

Sarco Creek Bridge Replacement Project

NAPA COUNTY, CALIFORNIA
DISTRICT 4 – NAP – 121 (PM 8.9/9.4)
2A3200
SCH # TBD

Initial Study with Proposed Negative Declaration



Prepared by the
State of California Department of Transportation



March 2012

General Information about This Document

What's in this document:

The California Department of Transportation (Department) has prepared this Initial Study, which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Napa County, California. The Department is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document.
- Additional copies of it, as well as of the technical studies we relied on in preparing it, are available for review at the Department District 4 Office, 111 Grand Avenue, Oakland, CA 94612, and online at <http://www.dot.ca.gov/dist4/envdocs.htm>.
- Attend the public meeting on April 17, 2012
- We'd like to hear what you think. If you have any comments regarding the proposed project, please send your written comments to the Department by the deadline indicated below.
 - Submit comments via postal mail to:
Yolanda Rivas, Branch Chief
Attention: Karin Bouler
Division of Environmental Planning & Engineering
California Department of Transportation
111 Grand Avenue, Mail Station 8B
Oakland, CA 94623
 - Submit comments via email to: karin_bouler@dot.ca.gov
- Be sure to submit comments by: April 30, 2012

What happens next:

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

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 Department of Transportation, District 4 Office of Public Affairs, P. O. Box 23660, Oakland, CA 94623; (510) 286-4444 Voice, or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

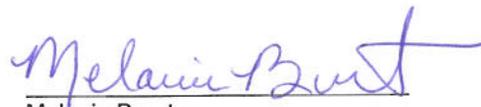
Replacement of the Sarco Creek Bridge on Route 121 from Post Mile 8.9 to Post Mile 9.4 in Napa County

INITIAL STUDY with Proposed Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation

Mar. 29, 2012
Date of Approval


Melanie Brent
Office Chief, Environmental Analysis
District 4
California Department of Transportation
CEQA Lead Agency

PROPOSED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (the Department) proposes to replace the Sarco Creek Bridge on Route 121 in Napa County.

Determination

This proposed Negative Declaration (ND) is included to give notice to interested agencies and the public that it is the Department's intent to adopt an ND for this project. This does not mean that the Department's decision regarding the project is final. This ND is subject to modification based on comments received by interested agencies and the public.

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

The proposed project would have no effect on air quality; land use; community character and cohesion; consistency with state, regional, or local plans and programs; environmental justice communities; farmlands or timberlands; growth; mineral resources; noise; parks and recreational land; or cultural resources.

In addition, the proposed project would have no significant effect on biological resources, visual resources, geology, real property, utilities and emergency services, traffic and transportation, hydrology and floodplains, water quality, paleontology, or hazardous waste and materials.

Deputy District Director
District 4
California Department of Transportation

Date

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Chapter 1 - Proposed Project

1.1 Introduction

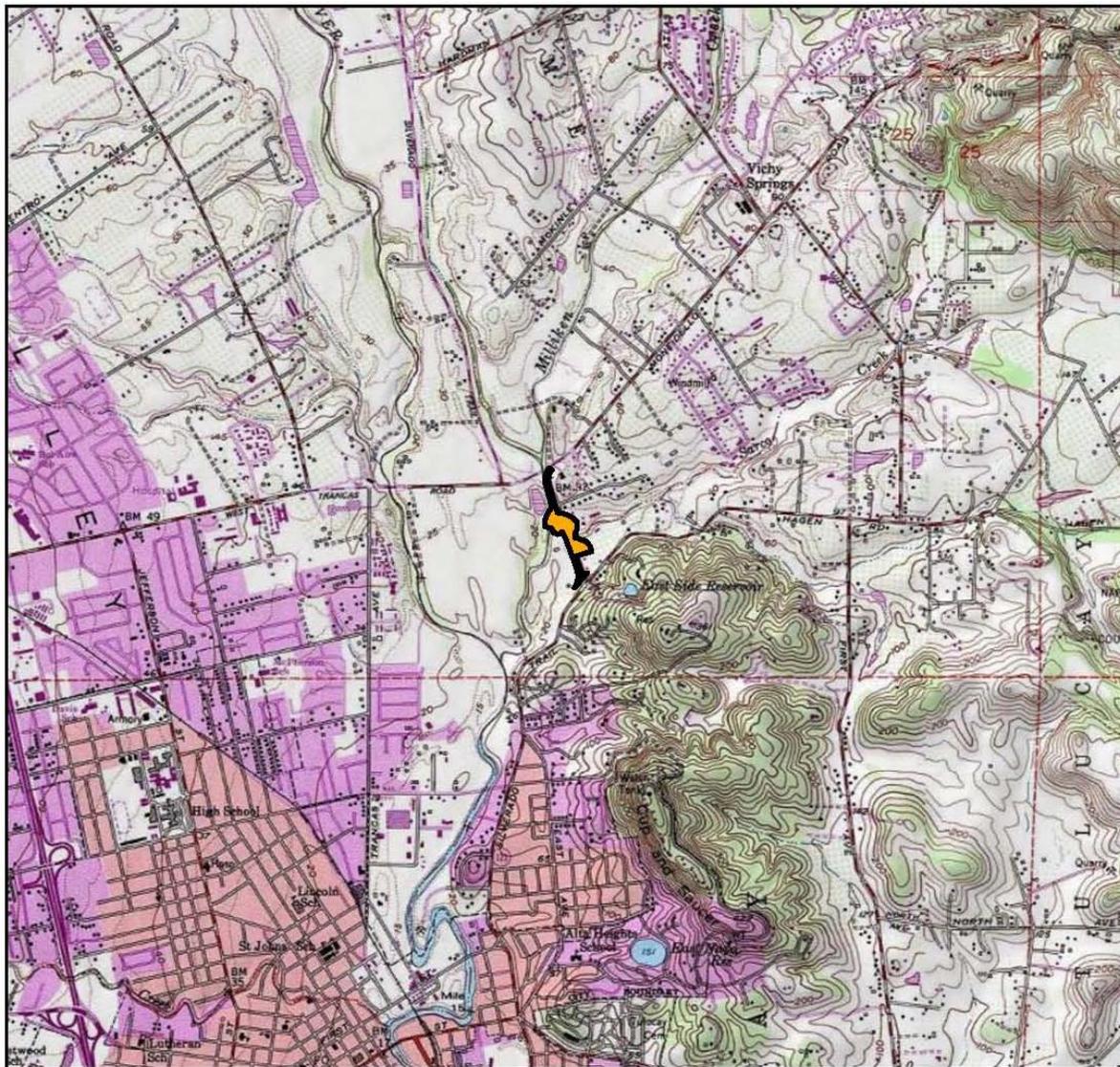
The Department of Transportation (Department or Caltrans) is the lead agency under the California Environmental Quality Act (CEQA). The Sarco Creek Bridge Replacement Project is located on State Route 121 (Silverado Trail) in the city of Napa and unincorporated Napa County between Hagen Road [postmile (PM) 8.9] and the Monticello Road/Trancas Street intersection (PM 9.4).

The Department proposes to remove the existing 35.5-foot (ft) wide, 31-foot long, two-lane, two-span Sarco Creek Bridge (Bridge # 21-0008) and replace it with a 46-foot long, 44-foot wide, two-lane, single-span bridge. The bridge replacement would be completed as part of a bridge rehabilitation project that includes roadway widening, embankment work, and construction of a fish passage downstream of the bridge. The roadway widening of the new structure deck width would provide two 12-foot wide lanes of traffic and two 8-foot wide shoulders, which is wider than the two 4-foot wide shoulders on the existing bridge. This widening would not increase roadway capacity.

Figures 1-1 and 1-2 show the project vicinity and location. The project was programmed in the 2008 State Highway Operation and Protection Program (SHOPP) and would be funded in the 2013/2014 SHOPP with a total estimated capital cost of \$9.7 million.

Construction is scheduled to begin in 2015 and last up to three and a half years, depending on construction method. The department has determined that utility relocation work and project construction within the creek can only occur between June 1 and October 15 of any given year in order to avoid and minimize effects to aquatic species, unless an extension is granted from the appropriate resource agencies.

Figure 1-1 Project Vicinity

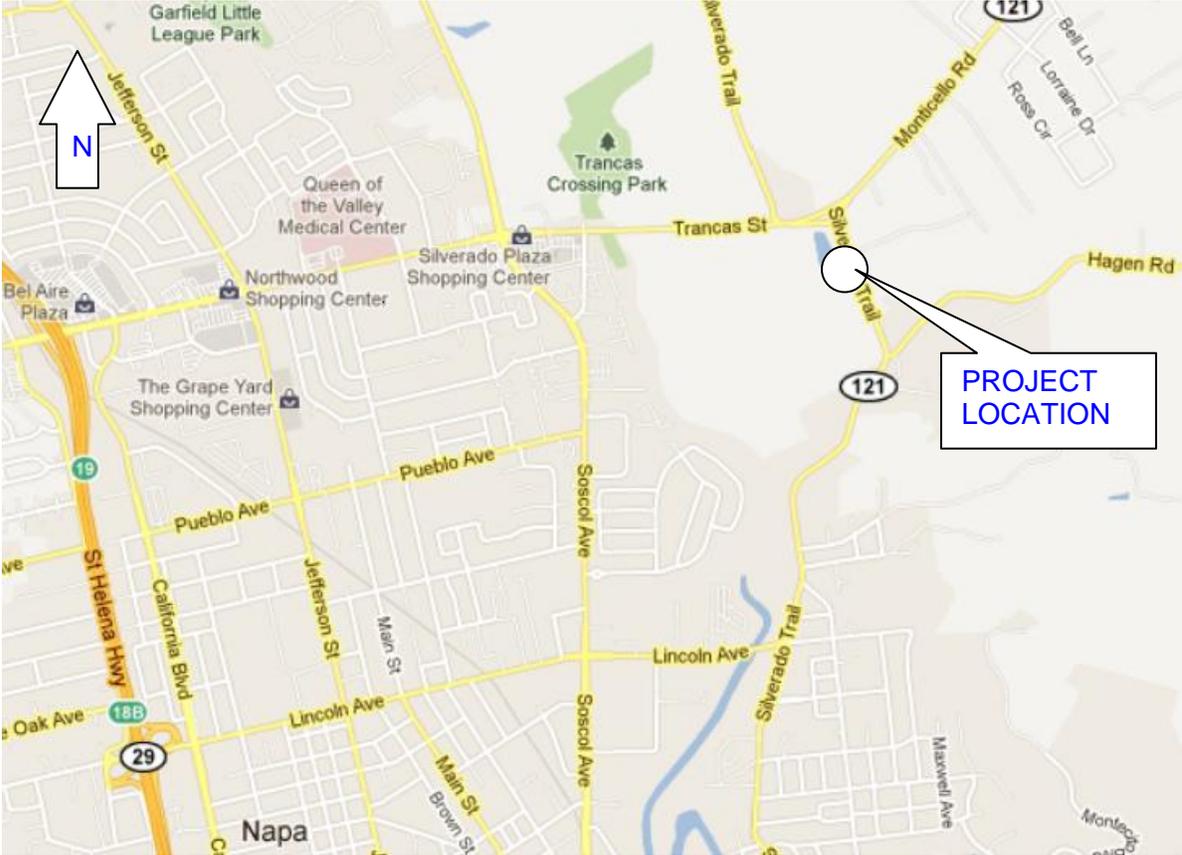


LEGEND

 Project Location



Figure 1-2 Project Location



1.2 Purpose and Need

The purpose of this project is to address the structural deterioration of the Sarco Creek Bridge.

The Sarco Creek Bridge was constructed in 1918 and widened in 1921 and again in 1974. Within the project limits, Route 121 is a two-lane conventional highway without access control that services traffic to and from Lake Berryessa and the wineries and resorts in northern Napa Valley. In addition, commuters, local traffic, and trucks use this highway as an alternative to the local roadway, Soscol Avenue.

The bridge was classified as “scour critical” in the latest Bridge Inspection Report (Caltrans, 2010) that determined the need to replace the Sarco Creek Bridge, as it is structurally deficient.

1.3 Project Description

The Department proposes to replace the Sarco Creek Bridge (Bridge # 21-0008), which is located on Route 121 (Silverado Trail) between Hagen Road (PM 8.9) and the Monticello Road/Trancas Street intersection (PM 9.4). The bridge itself is located in unincorporated Napa County, but the proposed project limits extend into the City of Napa, adjacent to the Hagen Road intersection.

The Department proposes to remove the existing 35.5-foot wide, 31-foot long, two-lane, two-span Sarco Creek Bridge (Bridge # 21-0008) and replace it with a 46-foot long, 44-foot wide, two-lane, single-span bridge. The new structure would include a pre-cast reinforced concrete slab deck approximately 2.2-feet thick. The project would include embankment work and construction of a fish passage downstream of the bridge. The proposed project would also include roadway widening (but no increase in roadway capacity) with the new structure deck width providing two 12-foot wide lanes of traffic and two 8-foot wide shoulders, which is wider than the two 4-foot wide shoulders on the existing bridge. The new bridge and highway would be realigned approximately four feet to the east to minimize impacts to existing utilities on the west side of the bridge, including a sewer main, and a residential property. The top of the new bridge deck would be approximately 4 to 6 inches higher than the existing bridge deck to accommodate the minimum soffit clearance required for a 100-year storm event. The new bridge, like the existing bridge, would have one lane in each direction.

The purpose of this project is to correct the structural deterioration of the Sarco Creek Bridge. 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.

Build Alternative

This proposed project, the Build Alternative, would include the following construction elements:

- Relocate utilities one year prior to the beginning of bridge construction;
- Install construction area signs and temporary one-way traffic signals or full traffic detour (depending on chosen construction option);
- Provide a temporary access ramp on the northeast corner of the bridge;
- Install a temporary water diversion system;
- Clear and grub vegetation within the construction area;
- Construct a roughened rock ramp and weir to improve fish passage through the project area;
- Place temporary erosion control measures underneath the bridge during construction;
- Demolish the existing bridge;
- Construct a longer and wider single-span bridge;
- Construct retaining walls along the roadway;
- Widen and adjust the grade of the roadway to conform to the new bridge;
- Construct drainage systems;
- Install Metal Beam Guard Rail (MBGR);

- Install permanent erosion control measures.

Details of these construction activities are further discussed below:

Temporary Water Diversion System

A temporary water diversion system consisting of an upstream coffer dam and a polyvinyl chloride (PVC) water pipe would be in place during the entire construction period. The coffer dam would be constructed across the creek with clean washed gravel bags wrapped in impermeable plastic sheeting. The PVC water conveyance pipe would be used for diverting the flow of in the creek. This diversion pipe would be protected by placing timber mats on top of temporary K-rail place along the edge of the creek bed under the existing bridge, covering the PVC pipe and the creek bed.

Fish Passage

Permanent fish passage would consist of a roughened-rock ramp and one permanent rock weir, backfilling the creek bed, as necessary, between the rock weir and existing sewer line concrete encasement with clean native bed materials. Prior to installation of the rock weir, the creek bed would be excavated approximately 3.5 ft deep. The area between the concrete encased sewer line and the rock weir would be backfilled with native creek bed material creating a roughened-rock ramp at an 8% slope throughout the fish passage structure.

The rock weir would be constructed approximately 15 to 20 feet downstream of the existing sewer line and would have a maximum top width of 5 feet and a bottom width of approximately 17 feet. The weir would be constructed per Caltrans Standard Specifications. The weir rocks would be individually placed into the creek-bed to protect the underlying filter fabric.

Rock slope protection (RSP) material would be placed on the north bank of Sarco Creek from the east edge of the bridge to about forty feet east of the bridge.

Temporary Construction Access and Staging Options

Construction machinery and equipment, including back hoes and dump trucks, would enter and exit the creek channel bed on a temporary access ramp northeast of the bridge. This ramp would be approximately 133 feet long, 10 to 12 feet wide, and paved with a 6 inch layer of gravel. The slope of the access road would be approximately 12% and it would require up to 7 feet of cut into the embankment. The temporary access ramp would be used for up to three seasons. Appropriate erosion

control measures would be installed and implemented during winter work suspension periods.

The proposed construction staging area would be located 750 feet south of the Sarco Creek Bridge in an empty lot. Gravel would be placed on top of filter fabric on the unpaved portion of the staging area.

The temporary access road and staging area would be restored to pre-construction conditions, to the maximum extent practicable, upon completion of construction.

Bridge Removal

The bridge deck would be saw-cut and replaced in one or two stages, depending on construction option chosen. If in two stages, the east half of the bridge would be removed first and reconstructed followed by the removal and reconstruction of the west half. If in one stage, the full bridge would be removed and reconstructed in one season.

Under either construction option, the abutments would be removed from the top down to the foundation. Sheet piles would be driven (by hammering) to protect any roadway structure debris from falling into the creek, which can result from the removal of the abutments. The spread footing foundations would be completely removed and the center pier and its foundation would be removed manually using hand-operated jackhammers.

Bridge Construction

Pre-cast concrete slab sections would be used for construction of the bridge deck. The entire bridge will be completed in one or two stages, depending on the construction option.

The new replacement bridge would be longer than the existing bridge and, therefore, all excavation work for the new abutment foundations would occur behind the existing abutments and outside of the creek channel. The excavation for the new abutments would proceed after removing the existing bridge's abutments. The depth of excavation for new abutment foundations would be approximately 10 feet with shoring of new abutment excavations placed as needed. A 14-foot wide spread footing foundation and wing walls are proposed to be used for the new bridge abutments.

A cast-in-place concrete approach slab would be constructed on each end of the bridge as a transition from the asphalt concrete roadway to the bridge. One hundred

cubic yards of cement concrete would be used for construction of the approach slabs which would rest on an aggregate base.

During construction, both temporary and permanent erosion controls and scouring protection measures would be implemented on the creek bed underneath the bridge, following Structures Hydraulics and Caltrans Erosion Control Standards. Additionally, if constructed in two stages, falsework would be erected within the creek channel during the first phase to support the west half of the bridge that would have live traffic.

Roadway Widening

The roadway would be widened up to 44 feet in order to conform to the new bridge on both east and west sides of the center line. The new roadway would taper to 32 feet approximately 500 feet north and 500 feet south of the new bridge. Existing asphalt concrete pavement within the roadway widening footprint would be demolished and replaced with an aggregate base and new asphalt concrete to conform to the new bridge. The roadway profile would be raised to conform to the new bridge using suitable material from project excavations as fill material. Any unused excavated materials would be disposed of properly in a certified landfill.

All existing metal beam guard rails (MBGRs) would be removed and replaced with new MBGRs. Reinforced cast-in-place retaining walls may be constructed at various locations along the roadway to retain the roadway embankment. The retaining walls would have spread footing foundations and the maximum depth of excavation to place these foundations would be approximately 8 feet.

Utility Relocation and Storm Water Drainage Improvements

The overhead power and cable lines crossing Sarco Creek would be relocated within the project footprint along the west side of the roadway. Approximately 605 feet of overhead lines and three poles would be relocated.

The four-inch diameter, 200-foot long underground gas line (along the westside of the roadway) would be relocated to the east side of the bridge. The 14-inch diameter, 600-foot long waterline (on the eastside of the road), would be relocated, but remain to the east of Sarco Creek Bridge. The existing 370-foot long, 16-inch diameter section of the underground sewer line would be abandoned or removed and a new line with the same dimensions would be installed adjacent to the existing line on the west side of the bridge. One 15-foot deep sewer manhole would be abandoned or removed and three others would be relocated. The installation of the

new sewer pipe would require a 7.5-foot wide by 15-foot deep trench. The electrical lines would be relocated adjacent to the current lines and occupy a similar footprint. All work from within the creek would be restricted to the June 1 to October 15 work period, unless an extension is granted from the appropriate agencies. Utilities would be relocated one year prior to the beginning of bridge work and are discussed further in the Utilities/Emergency Services section of Chapter 2.

The existing storm water drainage system would be removed and replaced with a new system which would consist of at least three drainage inlets.

Erosion Control Measures

Temporary and permanent erosion control and scouring protection measures would be placed on the creek bed underneath the bridge following the Department's Structures Hydraulics and Department Erosion Control Standards. The Best Management Practices (BMPs) for erosion control are discussed further in the Water Quality section of Chapter 2.

Right of Way

Right of way would be required for this project to accommodate the widening of the bridge and the realignment of about 1,148 feet of the roadway by approximately four feet to the east. These requirements include temporary construction easements and partial acquisition of properties on both sides of the roadway and are discussed further in the Relocations and Real Property Acquisition section of Chapter 2. The proposed staging area is located on a proposed temporary construction easement at 1050 Hagen Road, a vacant lot located about 750 feet southeast of the Sarco Creek bridge. A temporary access ramp is proposed at the northeast corner of the bridge on a temporary construction easement.

Construction Scheduling and Staging Options

Option 1 – Partial Roadway Closure/ 2 Stages

This construction staging option would require partial closure of the bridge for two construction seasons, from approximately April to November. Temporary one-way traffic signal controls would be required for construction Stage 1 and Stage 2. Stage 1 would involve installing one-way signal control on the west portion of the bridge while the east side is removed and reconstructed. Stage 2 would install the one-way signal on the east portion of the bridge while removing and reconstructing the west portion. The anticipated construction duration for this option is two years. In-creek work would only be allowed from June 1 to October 15 of any given year, unless an extension is granted from the appropriate agencies. An intermediate stage, between

Stage 1 and Stage 2, would allow traffic to travel on both the newly constructed east and west side of the bridge for a portion of the winter season.

Option 2 – Full Roadway Closure/ 1 Stage

This construction staging option would require full closure of the bridge for one construction season, approximately from April to December. In-creek work would only be allowed from June 1 to October 15 of any given year, unless an extension is granted from the appropriate agencies. This option would allow full construction access to the site while detouring traffic onto City streets. Signs denoting detours would be installed prior to construction. Traffic detours would be discussed in a Transportation Management Plan (TMP) and is further discussed in the Traffic and Transportation/Pedestrian and Bicycle Facilities section of Chapter 2.

No-Build Alternative

The No Build Alternative compares project conditions if the proposed improvements are not constructed. The Sarco Creek Bridge would continue to deteriorate in its existing condition under the No Build Alternative as its structural deficiencies would not be resolved or addressed. The STRAIN report's recommendation for bridge replacement would be rejected. Presumably, the bridge condition would continue to deteriorate so that the Department would eventually close the bridge to traffic.

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 the Build Alternative, three design variations were proposed to remove and replace the bridge. Two are discussed previously and still under consideration. The third variation proposed to maintain two lanes of traffic throughout the construction period, but due to excessive encroachment to the creek south of the structure and to the properties east of the bridge, this variation was not a viable option and has been removed from further consideration.

1.6 Permits and Approvals Needed

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

Table 1-1 Permits and Approvals Needed

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 issued its Letter of Concurrence on October 24, 2011
United States Army of Engineers (USACE)	Section 404 Nationwide Permit for placement of fill in waters of the United States	Application pending (Design phase)
California Department of Fish and Game (CDFG)	1602 Lake and Streambed Alteration Agreement	Application pending (Design phase)
San Francisco Bay Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification	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. 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 would not alter the character or cohesiveness of existing neighborhoods or communities.
- *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. The Transportation 2035 Plan for the San Francisco Bay Area, adopted by the Metropolitan Transportation Commission in 2009, does not list any planned major highway improvements in the project vicinity. The project's consistency with the Napa County General Plan is discussed in the Visual/Aesthetics section of this chapter. The project's consistency with the Napa County Transportation & Planning Agency's Draft Napa Countywide Bicycle Plan is discussed in the Traffic and Transportation/Pedestrian and Bicycle Facilities section of this chapter.
- *Environmental Justice* – There would be no impacts concentrated in any area of minority or low-income residents. The project would not cause adverse affects on any minority or low-income populations.

- *Existing and Future Land Use* – The project would not affect existing or future land uses. No acquisition of residential or commercial structures is anticipated, and the project would not alter community interaction patterns.
- *Farmlands and Timberlands* – There are no farmlands or timberlands within the project vicinity. Small portions of rural residential properties would be required for the project, but these properties do not meet the definitions of farmland per the California Department of Conservation’s Office of Land Conservation and are not Williamson Act contracted lands.
- *Growth* – The project does not propose to modify highway capacity, operation or accessibility and has no potential to influence growth. 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.
- *Parks and Recreation* – There are no parks or recreational facilities affected by the project.
- *Plant Species* – No special-status or sensitive plant species were observed within the project vicinity during the reconnaissance level or the focused botanical surveys.

2.1 RELOCATIONS AND REAL PROPERTY ACQUISITION

Regulatory Setting

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

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

Affected Environment

The new bridge and highway would be realigned approximately 4 ft to the east to minimize effects to existing utilities on the west side of the bridge, including a sewer main. Therefore, the project would require the partial acquisition of properties to the east of the bridge. Temporary construction easements (TCEs) would also be necessary for access and staging. These right of way requirements may also be necessary for potential bioswales or forms of bioretention used to treat water quality and convey storm water away from the highway.

Environmental Consequences

Right-of-way requirements for the project are subject to change and the sizes and types of each requirement will be finalized by the design/right of way phase of the project. The table below shows the following properties that are expected to be affected by the project:

Table 2-1 Right-of-Way Requirements

Napa County Assessor's Parcel Number	Address (Type of property)	Anticipated Type of Right of Way Required
049-190-005	1916 Silverado Trail, Napa (single-family residential)	Temporary Construction Easement (TCE)
049-190-007	1920 Silverado Trail, Napa (single-family residential)	TCE
049-190-015	1050 Hagen Road, Napa (church/worship facility)	TCE
049-190-006	1944 Silverado Trail, Napa (single-family residential)	Partial Acquisition, TCE
049-190-002	1950 Silverado Trail, Napa (single-family residential)	Partial Acquisition, TCE
049-190-001	1954 Silverado Trail, Napa (single-family residential)	Partial Acquisition, TCE
049-170-002	1968 Silverado Trail, Napa (single-family residential)	Partial Acquisition, TCE
049-170-001	1972 Silverado Trail, Napa (single-family residential)	Partial Acquisition, TCE
049-150-018	2000 Silverado Trail, Napa (single-family residential)	TCE
049-150-017	2006 Silverado Trail, Napa (single-family residential)	TCE
052-010-003	1971 Silverado Trail, Napa (single-family residential)	TCE
052-010-016	1953 Silverado Trail, Napa (single-family residential)	TCE
052-010-017	None identified (vacant parcel)	TCE
052-010-005	1945 Silverado Trail, Napa (single-family residential)	TCE

No owners, tenants, businesses or persons would be displaced by the project. None of the physical improvements (homes, church) to each of the above properties would be affected by the project.

Upon the appraisal and inspection of each proposed right-of-way acquisition by the Department at future meetings between the affected property owners and Department Right-of-Way representatives, these owners, tenants, business or persons may qualify for relocation assistance benefits for the possible relocation of any personal property within required right of way areas encountered during inspection. No other RAP benefits or entitlements are anticipated.

Avoidance, Minimization and/or Mitigation Measures

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

2.2 UTILITIES/EMERGENCY SERVICES

Affected Environment

Overhead power and cable lines crossing Sarco Creek are within the project footprint along the west side of the roadway. Also, there is an existing storm water drainage system within the project limits.

There is an underground gas line along the west side of the roadway that is 4 inches in diameter and 200 feet long, a water line on the east side of the road that is 14 inches in diameter and 600 feet long, and a 370-foot sewer line crossing Sarco Creek.

Environmental Consequences

The overhead power and cable lines crossing Sarco Creek would be relocated within the project footprint along the west side of the roadway. Approximately 605 feet of overhead lines would be relocated along with 3 poles. Proposed relocation areas are within the project footprint and are within areas that are heavily disturbed by residential activities, previous road construction and existing utility installation.

The existing storm water drainage system would be removed and replaced by a new system that would consist of at least three drainage inlets. The inlets would be precast cement concrete boxes with approximate dimensions of 4 feet wide by 6 feet long by 6 feet deep (maximum). The average depth of excavation to remove and relocate the drainage line would be 4 feet.

The underground sewer line crossing Sarco Creek would be relocated within the project footprint along the west side of the roadway. One 15-foot deep sewer manhole and a 370-foot long sewer line would be abandoned or removed. A new sewer line would consist of a pipe, 16 inches in diameter, 370 feet long, and three new manholes. The installation of a new pipe would require a 7.5-foot wide by 15-foot deep trench supported by temporary shoring. The excavation for the manholes would be 15 feet deep. The gas and water lines would also be relocated, but would remain in Sarco Creek.

All of the affected utilities are anticipated to be relocated one year prior to the beginning of construction.

This bridge replacement project, including utility relocation, would require either partial or full closure of the bridge for up to three construction seasons from April to November or December, depending on construction method chosen. Traffic detours would be discussed in a Transportation Management Plan (TMP) that is discussed in the Traffic and Transportation/Pedestrian and Bicycle Facilities section of this chapter. Signs denoting partial closure or detours would be installed prior to construction. Access to adjacent private properties would be maintained during construction.

Avoidance, Minimization, and/or Mitigation Measures

The Department and/or its contractor would notify the local emergency service providers of its intent to close the highway and provide detour information in the TMP discussed in the next section. No other 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. The project, therefore, would not permanently affect traffic and transportation (i.e., levels of service, etc.).

There is pedestrian/bicycle access including striped but unsigned bicycle/pedestrian paths on the shoulders of both sides of the roadway. The Napa County Transportation & Planning Agency's Draft Napa Countywide Bicycle Plan Update Overview, released for public review in September 2011, identifies this segment of Route 121 (Silverado Trail) as a Primary Bikeway Network. The Primary Bikeway Network, as defined in this Draft Napa Countywide Bicycle Plan Update Overview, consists of a selection of existing and proposed Class I, Class II, and Class III bikeways that provide inter-city and inter-county routes along with connections to other transportation modes, major destinations, jobs, neighborhoods, recreation, and local bicycle networks. The Draft Napa Countywide Bicycle Plan Update Overview also identifies this segment of Route 121 (Silverado Trail) as a proposed Class II Bike Lane, defined as a portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.

Environmental Consequences

The project would temporarily affect pedestrian and bicycle access on the roadway by requiring either partial or full closure of the bridge for up to three construction seasons, approximately from April to December. The new bridge would provide

adequate shoulders, increasing to 8 feet wide from the existing 4 foot wide shoulders, for bicyclists to cross Sarco Creek with motor vehicle traffic. The project benefits bicycle traffic, does not inhibit or otherwise prevent this segment of Route 121/Silverado Trail from becoming a Class II Bike Lane, and is therefore consistent with the Napa County Transportation & Planning Agency's Draft Napa Countywide Bicycle Plan Update Overview.

Avoidance, Minimization and/or Mitigation Measures

A Transportation Management Plan (TMP) would be required for this project. The TMP is a plan that would be implemented during construction to minimize and prevent delay and inconvenience to the traveling public. The TMP would be developed and refined during the design phase, supported by traffic studies to evaluate traffic operations. The need for partial or full closure of the bridge would be identified. The TMP would include press releases to notify motorists, businesses, community groups, local entities, emergency service providers, and politicians of upcoming closures and detours. Various TMP elements such as portable Changeable Message Signs and California Highway Patrol Construction Zone Enhanced Enforcement Program (COZEEP) may be utilized to alleviate and minimize delay to the traveling public.

2.4 VISUAL/AESTHETICS

Regulatory Setting

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

Affected Environment

The Department completed a Visual Impact Assessment Technical Report in February 2011. This report is available for review upon request.

Project Setting

Route 121 is a two lane, rural conventional highway. The landscape along the highway is characterized by stands of mature trees and shrubby vegetation, gravel or grass. Non-native trees include seasonal flowering trees, walnut and acacia. Native trees include seasonal and evergreen oaks, bay and conifers. Roadside trees occur mostly in groups but also singly. The road is punctuated with driveways and fences. There are above ground utility poles and existing signs on both sides of the highway. The photographs below (Figures 2-1 thru 2-3) show the existing condition of the project setting.

Figure 2-1 Silverado Trail (Route 121) approaching Sarco Creek Bridge



Figure 2-2 Silverado Trail (Route 121) approaching Sarco Creek Bridge



Figure 2-3 Sarco Creek Below Existing Structure



Existing Visual Character of Project Vicinity

This is a semi-rural area with the densely vegetated Sarco Creek running through the project site. Development surrounds both sides of the two-lane conventional highway. It includes agriculture, open space, a ranch and residential properties on large lots with widely spaced houses. The architectural style of the homes is eclectic. Residences on the east are set back from the road while those on the west side are closer to the roadway. Fences are visible adjacent to the roadside. They are made of a variety of materials: wood, wire and rock. On both sides of the highway, the existing Sarco Creek bridge rail is a plain concrete barrier with metal beam guard rail. A variety of mature trees and shrubs line the highway. Utility poles line the western roadside. The visual character is semi-rural, with vegetation changing with the seasons.

Currently, the level of vividness within the project area is moderate, defined as the inclusion of interesting but not dominant or exceptional characteristics. The roadside is lined with a mixture of native and ornamental trees and a wide variety of native and ornamental shrubs. Vegetation around Sarco Creek is dense with trees and understory shrubs along its upper banks. Predominately, the vegetation merges together into a large mass. The exception is two individual landscape features that seem especially memorable, both large deciduous oak trees. One is on the northeastern roadside, the other adjacent to the bridge on the northwestern side. The attractive semi-rural character of the landscape in general, with the highway lined with trees and shrubs, leaves a positive impression.

The intactness of the area is moderate. The Creek itself is surrounded by residential properties. Native vegetation is interspersed with non-native. There is a medium level of mixed development within the highway corridor including ranches, homes and agriculture. This development, combined with the presence of visually encroaching, human-made features such as the two-lane roadway, concrete bridge railings, metal beam guard rail, residences, driveways, mail boxes, fencing, utility poles and highway signage create a moderate level of intactness.

The unity of the highway corridor landscape is moderate. There is consistency in the level of development, which is medium, and type of development, which is semi-rural, but the overall appearance is still eclectic.

Based on these conditions, existing visual quality along Route 121 in the vicinity of the project is considered moderate.

Viewer Sensitivity

Viewers of the project site are motorists or cyclists on Route 121 including persons who live or work in the area, tourists visiting the scenic Napa wine country, or people traveling to nearby recreation destinations. Such viewer groups have a high sensitivity to the landscape within the highway corridor. These viewers would be exposed to any project-induced changes for a brief time, lasting only as long as it takes for persons to move through the bridge replacement project area.

Environmental Consequences

Once the bridge replacement project is completed, changes to the project setting would be evident. Changes would be due to the removal of trees along the roadway and at the bridge site, widening of the shoulders, earthwork, utility relocation, construction of the fish passage, and the presence of the new bridge as compared to the existing bridge.

The new bridge would contribute in a positive manner to the scenic quality of the immediate setting and enhance the visual character of the highway facility. The existing bridge railing consists of a smooth concrete barrier with no surface texture or pattern. Architectural treatment of the new bridge rail would consist of form lined rock texture and stain to match existing historical stacked rock bridge rails in the area. The visual quality of the new bridge would be superior to that of the existing bridge.

In many places along the highway, trees line the road and overhang the pavement of some degree. None of the trees that would be removed are visually unique or outstanding in terms of their size, form, age, species, location or arrangement, and, therefore, they do not qualify as a scenic resource. However, two deciduous oak trees that would be removed are visually prominent and removal would create a negative effect. Trees in general enhance the scenic appeal of the highway corridor and the loss of approximately 30 trees at the bridge site would have a negative visual effect.

The impact of tree removal, however, would be considered 'less than significant' in regards to CEQA since tree replacement is proposed for the trees removed and there are many trees in the immediately adjacent areas that would be unaffected by the project. These trees would help retain the vegetated character of the area.

Earthwork and grading at the bridge site would be required to provide access for construction equipment to the creek channel and fish passage areas. Trees and other vegetation within these areas would be removed. A temporary construction access ramp would be created on the northeast side of the bridge. The access

ramp areas would be restored to its preconstruction contour on completion of the new bridge. The upland and creek bank portions of the access area would be re-vegetated with native trees and shrubs. These types of fish passage projects typically maintain or enhance the visual character of a creek once their vegetation has been established.

The project would not have a substantial adverse effect on any scenic vistas, would not substantially damage scenic resources, would not substantially degrade the existing visual character or quality of the project area, and would not create a substantial new source of light or glare.

Route 121 is not a Designated State Scenic Highway nor is it eligible for such designation. However, it is identified in the Napa County General Plan as a Scenic Roadway that is subject to its Viewshed Protection Program, noted below.

The Community Character Element of the Napa County General Plan addresses Aesthetics, Arts and Culture, Views and Scenic Roadways. The following goals and policies contained in the plan are relevant to the proposed project.

Goal CC-1: Preserve, improve, and provide visual access to the beauty of Napa County.

Policy CC-8: Scenic roadways, which shall be subject to the Viewshed Protection Program are those shown in Figure CC-3, or designated by the Board of Supervisors in the future. (Route 121 is among the roadway shown in Figure CC-3.)

Policy CC-13: The County's roadway construction and maintenance standards and other practices shall be designed to enhance the attractiveness of all roadways in particular scenic roadways. New roadway construction or expansion shall retain the current landscape characteristics of County-designated scenic roadways, including retention of existing to the extent feasible and required re-vegetation and re-contouring of disturbed areas. In addition, a program to replant trees and shrubbery should be implemented in cases where they are removed during new roadway alignment.

Policy 1.3.1 Oak Woodland – Grass and Hardwoods Habitat Conservation Policies: Where possible, encourage preservation of remaining native Valley and Live Oaks. Where preservation is not possible, encourage appropriate replacement. Provide appropriate replacement native or adaptive vegetation, when retention of existing vegetation is found to be infeasible.

The project would be consistent with this policy, through re-vegetation with oak and other native species within the highway foreground discussed in the minimization measures below.

Avoidance, Minimization, and/or Mitigation Measures

Minimization measures of project-related visual effects consist of adhering to the following design requirements in cooperation with the Department's District Landscape Architect. The following specific minimization measures are proposed:

1. *Effect:* Temporary Construction Easements (TCEs) and Highway Widening

Minimization Measure: Cut and fill slopes shall be contour graded and rounded so as to reflect the contours of adjacent, undisturbed topography to the extent feasible. Grading operations shall not result in angular landforms.

2. *Effect:* Bare soil areas due to construction.

Minimization Measure: All exposed ground surfaces shall be hydro-seeded with appropriate plant species for erosion control purposes as early as possible, but no later than October 31.

Intended Result: The hydro-seeded vegetative cover would reduce the degree of visual contrast of these areas. It is expected that indigenous shrubs and herbaceous plants occurring on adjacent, undisturbed slopes would colonize the newly seeded slopes. As these colonizing plants mature and increase in density, the visual contrast of the disturbed areas would continue to diminish. In time, vegetative cover patterns of areas disturbed during construction would match the adjacent, undisturbed areas.

3. *Effect:* Tree removal due to construction.

Minimization Measure: Oak trees having a diameter at breast height equal to or greater than 6 inches that are removed during project construction shall be replaced with the same species at a minimum ratio of 1:1 for each tree removed. A higher replacement ratio shall be provided if sufficient space is available. Similarly, other trees (non-oak species having a diameter at breast height equal to or greater than 6 inches) that are removed shall be replaced at a ratio of 1:1. All trees would be replaced on-site to the extent possible after the completion of roadway construction. Off-site planting locations would be sought to provide additional replacement tree planting areas if space is not adequate at the proposed project site.

4. *Effect:* Removal of existing bridge structure.

Minimization Measure: The new bridge railings shall have a finished pattern, surface texture and coloration that mimic the stone pattern, color and texture of other rock railings in the vicinity.

2.5 CULTURAL RESOURCES

Regulatory Setting

“Cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), 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, the Federal Highway Administration (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).

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. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

Affected Environment

The Department prepared and completed a Historical Property Survey Report (HPSR) with an attached Archaeological Survey Report (ASR) and Historic Resource Evaluation Report (HRER) in July 2011. These documents are available for review upon request. 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).

Archaeology Studies

The Area of Potential Effects (APE) for archaeological studies was established in consultation with Department staff and includes the maximum project footprint including: all areas of direct effect, areas of proposed right of way acquisition, temporary construction easements (parcel for staging area included), utility relocations and the fish passage elements up and downstream from the bridge.

No concerns regarding cultural resources have been brought forth as a result of ongoing consultation with various Native American tribes, groups and individuals, and local historic societies.

A records search of the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, reveals six previously recorded cultural resources on NWIC maps within half a mile of the project site, consisting of four prehistoric archaeological sites, a recorded building and the bridge. None of the archaeological sites or the recorded built-environment resource is within the project APE.

Additionally, two previous archaeological surveys, each of which covered 95% of the APE, did not identify any archaeological deposits. Another survey, which covered 5% of the APE, also yielded negative results. The current archaeological study that was conducted for the purposes of this undertaking did not identify any archaeological deposits within the APE.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified

archaeologist could assess the nature and significance of the find. 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 contain remains, and the County Coroner shall be contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC) who would then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains would contact Lissa McKee, 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 are to be followed as applicable.

Architectural History Studies

The APE for architectural history studies was established in consultation with Department staff and includes the highway right of way and all parcels with frontage on the highway for the entire project length, including a total of sixteen parcels with four on the west side and twelve on the east side.

Existing historic property lists researched for this project include the National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks and California Points of Historical Interest. There are no previously identified National Register listed or eligible properties, California Historical Landmarks, or California Points of Historical Interest within the APE of for this project.

The Sarco Creek Bridge (#21-0008) is a Category 5 structure in the Department Historic Highway Bridge Inventory and was determined ineligible for National Register listing in the Statewide Historic Bridge Inventory of 2006. Also ineligible for such listing are the properties located at 1944 Silverado Trail, 1945 Silverado Trail, 1950 Silverado Trail, 1953 Silverado Trail, 1954 Silverado Trail, 1968 Silverado Trail, 1971 Silverado Trail, 1972 Silverado Trail and 2000 Silverado Trail. The Department has determined that the residence located at 1000 Monticello Road is eligible since it meets National Register Criterion C, as an excellent example of Spanish Revival architecture. The remaining properties within the APE are exempt from evaluation in accordance with Attachment 4 of the Section 106 Programmatic Agreement (PA).

Environmental Consequences

The Department, in consultation with the State Historic Preservation Officer (SHPO), has determined that a Finding of No Historic Properties Affected according to the

Section 106 PA is appropriate for this undertaking. The residence at 1000 Monticello Road would not be affected by this project because the project would not include alteration of the building or grounds on this property and there would be no right of way acquisition or temporary construction easement from this property.

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/compensation measures are proposed.

2.6 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 Location Hydraulics Study in December 2011; this section of the environmental document is based on this study. The Location Hydraulics Study is available for review upon request.

Project Setting

The average annual rainfall at the project site is close to 25 inches per the Caltrans District 4 Mean Annual Rainfall Chart. Sarco Creek begins at Mount George and flows generally to the southwest. Less than 0.1 miles downstream of the project, Sarco Creek flows into Milliken Creek which then flows approximately 0.6 miles before it merges with the Napa River. The Napa River eventually discharges to San Pablo Bay. The Sarco Creek watershed is approximately 8.4 square miles.

The base flood elevations in Sarco Creek at the proposed project site are controlled by the backwater from the Napa River and Milliken Creek.

As shown on the Federal Emergency Management Agency (FEMA) map (see Figure 2-4), the proposed project is located within the 100 year floodplain.

Environmental Consequences

A Summary Floodplain Encroachment Report was completed in December 2011 (see Appendix F).

The proposed roadway widening and the addition of the fish passage, including a roughened ramp and rock weirs, would result in minor fill placed within the floodplain.

The maximum increase in the roadway profile elevation would be about 0.4 feet in order to conform to the new bridge and roadway widening. The proposed bridge would be widened approximately 8.5 feet on the upstream side while the downstream edge would remain the same. The south abutment of the bridge would be moved approximately eight feet south and the north abutment would be moved approximately four feet north; this would increase the conveyance of the bridge. The lengthening of the bridge would result in minor excavation in the floodplain.

It is expected that the total fill and excavation from the project would balance out, resulting in no net impact.

Avoidance, Minimization, and/or Mitigation Measures

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

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2.7 WATER QUALITY AND STORM WATER RUNOFF

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S. to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below.)
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- 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 (USACE).

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

USACE issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

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

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable 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 then 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 the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

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

National Pollution Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. EPA defines an 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. The SWRCB has identified the Department as an owner/operator of an MS4 by the SWRCB. This permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

The Department's MS4 Permit, under revision at the time of this update, contains three basic requirements:

1. The Department must comply with the requirements of the Construction General Permit (see below);
2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) and other measures.

To comply 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 assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The 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 latest SWMP to address storm water runoff.

Part of and appended to the SWMP is the Storm Water Data Report (SWDR) and its associated checklists. The SWDR documents the relevant storm water design decisions made regarding project compliance with the MS4 NPDES permit. The preliminary information in the SWDR prepared during the Project Initiation Document (PID) phase will be reviewed, updated, confirmed, and if required, revised in the SWDR prepared for the later phases of the project. The information contained in the SWDR may be used to make more informed decisions regarding the selection of BMPs and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

Construction General Permit

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

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

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

Affected Environment

The Department completed a Water Quality Report for this project in May 2009. This report is available for review upon request. The San Francisco Bay Regional Water Quality Control Board (RWQCB, Region 2) is responsible for implementation of State and Federal water quality protection laws and regulations in the project vicinity.

Storm Water

The proposed project site is within the Napa River Hydrological Area, Hydrological Sub-Area (HSA) #206.50. Storm water from the project area drains into the

surrounding Municipal Separate Storm Sewer System (MS4), and then into Sarco Creek, which is tributary to Napa River, and ultimately to San Pablo Bay.

Napa River and San Pablo Bay are on the EPA's 303(d) List of Water Quality Limited Segments. Pollutants of concerns for Napa River are Nutrients, Pathogens, and Sedimentation/Siltation, and for San Pablo Bay, Chlordane, DDT, Diazanone, Dieldrin, Dioxin Compounds, Exotic Species, Furan Compounds, Mercury, Nickel, PCBs, and Selenium. The Region 2 RWQCB Basin Plan has also established beneficial uses for Napa River, which are: agricultural supply, municipal and domestic supply, cold and warm freshwater habitat, navigation, contact- and non-contact water recreation, wildlife habitat, and spawning, reproduction, and/or early development. Beneficial uses for San Pablo Bay are: industrial service supply, ocean, commercial, and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, contact and non-contact water recreation, and navigation.

The Department has performed many studies to monitor and characterize highway storm water runoff throughout the State. Commonly found pollutants are Total Suspended Solids (TSS,) nutrients, pesticides, metals (particulate and dissolved), pathogens, litter, Biochemical Oxygen Demand (BOD,) Total Dissolved Solids (TDS,) zinc (total or dissolved,) phosphorous, copper (total or dissolved,) sediments, and general metals. Some sources of these pollutants are natural erosion, runoff from construction sites, tree leaves, surfactants and emulsifiers, droppings of wild and domestic animals, automotive exhausts, fertilizer runoff, combustion products from fossil fuels, corrosion of metals, paints and solder, and the wearing of break pads.

Ground Water

This proposed project is located in the Napa-Sonoma Valley Groundwater Basin, Napa Valley Sub-Basin. The existing beneficial uses of this ground water resource according to the Basin Plan include municipal, industrial process and service, and agricultural water supply.

Environmental Consequences

A 401 Water Quality Certification from the Region 2 RWQCB would be required since work would be performed within Waters of the State.

All work proposed for this project is expected to cause approximately 2.0 acres of disturbed soil area (DSA). The net additional impervious area and the total reworked

area for the proposed project would be approximately 0.1 and 0.05 acres, respectively.

Grading and installation of new paving would change drainage patterns and increase the quantity of surface water run-off within the SR-121 right of way, both during construction and permanently.

Because the Napa River and San Pablo Bay would not be receiving any of the pollutants of concerns, no special regulatory requirements apply.

The No Build Alternative would have no water quality impacts.

Ground Water

Ground water may be encountered during the structural excavation. Early discussion shall be initiated regarding the handling and disposal of this water during the design phase. Also, the ground water would be tested for potential contamination as a part of the Hazardous Waste Site Investigation. Proper handling and disposal of the ground water would be based on the levels of contaminants reported in a Site Investigation Report to be completed during the design phase of the project.

Avoidance, Minimization, and/or Mitigation Measures

According to Caltrans NPDES permit and the Construction General Permit, Best Management Practices (BMPs) would be incorporated to reduce the discharge of pollutants during construction as well as permanently to the Maximum Extent Practicable (MEP). These BMPs fall into four categories: Temporary Construction Site BMPs, Design Pollution Prevention BMPs, Permanent Treatment BMPs, and Maintenance BMPs.

Construction Site BMPs

Construction Site BMPs are implemented during construction activities to limit or reduce potential pollutants at their source before they come in contact with storm water. Caltrans Construction Site BMPs are divided into six categories: Temporary Soil Stabilization, Temporary Sediment Control, Wind Erosion Control, Tracking Control, Non-Storm Water Management, and Waste Management and Materials Pollution Control. Some of the BMPs that may be utilized to prevent and minimize soil erosion and sediment discharges during construction are Street Sweeping and Vacuuming, Concrete Waste Management, Stockpile Management, and Stabilized Construction Entrance/Exit.

Given that the anticipated soil disturbance is one acre or more, a Stormwater Pollution Prevention Plan (SWPPP) should be developed during construction. This dynamic document addresses the deployment of various erosion and water pollution control measures that are required commensurate to changing construction activities.

Permanent Design Pollution Prevention BMPs

Design Pollution Prevention BMPs are permanent measures to improve storm water quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces after construction is completed. Erosion control measures will be provided on all disturbed areas to the extent feasible. These measures can utilize a combination of source and sediment control measures to prevent and minimize erosion from soil disturbed areas. Source controls can utilize erosion control netting in combination with hydroseeding. The biodegradable netting is effective in providing good initial mechanical protection while seed applied during the hydroseeding operation germinates and establishes itself. Other forms of source control such as tacked straw may also be used when applicable. Sediment controls such as biodegradable fiber rolls can be used to retain sediments and to help control runoff from disturbed slope areas. Outlet protection and velocity dissipation devices placed at the downstream end of culverts and channels are also Design Pollution Prevention BMPs that reduce runoff velocity and control erosion and scour. The need for these devices in this project would also be further investigated during the design phase.

Permanent Treatment BMPs

Treatment BMPs are permanent devices and facilities that remove pollutants from storm water runoff prior to leaving Caltrans right-of-way and being discharged directly or indirectly to receiving waters. Approved Treatment BMPs are Biofiltration Swales, Infiltration Basins, Detention Basins, Traction Sand Traps, Dry Weather Flow Diversions, Media Filters, Gross Solids Removal Devices (GSRDs), Multi-chamber Treatment Trains, and Wet Basins.

Considering the scope of work, this project would be required to incorporate permanent Treatment BMPs.

Maintenance BMPs

Maintenance BMPs are water quality controls used to reduce pollutant discharges during highway maintenance and activities conducted at maintenance facilities.

Included in this category are litter pickup, street sweeping, and stenciling storm drain inlets.

Use of appropriate BMPs, quantities and their locations would be further investigated as the project develops and more detailed information is provided at the subsequent design phase.

2.8 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 completed a Preliminary Geotechnical Report for this project in August 2010. This report is available for review upon request.

The proposed project is located at the southeastern end of the Napa Valley, a long, narrow depression that runs northwest/southeast and is drained by the Napa River. The valley is bordered by the Sonoma Mountains to the west, Vaca Mountains to the east and San Pablo Bay to the south. The elevations at the northern and southern ends of the Sarco Creek Bridge are 26.3 feet and 27 feet, respectively. Sarco Creek, which flows east to west to the Napa River, is at an elevation of 11 feet. Sarco Creek originates several miles to the east on the northern flank of Mount George, elevation 1,877 feet.

The proposed project site is located within a seismically active region dominated by the northwest trending San Andreas Fault. Several other faults that parallel the San Andreas make up the larger San Andreas Fault system and separate the Pacific Plate on the west from the North American Plate to the east. The San Andreas Fault system can be thought of as a diffuse plate boundary at which strain is spread across a wide region. There are larger, well-known faults within the system that tend to be the most active. However, there are other unnamed faults that are not mapped that may produce moderate earthquakes.

Table 2-2 summarizes the known active faults in the region that have the potential to produce large earthquakes. Data are from the Department’s 2007 Seismic Hazard Report. Maximum Credible Earthquakes are given in Mw (moment magnitude) and

are a function of the length and width of a fault zone and not of recent or historical events.

Table 2-2 Summary of Active Faults

FAULT	Distance from project (miles)	Maximum Credible Earthquakes	Peak Ground Acceleration
Green Valley	4.4	7.5	0.5 g
West Napa	6.7	6.25	0.25 g
Rodger's Creek	14.1	7.0	0.2 g
San Andreas	34	8.0	0.2 g

Note: g refers to the acceleration due to Earth's gravity, equivalent to g-force

Within the proposed project limits, the subsurface is comprised of alluvial material derived from the adjacent Milliken and Sarco Creek drainages. These alluvial units include Pleistocene alluvium, Late Holocene stream terrace deposits, and Lake Holocene stream channel deposits. Foundation materials for the Sarco Creek Bridge consist of dense silty sand with gravel, hard silty clay and sense clayey silt.

Little evidence was found regarding groundwater elevations along the proposed project alignment. Geotechnical borings were drilled along the bank of Sarco Creek and, although groundwater was not measured, it was assumed to be the elevation of the creek within the immediate vicinity (elevation 11 feet). Groundwater flows from east to west within the proposed project limits, mirroring the stream flow. The proposed project would not affect the local groundwater regime.

The banks of Sarco Creek are heavily vegetated with trees and thick brush. Slopes along the creek are 1.5:1 (horizontal:vertical) and steeper. Steeper banks are found on the outside of meanders with gentle banks to the inside, as is typical of streams. This can be seen downstream of the bridge where the creek takes a sharp left and flows south.

Environmental Consequences

Potential seismic hazards in such an active region include primary surface rupture, a seismic fault creep and the secondary effects due to strong ground shaking. There are no active faults that cross the proposed project limits so fault rupture and fault creep are not considered to pose a hazard to the project. The potential for strong ground shaking in the project area during the life of the project is high and would affect both roadways and structures. Loose, saturated soils pose the greatest threat during episodes of strong shaking. The following lists possible hazards that may be caused by strong ground shaking and the probability of their occurrence within the project limits:

Densification and Settlement:

Densification of loose granular soils – The probability of densification of loose soils within the project limits is moderate to low. Any embankments or fill should be sufficiently compacted to lessen the risk of densification.

The proposed project would not increase the likelihood of settlement within the project limits. The current roadway configuration and the existing Sarco Creek Bridge have withstood moderate to strong ground shaking in the past and have not shown adverse affects. The likelihood of settlement in the future is low.

Liquefaction

Liquefaction potential, a phenomenon in which soils lose all shear strength and turn essentially to fluids, is considered low in the project area. Potentially liquefiable deposits are generally composed of clean sand with a high ration of void space. Subsurface sampling indicated dense silty clay, silty sand with gravel and hard silty clay. The subsurface conditions suggest a low potential for liquefaction.

In areas where cuts would be made to the outside bend of the channel, further erosion of the bank can be expected. Unwanted erosion would be minimized by the use of rock slope protection (RSP) at the toe of the new bank. Slope stability hazards are found along the steeper, outside bends of Sarco Creek. Where the project proposes to cut these banks, failures during high flow events are expected. There are no rockfall hazards within the project area.

Though Sarco Creek and the surrounding area are within a 100-year flood zone, the project would not increase the likelihood of damage from a flood event because the bridge conveyance would increase as a result of the proposed project.

The project proposes to excavate side slopes of Sarco Creek. Preliminary cross sections indicate side slopes to be cut at 1.5:1, similar to current conditions. Cuts would be minimal and no more than a few feet into the bank. The excavation as proposed poses little or no risk to the project.

Avoidance, Minimization, and/or Mitigation Measures

Rock slope protection (RSP) would be used to minimize erosion and slope stability hazards. The project area is likely to experience seismic activity in the future. No other avoidance, minimization and/or mitigation measures are proposed. BMPs for erosion and sediment control are noted in the Water Quality section of this chapter.

2.9 PALEONTOLOGY

Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., Antiquities Act of 1906 [16 USC 431-433], Federal-Aid Highway Act of 1956 [23 USC 305], and the Omnibus Public Land Management Act of 2009 [16 USC 470aaa]). Under California law, paleontological resources are protected by the California Environmental Quality Act.

Affected Environment

According to the Preliminary Geotechnical Report (PGR) prepared in August 2010 and the Paleontological Identification Report (PIR) prepared in September 2011 (both reports are available for review upon request), the proposed project site is located on Quaternary sediments. No specific fossil bearing formations are located in the project vicinity. The alluvium that is present ranges from the Holocene (present-age) to late Pleistocene. The only fossils on record in Napa County that have been found in Quaternary strata were found 25 miles north of the project site

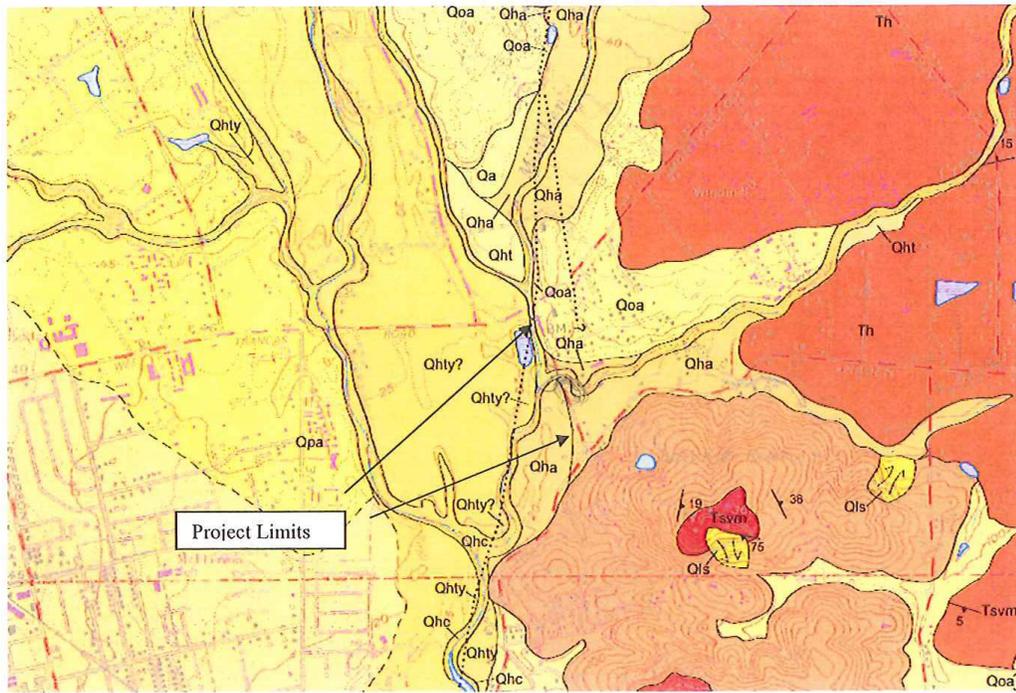
Holocene Alluvium has been shown to contain vertebrate and invertebrate fossils of presently existing, modern species, which are generally not considered paleontologically important.

As part of the PIR preparation, a field survey was done in August 2011 of the paleontological study area (PSA), which includes the half mile project boundary along SR 121. No paleontological resources were observed.

A literature review and online fossil locality search were conducted for Napa County using the Berkeley Natural History Museum (BNHM) online database and the UC Paleontology Museum Database (UCMP). Sixty-one fossil localities were located using BNHM and 101 fossils were located using the UCMP database. Only the UCMP categorized the fossils by their time period and, of the 101 fossils located in Napa County, only 4 are from the Quaternary and one has unlisted age. These 4 fossils were eliminated from further examination due to their distance from the project site (25 miles). Therefore, the proposed project site has been classified as having a low potential for paleontological sensitivity.

All geological units within the project vicinity are indicated on Figure 2-5.

Figure 2-5 Geological Units within the Project Area



MAP UNITS

Qhbm	Bay mud (Holocene <10,000 years) - Silt, clay, peat, and fine sand deposited at or near sea level in San Pablo Bay.
Qhc	Stream channel deposits (latest Holocene <1,000 years) - Deposits in active, natural stream channels, consists of loose alluvial sand, gravel, and silt.
Qhly	Stream terrace deposits (latest Holocene) - Stream terraces deposited as point bar and overbank deposits along the Napa River, composed of moderately sorted clayey sand and sandy clay with gravel.
Qht	Alluvial fan deposits (latest Holocene) - Alluvial fan sediment deposited by streams emanating from Dry Creek drainage, composed of moderately to poorly sorted and bedded sand, gravel, silt, and clay.
Qha	Stream terrace deposits (Holocene <10,000 years) - Stream terraces deposited as point bar and overbank deposits, composed of moderately to well-sorted and bedded sand, gravel, silt, and minor clay.
Qpa	Alluvium, undivided (Holocene) - Alluvium deposited on fans, terraces, or in basins, composed of sand, gravel, silt, and clay that are poorly sorted.
Qpl	Alluvial fan deposits (Holocene) - Alluvial fan sediment deposited by streams emanating from mountain drainages onto alluvial valleys, composed of moderately to poorly sorted sand, gravel, silt and clay.
Qol	Alluvial fan deposits (latest Pleistocene <30,000 years to Holocene) - Sand, gravel, silt and clay mapped on gently sloping, fan-shaped, relatively undivided alluvial surfaces.
Qoa	Alluvium, undivided (latest Pleistocene to Holocene) - Flat, relatively undivided fan, terrace, and basin deposits.
Qpa	Alluvium, undivided (latest Pleistocene) - Alluvial fan, stream terrace, basin, and channel deposits, composed of poorly to moderately sorted sand, silt, clay, and gravel.
Qpl	Alluvial fan deposits (latest Pleistocene) - Composed of poorly to moderately sorted sand, silt, clay, and gravel.
Qol	Alluvial fan deposits (early to late Pleistocene) - Composed of consolidated sand, silt, clay, and gravel. Topography is moderately rolling with little or no original alluvial surfaces preserved, deeply dissected.
Qoa	Alluvium (early to late Pleistocene) - Composed of consolidated sand, silt, clay, and gravel. Topography is moderately rolling with little or no original alluvial surfaces preserved, deeply dissected.

Sonoma Volcanics (late Miocene to Pliocene) - Mafic lava flows and tuffs, rhyolite to dacite ash flow tuff, lava flows, intrusions, breccias, also includes tuffaceous sediment. The Sonoma Volcanics are divided into the following subunits:	
Tsvbn	Tsbn - Breccia of Napa - Dacite breccia underlying the low hills east of Napa. This unit is likely a rearguard dome within a caldera. It is capped by Tsvm an andesitic rhyolite.
Tsvbn	Tsvbn - Andesite of Atlas Peak - Dark to grey, plagioclase phyllic, andesite interbedded with tuff. Locally has a phyllic foliation.
Tsvbn	Tsvbn - Lava flows of Huchica Creek - Dark glassy flow rock with highly variable phenocryst assemblage, including plagioclase, pale olivine, and possible amphibole or pyroxene. Appears to be interbedded with a plagioclase phyllic dacite.
Tsvbn	Tsvbn - Rhyolite ash flow tuff - Black to light grey vitrophyre with angular lithic clasts overlying welded tuff with flattened pumice lapilli and unwelded pumice lapilli tuff. This unit overlies the older rocks with angular unconformity.
Tsvbn	Tsvbn - Dacite of Mt. George - Flows and domes of gray to tan porphyritic dacite. The dacite is typically strongly flow banded. The upper surfaces of flows are commonly puffed. K-Ar ages for the dacite are 4.30 ± 0.2 and 3.70 ± 0.1 Ma (Masterson, 1972; Fox and others, 1993).
Tsvbn	Tsvbn - Pumice breccia, pumice lapilli tuff, and pumice lapilli tuff with lithic fragments and granitic glass fragments that mantle flows and domes and occur between dacite flows.
Tsvbn	Tsvbn - Tuff of Tuluay Creek - Pumice lapilli tuff interbedded with tuffaceous volcanic agglomerate. Particulate glass fragments are abundant in some tuff beds.
Tsvbn	Tsvbn - Mafic flows and breccias - Basalt, basaltic andesite and andesite flows and breccias, interbedded with volcanic agglomerate and tuff.

Clahan, K.B., Wagner, D.L., Saucedo, G.J., Randolph-Loar, C.E., and Sowers, J.M., *Geologic Map of the Napa 7.5' Quadrangle, Napa County, California, CGS, 2004*
Scale 1:28,000

Symbol Explanation

--- ? Contact between map units - Solid where accurately located, dashed where approximately located, dotted where concealed, queried where uncertain.

--- Fault - Solid where accurately located, dashed where approximately located, dotted where concealed, queried where uncertain.

↑ Axis of anticline - Solid where accurately located.

↘ Strike and dip of inclined bedding.

~ Approximate strike and dip of inclined bedding.

↘ Strike and dip of inclined foliation.

↘ Landslide - Arrows indicate principal direction of movement, queried where existence is questionable (some geologic features are drawn within questionable landslides), hachured where headscarp is mapped.



Geology Map

NAP 121
0400000817-0

PM 8.9-9.4
July 2010

Environmental Consequences

Construction activities can impact paleontologically sensitive geologic units when vehicles or other work equipment impacts previously undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. This can result in adverse impacts to fossils by destroying them or otherwise altering them in such a way that their scientific value is lost.

The proposed project includes ground-disturbing activities. The average depth of planned excavation would be about 7.5 feet with the maximum depth being 15 feet for utility relocation activities. As the deepest excavation planned would still be in the undivided alluvium, the excavation would never go past the low paleontological sensitivity level. However, because the thickness of the overlying soils is unknown, the excavations could possibly cut into the potential fossil bearing strata.

Avoidance, Minimization, and/or Mitigation Measures

In general, avoidance and minimization measures are not feasible with regard to addressing impacts on paleontological resources. Geologic formations are usually extensive and project design cannot be adjusted sufficiently to effectively avoid or minimize paleontological impacts. As a result, mitigation is the approach generally taken to address these impacts.

The following mitigation measures are recommended and in accordance to Caltrans' Standard Environmental Reference Guidelines (Caltrans, 2007):

- A Paleontological Evaluation Report (PER) should be prepared prior to construction to define actual locations where monitoring may be necessary based upon the project design. For budgeting, the PER will provide enough information about the level of effort needed.
- Based upon the findings from the PER, a Paleontological Mitigation Plan (PMP) may be recommended to define the specific mitigation measures and methods that will be implemented.
- These recommendations may include:
 - A qualified paleontologist could be present to consult with grading and excavation contractors at pre-grading meetings.

- The Principal Paleontologist could also have an environmental meeting to train grading and excavation contractors in the identification of fossils.
- If fossils are discovered, the paleontologist (or paleontological monitor) would be called to recover them. Construction work in these areas may need to be halted or diverted to allow recovery of fossil remains in a timely manner.
- Fossil remains collected during the monitoring and salvage portion of the mitigation program would be cleaned, stabilized, sorted, and cataloged.
- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, would then be deposited in a scientific institution with paleontological collections.
- A final report may be completed that outlines the results of the mitigation program.

2.10 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 and Conservation 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

An Initial Site Assessment (ISA) Checklist was completed for the project in March 2000 and is available for review upon request. Federal, State and local environmental and health regulatory agency records were consulted to identify any known hazardous waste sites within or near the project vicinity. Additionally, the Department conducted an environmental regulatory database search for this project in early 2009.

Environmental Consequences

Results from the ISA indicate no potential or known hazardous waste sites in the project vicinity. The possibility of lead-base paint contamination from routine maintenance (i.e., sandblasting) was considered on the steel bridge structure. However, observation from the site reconnaissance indicated that there are no remnants of lead-based paint or any other evidence that would otherwise indicate that this project is impacted with lead-base paint contamination. The ISA concludes that the project has no known or potential hazardous waste involvement.

Further database research confirms that the project is considered low risk with regard to potential hazardous material concerns. Aerially deposited lead (ADL) from past vehicle emissions may be present at the site, but likely not much above levels known to occur in the natural environment. Naturally occurring asbestos (NOA) is not anticipated to be present at this location. A site investigation may be warranted during the design phase of the project to verify these assessments.

Ground Water

Ground water may be encountered during the structural excavation. Early discussion shall be initiated regarding the handling and disposal of this water during the design phase. Also, the ground water would be tested for potential contamination as a part of the Hazardous Waste Site Investigation.

Avoidance, Minimization, and/or Mitigation Measures

Proper handling and disposal of the ground water would be based on the levels of contaminants reported in a Site Investigation Report, to be completed during the design phase of the project.

The demolition of the existing steel bridge would require surveys for asbestos-containing materials and lead containing paint.

Depending upon the results of the aforementioned report and surveys, Caltrans would implement special material-handling plans that are consistent with state and

federal environmental laws. These laws and the resulting environmental consequences are described in the following sections:

Man-made Asbestos Containing Materials (ACM)

Because ACM is a hazardous substance and a hazardous air pollutant, BAAQMD regulations require that Caltrans conduct a thorough survey prior to any demolition for the presence of ACM. The survey shall include sampling and the results of laboratory analysis of the asbestos content of all suspected ACM. If this asbestos survey finds ACM then other regulations become effective during the demolition of a bridge.

Title 8 of the California Code of Regulations (CCR) Section 1529, "Asbestos," regulates asbestos exposure in all construction work as defined by Section 1502 and includes demolition of structures. Section 1502 states that the construction safety orders establish minimum safety standards whenever employment exists in connection with removal or wrecking of any fixed structure or its parts.

The removal of asbestos-containing material, such as bridge-barrier-rail shims, falls under the 8 CCR Section 1529 definition of "Class II asbestos work." Class II asbestos work means activities involving the removal of asbestos-containing material (ACM) which is not thermal system insulation or surfacing material. Removal means all operations where ACM is taken out or stripped from structures or substrates, and includes demolition operations.

Title 8 of CCR Section 1529, "Asbestos," specifies the following best management practices for handling ACM during bridge removal or demolition operations.

1. The material shall be thoroughly wetted with amended water prior to and during its removal.
2. The material shall be removed in an intact state unless the employer demonstrates that the intact removal is not possible.
3. Cutting, abrading or breaking the material shall be prohibited unless the employer can demonstrate that methods less likely to result in asbestos fiber release are not feasible.
4. Asbestos-containing material removed, shall be immediately bagged or wrapped, or kept wetted until transferred to a closed receptacle, no later than the end of the work shift.

Caltrans' nonstandard special provision (NSSP) entitled "Removal of Asbestos Containing Materials - Bridges and Non-building Structures," would be used to

address any ACM removal during the demolition of the bridge. This NSSP requires that all friable ACM be removed in a manner that conforms to OSHA work practice requirements. This NSSP also specifies that the contractor remove and handle all non-friable ACM to prevent breakage. The contractor must dispose of friable and non-friable waste containing asbestos at a disposal facility permitted to accept such material and that meets all the requirements specified by Federal, State, and Local regulations.

Lead Based Paint

The Construction Safety Orders found in Title 8 CCR Section 1532.1, "Lead" apply to all construction work where an employee may be occupationally exposed to lead. The term "construction work" includes the alteration, repair, demolition, and salvage of structures where lead or materials containing lead are present.

8 CCR Section 1532.1 requires that employers assure that no employee is exposed to lead at concentrations greater than 50 micrograms per cubic meter (50 $\mu\text{g}/\text{m}^3$). Employers are also required to establish a written compliance program to ensure that employees are not exposed to lead.

Title 17 CCR Section 35022 states that any individual conducting lead activities, excluding lead hazard evaluation, shall use containment and shall ensure that the work area has no visible dust or debris following the completion of the project. Containment means a system, process, or barrier used to contain lead hazards inside a work area.

Caltrans' Engineering Service Center typically specifies that SSP 15-025, "Existing Paint Systems" be used to ensure that any work that disturbs existing paint on a structure is protective of human health and safety. SSP 15-025, or a similar NSSP, would require that the contractor prepare a lead compliance plan in accordance with the requirements within 8 CCR Section 1532.1, "Lead." These special provisions would also address the issue of containment and the proper disposal of demolition waste that contains lead.

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

2.11 BIOLOGICAL ENVIRONMENT

2.1.1 NATURAL COMMUNITIES

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below 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 October 2011 and is available for review upon request. The proposed project limits, which include Department right of way and proposed right of way acquisitions including temporary construction easements (TCEs), cover approximately 4.2 acres. The project area consists of the project's permanent and temporary direct and indirect effect areas, including construction access, staging, and utility relocation areas. The Biological Study Area (BSA) of the project includes the project limits plus additional areas downstream of the bridge for a total of 6.46 acres.

The proposed project area is in a low-density residential area where the majority of the vegetation consists of non-native ornamental trees, shrubs, and herbaceous landscaped plants. Annual grasses and ruderal forbs are found along the road shoulder, and a riparian-forested area is found along Sarco Creek. Native trees in this area include California bay laurel (*Umbel aria californica*), valley oak (*Quercus lobata*), live oak (*Quercus agrifolia*), California redwood (*Sequoia sempervirens*), and California buckeye (*Aesculus californica*).

Environmental Consequences

Vegetation would be removed in locations where permanent structures would be placed (e.g., shoulder widening) and within the cut-and-fill line. Approximately thirty trees would be affected by the project. Seven riparian trees, including California bay laurel, oak, and California buckeye would be removed. Table 2-3 below lists trees that will be affected by the project. More detailed information regarding the specific locations of these trees can be found in the NES.

Table 2-3 Trees to be Removed

dbh* (cm)	Species	Riparian
64	Oak	No
32	Oak	No
36	Privet	No
35	Oak	No
120	Bay Laurel	No
94	Bay Laurel	No
42	Fruit Tree	No
40	Oak	No
83	Oak	Yes
62	Bay Laurel	Yes
67	Bay Laurel	Yes
13.5	Bay Laurel	Yes
101.5	Valley Oak	No
57	Oak	No
54.5	Oak	No
12	Magnolia	No
62	Redwood	No
224	Flowering Deciduous	No
10	Bay Laurel	No
45	Prunus	No
23	Acacia	No
252	Acacia	Yes
45	Coast Live Oak	Yes
25	Buckeye	Yes
10	Coast Live Oak	No
30	Buckeye	No
47	Valley Oak	No
60	Valley Oak	No
37	Oak	No
255	Buckeye	No

*dbh - diameter at breast height

Boldface type designates riparian trees

Avoidance, Minimization, and/or Mitigation Measures

Vegetation would be cleared only when necessary and would be cut above soil level except in areas that would be excavated for roadway construction. All clearing and grubbing would be completed by using hand tools and small mechanical tools, or by using backhoes and excavators. This would allow plants that reproduce vegetatively to resprout after construction. Wherever feasible, all temporarily affected areas

would be regraded to preconstruction contours, protected with erosion control measures, and revegetated after roadway construction is completed.

All clearing would be scheduled outside the bird-nesting season. If for any reason this schedule could not be met, surveys for nesting migratory birds would be conducted before clearing begins. All nest avoidance requirements of the Migratory Bird Treaty Act (MBTA) and California Department of Fish & Game (CDFG) code would be observed.

A Biological Monitor would be present onsite during vegetation removal to inspect for federally listed species and migratory birds, and to verify that all clearing is performed in accordance with the contract special provisions and permits.

Replacement trees would be planted at a ratio of 3:1 for native oak trees that have a diameter breast height (dbh) of greater than 4 inches and are within the riparian areas and within CDFG jurisdiction and a ratio of 1:1 for upland native oak trees. Non-native trees would be compensated at a ratio of 1:1. Trees would be planted on-site in the Project area to the maximum extent possible after the completion of construction. Potential offsite planting areas are being identified within the Napa Valley. The Department would complete the tree planting either through the purchase of credits or with off-site planting or conservatorship.

Onsite tree and shrub planting would occur as part of a separate landscaping project to follow the bridge/roadway construction project. The landscape planting could occur on and above the cut slope within the proposed right of way south of Route 121 and east of the bridge. However, some shrubs would be seeded or planted as erosion control measures during the construction season. Tree planting would be minimized on the cut slope and in the right of way west of the bridge to preserve the existing sloping meadow. A row of trees is proposed to be planted on the edge of the level pullout area east of Route 121 and west of the creek bank. Willow cuttings are proposed on the creek bank north of the bridge.

The Department would propose a 3-year plant establishment period with a 65 percent survival at the end of the third year.

All disturbed areas would be re-vegetated with appropriate native, non-invasive species or non-persistent hybrids that would serve to stabilize site conditions.

Filter fabric would line the access roads to protect existing vegetation and would be removed after each construction phase. The access ramp would be re-contoured to preconstruction conditions to the maximum extent practicable and within the same construction season.

General Avoidance and Minimization Measures

The following are general avoidance and minimization measures that pertain to all biological resources (including those that are discussed further in this chapter) within the entire project area. The Department would implement reasonable and prudent measures to minimize and avoid take of Central California Coastal (CCC) steelhead and avoid and minimize effects on waters of the State and waters of the United States. The Department has developed the design strategy such that permanent pile driving to reinforce the foundations of the bridge columns would occur only after dewatering the work area. This would eliminate the potential for adverse effects on steelhead and any other aquatic species from pile-driving actions.

These measures would be communicated to the contractor through the use of special provisions included in the contract bid solicitation package. The following measures have been incorporated into the design and construction sequencing as avoidance and minimization measures:

- The in-water work window would be restricted to June 1 thru October 15, unless an extension is granted from the appropriate agencies.
- Pile driving within the water column would not be conducted. Pile driving would involve pre-drilling in the dry creek bed to a depth of approximately ten feet below surface, then driving piles.
- Permanent erosion control measures would be implemented upon completion of construction. Permanent erosion control measures may include, but are not limited to, soil stabilization measures, such as hydroseeding and coir netting, and would be applied to all disturbed areas.
- A Department-approved biological monitor would conduct pre-construction surveys for federally and state listed species.
- A Department-approved biological monitor would be present to monitor and inspect for listed species and migratory birds and nests during ground disturbance activities.
- Prior to start of construction activities, environmentally sensitive area (ESA) fencing would be installed and maintained along the project limit boundary. This fencing would be removed at the end of construction activities.
- Vegetation would be cleared only when necessary and would be cut above original ground level except in areas that would be excavated for permanent construction.

- Vegetation clearing would occur outside the bird nesting season (February 15 through August 15). If this schedule could not be met, surveys for nesting migratory birds would be conducted before clearing begins. Nest avoidance requirements of the MBTA and CDFG code would be observed.
- All temporary disturbed areas would be restored to original grade and vegetated with appropriate native species to the maximum extent practicable.
- Department standard temporary erosion control (TEC) measures would be implemented on all disturbed soil areas.
- All state and federal waters and wetlands would be protected from sediment and pollutant discharges using appropriate erosion control measures.
- The creek bed would be protected by placing timber mats on top of temporary railing placed along the edge of the creek bed under the existing bridge, covering the water diversion PVC pipe and the creek bed.
- The Department would submit a water diversion plan to the Regional Water Quality Control Board (RWQCB), CDFG, and National Marine Fisheries Service (NMFS) for review prior to construction. The approved temporary water diversion system would be utilized during construction to ensure that there is no water in the creek bed during in-stream construction activity.
- The Department would submit a fish removal and relocation plan to CDFG and NMFS for review and approval prior to the installation and operation of a water diversion system.
- Appropriate Best Management Practices (BMPs) would be implemented to avoid and minimize adverse effects from construction-derived erosion and sediment pollution.
- Permanent erosion control measures, (e.g., hydroseeding and coir netting) would be implemented along the banks; and
- Scouring protection would be installed on the creek channel bed beneath the bridge.

2.1.2 WETLANDS AND OTHER WATERS

Regulatory Setting

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

Section 404 of the CWA 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 United States Environmental Protection Agency (U.S. EPA).

USACE issues two types of 404 permits: Standard and General permits. Nationwide permits, a type of General permit, are issued to authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 CFR Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (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 (FHWA) and/or Caltrans, as assigned, cannot undertake or provide assistance for

new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and 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 USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the CWA. Please see the Water Quality section for additional details.

Affected Environment

The Natural Environment Study (NES) was completed in October 2011 and is available for review upon request. A Wetland Delineation Report was submitted on April 6, 2011 to the USACE, San Francisco District. A Jurisdictional Determination from the USACE was received in May 2011.

No wetlands were identified within the project area. However, portions of Sarco Creek, one drainage channel, and one drainage swale were identified as waters of the United States within the project area. The aquatic features determined during the wetlands delineation are described in Table 2-4 below.

Table 2-4 Summary of Aquatic Features

Water Feature	Acreage	Linear Feet	Potentially USACE Jurisdictional
Sarco Creek	0.640	807	Yes – tributary to the Napa River
Drainage 1	0.005	30	Yes – tributary to Sarco Creek
Drainage 2	0.040	251	No – upland swale with no apparent connection to Sarco Creek or other water feature in the vicinity
Total Potential USACE Jurisdictional Waters	0.645	837	

Because of the steep, nearly vertical banks of Sarco Creek within the proposed project area, only the upper banks of the creek were mapped. Top of bank was considered to be a close approximation of the extent of the ordinary high water (OHW) along this reach of Sarco Creek based on observations of scouring lines and debris lines, and as evidenced by the steep channel banks.

The portion of Sarco Creek within the project area (0.64 acres and 807 linear feet) supports a dense riparian canopy. Drainage 1 (0.005 acres and 30 linear feet) conveys runoff from Route 121 to Sarco Creek through a 24-inch-diameter culvert. The drainage channel generally ranges from 1 to 3 feet wide. Drainage 2 (0.04 acres and 251 linear feet) is along the southeast edge of an open lot within the project area. This feature is a weakly-expressed, narrow linear topographic feature that ranges from 1 to 4 feet wide. This feature conveys flows to the northeast into a small culvert near the corner of a parking lot.

Environmental Consequences

The proposed work areas within aquatic resources include: Sarco Creek channel bed and bank areas, including areas in which the fish passage structure and temporary water diversion system would be constructed, utility relocations and sewer manhole reconstruction, as well as areas where the existing bridge abutment would be demolished.

A typical temporary water diversion system consisting of an upstream cofferdam and a PVC water conveyance pipe would be in place during the entire in-water construction period (June 1 through October 15). The cofferdam would be constructed across the creek with clean washed gravel bags wrapped in impermeable plastic sheeting. The PVC water conveyance pipe would be used for diverting the flow in the creek. This diversion pipe would be protected by placing timber mats on top of temporary K-rails placed along the edge of the creek bed under the existing bridge, covering the PVC pipe and the creek bed. The actual plan

for the temporary water diversion system would be presented by the contractor prior to start of construction for agency review and approval.

The existing 200-foot-long underground gas line (along the west side of the roadway) and the 600-foot-long water line (on the east side of the road) crossing Sarco Creek would be relocated, but both would remain in Sarco Creek. Additionally, the existing underground sewer line would be replaced. One 15-foot-deep sewer manhole would be removed, and a 370-foot-long sewer line would be abandoned or removed. A new sewer line would consist of a 16-inch-diameter, 370-foot-long pipe and 3 new manholes. The installation of the new pipe would require a 7.5-foot-wide by 15-foot-deep trench supported with temporary shoring. The excavation for the manholes would be 15 feet deep. The utility lines are anticipated to be installed adjacent to the current lines and occupy a similar footprint. All in-water utility work and the implementation of a dewater plan would be restricted to the work period between June 1 and October 15, unless an extension is granted from the appropriate agencies.

The proposed new replacement bridge would be longer than the existing bridge; therefore, all excavation work for the new abutment foundations would be behind the existing abutments (and outside the creek channel). The excavation for the new abutments would proceed after removing the existing bridge's abutments.

Permanent fish passage structures, consisting of a roughened-rock ramp, one permanent rock weir backfilling the creek bed, and clean native bed materials, would be placed into the creek channel during construction. Prior to installation of the rock weir, the creek bed would be excavated approximately 3.5 feet deep, and the area between the concrete encased sewer line and the rock weir would be backfilled with native creek bed material.

The rock weir would be constructed approximately 15 to 20 feet downstream of the existing sewer line and would have a maximum top width of 5 feet and a bottom width of approximately 17 feet. The weir would be constructed with 0.25-ton rocks (Department Standard Specifications). The weir rocks would be individually placed into the creek bed to protect the underlying filter fabric that would be placed underneath all weir rocks, including footer rocks.

RSP material would be placed on the north bank and permanent erosion control measures would be installed on the south bank, upstream of the bridge.

During construction, both temporary and permanent erosion controls and scouring protection measures would be placed on the creek bed underneath the bridge in accordance with Structures Hydraulics and Department Erosion Control Standards.

Avoidance, Minimization, and/or Mitigation Measures

The Department proposes to remove the existing middle pier wall and replace the existing bridge with a single-span design, which would reduce the amount of fill into waters of the United States, and would restore and preserve the integrity of Sarco Creek. General avoidance and minimization measures are noted in the above Natural Communities section. In addition to those described in that section, the following measures would be implemented to avoid and minimize effects to waters of the United States.

- Work within the bed and bank of Sarco Creek would be restricted to the dry season between June 1 and October 15, unless an extension is granted from the appropriate agencies.
- The Department would require a stormwater pollution prevention plan (SWPPP) before construction begins to avoid and minimize discharges to Sarco Creek and drainages that flow into it. The SWPPP would include specifications for the placement of erosion control devices and measures to reduce the introduction of pollutants from runoff and spills during construction.
- Temporary erosion control measures would be implemented in all disturbed areas. Permanent erosion control measures would be implemented upon completion of construction. Silt fencing or other erosion control measures would be installed to prevent sediment and pollutant discharges to state and federal waters and wetlands.
- Permanent erosion control measures to receive storm water discharges from the highway or other impervious surfaces would be incorporated to the maximum extent practicable.
- ESA fencing would be installed before the start of construction to protect special aquatic resources.

The proposed project would not affect wetlands. Effects to waters of the United States would be minimized to the greatest extent possible through implementation of Department BMPs, working during the dry season (June 1 through October 15), and incorporating applicable water quality measures during the construction period. Clear spanning the creek and removing the old in-stream pier support would be self-minimizing by allowing greater conveyance. The Department would also be constructing the weir structure to improve fish passage, which the Department considers as minimization on-site.

2.1.3 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's National Marine Fisheries Service (NOAA Fisheries Service) 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 animals 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 Service candidate species.

Federal laws and regulations pertaining to wildlife include the following:

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

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 October 2011 and is available for review upon request.

Western Pond Turtle

The western pond turtle (*Actinemys* [formerly *Clemmys*] *marmorata marmorata*) is a California species of special concern. Western pond turtles range throughout the state of California, from southern coastal California and the Central Valley, east to the Cascade Range and Sierra Nevada. The two subspecies, northwestern and southwestern, are believed to integrate over a broad range in the Central Valley.

This species occurs in a variety of permanent and intermittent aquatic habitats, such as ponds, marshes, rivers, streams, and ephemeral pools. Pond turtles require suitable basking and haul-out sites, such as emergent rocks or floating logs, which they use to regulate their temperature throughout the day. In addition to appropriate aquatic habitat, these turtles require an upland egg-laying site in the vicinity of the aquatic habitat, often within 656 feet. Nests are typically created in grassy, open fields with soils that are high in clay or silt fraction. Egg laying usually takes place between March and August.

A recent study has demonstrated that this species may spend the winter in an inactive state, on land or in the water, and in other cases may remain active and in the water throughout the year. Although the turtles may be active year-round along the coast, at interior locations such as the Central Valley, pond turtles are more likely to be active between April and October. Western pond turtles have been documented hibernating up to 1,150 feet from a watercourse, immediately adjacent to a watercourse, and underwater in mud. Upland hibernacula may include any type of crack, hole, or object that a turtle seeking cover might squeeze into or burrow underneath.

According to the CDFG's California Natural Diversity Database (CNDDDB), the closest recorded occurrence of western pond turtle is about 1 mile from the project area. No western pond turtles were observed during the reconnaissance-level wildlife and habitat assessment; however, no protocol-level surveys were conducted for western pond turtles.

Migratory Birds

Common migratory bird species found within the project area include red-tailed hawks, Acorn and Nuttall's woodpeckers, western blue bird, yellow-billed magpie, Anna's hummingbird, Lazuli bunting, and Cooper's hawk.

The project area contains trees that could serve as potential nesting habitat for species protected by the MBTA. Active and inactive nests were observed within the project vicinity, both in the surrounding vegetation and under the bridge. An active red-shouldered hawk (*Buteo lineatus*) nest with one chick was observed in a blue gum eucalyptus (*Eucalyptus globulus*) tree approximately 200 feet north of the bridge in 2009. Also, a black phoebe (*Sayornis nigricans*) nest was observed underneath the Sarco Creek Bridge.

Environmental Consequences

Western Pond Turtle

Potential effects to western pond turtles may include loss of individuals during grading and heavy equipment movement, potential loss of breeding habitat, and temporary disturbance to dispersal habitat. In addition, there are potential effects through increased sedimentation and due to construction activities and increased hydrocarbon pollutants from roadside run-off due to increased impervious surface. While there are potential effects associated with the project, these effects will be reduced through the general avoidance and minimization measures described above in the Natural Communities section. The proposed project is not expected to increase light, noise, vibration, and visual disturbances within the project area.

The Department proposes to remove the existing middle pier wall and replace the existing bridge with a single-span design. This new design would allow animals of all sizes to pass more freely underneath the bridge. The proposed bridge design and fish passage improvements are intended to enhance the quality of the aquatic environment for all aquatic species including western pond turtles.

Migratory Birds

With the general avoidance and minimization measures described above in the Natural Communities section, there would be no effects to migratory birds.

Avoidance, Minimization, and/or Mitigation Measures

Western Pond Turtle

In addition to the general avoidance and minimization measures, the following avoidance measures would be implemented:

- Qualified biologists would conduct preconstruction surveys for western pond turtles.
- An onsite Biological Monitor would monitor activities that may affect sensitive biological resources, including western pond turtles.
- Any western pond turtles that are encountered during project activities would be relocated out of the project area.
- Water diversion structure would also act as an exclusion barrier within the bed and bank area of the creek.

Effects to western pond turtles can be avoided or minimized by implementing the measures previously described. Therefore, no compensatory mitigation is being proposed by the Department. If western pond turtles are found during preconstruction surveys, potential impacts would be minimized by relocating individual turtles to a location outside the project area.

The Department proposes to remove the existing middle pier wall and replace the existing bridge with a single-span design. This new design would allow animals of all sizes to pass more freely underneath the bridge. The proposed bridge design and fish passage improvements are intended to enhance the quality of the aquatic environment for all aquatic species, including western pond turtles.

Migratory Birds

Migratory birds may nest on the ground, on structures, or in trees, shrubs, or other vegetation within the project area. The following measures would be implemented to avoid or minimize impacts to nesting birds:

- A preconstruction bird nesting survey would be conducted to survey impacted trees and shrubs prior to the beginning of construction. The Department may remove unoccupied nests during the non-nesting period October 1 to February 14.
- Exclusion methods may be used to prevent birds from nesting and roosting within the project area. Such methods may include but are not limited to the use of small-mesh netting on the bridge structure, which would be installed prior to the nesting season.
- If occupied nests (i.e., nests with birds or eggs) are present within the project area, work within 50 feet of the nest of passerine species or 200 feet of raptor species would be avoided.

By implementing the general avoidance and minimization measures mentioned above, the Department does not propose any compensatory mitigation for migratory birds.

2.1.4 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 (FHWA), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of 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 species listed under both FESA and CESA 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 California Fish and Game Code.

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

Affected Environment

The Natural Environment Study (NES) was completed in October 2011 and is available for review upon request. The Department has initiated formal consultation under Section 7 of FESA with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) since this project would have the potential to impact a federally listed species and/or destroy or adversely modify designated critical habitat. A Biological Assessment discussing effects on threatened Central California Coastal (CCC) steelhead and associated habitat that may be affected by the implementation of this project was submitted to the NMFS on April 25, 2011. The Department received a Letter of Concurrence that the project would not adversely affect CCC from the NMFS on October 24, 2011 and is located in Appendix C. Discussion of this species and potential project effects follows. No consultation with the CDFG under the CESA is required for this project.

Central California Coastal Steelhead

The Central California Coastal (CCC) distinct population segment (DPS) of steelhead was federally listed as threatened on January 5, 2006, for an effective date of February 6, 2006. This DPS includes all naturally spawned anadromous populations below natural and man-made impassable barriers in California streams from the Russian River (inclusive) to Aptos Creek (inclusive), and the drainages of San Francisco Bay, San Pablo Bay, and Suisun Bay eastward to Chipps Island at the confluence of the Sacramento River with the San Joaquin River.

Habitat requirements for steelhead include cool, clean flowing water with sufficient dissolved oxygen and minimal turbidity for successful incubation and rearing. Steelhead juveniles require cool stream water temperatures year-round because the species does not emigrate from its natal stream until its second year of life. Adult CCC steelhead typically enter fresh water in December through March, with a peak in January through February. Adult spawning generally occurs from December through April, depending on the local population. Most steelhead live in the ocean for 1 to 3 years before returning to spawn.

The current number of steelhead natal to the Napa River and Sarco Creek is unknown. The most recent status review concluded that CCC steelhead remain likely to become endangered in the foreseeable future.

No species-specific presence/absence survey for this species was conducted. Based on observed habitat conditions, Sarco Creek within the project area likely provides migration and dispersal habitat suitable for adult and juvenile steelhead, in addition to juvenile rearing habitat (Koehler and Edwards 2009). These habitats are likely suitable for steelhead only during late fall through early spring (mid-October

through mid-April) when stream flows and water temperature conditions allow occupation by this species.

From known life history characteristics, steelhead are inferred to occupy Sarco Creek at least on a seasonal basis in the project area. Due to seasonal conditions, including low stream flow and water temperatures, during the proposed project in-water work window (June 1 through October 15), significant numbers of adult steelhead are unlikely to be present in the project area. Should the construction work period needed for installing the bridge and fish passage structures extend into November, adult steelhead could begin to immigrate to the watershed and through the project area. Similarly, due to the natural habitat conditions during the proposed work window, the likelihood that significant numbers of juvenile steelhead would be present in the project area is low.

Critical habitat for CCC steelhead was designated on September 2, 2005 and became effective on January 2, 2006. Napa County is included in this designated Critical Habitat. Within Napa County, Critical Habitat includes the San Pablo Hydrologic Unit and Napa River Hydrologic Sub-Area with the longitudinal extent in Sarco Creek, extending from its confluence with Miliken Creek to longitude 38.3567 North, latitude -122.2071 West (70FR52488). The lateral extent of designated critical habitat is defined as the width of the stream channel defined by the ordinary high-water line as designated by the USACE (70FR52488). The designated Critical Habitat for CCC steelhead in Sarco Creek includes the project area. The following primary constituent elements of critical habitat for CCC steelhead that are located within the project-affected area are:

- Freshwater rearing sites
- Freshwater migration corridors

Environmental Consequences

Central California Coastal Steelhead

The effects to the CCC steelhead habitat are neither adverse nor significant, and are determined to be 5,488 square feet (0.126 acres) of permanent effects to rearing and migration habitat, 1,431 square feet (0.033 acres) of temporary effects to rearing and migration habitat, 2,584 square feet (0.059 acres) of permanent effects to shaded riparian habitat, and 1,636 square feet (0.038) acres of temporary effects to shaded riparian habitat. The Letter of Concurrence received from the NMFS as a result of Section 7 consultation on October 24, 2011 concurs with the Department's determination that the project is "not likely to adversely affect threatened CCC steelhead."

Direct effects are anticipated within the project footprint only during the dewatering of work areas. To ensure safe removal and relocation of fish within the wetted areas, it would be necessary to capture and handle steelhead should they be present in residual pool areas during dewatering. Handling steelhead during capture and relocation would constitute “harassment” under Section 7 of the FESA, resulting in “take” of the species. However, implementation of a NMFS/CDFG-approved dewatering and fish capture/relocation plan would result in minimizing mortality and injury to steelhead. Should CCC steelhead be present during the dewatering process, the Department would re-initiate consultation with the NMFS to obtain the appropriate take authorization.

The removal of the middle weir of the existing Sarco Creek Bridge and the addition of the fish passage structure would result in beneficial effects to the habitat.

Effects to steelhead habitat would result from the installation of the bridge abutments, fish passage structure and relocation/installation of underground utilities crossing. The riparian corridor would be impacted by the removal of a small number of riparian trees and shrubs resulting in the loss of shade, a potential increase in summer stream temperatures and a potential decrease in detritus associated with the canopy cover. This would be a temporal effect due to restoration or re-vegetation after the completion of bridge construction. Rearing habitat for juvenile steelhead and fish migration habitat for adult and juvenile steelhead would be temporarily lost during dewatering during construction.

Additional indirect effects of the proposed project include removal and replacement of natural bottom substrates resulting in a temporary loss of a small volume of juvenile rearing habitat caused by installation of a fish passage weir. Construction of the fish passage elements would ultimately result in long-term rearing habitat enhancement for juveniles, and the creation of the fish passage structure would improve passage and dispersal conditions for adult and juvenile steelhead.

The construction of the larger single-span bridge deck would result in an increase in shaded riparian area, offsetting the loss of canopy cover and regulation of water temperatures. Overall, the project would result in enhanced habitat conditions and in long-term beneficial effects to CCC steelhead.

Dewatering during construction would have a temporary effect on CCC steelhead critical habitat by the short-term alteration of the streambed and channel. However, the construction would result in long-term, rearing habitat enhancements and would offset the short-term losses of steelhead Critical Habitat. The Department anticipates the project would result in an enhancement and benefit CCC steelhead Critical Habitat.

Avoidance, Minimization, and/or Mitigation Measures

Central California Coast Steelhead

In-water work would be restricted to a seasonal window from June 1 to October 15, unless an extension is granted from the appropriate agencies. Furthermore, the design strategy is such that permanent pile driving to reinforce the foundations of the bridge columns within the water column would not be necessary. This would eliminate the potential for adverse effects of acoustic shock on steelhead from pile-driving actions in Sarco Creek. In addition, habitat quality would be improved through the removal of structural supports and footings from the stream channel and installation of a step weir to improve fish passage and stream structure.

The Department would implement several measures to avoid and minimize adverse environmental effects during construction. The following minimization measures are proposed:

- A biological monitor would be present to monitor and inspect for state and federally listed species and migratory birds during site preparation and construction.
- The Department's standard temporary erosion control measures would be implemented in all areas of disturbed soil.
- All state and federal waters would be protected from sediment and pollutant discharges using appropriate techniques.
- Precast concrete would be used for the construction of the bridge, which would eliminate the need to erect falsework below top of bank.
- The creek bed would be protected by placing timber mats on top of temporary railing placed along the edge of the creek bed under the existing bridge, covering the diversion PVC pipe and the creek bed.
- The Department would submit a water diversion plan to the RWQCB, CDFG, and NMFS for review prior to construction.
- Should it be necessary (water is present in Sarco Creek Project within the action area), the Department would submit a fish removal and relocation plan to CDFG and NMFS for review and approval prior to the installation and operation of a water diversion system.

- The approved temporary water diversion system would be utilized during construction to ensure that there is no water in the creek bed during in-stream construction activity.
- Appropriate BMPs would be implemented to avoid and minimize adverse effects from construction-derived erosion and sediment pollution.
- Permanent erosion control measures (e.g., hydroseeding and coir netting) would be implemented along the banks; and
- Both temporary and permanent erosion control BMPs and scouring protection would be installed on the creek channel bed beneath the bridge during construction.

The Department does not propose compensatory mitigation for CCC steelhead. The replacement of the existing structure with a single-span bridge, removal of the in-stream support structure and implementation of fish passage enhancements, along with the proposed avoidance and minimization measures, would provide an overall net-benefit to CCC steelhead habitat and to the species within Sarco Creek.

2.12 CONSTRUCTION IMPACTS

Construction Scheduling/Transportation Management Plan

Because the project is located in a residential area, all construction activities are expected to be performed during daytime hours. Depending on construction method chosen, the proposed project would either require one-way traffic control measures at the bridge or full closure of the bridge for up to three construction seasons, from April to November/December. Signs denoting detours would be installed prior to construction. Traffic detours would be discussed in a Transportation Management Plan that is discussed in the Traffic and Transportation/Pedestrian and Bicycle Facilities section of this chapter.

Air Quality

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

Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Department Standard Specifications Section 7-1.01I, "Sound Control Requirements," which states that noise levels generated during construction shall comply with applicable local, state, and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

No adverse or significant noise impacts from construction are anticipated because construction would be conducted in accordance with Department Standard Specifications Section 7-1.01I and applicable local noise standards and ordinances. Construction noise would be short-term and intermittent. Further, implementing the following measures would minimize the temporary noise impacts from construction:

- All equipment would have sound-control devices that are no less effective than those provided on the original equipment. No equipment would have an unmuffled exhaust.

- As directed by the Department, the contractor would implement appropriate additional noise minimization measures, including changing the location of stationary construction equipment, turning off idling equipment, avoiding construction activities during the night and weekends, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

2.13 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.

Transportation sources (passenger cars, light duty trucks, other trucks, buses and motorcycles) in the state of California make up the largest source (second is 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.

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

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and proactive approach to dealing with 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.

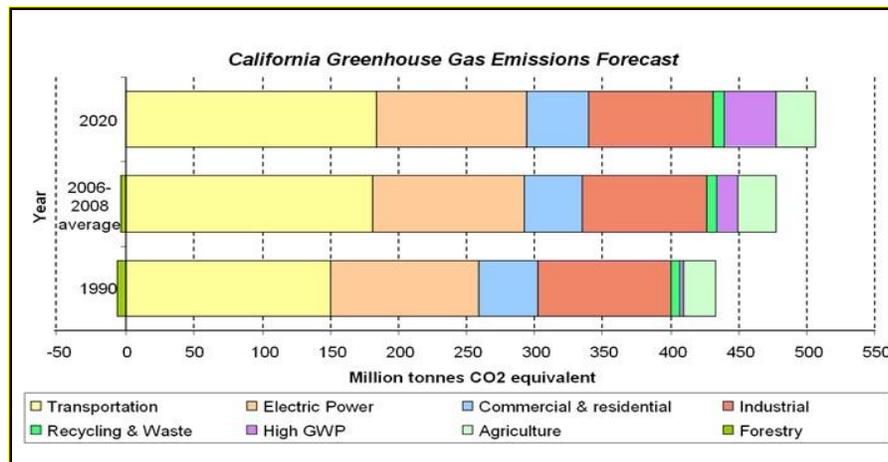
Senate Bill 97 (Chapter 185, 2007): required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. The Amendments became effective on March 18, 2010.

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.² In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See California Environmental Quality Act (CEQA) Guidelines sections 15064(h)(1) and 15130. To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

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 2-6 California Greenhouse Gas Forecast



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

² 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).

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, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (see Climate Action Program at Caltrans (December 2006)).³

The purpose of this project is to improve safety for the traveling public and improve structural integrity by replacing the Sarco 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 lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

Measures integrated into the project which help limit/minimize construction-related GHG emissions include reducing traffic delays by developing a Transportation Management Plan (TMP) during the PS&E phase.

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

³ Caltrans Climate Action Program is located at the following web address:
http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

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 (COZEED).
- 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 would result in a slight increase in greenhouse gas emissions during construction, Caltrans expects that there would be no operational increase in GHG emissions associated with this proposed project. However, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a determination on the project's direct

impact and its contribution on the cumulative scale to climate change. Nonetheless, Caltrans is taking further measures to help reduce energy consumption and greenhouse gas 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,

Figure 2-7 The Mobility Pyramid



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. 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 above in Figure 2-7, 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 UC Davis.

Table 2-5 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).

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

Table 2-5 Climate Change/CO2 Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO ₂ Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	.0045	.0065 .045 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	.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	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Adaptation Strategies

“Adaptation strategies” refer to how the Department and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, 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. This Executive Order set in motion several agencies and actions to address the concern of sea level rise.

The California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop. *The California Climate Adaptation Strategy* (Dec 2009)⁴, which summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to Executive Order S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including Environmental Protection; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that

⁴ <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

Resources Agency was also directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010⁵ to advise how California should plan for future sea level rise. The report is to include:

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

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. 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

Until the final report from the National Academy of Sciences is released, interim guidance has been released by The Coastal Ocean Climate Action Team (CO-CAT) as well as the Department as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise.

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. This project was programmed for construction in 2008.

Furthermore Executive Order S-13-08 directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems

⁵ The Sea Level Rise Assessment report is currently due to be completed in 2012 and will include information for Oregon and Washington State as well as California.

to sea level affecting safety, maintenance and operational improvements of the system and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change 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.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to Executive Order S-13-08 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 in 2012.

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Chapter 3 - Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. 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 and interagency coordination meetings. 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 at least 2008 when the project was programmed. There is no known opposition to the project.

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

December 8, 2010: Rachel Cotroneo, Department District 4 Associate Planner-Biologist, met with Joe Heublein, Fishery Biologist in the National Marine Fisheries Service (NMFS) Santa Rosa office at the Sarco Creek Project site on December 8, 2010. On December 9, 2010, Ms. Cotroneo summarized the topics discussed at that field meeting in an email to Mr. Heublein (R. Cotroneo, pers. comm. 2010).

January 18, 2011: Rachel Cotroneo spoke to Melissa Escaron, CDFG Staff Environmental Scientist, on January 18, 2011, confirming CDFG's willingness to accept the National Oceanic and Atmospheric Administration (NOAA) recommended in-water work window of April 15 through October 15 (R. Cotroneo, pers. comm. 2011).

March 24, 2011: Project development team meeting with various Department team members and Joe Heublein of NMFS. Joe Heublein expressed concerns with the fish passage design and suggested an approach using one weir downstream of the bridge site to accommodate fish passage. He indicated that he would like to see a design that would not need an access road. Other topics discussed were; construction schedule and a June 1 start date for in-creek work.

March, 25, 2011: E-mail from Joe Heublein of NMFS to Rachel Cotroneo of Caltrans. The e-mail contained NMFS-approved examples of a project description, dewatering plan and fish relocation. Joe mentioned in the e-mail that he would get back to Rachel about the June 1 start date within the week.

April 7, 2011: Telephone conversation between Joe Heublein of NMFS and Rachel Cotroneo of Caltrans. Joe expressed his desire to see a design for fish passage using one weir without an access road. He also mentioned that he would like to see a Determination of “Not Likely to Adversely Affect” with 2 years of monitoring to ensure that no fish will be present during the proposed months of construction. He mentioned that he would like to speak with Tim Hamaker of CH2M HILL regarding hydrograph, surface flow, and juvenile rearing at Sarco Creek Bridge.

April 7, 2011: Telephone conversation between Joe Heublein of NMFS and Tim Hamaker of CH2M HILL. The hydrology of Sarco Creek, juvenile steelhead rearing conditions, and other topics were discussed. Joe continued to express concern for a multiple-weir fish passage design requiring a large access road, removal of riparian vegetation, and multiple years of in-channel construction. Joe stated that NMFS is not overly concerned about anadromous fish passage at the Sarco Creek Project site because adult fish are passing currently, and he is more concerned about construction impacts. His desire would be for a modest improvement in passage for steelhead (e.g., “notching” the concrete-encased pipeline) as a tradeoff of much lesser impacts to riparian foliage as an alternative.

April 25, 2011: A Biological Assessment for the threatened CCC steelhead and associated habitat that may be affected by the project was submitted to NOAA Fisheries for formal consultation under Section 7 of the Federal Endangered Species Act.

August 2011: Site visit with Joe Heublein of NMFS regarding in-water work for Sarco Creek.

October 24, 2011: The Department (to Jeff Jensen) received the Letter of Concurrence from NOAA Fisheries (Appendix C).

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Appendix A - CEQA Checklist

CEQA Environmental Checklist

04-NAP-121

8.9/9.4

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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"/>

	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:

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"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input 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:				
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 type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VII. GREENHOUSE GAS EMISSIONS: Would the project:

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

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

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

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

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

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

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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"/>

	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:

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
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XV. RECREATION:

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

XVI. TRANSPORTATION/TRAFFIC: Would the project:

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

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

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

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Appendix B - Title VI Policy Statement

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

"Caltrans improves mobility across California"

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Appendix C - National Oceanic and Atmospheric Administration's National Marine Fisheries Service Letter of Concurrence



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

October 24, 2011

In response, refer to:
2011/03131

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 April 25, 2011, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Effective July 1, 2007, the Federal Highway Administration (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 also serves as consultation under the authority of, and in accordance with, the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. These consultations pertain to Caltrans' proposed State Route 121 Sarco Creek Bridge Replacement Project located in Napa County, California.

The Sarco Creek Bridge is located north of the City of Napa at post mile (PM) 9.3 on State Route (SR) 121, in Napa County, California. The existing Sarco Creek Bridge is 31 feet (ft) long by 35.5 ft wide and was constructed in 1918. The two bridge deck spans are supported by a single pier with its foundation located within Sarco Creek. Proposed construction involves removing the existing bridge, constructing a larger free-spanning bridge (44 ft long and 43.5 ft wide), and improving a partial fish barrier below the bridge. Sarco Creek originates in the foothills northeast of the City of Napa (approximately 2.5 miles northeast of the project site); the confluence of Sarco Creek and Miliken Creek (a tributary to the Napa River) is approximately 500 ft downstream of the project site. A sewer line concrete encasement immediately downstream of the bridge creates a backwater, and a small stagnant pool persists below the Sarco Creek Bridge during summer months. Typically, surface flow is absent by early summer (June 1) and, due in part to this lack of flow, water quality is poor in the vicinity of the Sarco Creek Bridge.



A maximum of three summer work seasons (July 1st and October 15th) in the dewatered channel below the Sarco Creek Bridge will be required to replace the existing bridge. A temporary water diversion system consisting of an upstream coffer dam and a PVC water conveyance pipe will be in place during all in channel summer construction seasons. The coffer dam will be constructed across the creek with clean washed gravel bags wrapped in impermeable plastic sheeting. The PVC water conveyance pipe will be used for diverting any flow that is present in the creek. This diversion pipe will be protected by placing timber mats on top of temporary K-rail placed along the edge of the creek bed under the existing bridge, covering and protecting the PVC pipe and the creek bed. Any standing water that is encounter below the bridge during construction will be removed and disposed of off-site or used on-site for dust control measures. Utility relocation activities below Sarco Creek Bridge are proposed to commence in the first summer. Activities associated with bridge construction are anticipated to begin the following summer, and require two seasons of construction within the dewatered channel. Bridge construction work will include removing and replacing the east half of the bridge, widening the northbound lane to conform to the new bridge, replacing the remaining west part of the bridge, constructing the fish passage structure, and implementing permanent erosion control measures. Fish passage improvement will consist of constructing a roughened rock ramp and, if necessary, one rock weir downstream of the existing sewer line concrete encasement. The roughened rock ramp will be covered with clean native bed materials. The site of the construction access road, located on the northeastern bank of Sarco Creek at the bridge, is encroached by suburban development. This bank is over-steepened and vegetated primarily with blackberry. Therefore, there is no room to restore this bank to a stable slope with native materials following bridge replacement, and permanent erosion control measures will be necessary. This involves placing one-to-two-ton rocks covering the width and height of the access road and native soil and plantings that fill the voids between the rocks. The rock slope protection will be keyed-in at the bottom of the slope and match the existing slope conforms.

The Sarco Creek Bridge Replacement Project will involve the following measures to minimize disturbance of the channel and riparian corridor: 1) construction of only one access road on the northeast corner of the bridge; 2) construction of new abutment foundations behind the existing abutments (and outside of the creek channel); 3) conducting in channel construction only in dewatered areas during periods of little or no surface flow; 4) construction of proposed roughened ramp and rock weir from the bank and/or deck of the bridge utilizing a crane and only small construction machinery within the dewatered channel (e.g., Bobcat®); and 5) implementation of appropriate best management practices (BMPs) during all in channel construction work to mitigate for erosion and water pollution from soils and sediments.

Caltrans has determined that the potential impacts related to the State Route 121 Sarco Creek Bridge Replacement Project are not likely to adversely affect listed species or designated critical habitat, and has asked NMFS for concurrence with this determination.

Endangered Species Act

In its April 25, 2011, letter Caltrans asked for concurrence with a finding that the project is not likely to adversely affect California Central Coast (CCC) steelhead (*Oncorhynchus mykiss*). Available information indicates the following listed species (Distinct Population Segments [DPS]) or designated critical habitat may occur in the project area:

Central California Coast steelhead (*O. mykiss*) DPS

Threatened (71 FR 834; January 5, 2006)

Critical Habitat (70 FR 52488; September 2, 2005).

The life history of steelhead is summarized in Busby *et al.* (1996). Juvenile CCC steelhead stranding occurred in spring of 2005 and 2006 in Sarco Creek below the Vichy Avenue crossing (approximately 1.25 miles upstream of the project site) (Koehler and Edwards, 2009). The presence of stranded juvenile steelhead indicates successful spawning can occur during some years in the upper accessible reaches of Sarco Creek. No salmonids or suitable rearing habitat, however, were observed in accessible reaches of Sarco Creek during July 2007 due to lack of water or poor water quality (Koehler and Edwards, 2009). Furthermore, no surface flow was present in the isolated pool below the Sarco Creek Bridge on June 2, 2011, and habitat appeared to be unsuitable for salmonid rearing (J. Heublein, personal observation). Therefore, surface flows cease and water quality is poor in accessible reaches of Sarco Creek during late spring and summer months in even extremely wet years (2011); and listed salmonids are not likely to be present in the waters of Sarco Creek adjacent to the project site during the proposed in-water construction season (July-October).

Sarco Creek is designated critical habitat for CCC steelhead. Surface flow is typically limited to the winter and early spring within the action area; and water quality and aquatic habitat is poor during summer months due to low groundwater elevations. A limited amount of spawning substrate is present within the action area, but successful summer rearing is unlikely due to poor aquatic conditions. Therefore, the action area within Sarco Creek provides primarily migration and dispersal habitat for adult and juvenile steelhead, and juvenile rearing habitat when surface flow is present. Proposed bridge construction activities involve a minimal amount of riparian disturbance, removal of instream structures (the existing center bridge pier), and enhancement of fish passage at the project site. Therefore, activities associated with the Sarco Creek Bridge replacement could constitute a long-term benefit to the available habitat in Sarco Creek.

Based on the best available information, NMFS concurs with Caltran's determination that threatened CCC steelhead are not likely to be adversely affected by the State Route 121 Sarco Creek Bridge Replacement Project. This concludes informal consultation in accordance with 50 CFR 402.13(a) for the proposed State Route 121 Sarco Creek Bridge Replacement Project, Napa County, California. However, further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.

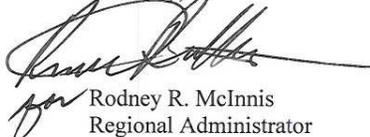
Fish and Wildlife Coordination Act

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development [16 U.S.C. 661]. The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose,

including navigation and drainage [16 U.S.C 662(a)]. Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. NMFS has no further comments to provide.

Please contact Mr. Joseph Heublein at (707) 575-1251, or via e-mail at joe.heublein@noaa.gov should you have any questions.

Sincerely,



for Rodney R. McInnis
Regional Administrator

Enclosures

cc: Chris States, Caltrans District 4, Oakland
DianneJoy Hughey, Caltrans District 4, Oakland
Suzanne Gilmore, CDFG, Yountville
Copy to file 151422-SWR-2011-SR00371

Literature Cited

- 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. United States Department of Commerce, National Oceanic and Atmospheric Administration Technical Memorandum NMFS-NWFSC-27. 261 pages.
- Koehler, J. and C. Edwards. 2009. Southern Napa River Watershed Restoration Plan: Final Report. Prepared For California Department of Fish and Game, Contract # P0530429. Fisheries Restoration Grant Program. Napa County Resource Conservation District, 1303 Jefferson St. Suite 500b, Napa, California 94559. April 30, 2009.

Appendix D - U. S. Fish & Wildlife Service Species List

Sacramento Fish & Wildlife Office Species List

http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists_auto-l..

United States Department of the Interior



FISH AND WILDLIFE SERVICE



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

January 17, 2012

Document Number: 120117115316

DianneJoy R. Hughey
Caltrans
111 Grand Ave
Oakland, CA 94623

Subject: Species List for Sarco Creek Bridge Replacement

Dear: Ms. Hughey

We are sending this official species list in response to your January 17, 2012 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

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

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

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 16, 2012.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found [here](#).

Endangered Species Division



These buttons will not appear on your list.

Revise Selection

Print this page

Print species list before going on to letter.

Make Official Letter

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: 120117115316

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Branchinecta conservatio
 - Conservancy fairy shrimp (E)
- Branchinecta lynchi
 - Critical habitat, vernal pool fairy shrimp (X)
 - vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus
 - valley elderberry longhorn beetle (T)
- Speyeria callippe callippe
 - callippe silverspot butterfly (E)
- Speyeria zerene myrtleae
 - Myrtle's silverspot butterfly (E)
- Syncaris pacifica
 - California freshwater shrimp (E)

Fish

- *Acipenser medirostris*
 - green sturgeon (T) (NMFS)
- *Eucyclogobius newberryi*
 - tidewater goby (E)
- *Hypomesus transpacificus*
 - Critical habitat, delta smelt (X)
 - 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)
 - Critical habitat, winter-run chinook salmon (X) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

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

Reptiles

- *Thamnophis gigas*
 - giant garter snake (T)

Birds

- *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)

- *Strix occidentalis caurina*
 - northern spotted owl (T)

Mammals

- *Reithrodontomys raviventris*
 - salt marsh harvest mouse (E)

Plants

- *Astragalus clarianus*
 - Clara Hunt's milk-vetch (E)
- *Blennosperma bakeri*
 - Baker's stickyseed [=Sonoma Sunshine] (E)
- *Castilleja affinis* ssp. *neglecta*
 - Tiburon paintbrush (E)
- *Cordylanthus mollis* ssp. *mollis*
 - soft bird's-beak (E)
- *Lasthenia conjugens*
 - Contra Costa goldfields (E)
 - Critical habitat, Contra Costa goldfields (X)
- *Navarretia leucocephala* ssp. *pauciflora*
 - few-flowered navarretia (E)

Proposed Species

Amphibians

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

Plants

- *Cordylanthus mollis* ssp. *mollis*
 - Critical habitat, soft bird's-beak (PX)

Quads Containing Listed, Proposed or Candidate Species:

CORDELIA (482B)

CUTTINGS WHARF (483A)

SEARS POINT (483B)

CAPELL VALLEY (499B)

MT. GEORGE (499C)

YOUNTVILLE (500A)

RUTHERFORD (500B)

SONOMA (500C)

NAPA (500D)

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 April 16, 2012.

Appendix E - California Natural Diversity Database (CNDDDB)

California Department of Fish and Game
Natural Diversity Database
Sarco Creek Bridge Replacement

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 <i>Astragalus claranus</i> Clara Hunt's milk-vetch	PDFAB0F240	Endangered	Threatened	G1	S1	1B.1
2 <i>Blennosperma bakeri</i> Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
3 <i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
4 <i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070		Threatened	G5	S2	
5 <i>Castilleja affinis ssp. neglecta</i> Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	G4G5T1	S1.2	1B.2
6 <i>Charadrius alexandrinus nivosus</i> western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
7 <i>Chloropyron molle ssp. molle</i> soft bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
8 <i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2	
9 <i>Haliaeetus leucocephalus</i> bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
10 <i>Hypomesus transpacificus</i> Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
11 <i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered		G1	S1	1B.1
12 <i>Lateralus jamalensis coturniculus</i> California black rail	ABNME03041		Threatened	G4T1	S1	
13 <i>Lilaeopsis masonii</i> Mason's lilaeopsis	PDAPH19030		Rare	G2	S2	1B.1
14 <i>Limnanthes vincularis</i> Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
15 <i>Navarretia leucocephala ssp. pauciflora</i> few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	G4T1	S1	1B.1
16 <i>Oncorhynchus mykiss tshawytscha</i> steelhead - central California coast DPS	AFCHA0209G	Threatened		G5T2Q	S2	
17 <i>Rallus longirostris obsoletus</i> California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	
18 <i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
19 <i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
20 <i>Sidalcea keckii</i> Keck's checkerbloom	PDMAL110D0	Endangered		G1	S1	1B.1
21 <i>Speyeria zerene myrtisae</i> Myrtie's silverspot	IILEPJ6089	Endangered		G5T1	S1	
22 <i>Syncaris pacifica</i> California freshwater shrimp	ICMAL27D10	Endangered	Endangered	G1	S1	
23 <i>Trifolium amoenum</i> showy rancheria clover	PDFAB40040	Endangered		G1	S1	1B.1

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Appendix F - Summary Floodplain Encroachment Report

SUMMARY FLOODPLAIN ENCROACHMENT REPORT*

Dist. 04 Co. Napa Rte. 121 P.M. 8.9/9.4

Project No.: 04 0000 0817 Bridge No. 21-08

Limits: The Sarco Creek Bridge Replacement Project is located on State Route 121 in the city of Napa between Hagen Road and Monticello Road.

Floodplain Description: The project site is located within a FEMA defined 100 year floodplain. See FEMA map no. 06055C0509F dated September 29,2010.

- | | No | Yes |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| 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:

Kathleen M. Pailly
Signature - Dist. Hydraulic Engineer

12/13/11
Date

Yolanda Rivas
Signature - Dist. Environmental Branch Chief

12/19/11
Date

[Signature]
Signature - Dist. Project Engineer

1/5/12
Date

* Same as Figure 804.7B Floodplain Evaluation Report Summary located in Chapter 804 of the Highway Design Manual

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Appendix G - Minimization and/or Mitigation Summary

This section will be finalized after the public circulation and comment period has concluded.

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Appendix H - List of Technical Studies

Biological Assessment (BA), April 2011

Natural Environment Study (NES), October 2011

Historic Property Survey Report (HPSR), July 2011

Hazardous Waste Initial Site Assessment (ISA), March 2000

Location Hydraulics Study (LHS), December 2011

Paleontological Identification Report (PIR), September 2011

Preliminary Geotechnical Report (PGR), August 2010

Visual Impact Assessment Technical Report (VIA), February 2011

Water Quality Report (WQR), May 2009

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