anthropogenically driven phenomenon has been well established by the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change, and others (Davies *et al.* 2001, Oreskes 2004, UNFCCC 2006). The most relevant trend in climate change is the warming of the atmosphere from increased greenhouse gas emissions. This warming is inseparably linked to the oceans, the biosphere, and the world's water cycle. Changes in the distribution and abundance of a wide array of biota confirm a warming trend is in progress, and that it has great potential to affect species' survival (Davies *et al.* 2001). In general, as the magnitude of climate fluctuations increases, the population extinction rate also increases (Good *et al.* 2005). Global warming is likely to manifest itself differently in different regions.

Modeling of climate change impacts in California suggests average summer air temperatures are expected to increase (Lindley *et al.* 2007). Heat waves are expected to occur more often, and heat wave temperatures are likely to be higher (Hayhoe *et al.* 2004). Total precipitation in California may decline; critically dry years may increase (Lindley *et al.* 2007, Schneider 2007). The Sierra Nevada snow pack is likely to decrease by as much as 70 to 90 percent by the end of this century under the highest emission scenarios modeled (Luers *et al.* 2006). Wildfires are expected to increase in frequency and magnitude, by as much as 55 percent under the medium emissions scenarios modeled (Luers *et al.* 2006). Vegetative cover may also change, with decreases in evergreen conifer forest and increases in grasslands and mixed evergreen forests. The likely change in amount of rainfall in Northern and Central Coastal streams under various warming scenarios is less certain, although as noted above, total rainfall across the state is expected to decline. For the California North Coast, some models show large increases (75 to 200 percent) while other models show decreases of 15 to 30 percent (Hayhoe *et al.* 2004). Many of these changes are likely to further degrade salmonid habitat by, for example, reducing stream flows during the summer and raising summer water temperatures. Estuaries may also experience changes detrimental to green sturgeon. Estuarine productivity is likely to change based on changes in freshwater flows, nutrient cycling, and sediment amounts (Scavia *et al.* 2002). The projections described above are for the mid to late 21st Century. In shorter time frames natural climate conditions are more likely to predominate (Cox and Stephenson 2007, Smith *et al.* 2007).

V. ENVIRONMENTAL BASELINE

The environmental baseline is the current status of species and critical habitat in the action area based on analysis of the effects of past and ongoing human and natural factors. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone

formal or early section 7 consultation, and the impacts of State or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

The proposed project is located where U.S. Highway 101 crosses San Francisquito Creek at the border of southern San Mateo and northern Santa Clara counties. This reach of San Francisquito Creek is located in a heavily urbanized, low gradient area, historically occupied by extensive tidal marshes at the edge of San Francisco Bay. The project location is approximately one mile upstream of the current mouth of the creek at San Francisco Bay and does experience daily tidal fluctuations.

San Francisquito Creek Watershed drains approximately 47.5-square-miles on the eastern side of the Santa Cruz Mountains. Major tributaries include Bear Creek, Corte Madera Creek, and Los Trancos Creek, which converge to form San Francisquito Creek. The project area has a Mediterranean climate, typical of the California's central coast, with cool, wet winters and a long, mild dry season. Rainfall in the winter averages approximately 35 inches per year, falling mainly between the months of October and March. Portions of the upper San Francisquito Creek watershed are perennial and support spawning and rearing habitat for CCC steelhead. Sections of the mainstem of San Francisquito Creek dry by late spring or early summer in most years (Launer and Spain 1998, Metzger 2002, Jones and Stokes 2006).

A. Status of Critical Habitat within the Action Area

The lower reaches of San Francisquito Creek are heavily channelized and some areas of the stream banks are armored with concrete to prevent erosion (Figures 1 and 2). In the action area, San Francisquito Creek is tidally influenced. The channel bottom is fairly uniform throughout this section and is only completely flooded during high tides. Within the action area, bank vegetation is limited and is dominated by non-native, ruderal species including ice plant, poison hemlock, and various species of annual grasses. Channel substrate is predominantly sand upstream of the bridge and silt and clay



Figure 1. San Francisquito Creek immediately downstream of the U.S. Highway 101 Bridge, looking downstream on April 7, 2008 (Photo: Caltrans 2010)



Figure 2. San Francisquito Creek upstream of the U.S. Highway 101 Bridge looking downstream on June 8, 2010 (Photo: Caltrans 2010)

downstream, and therefore this reach does not support spawning habitat for either CCC steelhead or southern DPS green sturgeon. Freshwater flow through the action area during the dry season is either non-existent or consists largely of urban runoff.

For CCC steelhead, this reach of San Francisquito Creek only serves as migratory habitat for adults during winter and spring, and smolts during the smolt out-migration period in spring. NMFS believes that the PCEs for migration within the action area are good due to the lack of migration impediments (Caltrans 2010); however the overall PCEs for migration in the watershed are degraded due to multiple barriers upstream in the watershed (Smith and Harden 2001, Cleugh and McKnight 2002, Spence *et al.* 2008). Overall, the PCEs for steelhead rearing throughout the mainstem of San Francisquito Creek are degraded due to channelization, limited pool development and overwintering habitat, and impacted water quality conditions (Jones and Stokes 2006). Meanwhile, the PCEs for spawning in the watershed have also been degraded due to sedimentation (Jones and Stokes 2006).

For southern DPS green sturgeon, the action area could potentially provide suitable rearing habitat in the tidal portions of the channel. NMFS believes the overall PCE for rearing of green sturgeon are degraded due to the poor overall condition of the habitat, including a lack of emergent marsh, limited depth and cover, and reduced channel complexity. Adult southern DPS green sturgeon are only known to spawn in deep, turbulent pools in the upper Sacramento River below Keswick Dam and therefore spawning would not occur in the San Francisquito Creek watershed.

B. Status of Listed Species in the Action Area

1. CCC Steelhead:

The San Francisquito Creek steelhead population has been classified as potentially independent (Bjorkstedt *et al.* 2005, Spence *et al.* 2008). Juvenile and adult abundance data for this watershed are very limited. Overall, the watershed's population status, trends, and viability were found to be insufficient (Spence *et al.* 2008).

Based on more recent observations, adult steelhead continue to use San Francisquito Creek and its tributaries (Launer and Spain 1998, Leidy *et al.* 2005). Most steelhead presence data are based on observations from local residents/biologists and pertain primarily to the upper watershed. Launer and Spain (1998) conducted observations of fish and amphibian communities in San Francisquito Creek through the Stanford University property during the summer of 1997. Based on their observations, they estimated a few thousand juvenile steelhead inhabited that segment of the creek, which represents a small fraction of the total available rearing habitat available to steelhead in the watershed. In the summer of 2004, juvenile steelhead were captured and relocated at two sites on the upper mainstem of San Francisquito Creek. Juvenile steelhead densities

at the two sites were approximately 17 and 12 fish per 100 feet respectively (Alley and Associates 2004).

Steelhead use of the action area would be primarily as migratory habitat for adults and smolts migrating in and out of the watershed. As noted earlier, reaches upstream of the U.S. Highway 101 Bridges go dry in most years and therefore summer rearing habitat is not available at this location (Launer and Spain 1998, Metzger 2002, Leidy et al. 2005). In the action area, NMFS expects juvenile and smolt steelhead presence during the summers will be limited to very few individuals, if any, due to the lack of connection with upstream rearing areas in most years, the timing of project implementation (*i.e.*, at the end of the smolt out-migration season), and the poor quality of rearing habitat described above.

2. Southern DPS Green Sturgeon:

There are no known records of green sturgeon utilizing San Francisquito Creek or its watershed for spawning or rearing (David Woodbury, NMFS, personal communication, December 21, 2010). Juvenile green sturgeon have occasionally been captured by CDFG during trawl surveys in southern San Francisco Bay (David Woodbury, NMFS, personal communication, December 21, 2010). While no surveys for green sturgeon have been conducted in the action area, tidal sloughs are used as foraging habitat by green sturgeon, and green sturgeon have been observed nearby in southern San Francisco Bay. Therefore, NMFS assumes they are present in the action area when tidal conditions permit. Based on the poor condition of habitat in the action area for green sturgeon (*i.e.*, shallow waters, poor cover, and limited foraging habitat) NMFS expects very few green sturgeon juveniles will be present.

C. Factors Affecting Species Environment within San Francisquito Creek and the Action Area

Jones and Stokes (2006) conducted a limiting factors analysis for steelhead in the San Francisquito Creek. Based on their conclusion, multiple factors are impacting the survival and abundance of steelhead in San Francisquito Creek. They identified poor overwintering habitat (*i.e.*, a lack of deep, complex pools) as the primary limiting factor for juvenile survival. Although the availability of summer rearing habitat was not found to be a limiting factor, they noted that summer rearing habitat was degraded due to a lack of deep pools, low abundance of large woody debris, limited coarse substrate accumulations caused by channelization, urban development, and stream flow regulation. Steelhead outmigration success is limited by seasonal drying which may be further impacted by fish passage impediments in San Francisquito Creek. In dry to average years, low spring outmigration flows severely limits passage for out-migrating smolts (Dr. Jerry Smith, SJSU, personal communication, December 6, 2010). Multiple dams in the upper watershed have blocked approximately 33 percent of the historic spawning habitat in the San Francisquito Creek watershed (Spence *et al.* 2008).

Within the action area, a lack of persistent summer stream flow, suitable cover, and poor substrate conditions likely precludes juvenile steelhead from utilizing this reach successfully for summer rearing. Use of the action area by juvenile green sturgeon during summer would be limited to periods of high tide when the channel is fully inundated. Even during high tide, foraging habitat is limited to the channel bottom and cover from predators is scarce in this heavily channelized reach.

D. Previous Section 7 Consultations and Section 10 permits in the Action Area

NMFS has conducted one previous section 7 consultation within the action area. This project was for the construction of a storm water pumping station located immediately downstream of the U.S. Highway 101 Bridge (shown in Figure 3) and was found to not likely adversely affect CCC steelhead or designated critical habitat.

Section 10(a)(1)(A) research and enhancement permits and research under exemptions granted in section 4(d) of the ESA could potentially occur in the San Francisquito Creek Watershed. Currently, four active section 10(a)(1)(A) research and enhancement permits have been issued that authorize research on CCC steelhead in the San Francisquito Creek Watershed. As of 2010, no take of CCC steelhead has occurred in the San Francisquito Creek Watershed related to these permits.

VI. EFFECTS OF THE PROPOSED ACTION

The purpose of this section is to identify the direct and indirect effects of the proposed action, and any interrelated or interdependent activities, on threatened CCC steelhead and southern DPS green sturgeon and their designated critical habitat. Data to quantitatively determine the precise effects of the proposed action on these species and their critical habitat are limited or not available; the assessment of effects therefore focuses mostly on qualitative identification. This approach was based on knowledge and review of the ecological literature concerning the effects of loss and alteration of habitat elements important to salmonids and green sturgeon, including the primary constituent elements of critical habitat. This information was used to gauge the likely effects of the proposed project via an exposure and response framework that focuses on what stressors (physical, chemical, or biotic), directly or indirectly caused by the proposed action, that steelhead and green sturgeon and their critical habitat are likely to be exposed to. Next, we evaluate the likely response of steelhead and green sturgeon and their critical habitat to these stressors in terms of changes to survival, growth and reproduction, and changes to the ability of PCEs to support the value of critical habitat.

A. Fish Relocation Activities

Based on the poor habitat quality and lack of perennial stream flow in the lower creek channel, NMFS assumes the presence of both juvenile steelhead and green sturgeon will be rare in the action area during the proposed construction period (June 1-October 15).

However, due to inter-annual variation in stream flow patterns and smolt out-migration timing/duration, a small number of juvenile and/or smolt steelhead (less than 20 individuals each year) may be encountered during the initial dewatering in early June. Similarly, juvenile green sturgeon may be encountered while foraging in the tidal portions of the creek. NMFS anticipates only a small number of juvenile green sturgeon (less than 20 individuals each year), if any, to be present in the project area during the proposed action.

Once the diversion facilities are in place, steelhead and green sturgeon will be able to move through the work area in the diversion pipe only. Before and during dewatering of the work area, the applicant will capture and relocate fish within the work area in order to avoid direct mortality and minimize the possible stranding of fish. Steelhead and green sturgeon in the project area will be captured by seine and or dip net, and then transported and released to a suitable location downstream of the dewatered channel. Electrofishing will not be used to capture fish due to potentially high salinity/conductivity levels in the tidal channel.

Fish capture and relocation activities pose a risk of injury or mortality to fish species. Fish collecting gear, whether passive (Hubert 1996) or active (Hayes *et al.* 1996) has some associated risk to fish, including stress, disease transmission, injury, or death. The amount of unintentional injury and mortality attributable to fish capture varies widely depending on the method used, the ambient conditions, and the expertise and experience of the field crew. Since fish relocation activities will be conducted by qualified fisheries biologists following both the CDFG and NMFS guidelines, direct effects to and mortality of steelhead and green sturgeon during capture will be minimized. Data from years of similar salmonid relocation activities indicate that average mortality rate is below one percent (Jeffrey Jahn, NMFS, personal communication, February 2011). Based on this information, NMFS will use 2 percent as the maximum amount of mortality likely from fish relocation for the project, or no more than one fish of both species.

Ideally sites selected for relocating fish should have ample habitat. However, because of the degraded habitat conditions in San Francisquito Creek, relocated fish may endure short-term stress from crowding at the relocation sites. Relocated fish may also face increased competition for available resources such as food and habitat. Some of the fish released at the relocation sites may choose not to remain in these areas and may move either upstream or downstream to areas that have more habitat and a lower density of fish. Because relocated fish will have the opportunity to quickly relocate into adjacent areas, thereby minimizing competition and crowding stress, NMFS does not believe relocation activities will reduce the fitness of individual fish.

B. Dewatering

The project will require channel dewatered during two to three consecutive dry seasons. A vast majority, if not all, of the water present during the summer months would be tidal waters. Waters will be diverted through the construction area in a large metal pipe. The

total length of the dewatered channel will be approximately 450-500 feet. Once the diversion pipe and cofferdams are installed and operating, water and fish will be allowed to move through the pipe during construction.

Stream flow diversions could harm individual rearing steelhead or green sturgeon by concentrating them in residual wetted areas before they are relocated (Cushman 1985). Juvenile steelhead and green sturgeon that avoid capture in the project site prior to dewatering will likely die during dewatering activities due to desiccation or thermal stress. Due to the rarity of steelhead and green sturgeon presence at the site, the lack of hiding cover and the capture and relocation efforts, NMFS expects that no steelhead or green sturgeon will be stranded during the dewatering process. Also, during the dewatering process, the biologist on site will make every effort to collect and relocate any fish that avoided capture prior to the beginning of the dewatering process.

Another manner by which juvenile steelhead and green sturgeon may be harmed or killed during dewatering activities is to be entrained into pumps or discharge lines if these methods are used. To eliminate this risk, the applicant will screen all pumps according to NMFS criteria, to ensure juvenile steelhead and green sturgeon will not be harmed by the pumps during dewatering events.

Juvenile steelhead and green sturgeon rearing downstream of the action area may be inadvertently affected by the loss of benthic aquatic macroinvertebrate production within the dewatered area (Cushman 1985). However, effects to aquatic macroinvertebrates resulting from dewatering will be temporary because construction activities will be relatively short-lived, drift from upstream will continue through the pipe, and rapid recolonization (about two to three months) of disturbed areas by macroinvertebrates is expected following construction (Cushman 1985, Thomas 1985, Harvey 1986). Also, once the proposed project is completed, there will be an increase in the amount of exposed channel bottom that will be colonized by additional invertebrates, thereby increasing overall invertebrate production within the action area. Based on the foregoing, the loss of aquatic macroinvertebrates as a result of dewatering activities and bank disturbances is not expected to adversely affect juvenile steelhead or green sturgeon downstream of the project area.

C. Turbidity

In-stream and near-stream construction activities may cause temporary increases in turbidity (reviewed in Furniss *et al.* 1991, Reeves *et al.* 1991, and Spence *et al.* 1996). NMFS anticipates only short-term increases in turbidity will occur during proposed activities (*e.g.*, construction and removal of cofferdams and the initial re-wetting of the channel following the removal of the diversion). High concentrations of suspended sediment can disrupt normal feeding behavior and efficiency (Cordone and Kelly 1961, Bjornn *et al.* 1977, Berg and Northcote 1985), reduce growth rates (Crouse *et al.* 1981), and increase plasma cortisol levels (Servizi and Martens 1992). High turbidity concentrations can reduce dissolved oxygen in the water column, result in reduced

respiratory functions, reduce tolerance to diseases, and can also cause fish mortality (Sigler *et al.* 1984, Berg and Northcote 1985, Gregory and Northcote 1993, Waters 1995). Even small pulses of turbid water will cause salmonids to disperse from established territories (Waters 1995), which can displace fish into less suitable habitat and/or increase competition and predation, decreasing chances of survival. Increased sediment deposition can fill pools and reduce the amount of cover available to fish, decreasing the survival of juveniles (Alexander and Hansen 1986).

Much of the research discussed in the previous paragraph focused on turbidity levels higher than those expected to occur during implementation of the proposed activities. Monitoring of newly replaced culverts within Humboldt County indicated temporary increases in turbidity following winter storm events in which the measured turbidity was generally less than the turbidity threshold commonly cited as beginning to cause minor behavioral changes (Henley *et al.* 2000), and always less than turbidity levels necessary to injure or kill salmonids. Impacts associated with degraded water quality will likely be limited to behavioral effects, such as temporarily vacating preferred habitat or temporarily reduced feeding efficiency. These temporary changes in behavior, may reduce growth rates, but are not likely to reduce the survival chances of individual juveniles. Caltrans has included BMPs to reduce the likelihood of sediments from entering the streams. NMFS assumes these actions will be effective at reducing sedimentation rates. The effects of the turbidity may extend to approximately 1,000 feet downstream of the construction area, but beyond that point, NMFS assumes that most suspended material will have settled or will have been diluted by tidal waters. Therefore, any short-term impacts associated with turbidity during implementation of this project are expected to be insignificant.

D. Toxic Chemicals

Equipment refueling, fluid leakage, equipment maintenance, and road surfacing activities near the stream channel pose some risk of contamination of aquatic habitat and subsequent injury or death to listed salmonids. The applicant and its contractors propose to maintain any and all fuel storage and refueling site in an upland location well away from the stream channel; that vehicles and construction equipment be in good working condition, showing no signs of fuel or oil leaks, and that any and all servicing of equipment be conducted in an upland location. For instream construction activities, NMFS does not anticipate any localized or appreciable water quality degradation from toxic chemicals or adverse effects to steelhead or green sturgeon associated with the proposed project, as the stream will be dewatered, giving the applicant and its contractors ample opportunity to attend to any spill prior to toxic chemicals reaching the waters of San Francisquito Creek. NMFS anticipates proposed BMPs and responses by the applicant and its contractors to any accidental spill of toxic materials should be sufficient to restrict the effects to the immediate area and not enter the waterway.

E. Pile Installation

Available information indicates fish may be injured or killed when exposed to elevated underwater sound pressure waves generated from driving steel piles with impact hammers. Pathologies associated with very high sound levels are collectively known as barotraumas. These include hemorrhage and rupture of internal organs, including the swim bladder and kidneys in fish. Death can be instantaneous, occur within minutes after exposure, or occur several days later. High sound pressure levels can also result in hearing damage to fish (Hastings *et al.* 1995, 1996). Additional detrimental effects on fish from loud sounds include stress, increasing risk of mortality by reducing predator avoidance capability, and interfering with communication necessary for navigation and reproduction. Pile driving may result in “agitation” of salmonids and green sturgeon indicated by a change in swimming behavior detected by Shin (1995) with salmonids. Salmonids and green sturgeon may exhibit a startle response to the first few strikes of a pile.

Caltrans proposes to permanently install approximately 200 steel-cased piles and multiple sheet piles using a pile driver. Because the project site will be dewatered, no pile or sheet installation will occur in surface waters. Any surface waters will be diverted through the construction area in a rigid steel pipe, which will also accommodate daily tidal fluctuations. A pile driver will be used to install the steel-cased piles (partial install) and sheet piles. Approximately six to eight steel-cased piles will be installed per day. Pile driving is estimated to take approximately 30 work days and will occur approximately eight hours per day during the dry season (June 1-October 15) when CCC steelhead and southern DPS green sturgeon are anticipated to be rare in the action area. Impacts to either of these species would only occur if they happened to move through the diversion pipe during pile installation. Sound energy originating from the ground as a result of pile driving activities will be dominated by low frequencies, which do not propagate efficiently through water, and therefore would have less of an effect on fish within the diversion pipe.

NMFS considers the possibility of adverse effects to listed CCC steelhead and southern DPS of North American green sturgeon and their designated critical habitat during pile installation to be minimal, if any, because: (1) this work will be conducted during the dry season when both species are likely rare in the action area; (2) habitat conditions present at the site are poor, which further reduces the likelihood of either species being present; and (3) the channel in the action area will be dewatered with a diversion pipe, which would allow any fish present in or near the construction area to move away from the action; and (4) once pile driving is completed, underwater sound pressure waves will return to normal levels in the action area.

F. Habitat Loss

Approximately 0.72 acres (31,227 square feet) of designated critical habitat for both CCC steelhead and the southern DPS green sturgeon in San Francisquito Creek will be temporarily impacted due to the dewatering of the channel and the placement of cofferdams. This area consists primarily of open water, tidal channel habitat. The channel bottom is fairly uniform throughout this section and is only completely flooded during high tides. NMFS anticipates the temporary impacts associated with dewatering this area will not result in permanent adverse impacts to critical habitat or the species it supports because (1) fish will be relocated prior to dewatering; (2) the area to be dewatered represents a very small fraction of the total amount of tidal habitat available to the species; (3) water and fish will be allowed to pass through the diversion pipe while the; and (4) Caltrans will employ various BMPs and minimization measures to ensure impacts to the channel and the species will be avoided or minimized.

Temporary disturbances to upland habitats will also occur, however these areas are dominated by low-growing, non-native species, which currently provide little shade or cover within the creek. Therefore, NMFS assumes the disturbances to these upland areas will be insignificant with respect to effects on habitat for steelhead or green sturgeon.

Approximately 0.024 acres (1,061 square feet) of designated critical habitat for both CCC steelhead and the southern DPS green sturgeon in San Francisquito Creek will be permanently lost due to the project activities (*i.e.*, pier construction). This loss of habitat would occur in the open water areas of the lower river channel. Regardless of the poor habitat conditions at the site, the contribution of this small part of the action area as habitat space for migration (steelhead and green sturgeon) and as foraging habitat (green sturgeon) is insignificant and its loss is unlikely to diminish the value of critical habitat in the action area for steelhead and green sturgeon. In addition, the channel will be widened under the bridge, and eventually will provide additional habitat space for both species and channel bottom foraging habitat for green sturgeon as described below.

G. Interrelated and Interdependent Actions

The replacement of the U.S. Highway 101 Bridge over San Francisquito Creek would also include the addition of auxiliary lanes as a component of the U.S. Highway 101 Auxiliary Lanes-Embarcadero Road to Marsh Road Project. As a separate project, Caltrans will construct auxiliary lanes in both directions by widening U.S. Highway 101 between the Embarcadero Road interchange in the City of Palo Alto to the Marsh Road interchange in the City of Menlo Park (Caltrans 2008). The new U.S. Highway 101 Bridge will be constructed to satisfy the lane requirements of the U.S. Highway 101 Auxiliary Lanes-Embarcadero Road to Marsh Road Project.

Caltrans will combine the Auxiliary Lanes Project with the U.S. Highway 101 Bridge replacement project during construction in order to minimize conflicts between the two projects due to their proximity, and the need to share lanes on U.S. Highway 101 during

construction to allow traffic to move through the work zone. Caltrans determined the Auxiliary Lanes Project would have no effect on the environment including biological species or hydrology (Caltrans 2008). After reviewing the proposed Auxiliary Lanes Project (Caltrans 2008), NMFS agrees that the project is not likely to affect ESA-listed species or their designated critical habitat because the project activities will only occur in upland areas, far enough away from San Francisquito Creek to prevent sediments or other disturbances from entering salmonid or green sturgeon waters.

H. Beneficial Effects

The proposed lengthening of the three parallel bridges will result in a wider creek channel, which will allow for more natural high flow conditions and an increase in channel bottom habitat. Currently, the steep banks support predominantly non-native species that provide little shade or cover. However, tidal slough channels are known to be utilized by juvenile green sturgeon as foraging habitat. Therefore, the increase in exposed channel bottom habitat resulting from the widening of the bridge will result in an increase in the amount of this habitat type available for juvenile green sturgeon.

VII. CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Caltrans and NMFS are not aware of any future State or private activities that are reasonably certain to affect species and habitats within the action area. During the time frame of the proposed project, two to three years, natural environmental fluctuations are likely to obscure any impacts from climate change (Cox and Stephenson 2007, Smith *et al.* 2007). Therefore, NMFS does not expect cumulative impacts from climate change in the action area will be observable during the proposed project.

VIII. INTEGRATION AND SYNTHESIS

After reviewing the information available, NMFS anticipates only a small number of juvenile and/or smolt CCC steelhead and juvenile southern DPS green sturgeon (less than 20 individuals of either species) may be affected by the project, and no more than one individual of either species will perish. This is due to the low expected abundance of fish and the relocation efforts prior to dewatering and construction and the low injury and mortality rates expected from fish collection methods. Based on the time of year that the project will be implemented, the creek's hydrograph (*i.e.*, the channel typically goes intermittent by end of spring), and recent juvenile abundance estimates in portions of the upper watershed, NMFS believes that the number of juvenile steelhead potentially

affected by the proposed project would likely be very small and would represent a small fraction of the total number of juveniles in the entire San Francisquito Creek watershed. NMFS anticipates only a few, if any, steelhead smolts are likely to be encountered because the project will start at the end of the smolt out-migration period, and therefore a majority of the smolts would have already migrated downstream of the action area to the Bay. Although estimates of smolt abundance do not exist for the San Francisquito Creek Watershed, based on the available juvenile abundance data described above, NMFS does not expect the potential loss of one smolt to impact future adult returns/abundance in the San Francisquito Creek Watershed or jeopardize the continued existence of the DPS.

Similarly, NMFS anticipates the number of juvenile southern DPS green sturgeon affected by the proposed activities to be very small, if any. Due to their higher fecundity (60,000-140,000 eggs), large numbers of juvenile green sturgeon can be produced in one spawning event. Therefore the loss of up to one juvenile southern DPS green sturgeon as a result of the proposed activities is not likely to impact the future abundance of the species in the area or the continued existence of the DPS.

NMFS anticipates short-term increases in turbidity will occur during dewatering activities. These impacts will be temporary, and NMFS anticipates proposed BMPs will control sediment and other pollutants sufficiently to avoid significant adverse effects to listed fish species. No permanent adverse changes in stream flow are anticipated. Therefore, NMFS believes the effects of turbidity increases and flow conditions from the project activities will not have any long-term impacts to the PCEs of CCC steelhead or southern DPS green sturgeon habitat. The value of critical habitat in the action area for species conservation is not likely to be appreciably reduced by the activities proposed in this project.

IX. CONCLUSION

After reviewing the best available scientific and commercial information, the current status of the species and critical habitat, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is NMFS' biological opinion the replacement of the U.S. Highway 101 Bridge over San Francisquito Creek, is not likely to jeopardize the continued existence of threatened CCC steelhead and threatened southern DPS green sturgeon

After reviewing the best available scientific and commercial information, the current status of the critical habitat, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is NMFS' biological opinion the replacement of the U.S. Highway 101 Bridge over San Francisquito Creek, is not likely to destroy or adversely modify designated critical habitat for threatened CCC steelhead and threatened southern DPS green sturgeon.

X. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by NMFS as an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement. Caltrans will adhere to the Term and Conditions detailed in this section of the biological opinion and other BMPs discussed in the biological assessment for the entirety of the project.

The measures described below are nondiscretionary, and must be undertaken by Caltrans, for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions or (2) fails to require their designee(s) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to NMFS as specified in the incidental take statement (50 CFR §402.14(i)(3)).

A. Amount or Extent of Take

As described above in the accompanying biological opinion, the number of threatened CCC steelhead and threatened southern DPS green sturgeon that may be incidentally taken by capture and relocation during project activities is expected to be small (less than 20 individuals of either species per year, for a total of 60 individuals over three years) relative to the number of each species present throughout the San Francisquito Creek Watershed (steelhead) and southern San Francisco Bay (green sturgeon). NMFS anticipates no more than two percent annually of the juvenile CCC steelhead and/or southern green sturgeon present in the area to be dewatered will be killed during relocation and dewatering efforts (no more than 1 fish per species).

The anticipated take will have been exceeded if more than 20 juvenile and/or smolt steelhead and/or 20 juvenile green sturgeon are captured or if more than 1 fish of either species is killed during relocation efforts.

B. Effect of the Take

In the accompanying opinion, NMFS determined this level of anticipated take is not likely to result in jeopardy to either species.

C. Reasonable and Prudent Measures

The following reasonable and prudent measures are necessary and appropriate to minimize and monitor the impacts of the anticipated incidental take of CCC steelhead and southern DPS of North American green sturgeon:

1. Undertake measures to ensure harm and mortality to CCC steelhead and southern DPS green sturgeon resulting from fish relocation and dewatering activities is low.
2. Undertake measures to maintain water quality at pre-construction levels to avoid or minimize harm to CCC steelhead and southern DPS green sturgeon.
3. Prepare and submit a report to document the effects of construction and relocation activities and performance.

D. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, Caltrans, its permittee, and their designees must comply with the following terms and conditions, which implement the reasonable and prudent measures described above, and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

The following terms and conditions implement Reasonable and Prudent Measure 1, to minimize harm or mortality to listed steelhead and green sturgeon from fish relocation and dewatering activities.

1. Caltrans shall provide a list of all BMP's and the Terms and Conditions of this biological opinion to their contractors and ensure they are followed for the length of the project.
2. Caltrans shall provide NMFS with a Fish Relocation Plan for review 30 days prior to the start of dewatering and fish relocation activities and shall outline all confirmed fish relocation methods, including the location and a description of the habitat where steelhead and green sturgeon are to be relocated. The plan shall be submitted to NMFS' North Central Coast Office (see address below).
3. The project biologist shall notify NMFS biologist Joel Casagrande at (707) 575-6016 or Joel.Casagrande@noaa.gov one week prior to relocation activities in order to provide an opportunity for NMFS staff to observe the activities.

4. The biologist will note the number of each species observed in the affected area, the number of fish relocated, and the date and time of collection and relocation. If any dead or fatally wounded fish are observed, they will be collected and placed in an appropriately sized whirl-pack or zip-lock bag, labeled with the date and time of collection, fork length, and location of capture, and frozen as soon as possible.
5. All live steelhead and green sturgeon shall be handled with extreme care and kept in water to the maximum extent possible during relocation activities. All captured fish shall be kept in cool, shaded, and aerated water that is protected from excessive noise, jostling, or overcrowding any time they are not in the stream, and fish shall not be removed from this water except when released. If necessary, the biologist shall have at least two containers and segregate young-of-year salmonids from older salmonids and other potential aquatic predators in order to avoid predation affects. Captured steelhead and green sturgeon shall be relocated as soon as possible and will be given highest priority over other non-listed fish species. Both juvenile steelhead and green sturgeon will be released downstream of the project area.

The following terms and conditions implement Reasonable and Prudent Measure 2, undertake measures to maintain water quality at pre-construction levels to avoid or minimize harm to CCC steelhead and southern DPS green sturgeon.

6. Caltrans shall monitor in-channel activities and performance of sediment control or detention devices for the purpose of identifying and reconciling any condition that could result in take of listed salmonids.
7. Caltrans shall provide NMFS with a copy of the project's site specific Storm Water Pollution Prevention Plan (SWPPP) or applicable plan(s), which specifies BMPs to control mobilization of sediment from the project. If BMPs must be modified, or when additional BMPs are implemented, the SWPPP will be updated to reflect needed changes. Documents shall be submitted to NMFS North Central Coast Office (see address below).
8. Construction work shall not create conditions that mobilize sediment or concentrate over-land flow from construction areas into the creek, or other channels leading directly to the creek.

The following terms and conditions implement Reasonable and Prudent Measure 3, prepare and submit a report to document the effects of construction and relocation activities and performance.

9. Caltrans shall provide NMFS with a summary report by January 15 of each year following the completion of fish relocation and monitoring activities. The report shall include the methods used during the fish relocation and monitoring efforts, location, number and species captured, number of mortalities by species, and other

pertinent information related to the monitoring and fish relocation activities. Reports shall be submitted to NMFS North Central Coast Office (see address below).

10. Caltrans or its contractor shall allow any NMFS employee(s) or any other person(s) designated by NMFS, to access the work area during the construction period for the purpose of observing monitoring activities, evaluating fish and stream conditions, monitoring performance of Caltrans BMPs, monitoring water quality, collecting fish samples, or perform other monitoring/studies. NMFS will notify the Caltrans Resident Engineer 48 hours prior to planning a site visit and will contact Caltrans personnel prior to entering the construction site.
11. All reports or plans required for the above terms and conditions shall be sent to:

NMFS North Central Coast Office
Central Coast Branch Supervisor, Protected Resources Division
Southwest Region
National Marine Fisheries Service
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

XI. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, or to develop information.

1. NMFS recommends Federal Highway Administration (FHWA) and Caltrans consult with NMFS to develop a long range planning approach that seeks to minimize and avoid the impacts of road-related projects on listed salmonids and green sturgeon.
2. Caltrans should identify and prioritize any maintenance and construction projects which, if implemented, can improve ESA-listed salmonid migration or in-stream environmental conditions.

XII. REINITIATION NOTICE

This concludes formal consultation for the proposed replacement of U.S. Highway 101 Bridge over San Francisquito Creek along the San Mateo County and Santa Clara County boundary. As provided in 50 CFR §402.16, reinitiation of formal consultation is required if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an

extent not previously considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, formal consultation shall be reinitiated immediately.

XIII. LITERATURE CITED

- Adams, P.B., C.B. Grimes, S.T. Lindley, and M.L. Moser. 2002. Status review for North American green sturgeon, *Acipenser medirostris*. NOAA, National Marine Fisheries Service, Southwest Fisheries Science Center, Santa Cruz, CA 50 pp.
- Alexander, G.R., and E.A. Hansen. 1986. Sand bed load in a brook trout stream. *North American Journal of Fisheries Management* 6:9-23.
- Allen, P.J. and J.J. Cech Jr. 2007. Age/size effects on juvenile green sturgeon, *Acipenser medirostris*, oxygen consumption, growth, and osmoregulation in saline environments. *Environmental Biology of Fishes* 79:211-229.
- Alley, D.W. and Associates. 2004. Report of construction monitoring leading to isolation of construction sites and fish capture/relocation on San Francisquito Creek at the Sand Hill Road Bridge and Golf Cart crossing in the Stanford Golf Course, June 4 – September 2, 2004.
- Barnhart, R.A. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Southwest) - steelhead. U.S. Fish and Wildlife Service Biological Report 82(11.60):1-21.
- Bell, M.C. 1973. Fisheries handbook of engineering requirements and biological criteria. State Water Resources Control Board, Fisheries Engineering Research Program, Portland, Oregon. Contract No. DACW57-68-C-006.
- Berg, L., and T.G. Northcote. 1985. Changes in territorial, gill-flaring, and feeding behavior in juvenile coho salmon (*Oncorhynchus kisutch*) following short-term pulses of suspended sediment. *Canadian Journal of Fisheries and Aquatic Sciences* 42:1410-1417.
- Bilby, R.E., B.R. Fransen, and P.A. Bisson. 1996. Incorporation of nitrogen and carbon from spawning coho salmon into the trophic system of small streams: evidence from stable isotopes. *Canadian Journal of Fisheries and Aquatic Sciences* 53:164-173.
- Bilby, R.E., B.R. Fransen, P.A. Bisson, and J.K. Walter. 1998. Response of juvenile coho salmon (*Oncorhynchus kisutch*) and steelhead (*Oncorhynchus mykiss*) to the

- addition of salmon carcasses to two streams in southwestern Washington, United States. *Canadian Journal of Fisheries and Aquatic Sciences* 55:1909-1918.
- Bjorkstedt, E.P., B.C. Spence, J.C. Garza, D.G. Hankin, D. Fuller, W.E. Jones, J.J. Smith, and R. Macedo. 2005. An analysis of historical population structure for evolutionarily significant units of Chinook salmon, coho salmon, and steelhead in the north-central California coast recovery domain. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center. 210 pages.
- Bjornn, T.C., M.A. Brusven, M.P. Molnau, J.H. Milligan, R.A. Klamt, E. Chacho, and C. Schaye. 1977. Transport of granitic sediment in streams and its effect on insects and fish. University of Idaho, Forest, Wildlife, and Range Experiment Station, Bulletin 17, Moscow.
- Bond, M.H. 2006. The importance of estuary rearing to Central California steelhead (*Oncorhynchus mykiss*) growth and marine survival. Master's thesis. University of California, Santa Cruz.
- Busby, P.J., T.C. Wainwright, G.J. Bryant, L. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-27. United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northwest Fisheries Science Center, Seattle, Washington. August, 1996.
- CDFG (California Department of Fish and Game). 2002. California Department of Fish and Game comments to NMFS regarding green sturgeon listing. California Department of Fish and Game, Inland Fisheries Division, Sacramento, California. 79 pp. (plus appendices)
- Caltrans. 2008. Route 101 Auxiliary Lanes Project: Initial Study with Negative Declaration/Environmental Assessment with Finding of No Significant Impact. September 2008. 124 pp.
- Caltrans. 2010. U.S. 101 San Francisquito Creek Bridge Replacement Project. Biological Assessment. Br No. 35-003. November 2010.
- Cleugh, E. and C. McKnight. 2002. Steelhead migration barrier survey of San Francisco Bay area creeks (Contra Costa, Alameda, Santa Clara, and San Mateo Counties). California Department of Fish and Game. 137 pp.
- Cordone, A.J., and D.W. Kelly. 1961. The influences of inorganic sediment on the aquatic life of streams. *California Fish and Game* 47:189-228.

- Cox, P., and D. Stephenson. 2007. A changing climate for prediction. *Science* 113:207-208.
- Crouse, M.R., C.A. Callahan, K.W. Malueg, and S.E. Dominguez. 1981. Effects of fine sediments on growth of juvenile coho salmon in laboratory streams. *Transactions of the American Fisheries Society* 110:281-286.
- Cushman, R.M. 1985. Review of ecological effects of rapidly varying flows downstream from hydroelectric facilities. *North American Journal of Fisheries Management*. 5:330-339.
- Davies, K.F., C. Gascon, and C.R. Margules 2001. *Habitat fragmentation: consequences, management, and future research priorities*. Island Press, Washington, D.C.
- Furniss, M.J., T.D. Roelofs, and C.S. Lee. 1991. Road construction and maintenance. Pages 297-323 in W.R. Meehan, editor. *Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats*. American Fisheries Society Special Publication 19. 751 pages.
- Good, T.P., R.S. Waples, and P. Adams, *editors*. 2005. Updated status of federally listed ESUs of West Coast salmon and steelhead. NOAA Technical Memorandum NMFS-NWFSC-66. United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northwest Fisheries Science Center, Seattle, Washington. June, 2005.
- Gregory, R.S., and T.G. Northcote. 1993. Surface, planktonic, and benthic foraging by juvenile Chinook salmon (*Oncorhynchus tshawytscha*) in turbid laboratory conditions. *Canadian Journal of Fisheries and Aquatic Sciences* 50:233-240.
- Gresh, T., J. Lichatowich, and P. Schoonmaker. 2000. An estimation of historic and current levels of salmon production in the northeast pacific ecosystem. *Fisheries* 15(1):15-21.
- Hanson, L.C. 1993. The foraging ecology of harbor seals, *Phoca vitulina*, and California sea lions, *Zalophus californianus*, at the mouth of the Russian River, California. *Master of Arts thesis*, Sonoma State University, Rohnert Park, California.
- Harvey, B.C. 1986. Effects of suction gold dredging on fish and invertebrates in two California streams. *North American Journal of Fisheries Management* 6:401-409.
- Hastings, M. C. 1995. Physical effects of noise on fishes, *Proceedings of INTER-NOISE 95, The 1995 International Congress on Noise Control Engineering – Volume II*, 979–984.

- Hastings, M. C., Popper, A. N., Finneran, J. J., and Lanford, P. 1996. Effects of low frequency sound on hair cells of the inner ear and lateral line of the teleost fish *Astronotus ocellatus*, *Journal of the Acoustical Society of America*, 99(3): 1759-1766.
- Hayes, D.B., C.P. Ferreri, and W.W. Taylor. 1996. Active fish capture methods. Pages 193-220 in B.R. Murphy and D.W. Willis, editors. *Fisheries Techniques*, 2nd edition. American Fisheries Society, Bethesda, Maryland. 732 pages.
- Hayhoe, K., D. Cayan, C. B. Field, P. C. Frumhoff, E. P. Maurer, N. L. Miller, S. C. Moser, S. H. Schneider, K. N. Cahill, E. E. Cleland, L. Dale, R. Drapek, R. M. Hanemann, L. S. Kalkstein, J. Lenihan, C. K. Lunch, R. P. Neilson, S. C. Sheridan, and J. H. Verville. 2004. Emissions pathways, climate change, and impacts on California. *Proceedings of the National Academy of Sciences of the United States of America*, volume 101: 12422-12427.
- Henley, W.F., M.A. Patterson, R.J. Neves, and A.D. Lemly. 2000. Effects of sedimentation and turbidity on lotic food webs: a concise review for natural resource managers. *Reviews in Fisheries Science* 8(2):125-139.
- Heublein, J. C., J. T. Kelly, C. E. Crocker, A. P. Klimley, and S.T. Lindley. 2009. Migration of green sturgeon, *Acipenser medirostris*, in the Sacramento River. *Environmental Biology of Fishes* 84:245–258.
- Hokanson, K. E. F., C. F. Kleiner, and T. W. Thorslund. 1977. Effects of constant temperatures and diel temperature fluctuations on specific growth and mortality rates of juvenile rainbow trout, *Salmo gairdneri*. *Journal of the Fisheries Research Board of Canada* 34:639-648.
- Hubert, W.A. 1996. Passive capture techniques. Pages 157-192 in B.R. Murphy and D.W. Willis, editors. *Fisheries Techniques*, 2nd edition. American Fisheries Society. Bethesda, Maryland. 732 pages.
- Jones and Stokes. 2006. Lower San Francisquito Creek Watershed Aquatic Habitat Assessment and Limiting Factors Analysis. Prepared for the Santa Clara Valley Water District, June 12, 2006. 104 pp.
- Kelly, J. T., A. P. Klimley, and C. E. Crocker. 2007. Movements of green sturgeon, *Acipenser medirostris*, in the San Francisco Bay estuary, California. *Environmental Biology of Fishes* 79:281–295
- Launer, A. E. and D. Spain. 1998. Biotic resources of the San Francisquito Creek Watershed: Report on 1997 Field Activities Associated with Streambed Alteration Agreement #934-96. 75 pp.

- Leidy, R.A., G.S. Becker, B.N. Harvey. 2005. Historical distribution and current status of steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California. Center for Ecosystem Management and Restoration, Oakland, CA.
- Lindley, S. T., R. S. Schick, E. Mora, P. B. Adams, J. J. Anderson, S. Greene, C. Hanson, B. P. May, D. R. McEwan, R. B. MacFarlane, C. Swanson, and J. G. Williams. 2007. Framework for assessing viability of threatened and endangered Chinook salmon and steelhead in the Sacramento-San Joaquin Basin. San Francisco Estuary and Watershed Science, 5.
- Lindley, S. T., C. B. Grimes, M. S. Mohr, W. Peterson, J. Stein, J. T. Anderson, L. W. Botsford, D. L. Bottom, C. A. Busack, T. K. Collier, J. Ferguson, J. C. Garza, A. M. Grover, D. G. Hankin, R. G. Kope, P. W. Lawson, A. Low, R. B. MacFarlane, K. Moore, M. Palmer-Zwahlen, F. B. Schwing, J. Smith, C. Tracy, R. Webb, B. K. Wells, and T. H. Williams. 2009. What caused the Sacramento River fall Chinook stock collapse? Pre-publication report to the Pacific Fishery Management Council. March 18, 2009, 57 pp.
- Luers, A.L., Cayan, D.R., and G. Franco. 2006. Our Changing Climate, Assessing the Risks to California. A summary report from the California Climate Change Center. 16 pages.
- McElhany, P., M. H. Ruckelshaus, M. J. Ford, T. C. Wainwright, and E. P. Bjorkstedt. 2000. Viable salmonid populations and the recovery of evolutionarily significant units. U.S. Depart. Commer., NOAA Technical Memorandum NMFS-NWFSC-42.
- Meehan, W.R., and T.C. Bjornn. 1991. Salmonid distributions and life histories. Pages 47-82 in W.R. Meehan, *editor*. Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. American Fisheries Society Special Publication 19. American Fisheries Society, Bethesda, Maryland.
- Moyle, P.B. 2002. Inland fishes of California, 2nd edition. University of California Press, Berkeley and Los Angeles, CA.
- Moyle P.B., P.J. Foley, and R.M. Yoshiyama. 1992. Status of green sturgeon, *Acipenser medirostris*, in California. Final Report submitted to the National Marine Fisheries Service, University of California, Davis, 11 pp.
- Myrick, C. A., and J. J. Cech. 2005. Effects of temperature on the growth, food consumption, and thermal tolerance of age-0 Nimbus-strain steelhead. North American Journal of Aquaculture 67:324–330.

- Nakamoto, R.J., T.T. Kisanuki, and G. H. Goldsmith. 1995. Age growth of Klamath River green sturgeon (*Acipenser medirostris*). U.S. Fish and Wildlife Service Project 93-FP-13, Yreka, CA, 20 pp.
- NMFS (National Marine Fisheries Service). 1997. Status review update for deferred and candidate ESUs of West Coast Steelhead (Lower Columbia River, Upper Willamette River, Oregon Coast, Klamath Mountains Province, Northern California, Central Valley, and Middle Columbia River ESUs). United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 62 pages.
- NMFS (National Marine Fisheries Service). 1999. Impacts of California sea lions and Pacific harbor seals on salmonids and West Coast ecosystems. Report to Congress. National Oceanic and Atmospheric Administration, National Marine Fisheries Service.
- NMFS (National Marine Fisheries Service). 2005. Green sturgeon (*Acipenser medirostris*) status review update. NOAA Fisheries, Southwest Fisheries Science Center, Long Beach, CA. 31 p.
- Newcombe, C. P., and J. O. T. Jensen. 1996. Channel suspended sediment and fisheries: A synthesis for quantitative assessment of risk and impact, *North American Journal of Fisheries Management* 16:693-727.
- Oreskes, N. 2004. The Scientific Consensus on Climate Change. *Science*. Volume 306:1686. December 3.
- Radtke, L. D. 1966. Distribution of smelt, juvenile sturgeon, and starry flounder in the Sacramento-San Joaquin Delta with observations on food of sturgeon. Pages 115-129 *in*: J. L. Turner and D. W. Kelley (editors). *Ecological studies of the Sacramento-San Joaquin Delta Part II: Fishes of the Delta*. California Department of Fish and Game Fish Bulletin.
- Reeves, G.H., J.D. Hall, T.D. Roelofs, T.L. Hickman, and C.O. Baker. 1991. Rehabilitating and modifying stream habitats. Pages 519-557 *in* W.R. Meehan, editor. *Influences of Forest and Rangeland Management on Salmonid Fishes and their Habitats*. American Fisheries Society Special Publication 19. 751 pages.
- Scavia, D., J.C. Field, D.F. Boesch, R.W. Buddemeier, V. Burkett, D.R. Cayan, M. Fogarty, M.A. Harwell, R.W. Howarth, C. Mason, D.J. Reed, T.C. Royer, A.H. Sallenger, and J.G. Titus. 2002. Climate Change Impacts on U.S. Coastal and Marine Ecosystems. *Estuaries*, volume 25(2): 149-164.

- Schneider, S. H. 2007. The unique risks to California from human-induced climate change. California State Motor Vehicle Pollution Control Standards; Request for Waiver of Federal Preemption, presentation May 22, 2007.
- Servizi, J.A., and D.W. Martens. 1992. Sublethal responses of coho salmon (*Oncorhynchus kisutch*) to suspended sediments. Canadian Journal of Fisheries and Aquatic Sciences 49:1389-1395.
- Shapovalov, L. and A.C. Taft. 1954. The life histories of the steelhead rainbow trout (*Salmo gairdneri gairdneri*) and silver salmon (*Oncorhynchus kisutch*) with special reference to Waddell Creek, California, and recommendations regarding their management. California Department of Fish and Game, Fish Bulletin 98:1-375.
- Shin, H.O. 1995. Effect of the piling work noise on the behavior of snakehead (*Channa argus*) in the aquafarm. J. Korean Fish. Soc. 28(4) 492-502.
- Sigler, J. W., T. C. Bjornn, and F.H. Everest. 1984. Effects of chronic turbidity on density and growth of steelheads and coho salmon. Transactions of the American Fisheries Society 113:142-150.
- Smith, J.J. 1990. The effects of sandbar formation and inflows on aquatic habitat and fish utilization in Pescadero, San Gregorio, Waddell and Pomponio Creek estuary/lagoon systems, 1985-1989. Department of Biological Sciences, San Jose State University, San Jose, California. December 21, 1990.
- Smith, J.J. and D. Harden. 2001. Adult steelhead passage in the Bear Creek Watershed. Prepared for the San Francisquito Creek Watershed Council. 76 pp.
- Smith, D.M., Cusack, S., Colman, A.W., Folland, C.K., Harris, G.R., and Murphy, J.M. 2007. Improved surface temperature prediction for the coming decade from a global climate model. Science 317:796-799.
- Spence, B., G. Lomnicky, R. Hughes, and R. Novitzki. 1996. An ecosystem approach to salmonid conservation. TR-4501-96-6057. Technical Environmental Research Services Corp., Corvallis, Oregon. 356 pages.
- Spence, B., G., E. P. Bjorkstedt, J. C. Garza, J. J. Smith, D. G. Hankin, D. Fuller, W. E. Jones, R. Macedo, T. H. Williams, and E. Mora. 2008. A framework for assessing the viability of threatened and endangered salmon and steelhead in the North-Central California Coast Recovery Domain. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Fisheries Science Center. 194 pp.
- Thomas, V.G. 1985. Experimentally determined impacts of a small, suction gold dredge on a Montana stream. North American Journal of Fisheries Management 5:480- 488.

UNFCCC (United Nations Framework Convention on Climate Change). 2006. United Nations Framework Convention on Climate Change Homepage. United Nations Framework Convention on Climate Change.

USFWS (U.S. Fish and Wildlife Service). 2002. Spawning areas of green sturgeon *Acipenser medirostris* in the upper Sacramento River California. U.S. Fish and Wildlife Service, Red Bluff, CA.

Van Eenennaam, J. P., M. A. H. Webb, X. Deng, S. I. Doroshov, R. B. Mayfield, J. J. Cech, D. C. Hillemeier, and T. E. Willson. 2001. Artificial spawning and larval rearing of Klamath River green sturgeon. Transactions of the American Fisheries Society 130:159-165.

Waples, R.S. 1991. Pacific Salmon, *Oncorhynchus* spp., and the definition of a species under the Endangered Species Act. Marine Fisheries Review 53:11-21.

Waters, T. F. 1995. Sediment in Streams: Sources, Biological Effects, and Control. American Fisheries Society Monograph 7.

Wurtsbaugh, W. A. and G. E. Davis. 1977. Effects of temperature and ration level on the growth and food conversion efficiency of *Salmo gairdneri*, Richardson. Journal of Fish Biology 11:87-98.

XIII. FEDERAL REGISTER NOTICES CITED

70 FR 52488. September 2, 2005. Final Rule: Endangered and Threatened Species: Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States Department of Commerce. Federal Register, Volume 70 Pages 52487-52627.

71 FR 834. January 5, 2006. Final ESA listing determinations for 10 distinct population segments of West Coast steelhead. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States Department of Commerce. Federal Register, Volume 71 Pages 834-862.

71 FR 17757. April 7, 2006. Endangered and Threatened Wildlife and Plants: Threatened Status for Southern Distinct Population Segment of North American Green Sturgeon. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States Department of Commerce. Federal Register, Volume 71 Pages 17757-17766.

74 FR 52300. October 9, 2009. Endangered and Threatened Wildlife and Plants: Final Rulemaking To Designate Critical Habitat for the Threatened Southern Distinct Population Segment of North American Green Sturgeon. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States Department of Commerce. Federal Register, Volume 74 Pages 52300-52351

XIV. PERSONAL COMMUNICATION CITED

Jeffrey Jahn, NMFS, personal communication, November 2010 and February 2011.

David Woodbury, NMFS, personal communication, December 21, 2010

Dr. Jerry Smith, SJSU, personal communication, December 7, 2010

United States (U.S.) Highway 101 San Francisquito Creek Bridge Replacement Project
Santa Clara and San Mateo Counties, California

**MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT
ACT ESSENTIAL FISH HABITAT CONSULTATION**

Statutory and Regulatory Information

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996, establishes a national program to manage and conserve the fisheries of the United States through the development of federal Fishery Management Plans (FMPs), and federal regulation of domestic fisheries under those FMPs, within the 200-mile U.S. Exclusive Economic Zone (“EEZ”). 16 U.S.C. §1801 *et seq.* To ensure habitat considerations receive increased attention for the conservation and management of fishery resources, the amended MSA required each existing, and any new, FMP to “describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 1855(b)(1)(A) of this title, minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat.” 16 U.S.C. §1853(a)(7). Essential Fish Habitat (EFH) is defined in the MSA as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” 16 U.S.C. §1802(10). The components of this definition are interpreted at 50 C.F.R. §600.10 as follows: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

Pursuant to the MSA, each federal agency is mandated to consult with NMFS (as delegated by the Secretary of Commerce) with respect to any action authorized, funded, or undertaken, or proposed to be, by such agency that may adversely affect any EFH under this Act. 16 U.S.C. §1855(b)(2). The MSA further mandates that where NMFS receives information from a Fishery Management Council or federal or state agency or determines from other sources that an action authorized, funded, or undertaken, or proposed to be, by any federal or state agency would adversely affect any EFH identified under this Act, NMFS has an obligation to recommend to such agency measures that can be taken by such agency to conserve EFH. 16 U.S.C. §1855(4)(A). The term “adverse effect” is interpreted at 50 C.F.R. §600.810(a) as any impact that reduces quality and/or quantity of EFH and may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce

quantity and/or quality of EFH. In addition, adverse effects to EFH may result from actions occurring within EFH or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

If NMFS determines that an action would adversely affect EFH and subsequently recommends measures to conserve such habitat, the MSA proscribes that the Federal action agency that receives the conservation recommendation must provide a detailed response in writing to NMFS within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NMFS EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations. 16 U.S.C. §1855(b)(4)(B).

Background and Consultation History

On November 18, 2010, NMFS received the California Department of Transportation's letter requesting initiation of formal consultation under Section 7 of the Endangered Species Act for replacement, widening, and lengthening of the U.S. 101 bridge over San Francisquito Creek and widening of the channel between Santa Clara and San Mateo Counties, California. The Caltrans letter did not initiate consultation under MSA; however NMFS has determined that the proposed actions do occur in areas identified as EFH for various life stages of fish species managed with the following Fishery Management Plans (FMP) under the MSA: Pacific Groundfish FMP, Coastal Pelagics FMP, and the Pacific Salmon FMP.

Proposed Action

The proposed action is described in detail in the preceding biological opinion (BO). The current U.S. Highway 101 Bridge will be replaced with a bridge 44 feet longer and 14 feet wider to accommodate channel widening and auxiliary lanes. The East Bayshore bridge (80 feet long and 38 feet wide) and West Bayshore bridge (80 feet long and approximately 35 feet wide) run adjacent to U.S Highway 101 Bridge and cross over the creek on the same pier walls (*i.e.*, bridge supports) and will also be replaced with longer, wider bridges, 126 feet long by 44 feet wide each. The creek channel beneath the bridge will be widened to coordinate with a separate major flood control project proposed by the San Francisquito Creek Joint Powers Authority (SFCJPA) to accommodate an increase in creek flow based on the 100-year flood projections.

An in-channel work window of June 1 through October 15 will be observed over 2 or 3 years of bridge demolition and construction. During this time, approximately 450-500 feet of San Francisquito Creek will be dewatered using sheet-pile cofferdams with a large corrugated pipe for diversion of stream flow and tidal water and for fish passage. The bridge replacement involves demolishing the existing U.S. Highway 101 Bridge over San Francisquito Creek, including the bridge deck and two existing pier walls, installation of

200 16- inch diameter piles; installation of sheet piles at five locations for temporary wing-walls and creek bank stabilization; replacement of two pier walls that support the bridge and divide the channel beneath San Francisquito Creek into three flow “cells”. Due to the widening of the channel and the lengthening of the bridge, a third pier wall will be built to create a 4th flow cell, to remain isolated from full stream flow until the SFCJPA flood control project widens the channel upstream and downstream. In order to equalize pressure from water against the new pier wall, temporary screened openings will be made in the new pier wall. The openings will be screened with 3/32 inch mesh to keep fish and other organisms from accessing this new cell, preventing entrainment.

BMPs and conservation measures include the following:

- Water pumped from the creek prior to and/or during construction of the bridge will be stored in tanks pending water quality analysis.
- Soil stabilization measures, sediment control, waste management, and pollution control BMPs will be implemented to prevent sediment and other pollutants from entering the channel during project construction to minimize the potential for impacts to water quality in San Francisquito Creek.
- Netting or suspended debris racks will be used during demolition to minimize the amount of debris falling into the creek channel and onto the water diversion pipe.
- Temporary materials in the channel, including the falsework, cofferdams, and the creek diversion pipe will be removed at the end of each dry season and the end of the project.
- Once the SFCJPA flood protection project is completed, all of the sheet piles will be removed and the fourth flow cell will become fully accessible.

The BMPs and conservation measures described here and in the consultation initiation package as parts of the proposed action are effective to reduce or avoid adverse effects to EFH. The NMFS regards these conservation measures as integral components of the proposed action and expects that all proposed activities will be completed consistent with those measures. We have completed our effects analysis accordingly. Any deviation from these conservation measures will be beyond the scope of this consultation and may require supplemental consultation to determine what effect the modified action is likely to have on EFH.

Action Area

For purposes of this EFH consultation, the action area occurs within the channel of San Francisquito Creek in a heavily urbanized area between University Avenue and Embarcadero Road, along the U.S. Highway 101 corridor. The length of the dewatered channel will extend approximately 450-500 feet in the area of the existing U.S. Highway

101 Bridge. San Francisquito Creek is designated EFH for federally-managed Coho within Pacific Salmon FMP as Coho salmon have been identified as historically occurring in San Francisquito Creek (Leidy 2005). The project site is within the tidally influenced portion of San Francisquito Creek thus EFH for the Coastal Pelagic and Pacific Groundfish FMPs may also be affected.

Effects of the Action

Based on information provided in the Biological Assessment and developed during consultation, NMFS concludes that the proposed action would adversely affect EFH for various federally managed species within the Pacific Groundfish FMP, Coastal Pelagics FMP, and the Pacific Salmon FMP. The proposed bridge replacement and expansion could adversely affect EFH, including estuary HAPC due to: (1) temporary turbidity/siltation effects, (2) temporary elevated levels of underwater sound, (3) temporary and permanent loss of subtidal habitat, and (4) permanent increase of shaded areas.

In-water construction activities are expected to temporarily increase turbidity within the creek channel during construction and removal of cofferdams and the initial re-wetting of the channel. Fish may suffer reduced feeding ability (Benfield and Minello 1996) and be prone to fish gill injury (Nightingale and C.A. Simenstad 2001) if exposed to excessive high levels of turbidity. Caltrans has included BMPs for sediment control to minimize impacts to water quality in San Francisquito Creek and fish are expected to move out of areas of high suspended sediment.

As described in the BO, fish can be injured or killed when exposed to elevated underwater sound pressure waves generated from pile driving. However, pile driving proposed for the project will occur in dewatered areas of the construction site and levels of sound in adjacent waters are not expected to exceed NMFS' single strike or cumulative threshold for fish injury. However, low frequency sound transmitted through the ground to adjacent waters and into the diversion pipe over 30 work days may cause fish to leave the area temporarily.

Approximately 0.72 acres of open-water estuarine EFH in San Francisquito Creek will be repeatedly disturbed and temporarily inaccessible to fish while the channel is dewatered for bridge demolition and construction. During this time, fish will be able to move through the work area in the diversion pipe only. The fine grain sediment that is characteristic of the creek bed in the project area is considered good foraging habitat for fish, providing a substrate for infaunal and bottom-dwelling organisms, such as polychaete worms, crustaceans, and other EFH prey types (NMFS 2007). Thus, forage resources for fish that feed on the benthos may be reduced during the 2 to 3 years of construction. However, this temporary loss and significant disturbance of benthic habitat occurs over a relatively small area and may be offset long-term by the increased open-water area from channel widening.

Installation of the new bridge will result in the permanent fill of 0.024 acres of EFH in San Francisquito Creek due to construction of pier walls and abutments for the new bridge. Only a fraction of this (from lengthened pier walls and one additional pier wall) will be an increase to the permanent structures already in place from the existing bridge and is not considered a significant increase.

Bridge expansions will result in approximately 1300 square feet of additional shaded area. Shading is known to decrease primary productivity, alter predator-prey interactions, change invertebrate assemblages, and reduce the density of benthic invertebrates (Helfman 1981; Glasby 1999; Struck, Craft et al. 2004; Stutes, Cebrian et al. 2006); all of which lead to an overall reduction in the quality of EFH. Effects of shading are expected to be minor given that there is only a small net increase in shaded area and additional shading occurs in an urbanized section of creek where overwater structures already exist. In addition, the proposed channel widening included in the project will increase open water habitat and is expected to offset impacts associated with the increase in shading.

EFH Conclusion

As described in the above effects analysis, NMFS has determined that the proposed project would adversely affect EFH for various federally-managed species within the Pacific Groundfish, Coastal Pelagic, and Pacific Salmonid FMPs. As described above, the adverse effects are expected to be temporary and may be offset by channel widening. Furthermore, the proposed action contains adequate measures to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH. With the terms and conditions set forth in the preceding BO, NMFS has no additional EFH Conservation Recommendations to provide. This concludes EFH consultation for the proposed replacement, widening, and lengthening of the U.S. 101 bridge over San Francisquito Creek and widening of the channel between Santa Clara and San Mateo Counties, California.

Supplemental Consultation

Pursuant to 50 CFR 600.920(l), Caltrans must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conclusion.

LITERATURE CITED

- Benfield, M. C. and T. J. Minello (1996). "Relative effects of turbidity and light intensity on reactive distance and feeding of an estuarine fish." Environmental Biology of Fish **46**(2): 211-216.
- Currie, D. & G. Parry. 1996. Effects of scallop dredging on soft sediment community: a large-scale experimental study. Marine Ecology Progress Series 134: 131-150.

- Glasby, T. M. (1999). "Effects of shading on subtidal epibiotic assemblages." Journal of Experimental Marine Biology and Ecology **234**: 275-290.
- Helfman, G. S. (1981). "The advantage to fishes of hovering in shade." Copeia **2**: 392-400.
- Leidy, R. A., Gordon Becker, Brett N. Harvey (2005). "Historical Status of Coho Salmon in Streams of the Urbanized San Francisco Estuary, California." California Fish and Game **91**(4): 219-254.
- McCauley, J.E., R.A. Parr, & D.T. Hancock. 1976. Benthic infauna and maintenance dredging: a case study. Water Research **11**:233-242.
- National Marine Fisheries Service. 2007. Report on the subtidal habitats and associated biological taxa in San Francisco Bay. Schaeffer K, McGourty K, and Cosentino-Manning N, editors. Santa Rosa, CA. p 86.
- Nightingale, B. and J. C.A. Simenstad (2001). Dredging activities: marine issues. Seattle, WA 98105, University of Washington.
- Oliver, J. S., P. N. Slattery, L. W. Hulberg & J. W. Nybakken 1977. Patterns of succession in benthic infaunal communities following dredging and dredged material disposal in Monterey Bay. U.S. Army Corps of Engineers. Technical Report D-77-27.
- Struck, S. D., C. B. Craft, et al. (2004). "Effects of bridge shading on estuarine marsh benthic invertebrate community structure and function." Environmental Management **34**(1): 99-111.
- Stutes, A. L., J. Cebrian, et al. (2006). "Effects of nutrient enrichment and shading on sediment primary production and metabolism in eutrophic estuaries." Marine Ecology Progress Series **312**: 29-43.
- Tuck, I.D., S.J. Hall, & M.R. Robertson. 1998. Effects of physical trawling disturbance in a previously unfished sheltered Scottish sea loch. Marine Ecology-Progress Series, **162**: 227-242.
- Watling, L., R.H. Findlay, L.M. Lawrence & D.F. Schick. 2001. Impact of a scallop drag on the sediment chemistry, microbiota, and faunal assemblages of a shallow subtidal marine benthic community. Journal of Sea Research, **46**: 309-324.