Huichica Creek Bridge Replacement & Fish Passage Project

NAPA COUNTY, CALIFORNIA
DISTRICT 4 – NAP – 121 (PM 0.5/1.0)
4G2100/0412000310

Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment

Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

September 2017
General Information about This Document

What's in this document:

The California Department of Transportation (Department or Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study/Environmental Assessment (IS/EA), 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 National Environmental Policy Act (NEPA) and 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 this document.

• Additional copies of this document and related technical studies are available for review at the following locations: California Department of Transportation, District 4, 111 Grand Avenue, Oakland, CA 94612; and Napa Main Public Library, 580 Coombs Street, Napa, CA 94559.

  This document may be downloaded at the following website: http://www.dot.ca.gov/d4/envdocs.htm.

• We’d like to hear what you think. If you have any comments about the proposed project, please attend the open house/map display at the Napa Main Public Library, 580 Coombs Street, Napa, CA on October 3, 2017 from 5:30 PM to 7:30 PM, and/or send your written comments to the Department by the deadline.

• Send comments via postal mail to:
  Thomas Rosevear, Environmental Planner
  California Department of Transportation, District 4
  PO Box 23660, MS 8B, Oakland, CA 94623.

• Send comments via email to: thomas.rosevear@dot.ca.gov

• Be sure to send comments by the deadline, October 20, 2017.

What happens next:

After comments are received from the public and reviewing agencies, the Department, as assigned by the Federal Highway Administration (FHWA), 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 obtained, 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 the California Department of Transportation, District 4, Attn: Wahida Rashid, PO Box 23660, MS 8B, Oakland, CA 94623. (510) 286-5935 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.
Widen and replace overcrossing on State Route 121 and incorporate fish passage improvements at Huichica Creek between Duhig Road and Napa Road in Napa County.

**INITIAL STUDY with Proposed Mitigated Negative Declaration/Environmental Assessment**

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

THE STATE OF CALIFORNIA
Department of Transportation


Responsible Agencies: California Transportation Commission, Regional Water Quality Control Board, California Department of Fish and Wildlife, State Historic Preservation Office

9-14-17
Date of Approval

Bijan Sartipi
District Director
California Department of Transportation
CEQA/NEPA Lead Agency

The following person may be contacted for more information about this document:

California Department of Transportation
Attn: Wahida Rashid, District Branch Chief
PO Box 23660, MS 8B
Oakland, CA 94623
(510) 286-5923
PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description
The California Department of Transportation (Department) proposes to widen State Route 121 over Huichica Creek, remove the existing triple culvert, replace it with a free span bridge, and incorporate fish passage improvements along Huichica Creek.

Determination
This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the Department’s intent to adopt an MND for this project. This does not mean that the Department’s decision regarding the project is final. This MND is subject to change 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: land use, consistency with plans and programs, growth, community character/cohesion, environmental justice, farmlands/timberlands, parks and recreational facilities, coastal zone, wild and scenic rivers, air quality, noise, traffic, hazardous waste, relocations, utilities/emergency services, floodplain, paleontology and special-status plant species.

In addition, the proposed project would have less than significant effects to visual/aesthetics, geology, water quality, natural communities, wetlands/other waters, special-status animal species and invasive species.

With the following mitigation measures incorporated, the proposed project would have less than significant effects to cultural resources, and threatened and endangered species.

• Archaeological Treatment Plan for cultural resources (data recovery, archaeological monitoring, establishment of environmentally sensitive areas)

• The project is self-mitigating for threatened/endangered species through the removal of triple culverts and paved creek bottom, which will restore a more natural stream bottom and allow for natural stream processes to occur.

Bijan Sartipi
District 4
California Department of Transportation
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Chapter 1 – Proposed Project

Introduction

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 USC 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on December 23, 2016 for a term of five years. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all of the United States Department of Transportation (USDOT) Secretary’s responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

The Department, as assigned by the FHWA, is the lead agency under the NEPA and the CEQA. The Department proposes to widen State Route (SR) 121 over Huichica Creek, remove the existing triple metal culvert (Bridge No. 21-0001), replace it with a free span bridge, and incorporate fish passage improvements and creek bed restoration along approximately 400 feet of Huichica Creek in unincorporated Napa County. This proposed widening will not increase the vehicular capacity of SR 121. The total length of the project is 0.5 miles. Figures 1 and 2 show the project vicinity and location; and Figure 3 shows the existing condition of the culverts at Huichica Creek. The project limits and footprint are delineated on the preliminary plans located in Appendix H.

This proposed project is a follow-up project to another Department safety project, known as the Duhig Roadway Rehabilitation and Curve Realignment project (Expenditure Authorization 04-44214), that was completed in 2011. That project provided full shoulder and curve corrections on SR 121 for approximately 1.7 miles from near the Sonoma County line to Duhig Road, from post mile (PM) 0.3 to PM 2.0. Thus, this follow-up project is located within the larger limits of the Duhig Roadway Rehabilitation and Curve Realignment project.

The improvements proposed at Huichica Creek under the Duhig Roadway Rehabilitation and Curve Realignment project were omitted because the originally proposed fish passage improvements under that project were not acceptable to the Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and the National Marines Fisheries Service (NMFS)/National Oceanic and Atmospheric Administration (NOAA). Changing the design for the fish passage would have significantly delayed the delivery of the Duhig Roadway Rehabilitation and Curve Realignment project. To keep that project on schedule, it was agreed that the improvements at the Huichica Creek Bridge would be done at a later time by this follow-up project. Construction is anticipated to begin in 2020 and take approximately two years to complete.

Footprint is defined as where ground disturbance would occur from the construction of the proposed improvements (e.g., construction staging areas, demolition and earthmoving activities), and areas of right-of-way to be obtained for the project.
SR 121 is a 33.5-mile long conventional highway in Sonoma and Napa counties. SR 121 traverses a region that is commonly referred to as the Napa Valley Wine Country. This is a semirural area, but is also close to the more suburbanized areas of the city of Napa. Adjacent land uses in the project vicinity include small ranches and large agricultural fields with viticulture as a prominent use. SR 121 is part of a primary transportation corridor between Lake Berryessa in Napa County and SR 37 in Sonoma County.

Within the project limits, SR 121 is a two-lane undivided conventional highway also known as “Sonoma Highway” and “Carneros Highway,” consisting on one 12-foot lane and 1-foot to 4-foot of shoulder in each direction without a median that passes through a rolling terrain. The current posted speed limit is 55 miles per hour, but there are speed limit signs of 40 miles per hour posted in each direction at two curve locations within the project vicinity. The Annual Average Daily Traffic (AADT) for the present year, 2017, is 32,000, and is forecasted to grow to 33,000 in 2020, 36,000 in 2027, and 39,000 in 2037, per Department traffic census counts and the Napa-Solano Counties Travel Demand Model.

Funding for this project will be from the 2016 State Highway Operations and Protection Program (SHOPP) Safety Improvement Program (Program Code 201.010). The proposed project is not included in the 2015 Federal Statewide Transportation Improvement Program (FSTIP). The project is included in the Metropolitan Transportation Commission’s cost-constrained 2015 Transportation Improvement Program (TIP) SHOPP Collision Reduction Program (TIP ID-VAR110004).
Figure 1 – Project Vicinity Map
Figure 2 – Project Location Map
Purpose and Need

The purposes of this project are to reduce the potential for cross-centerline and run-off-the-road accidents on SR 121; provide continuity to the widening of SR 121 constructed in a previous project east and west of the Huichica Creek bridge; and satisfy regulatory fish passage requirements.

The project is needed because the accident rate for cross-centerline accidents is higher than the statewide average for similar roadways. As previously mentioned, the scope of this project was originally part of the Duhig Roadway Rehabilitation and Curve Realignment project to widen this portion of SR 121. For that project, an accident history within the larger segment of SR 121 (from PM 0.25 to PM 2.0) showed that during the three-year period from January 1, 2001 to December 31, 2003, there were eleven cross-centerline and seventeen run-off-road accidents resulting in eight fatalities. The fatal accident rate on this larger segment of SR 121 is higher than the average rate for similar facilities statewide.

The Department conducted a similar accident study for a smaller segment of SR 121 (from PM 0.65 to PM 0.85) from July 1, 2012 to June 30, 2015 that resulted in a total actual accident rate of 0.55, which is lower than the average rate of 1.15 for similar facilities statewide. All of the accidents were rear end, and the primary collision factor of all of these accidents was speeding. All accidents occurred during daylight, on clear weather and on a dry road surface. The results of this study are shown in Table 1 below:

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Accidents/Significance</th>
<th>Accident Rates</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Fatal</td>
<td>Injury</td>
</tr>
<tr>
<td>SR 121 PM 0.65-0.85</td>
<td>3</td>
<td>0</td>
<td>3</td>
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The Duhig Roadway Rehabilitation and Curve Realignment project provided standard 8-foot shoulders and curve corrections on SR 121 from near the Sonoma County line at PM 0.5 to Duhig Road at PM 2.0. This project will provide for the same roadway improvements, including full shoulder and curve corrections that were made with the Duhig Roadway Rehabilitation and Curve Realignment project.

The Department is required by Senate Bill 857, amending Article 3.5 of the Streets and Highways Code to assess potential barriers to all life stages of anadromous fish prior to starting any bridge work programmed with state or federal funds. The creek work and improvements at the bridge over the west branch of Huichica Creek were omitted at the time because the original plan for fish passage improvements was not acceptable to the RWQCB, the CDFW, and the NMFS/NOAA.

Independent Utility and Logical Termini

FHWA regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the action evaluated:
1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope.

2. Have independent utility or independent significance (be usable and require a reasonable expenditure even if no additional transportation improvements in the area are made).

3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts. The environmental impact review frequently covers a broader geographic area than the strict limits of the transportation improvements.

The project has independent utility, which means the proposed improvements can be implemented within the project limits and completion of other projects would not be required in order to realize the operational benefits of the proposed improvements.

The project has logical starting and ending points or termini. The end points were selected to contain the length of the existing roadway and fish passage deficiencies including and adjacent to the Huichica Creek overcrossing. All of the proposed roadway improvement under the Build Alternative are included within the project limits.

**Project Description**

This section describes the proposed action and the project alternatives that were developed to meet the identified purpose and need of the project, while avoiding or minimizing environmental impacts. The alternatives are the “Build Alternative” and the “No-Build Alternative.”

The purposes of this project are to reduce the potential for cross-centerline and run-off-the road accidents on SR 121; provide continuity to the widening of SR 121 constructed in a previous project east and west of the Huichica Creek bridge; and satisfy regulatory fish passage requirements.

This project proposes to widen SR 121 over Huichica Creek, remove the existing triple metal culverts (Bridge No. 21-0001), replace it with a free (single) span bridge, incorporate fish passage improvements, restore creek banks along approximately 400 feet of Huichica Creek, and perform other work described in the next section entitled, “Build Alternative.” The total length of the project is 0.5 miles. Within the project limits, SR 121 is a two-lane undivided conventional highway consisting on one 12-foot lane and 1-foot to 4-foot of shoulder in each direction.

The bridge will be widened by at least 9 feet from the existing width of 35 feet, to a new width of 44 feet. This widening will not increase the vehicular capacity of SR 121. To allow for two-way traffic flow throughout construction and a daylight construction schedule the bridge will be overbuilt initially, and the additional width removed in the final phase of construction. The majority of the widening will occur on the southerly, or downstream side of the bridge in order to minimize construction effects to the property entrance of 5500 Sonoma Highway located at the northeast side of the bridge. These effects to the driveways of said property are further discussed in the next section.
Project Alternatives

Build Alternative

This proposed project, the “Build Alternative,” will involve the following activities.

The SR 121 roadway will be shifted a maximum of 26 feet to the south for traffic handling during stage construction. After construction, this temporary pavement and the corresponding structure over Huichica Creek will be removed. See Appendix H for preliminary project plans and cross sections.

One staging area and two access roads are proposed during construction. The staging area is on the northwest side of the bridge and the access roads are on the northwest and southwest of the bridge extending from the creek to the tops of the creek banks. The lengths of the access roads are proposed to be approximately 100 feet long and 12 feet wide. The maximum depth of excavation is 10 feet, which will primarily be along the banks of the creek. It is likely that the bioswale on the northwest of the bridge will be impacted temporarily to build the temporary access road but it will be restored to the pre-construction condition prior to project completion. Construction work is anticipated to take two construction seasons.

The following activities are anticipated during construction:

- place two-way traffic on the north side by using existing railing, two 11-foot lanes and temporary railing
- construct temporary pavement segment on the south side of the roadway
- remove approximately 12 feet wide of structural section above culverts of the roadway on the south side of the existing bridge
- install 28 feet wide section of the new precast/prestressed (PC/PS) concrete slab (approximately 2 feet thick with 3-inch hot mix asphalt on top) bridge on the south side
- switch two-way traffic to the newly constructed concrete slab bridge
- remove the rest of the existing structural section above culverts of the existing roadway
- replace 30 feet section of the PC/PS concrete slab bridge
- perform fish passage and creek bank restoration work in coordination with bridge and roadway work
- place concrete barrier Type 732, steel rail Type ST-10, ST-70 or MASH (Manual for Assessing Safety Hardware) rail in each direction
- remove existing culverts, sheet pile and temporary pavement section
- place the pavement delineation

1) Roadway widening

For the final configuration, the roadway will be widened about 8 feet maximum on both sides of the bridge with 3 feet of shoulder backing. The depth of the structural section will be 2 to 3 feet. The proposed centerline will be offset south from existing centerline by 2 feet maximum.
2) Removing existing triple metal culverts

The culverts and the concrete headwalls were built in 1968. According to the latest Bridge Inspection Report dated April 8, 2014, there is scour hole, approximately 3 feet in depth, at the right side of the middle culvert. The inlets to two of the culverts are blocked with vegetation. One culvert has its metal end detached from the concrete headwall. Slight rust was found in all three culverts invert. During the replacement of the bridge, which will occur during the first construction season, the existing pavement and embankment material on top of the culverts will be removed while leaving the culverts in place. During the second construction season, the culverts will be removed from underneath the new bridge.

3) Free (Single) span bridge

The existing roadway at Huichica Creek is 35 feet wide with two standard 12-foot lanes and shoulders that vary from 5 to 6 feet. The proposed bridge will be 45 feet long and 48 feet wide to accommodate standard 8-foot shoulders with bridge railings (Type 732), steel rail Type ST-10, ST-70 or MASH rail. The abutments will be built on a concrete pile foundation. The abutment will consist of a secant type pile wall with a precast pile cap. The depth of excavation for each abutment is anticipated to be 15 feet and its foundation is anticipated to be supported by 40 feet long cast-in-drilled-hole piles.

4) Fish passage

Currently, a 175 foot section of channel immediately downstream of the triple 78-inch cross culvert is steep and consists of a 6- to 8-foot drop at one location. Fish cannot traverse this portion of the channel. This portion of Huichica Creek is classified as a fish passage barrier by the CDFW in its Fish Passage Database (PAD, ID#714975).

The fish passage design will include removing paved portions of the channel, grading approximately 480 feet of the channel to a longitudinal 2.5% slope and constructing a roughened channel by incorporating half ton rocks within a mix of natural creek bed material, thereby reducing future scour along the creek banks. Eight step-pools are proposed with a maximum of 0.5 feet of jump. The width of the channel bottom is 14 feet. A maximum of 2 feet of cut and 6 feet of fill is proposed.

Along the proposed channel bottom, the transverse slope will be 14:1 (14 feet wide), then 2:1 (3 feet wide) then 4:1 where it intercepts with the existing bank slopes. Low benches along the channel bank width at 4:1 slope will provide native riparian vegetation corridors on both sides of the channel. Rocks will be placed along the weirs of step-pools and keyed in along the toe of the channel side-slopes. Exposure of the rock surface will be minimized to suit the habitat restoration.

The fish passage elements will extend approximately 130 feet upstream and 300 feet downstream of the existing culvert. These limits are from slightly beyond the existing right of way line on the upstream end to the point in the creek where the slope stabilizes on the downstream end. The preliminary design assumes cut and fill within the existing channel profile to obtain the 2.5% continuous grade. Grading this 480 foot reach at an average 2.5% slope will allow migration of adult fish upstream and juvenile fish downstream. Woody debris (root wads and logs), intermittent large shadow rocks, and planting of willows and alder trees will be included throughout the channel to enhance
fish and fresh water shrimp habitat. Intermittent grade control cutoffs using buried rock across the channel bottom will also be incorporated to stabilize the installation and prohibit any head cut from migrating upstream throughout the proposed improvements. The roughened channel design will extend slightly downstream of the existing private bridge located to the south of SR 121.

The Department’s Fish Passage Design Guidelines and CDFW's Habitat Restoration Manual have been followed in the design of a roughened channel. After a discussion of the fish passage improvements with the NMFS and the CDFW, both parties agreed to a roughened channel design of approximately 480 feet long at 2.5% slope to best match the existing site conditions. A low flow channel will be provided through the rock, woody debris incorporated along the side banks, boulder outcrops (resting pools) will be placed along its length, and planting of vegetation on the slopes above ordinary high water to provide shading.

To offset direct impacts on California freshwater shrimp (*Syncaris pacifica*) habitat, the stream bank habitat will be enhanced or restored within the project vicinity. Areas of stream bank that are disturbed during project construction will be planted with vegetation in conjunction with the placement of vegetated rock slope protection.

The habitat structure will likely include a tunnel feature with a rock groin in the channel topped and framed with large wood and a complex of horizontal alder and willow plantings. Supporting the large wood are a series of soil lifts in the channel bank which are incorporated in the vegetated rock slope protection.

The complexity of the structure is intended to provide velocity refuge and promote shoot and root development in the ‘ceiling’. Interstitial voids in the root mass and larger rocks are also expected to provide California freshwater shrimp habitat. The final design of any habitat feature will be determined through consultation with the United States Fish and Wildlife Service (USFWS) and the CDFW.

5) Creek bank restoration

Within the proposed roughened channel limits, creek bank restoration work is proposed. The existing creek banks are at 1:1 or steeper slopes and in some areas, the banks are near vertical. In order to stabilize these side slopes, the bank restoration will include reconstructing the banks and placing erosion control and riverine plants on the side slopes.

As mentioned above, along the proposed channel bottom, the transverse slope will be 14:1 (14 feet wide), then 2:1 (3 feet wide), and will finally catch the existing bank at 4:1. Half ton rocks will be placed along the channel bottom with vegetation planted at the banks at the 4:1 slope area. However, the final configuration will be determined through further studies from the Department’s Geotechnical Design and Erosion Control units.

6) Other miscellaneous work consists of the following:

i) Drainage improvement:

Drainage improvements are anticipated. The only culvert proposed to discharge directly to Huichica Creek will be located northwest of the westerly bridge.
abutment. This culvert will convey flow from an infiltration trench previously graded on the completed Duhig Roadway Rehabilitation and Curve Realignment project.

ii) Driveway impact:

There are two existing driveways at one property, 5500 Sonoma Highway, on the northeast side of the bridge. One driveway opening will be accessible at all times during construction while the other will be closed. However, there will be grading work to connect the driveways leading to the one opening. The depth of excavation is expected to be two feet. After completion of the project, there will be grading work to conform the two driveway openings to the new roadway.

iii) Tree removal and trimming:

Trees in clear recovery zone\(^2\) will be removed or trimmed, as necessary, to provide space for construction.

iv) Creek diversion:

A temporary water diversion system will be installed to allow for work in the creek during the dry season. It will keep the work area dry by conveying any water into a diversion pipe with gravel-filled cofferdams or a similar system. The temporary water diversion system will consist of a diversion pipe with temporary cofferdams located at the upstream and downstream ends.

The cofferdams will be constructed across the existing creek channel with gravel-filled bags wrapped in impermeable plastic sheeting or a similar system. A cut-off wall will be provided at both upstream and downstream of the cofferdams to reduce seepage into the work area. The cofferdams will be assembled and removed as needed during construction.

v) Utility relocation:

Five Pacific Gas & Electric (PG&E) 12 kilovolt utility poles on the south side of SR 121 are proposed to be relocated. The relocations have not been determined, but it is anticipated they will be relocated along the same southerly side within State right-of-way, and not in Huichica Creek.

vi) Equipment:

To grade temporary roads for access, dozers will be used. Cranes will be used for multiple parts of the construction from delivery of material to setting precast slabs. Excavators will be used for excavation at the abutments. Concrete mixer trucks and pump trucks will be used to pump concrete for all cast-in-place structures. Other equipment may include backhoes, pile driving rigs, saw cutters, light-weight trucks, lifts, generators, paver, and jackhammers.

\(^2\) Clear recovery zone is defined as an area clear of fixed object adjacent to the traveled way for vehicles that leave the traveled way.
Transportation System Management and Transportation Demand Management Alternatives

Transportation System Management (TSM) strategies increase the efficiency of existing facilities; they are actions that increase the number of vehicle trips a facility can carry without increasing the number of through lanes. Examples of TSM strategies include: ramp metering, auxiliary lanes, turning lanes, reversible lanes and traffic signal coordination. TSM also encourages automobile, public and private transit, ridesharing programs, and bicycle and pedestrian improvements as elements of a unified urban transportation system. Modal alternatives integrate multiple forms of transportation modes, such as pedestrian, bicycle, automobile, rail, and mass transit.

Transportation Demand Management (TDM) focuses on regional means of reducing the number of vehicle trips and vehicle miles traveled as well as increasing vehicle occupancy. It facilitates higher vehicle occupancy or reduces traffic congestion by expanding the traveler’s transportation options in terms of travel method, travel time, travel route, travel costs, and the quality and convenience of the travel experience. A typical activity would be providing funds to regional agencies that are actively promoting ridesharing, maintaining rideshare databases, and providing limited rideshare services to employers and individuals.

Following consideration of the setting as well as the purpose and need of this proposed project, the Department has identified no viable TSM and TDM alternatives.

Estimated Cost Information

This project is programmed in the 2016 SHOOPP with $8,700,000 for construction and $220,000 for right-of-way for the 2017/18 fiscal year. The current total project cost is $13,190,000.

No-Build (No-Action) Alternative

The No Build Alternative compares project conditions if the proposed improvements are not constructed, and the current bridge left as it is. The shoulders would remain at the non-standard width of six feet, the triple-metal culvert would remain in place as a barrier to fish passage and the roadway would not conform to the recently widened SR 121 east and west of the bridge. Only maintenance work would be done on the bridge as necessary.

Comparison of Alternatives

After the public circulation period, all comments will be considered, and the Department will select a preferred alternative and make the final determination of the project’s effect on the environment. Under the CEQA, if no unmitigable significant adverse impacts are identified, the Department will prepare an ND or Mitigated ND. Similarly, if the Department determines the action does not significantly impact the environment, the Department, as assigned by the FHWA, will issue a Finding of No Significant Impact (FONSI) in accordance with the NEPA.

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.
## Permits and Approvals Needed

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

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Marines Fisheries (NMFS)/National Oceanic and Atmospheric Administration (NOAA)</td>
<td>Section 7 Consultation for Threatened and Endangered Species Biological Opinion (BO)</td>
<td>Biological Assessment (BA) to be sent to NOAA Fisheries.</td>
</tr>
<tr>
<td>United States Fish and Wildlife Service (USFWS)</td>
<td>Section 7 Consultation for Threatened and Endangered Species Biological Opinion (BO)</td>
<td>Biological Assessment (BA) to be sent to USFWS.</td>
</tr>
<tr>
<td>United States Army Corps of Engineers (USACE)</td>
<td>Section 404 Permit for placement of fill in waters of the United States.</td>
<td>Application pending (Design phase)</td>
</tr>
<tr>
<td>California Department of Fish and Wildlife (CDFW)</td>
<td>Section 1602 Agreement for Lake and Streambed Alteration Agreement Incidental Take Permit (ITP)</td>
<td>Application pending (Design phase)</td>
</tr>
<tr>
<td>Regional Water Quality Control Board (RWQCB)</td>
<td>Section 401 Certification</td>
<td>Application pending (Design phase)</td>
</tr>
<tr>
<td>State Historic Preservation Officer (SHPO) and California Department of Transportation Cultural Studies Office</td>
<td>Memorandum of Agreement (MOA)</td>
<td>In progress</td>
</tr>
<tr>
<td>California Transportation Commission (CTC)</td>
<td>CTC vote to approve funds</td>
<td>Following the approval of the Final Environmental Document (FED), the CTC will be required to vote to approve funding for the project.</td>
</tr>
</tbody>
</table>
Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter describes the environmental resources of the project areas and how the resources would be affected by the proposed project. Potential environmental impacts of the proposed project and recommended avoidance, minimization, and/or mitigation measures are discussed. Chapter 2 also addresses issues of concern pursuant to the CEQA and the NEPA. Please see Appendix A for the CEQA Checklist. Under the CEQA, the baseline for environmental impact analysis consists of the existing conditions at the time the environmental studies began. Under the NEPA, the no-build alternative is the baseline for comparing environmental impacts.

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

Existing and Future Land Use – The project will not affect existing or future land uses. No acquisition of residential or commercial structures is anticipated; the required right-of-way is confined to drainage easements in Huichica Creek, and temporary construction easements adjacent to SR 121 and on the banks of Huichica Creek; and the project will not alter community interaction patterns.

Consistency with Federal, 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 including the Metropolitan Transportation Commission’s 2013 Plan Bay Area, the Circulation Element of the 2013 Napa County General Plan, and both the Napa County Transportation & Planning Agency’s 2012 Countywide Bicycle Plan and the Department’s statewide bicycle and pedestrian plan, Toward an Active California (discussed below under Traffic and Transportation/Pedestrian and Bicycle Facilities). The proposed project is not included in the 2015 FSTIP. The project is included in the Metropolitan Transportation Commission’s cost-constrained 2015 TIP SHOPP Collision Reduction Program (TIP ID-VAR110004).

Growth – The proposed project will not affect growth within Napa County. The project is located in a semirural area in unincorporated Napa County. The Napa County General Plan has the goal of focusing growth areas in existing incorporated cities and their spheres of influence. The project is located outside of the nearest city’s (city of Napa) sphere of influence and urban growth boundary, formally referred to as the “Rural-Urban Limit” line. Therefore, the project area is not anticipated to experience significant growth in the future.

Because the proposed project will not change accessibility, will have no influence on growth, and will not result in changes to land uses already planned and considered under the Napa County General Plan, the project will not result in project-related growth. Therefore, no resources of concern will be indirectly affected as a result of the project’s influence on growth.

Community Character and Cohesion – The proposed project will replace an existing overcrossing in a semirural area and provide fish passage improvements along Huichica Creek. The project will continue to serve the region in the same manner as the existing bridge; therefore, no impact to community character and cohesion will occur.
Environmental Justice – No minority or low-income populations that would be adversely affected by the proposed project have been identified as determined above. Therefore, this project is not subject to the provisions of Executive Order 12898.

Farmlands/Timberlands – The proposed project will not convert vineyards in the project area to a non-agriculture use, or otherwise affect farmland, timberland or lands under Williamson Act Contracts. The required right-of-way will be confined to the acquisition of drainage easements that are needed for the scope of work proposed for within Huichica Creek, as well as temporary construction easements located along SR 121 and the banks of Huichica Creek. Therefore, it is not anticipated that this project will have any impact to farmlands or timberlands.

Coastal Zone – The project site is located in western Napa County, and outside of the Coastal Zone.

Parks and Recreation Facilities – No parks, recreational facilities, wildlife or waterfowl refuges are located within approximately 0.5 mile of the project vicinity. Consequently, there are no Section 4(f) resources of these types within the project vicinity, and the provisions of Section 4(f) are not triggered. Therefore, the proposed project will not directly or indirectly affect any parks or recreation facilities.

Wild and Scenic Rivers – The project is located in an area that has no designated Wild and Scenic River.

Air Quality – The proposed project is exempt from the requirement of an air quality conformity determination. Thus, an air quality study is not required.

This project is not a capacity-increasing transportation project and will have no impact on traffic volumes. The project will have no effect on the implementation of an air quality plan, will not result in a cumulatively considerable net increase in any criteria pollutant, will not expose sensitive receptors to substantial pollutant concentrations, and will not create objectionable odors.

Short term air quality effects during the proposed project’s construction period will be addressed by the Department Special Provision and Standard Specification 14-9.02. Trucks and construction equipment emit hydrocarbons, oxides of nitrogen, carbon monoxide and particulates. Most project-related pollution during construction will consist of wind-blown dust generated by excavation, grading, hauling and various other activities. The effects from these activities will vary from day to day as construction progresses. The Special Provisions and Standard Specifications will include requirements to minimize or eliminate dust during construction through the application of water or dust palliatives.

Noise – The proposed work does not qualify as Type 1 under the Code of Federal Regulations 23 CFR 772 and the Department’s Traffic Noise Analysis Protocol. It does not create a traffic noise impact. Thus, a traffic noise study is not required.

Construction noise will be temporary and will be within acceptable levels for construction activity. The Department Standard Specifications Section 7-1.01l, “Sound Control

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3 A “Section 4(f) resource” refers to the Department of Transportation Act of 1966, which prohibits the Federal Highway Administration from approving the use of land from a publicly owned park, recreation area, wildlife refuge, waterfront, or any significant historic site, unless there are no feasible or prudent alternatives.
Requirements” regulates construction noise, 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 manufacturer’s specifications.

**Traffic and Transportation/Pedestrian and Bicycle Facilities** – The proposed project will not increase highway capacity. The project will not require traffic detours since a traffic lane in each direction will be maintained throughout construction. A Traffic Management Plan will be implemented to address vehicular, pedestrian and bicycle access on SR 121 during the construction phase. There are two existing driveways at one property, 5500 Sonoma Highway, on the northeast side of the bridge. One driveway opening will be accessible at all times during construction while the other will be closed. However, there will be grading work to connect the driveways leading to the one opening. After completion of the project, there will be grading work to conform the two driveway openings to the new roadway.

There are no existing dedicated pedestrian or non-motorized facilities within the project corridor. The 2012 Napa County Transportation & Planning Agency’s Countywide Bicycle Plan states that Class II bike lanes, or lanes formally designated for the exclusive use of bicyclists, are planned on SR 121 that would connect Sonoma County to Napa County. This project accommodates this effort by increasing the roadway shoulder width to standard size through the project limits, and does not inhibit or otherwise prevent this segment of SR 121 from incorporating a Class II bike lane, thus also conforming to the Department’s statewide bicycle and pedestrian plan, *Toward an Active California*.

**Hazardous Waste** – Since the proposed project is within the limits of the completed Duhig Roadway Rehabilitation and Curve Realignment project, the site investigation data collected for that project is entire applicable to this project. Therefore, a new soil investigation is not necessary.

An asbestos and lead-containing paint survey will be needed prior to the demolition of the Huichica Creek bridge. This survey will be conducted during the design phase of the project. The results will determine if any hazardous-material minimization measures will be necessary before bridge demolition work begins and which contract specification will be drafted for directing the work.
Human Environment

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 (Uniform Act), and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the 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, persons with disabilities, religion, age, or sex. Please see Appendix B for a copy of the Department’s Title VI Policy Statement.

Affected Environment

The project vicinity consists primarily of agricultural land, with a small number of farm-associated residences and outbuildings (barns, sheds, equipment storage, etc.). Under the Build Alternative, the required right-of-way is confined to drainage easements in Huichica Creek to the north and south sides of SR 121 for bridge construction activities and fish passage improvements, and temporary construction easements adjacent to SR 121 and on the banks of Huichica Creek to provide for construction staging, driveway work, and two access roads to the creek on both sides of SR 121.

Environmental Consequences

The proposed right-of-way requirements for this project are delineated on the preliminary project plans located in Appendix H and are summarized in Table 2 below:
Table 2 – Proposed Right-of-Way Requirements

<table>
<thead>
<tr>
<th>Napa County Assessor Parcel #</th>
<th>Street Address (per Napa County Assessor)</th>
<th>Primary use (per Napa County Assessor)</th>
<th>Right-of Way Requirement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>047-070-019</td>
<td>5500 Sonoma Highway, Napa</td>
<td>Single-Family Residential</td>
<td>Temporary Construction Easement</td>
</tr>
<tr>
<td>047-070-021</td>
<td>None</td>
<td>Agriculture (Vineyard)</td>
<td>Temporary Construction Easement</td>
</tr>
<tr>
<td>047-070-022</td>
<td>None</td>
<td>Agriculture (Vineyard)</td>
<td>Permanent Drainage Easement, Temporary Construction Easement</td>
</tr>
<tr>
<td>047-380-009</td>
<td>None</td>
<td>Agriculture (Vineyard)</td>
<td>Permanent Drainage Easement, Temporary Construction Easement</td>
</tr>
</tbody>
</table>

The build alternative will not require full acquisition of any parcels, nor will it result in the need to relocate residences or businesses. Therefore, RAP services or payments will not be required.

Avoidance, Minimization, and/or Mitigation Measures

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

UTILITIES/EMERGENCY SERVICES

Affected Environment

There are five Pacific Gas & Electric (PG&E) 12 kilovolt utility poles on the south side of SR 121 that are proposed to be relocated.

Environmental Consequences

The relocations have not been determined but it is anticipated they will be relocated along the same southerly side within State right-of-way, and not in Huichica Creek. All of the affected utilities are anticipated to be relocated prior to the beginning of bridge construction. Two-way traffic flow will be maintained throughout construction, so emergency services will not be affected by the project.

Avoidance, Minimization, and/or Mitigation Measures

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

Regulatory Setting

The National Environmental Policy Act of 1969 as amended (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and aesthetically (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

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 [PRC] Section 21001[b]).

Affected Environment

A Visual Impact Assessment was completed for this project in July 2017.

The project location and setting provide the context for analyzing potential changes to the existing visual environment. The project corridor is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance.

Rolling hills interspersed with native oak woodland, riparian corridors, and agricultural vineyards characterize the surrounding landscape within the project vicinity. Due to the hilly and varied surface topography, numerous streams occur throughout the area including Huichica Creek and several of its tributaries. There is a high degree of continuity between types of land cover, and they create a mostly uninterrupted pattern that enhances the experience of visiting the area for tourists. Preserving the value of this experience is critically important as tourism is essential to the economy in the region. This portion of SR 121 is eligible for designation as a State Scenic Highway, and is designated as scenic by Napa County.

Environmental Consequences

Visual Resources and Resource Change

Visual resources in the project corridor are identified by visual character and visual quality. Resource change is determined by evaluating differences in visual character and visual quality between pre-project and post-project conditions. This is accomplished by envisioning conditions with the project in place before construction actually occurs.

By examining the vividness, intactness, and unity of the landscape, as these characteristics relate to the highway corridor and the specific project site, the visual quality of the landscape and the visual impact of the project can be better understood.

Overall, the SR 121 corridor through Napa County has a high degree of vividness, meaning that the landscape is memorable, possessing a strong visual character. It is typical within the project
area primarily due to the continuity of the following regional landforms and land-cover: agricultural vineyard, oak woodland, riparian corridor, and commercial winery.

The level of intactness, or the integrity of the visual order of the landscape, and the extent to which the landscape through the Napa Valley vineyards is free of non-harmonious visual intrusions is high. Visual resources along SR 121 are mostly intact with many charming views of the surrounding and immediate areas. There is some variety in types of railings, retaining walls and commercial development. Consistency in the built environment is critical in maintaining a high level of visual intactness. Replacing the triple box culvert with a bridge at the project site, including bridge rails and guardrails, will do little to reduce the current level of intactness, provided the rail is consistent with others already existing in the region.

The degree of unity, or the aesthetic integration and visual coherence of the natural and developed environment, within the project area is high. With a few exceptions, constructed elements, including the existing highway facility and the commercial vineyard development, blend well with their surroundings and appear to contribute to the visual appeal of the setting. The proposed project will be consistent with existing highway features seen at various places along SR 121 to the west of the city of Napa.

As with the existing nearby creek bridges, the bridge rails and metal beam guardrail will be the most apparent components seen by highway users as they pass by. Proposed avoidance and minimization measures discussed below will reduce the magnitude of perceptible changes related to these project features.

Although the degree of visual resource change resulting from implementation of the proposed project, will be low, tree removal will be necessary to provide access for construction equipment and crews to remove the existing culvert, excavate the embankment under the new bridge, and contour grade the creek banks at bridge-abutments. Construction will impact several large trees and will eliminate the existing canopy over the roadway permanently because the proposed additional shoulder width on the bridge will increase the amount of roadway surface. Planting replacement native riparian trees like walnut, bay laurel, and oak will minimize this change over time. The area below the highway where the bridge abutments will be constructed is vegetated and has a natural appearance that will be unchanged by the project in the long term once the area of disturbance recovers. Tree removal will be kept at a minimum; trees replanted to restore the visual effect of the riparian corridor, and trees and shrubs trimmed, rather than removed, wherever possible to create a clear path for construction equipment and for contour grading operations at the bridge. A detailed discussion of trees and their removal and replacement is located in the Natural Communities section of this chapter.

Viewers and Viewer Response

Although most motorists will not notice the proposed bridge other than the brief inconvenience of traffic disturbance created by construction, neighbors directly northeast of the project site (5500 Sonoma Highway, APN# 047-070-019) will have a high level of exposure, will be heavily impacted by construction, and are likely to be highly sensitive to any visual change. Other people with views to the road and the proposed project site, are absent, as there are no off-highway use areas in the immediate vicinity. Highway users, people with views from the road, are motorists and cyclists on SR 121. The proposed project will minimally effect both groups. This can be better understood by exploring the concepts of viewer exposure and viewer sensitivity.
Viewers of the project include persons travelling for pleasure on SR 121, including tourists and persons visiting wineries in Napa Valley, as well as those commuting and transporting goods between local towns. Tourists have a high level of sensitivity to visual impacts along the corridor because they visit the area expecting high quality scenery. The property owners directly adjacent to the project site are expected to possess a high level of sensitivity due to the proximity to their place of residence, with particular impacts to the property entrance located at 5500 Sonoma Highway directly to the northeast of the bridge. The average highway user's response to project-related changes is expected to be low because their exposure to the project site is brief and they are primarily concerned with reaching their destination safely and quickly. Additionally, local values and attitudes toward landscape aesthetics include the retention of high visual quality.

The duration of viewer exposure to the proposed project site is short, as the project site is less than 100 feet in length, visible only briefly to highway users as they approach and pass over it. Traveling in either direction, the bridge site will be in view at close range for a matter of seconds. However, the property owner on to the northeast of the project site (5500 Sonoma Highway) will be exposed frequently, at close range, and for longer durations of time.

Figure 4 – Existing Condition of Metal Beam Guard Rail

The existing Metal Beam Guard Rail over Huichica Creek is the most common rail-type along the corridor.
Figure 5 – View of 5500 Sonoma Highway Entrance

Residential property entrance on the north side of the bridge.

Figure 6 – Existing Condition of State Route (SR) 121 Looking East

View looking east from SR 121 showing existing site conditions.
Figure 7 – Simulation of State Route (SR) 121 Looking East after Project Completion

Photoshop simulation of project proposal with additional bridge width removed post-construction.

Visual Impact

Visual impacts are determined by identifying changes to visual resources and predicting viewer response to those changes. The preceding simulation in Figure 7 depicts the expected visual change as a result of the project.

Temporary impacts during construction will be related to the presence of construction workers, materials, and equipment. These involve one-way traffic control and temporary traffic barriers, phased construction of the new bridge, excavation of the embankment beneath the new bridge, and final grading operations. Most visual impacts, other than the elimination of the tree canopy over the road, will last only as long as construction is ongoing. Visual impacts related to disturbance created by heavy equipment accessing the creek channel will equal the time it will take for restoration of these areas to occur.

Following construction and site restoration, remaining visual impacts will be related to the new bridge structure. These impacts will be minimal considering that the proposed bridge will not change the existing grade of the roadway, and the railing will match others along the roadway. Trees and other vegetation removed to provide access to the creek channel by workers and equipment will be re-vegetated in time, and disturbed ground surfaces re-graded as needed. The only long-term visual effects derive from the wider shoulders on the bridge deck that create an increase in the total width of the roadway. The proposed see-through safety barriers on the bridge will be new features, but will be seen by most viewers briefly while approaching and passing over the bridge, and will be compatible with the visual characteristics of the setting.
The level of visual impact attributable to the project will be moderate even though the project will ultimately cause a low degree of resource change, due to the high sensitivity of visiting tourists visiting the area, and the proximity of the residential property. The visual character of the proposed bridge project will be compatible with the existing character of the corridor, and thus visual quality will not be diminished.

The proposed project will not affect views or scenic vistas in any way. The design of the proposed project will be consistent with the visual quality and character of the highway corridor. The project will not significantly impact any scenic resources as defined by the CEQA.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance or minimization measures can diminish visual impacts of the project. Below are avoidance and/or minimization measures that will address specific visual issues, to be implemented with input from the District Landscape Architect:

- Hydroseed all disturbed areas with a mix of locally native vegetation to blend with the surrounding natural environment.

- Replant trees removed due to construction activities to restore riparian zone. (Trees and their removal and replacement are discussed in detail in the Natural Communities section of this chapter beginning on page 40, and shown in Tables 4 and 5 within that section.)

- Safety barriers for vehicles and cyclists will be constructed on the sides of the bridge deck. A see-through barrier such as the ST-70 barrier will likely be selected for aesthetic characteristics that are compatible with the visual characteristics of the setting, and consistent in appearance with other barriers in the vicinity. Final specifications will be determined during final project design with input from the Department Landscape Architect.

CULTURAL RESOURCES

Regulatory Setting

The term “cultural resources,” as used in this document, refers to the “built environment” (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including “historic properties,” “historic sites,” “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration
The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as “unique” archaeological resources. California Public Resources Code (PRC) Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term “tribal cultural resources” to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU) between the Department and SHPO, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 PA will satisfy the requirements of PRC Section 5024.

**Affected Environment**

Initial studies to identify cultural resources within the Area of Potential Effects were conducted throughout 2015 and 2016. The first Historic Survey Property Report (HPSR) was prepared in July 2016 and documented initial identification efforts as well as evaluation of built resources.

The Department contacted the Native American Heritage Commission on February 13, 2015 to request a search of their sacred lands files and a list of interested Native American individuals and parties and their contact information. The Department sent letters on June 1, 2015, requesting input from these parties and with project information and location maps. The Yocha Dehe Wintun Nation responded on June 26, 2015 with a letter stating their interest in continuing consultation about the project. The Department met with Yocha Dehe representatives to provide more maps and information. Multiple follow-up calls have not been returned. The Cortina Band of Indians requested an electronic version of project information. A follow-up call made on July 6, 2015 was not returned. The Mishewal Wappo Tribe of Alexander valley expressed interest in monitoring excavation and construction activities. The Department is in regular communication with the Mishewal Wappo as the project progresses.

The Area of Potential Effects (APE) consists of all locations where ground-disturbing activities, including road demolition and widening, bridge construction, guardrail installation, shoulder

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4 The MOU is located on the SER at [http://www.dot.ca.gov/ser/vol2/5024mou_15.pdf](http://www.dot.ca.gov/ser/vol2/5024mou_15.pdf)
backing, fish passage work, and grading for access roads, as well as equipment staging, will take place. The archaeological APE includes previously recorded archaeological resources occurring within the proposed project footprint. The archaeological APE is an irregular polygon approximately 1,175 feet long east-west and 2,000 feet at the widest point north-south, encompassing approximately 25 acres.

The APE for architectural history includes all proposed project-related activities as well as portions of the adjacent private parcels containing structures evaluated as a result of this project and encompasses approximately 85 acres. The APE extends to the north of the bridge to include two full parcels, Assessor’s Parcel (APN) 047-070-019, upon which are nine built resources, and APN 047-070-022, which is cultivated with grapevines. Approximately 500 square feet of a third parcel (APN 047-070-021) to the northeast of the bridge is included in the APE as well as approximately 15 acres of a fourth parcel (APN 047-380-009) to the south of the bridge. Per Attachment 3 of the PA, the parcels to the northeast and the south have not been included in their entirety because they are large agricultural parcels with no built resources on them. The vertical APE is from the ground surface to a depth of 55 feet, the maximum depth for bridge abutment foundations and supporting cast-in-drilled-hole (CIDH) piles.

A records search was performed at the Northwest Information Center (NWIC) on April 7, 2015 (NWIC File No. 14-230). Three archaeological resources were identified within the archaeological APE: CA-NAP-189/H (P-28-00175) and the reburial site associated with CA-NAP-189/H (included under the same identifier), both previously determined eligible for the National Register of Historic Places (National Register) under Criterion D on March 30, 2005; and CA-NAP-190 (P-28-00176), which has never been formally evaluated for the National Register. Intensive pedestrian survey of the APE was conducted on June 2, 2015 and May 25, 2016. The previously identified sites were relocated, and additional cultural materials were observed within the APE along the banks of Huichica Creek on private property. The result of archival research, Native American consultation, and surface survey were presented in an Archaeological Survey Report (ASR) dated August 2016.

The July 2016 HPSR also included a Historic Resources Evaluation Report (HRER), dated June 2016, which documented the evaluation of one built resource for National Register eligibility. An intensive field survey was conducted to account for all of the buildings in the architectural history APE on June 2 and November 9, 2015. One built resource, a farm complex consisting of 10 buildings located at 5500 Sonoma Highway, was identified. Requests for information were sent on November 17, 2015; no response was received from either the Napa County Historical Society or Napa County Landmarks. The HRER determined that the resource is not eligible for inclusion in the National Register.

Also documented in the July 2016 HPSR is the fact that the subsurface testing required to clarify boundaries of known archaeological sites and identify previously unrecorded resources associated with materials observed on the surface was not possible due to access issues. The Department was denied entry onto the private property to conduct subsurface testing.

**Environmental Consequences**

Due to the private property access issues that precluded the identification of archaeological resources within the APE, it was determined that the Undertaking as a whole will have an adverse effect upon CA-NAP-189/H, and will result in a substantial adverse change to the resource under the CEQA. This determination was documented in a Supplemental HPSR with
an attached Finding of Adverse Effect, both dated December 2016, and concurred by the SHPO on January 13, 2017. This correspondence is located in Appendix F.

The Department received concurrence from the SHPO that the previously described built resource located at 5500 Sonoma Highway is not eligible for inclusion in the National Register on August 25, 2016. This correspondence is also located in Appendix F. Additionally, the property is not considered to be a historical resource for the purposes of compliance with the CEQA.

The July 2016 HPSR documented that the Department will continue to consult with the SHPO on assessment of effects to CA-NAP-189/H, the associated reburial site, and CA-NAP-190.

There are no Section 4(f) historic resource types within the project vicinity, and therefore the provisions of Section 4(f) are not triggered.

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

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Brett Rushing, District Office Chief, Office of Cultural Resource Studies, Department of Transportation – District 4, 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.

Avoidance, Minimization, and/or Mitigation Measures

A draft Memorandum of Agreement (MOA) stipulating mitigation measures is currently being circulated with the SHPO and the Department’s Cultural Studies Office. Mitigation measures will be implemented through methods specified in an Archaeological Treatment Plan (ATP), appended to the MOA. The ATP includes provisions for avoidance and mitigation to the historic resources in the project area such as data recovery, archaeological monitoring, establishment of environmentally sensitive areas (ESAs), and continued consultation with Native American tribes.

Under the CEQA, the mitigation measures required to bring project impacts to a level of Less than Significant with Mitigation include the previously described ATP and data recovery.

The other archaeological resources within the APE, CA-NAP-190 and the reburial site associated with CA-NAP-189/H are outside of the project footprint and will be protected in their entirety from inadvertent project impacts through establishment of ESAs.
Physical Environment

HYDROLOGY AND FLOODPLAIN

Regulatory Setting

Executive Order (EO) 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 Code of Federal Regulations (CFR) 650 Subpart A.

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 affected 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 project is located in an “Area of Undetermined Flood Hazard” identified by the Flood Insurance Rate Map (FIRM) for Napa County, California, Map Number 06055C515E, effective September 26, 2008. This FIRM is shown in Appendix G.

Environmental Consequences

The waterway opening of the proposed bridge is significantly larger than the existing culverts, so the water surface during a 100-year storm will be lowered. This will have no impact on the floodplain at the bridge location.

There is no significant floodplain encroachment. The Floodplain Evaluation Report Summary shows the following findings for this project:

- The proposed action is not a longitudinal encroachment of the base floodplain.
• The risks associated with the implementation of the proposed action are not significant.

• The proposed action will not support probable incompatible floodplain development.

• There are no significant impacts on natural and beneficial floodplain values.

• There are no special mitigation measures necessary to minimize impacts on the floodplain, or to restore and preserve natural and beneficial floodplain values.

• The proposed action does not constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).

• Location Hydraulic Studies that document these answers are on file.

Avoidance, Minimization, and/or Mitigation Measures

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

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\(^5\) unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act 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. The following are important CWA sections:

• Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

• Section 401 requires an applicant for a federal license or permit to conduct any activity that 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. This is 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).

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\(^5\) A point source is any discrete conveyance such as a pipe or a man-made ditch.
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 goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. 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 allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE’s Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency’s (U.S. EPA) Section 404 (b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the 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 the 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. According to the 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.

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6 The U.S. EPA defines “effluent” as “wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall.”
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 about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters 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 or non-point source controls (NPDES permits or WDRs), 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, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

- National Pollutant Discharge Elimination System (NPDES) Program

   Municipal Separate Storm Sewer Systems (MS4)

   Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.” The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department’s MS4 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, Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0077-DWQ (effective July 1, 2014) and Order No. 2015-0036-EXEC (effective April 7, 2015) has three basic requirements:

   1. The Department must comply with the requirements of the Construction General Permit (see below);

   2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

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.

Construction General Permit

Construction General Permit, Order No. 2009-2009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that 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 result 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 construction 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 Program (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 of the United States 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
the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the 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 (Porter-Cologne Act) 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**

A Water Quality Study was completed for this project in August 2017.

The project site is within Hydrologic Sub-Area (HSA) 206.50, specifically within the Carneros Creek-Frontal San Pablo Bay Estuaries sub-watershed (Hydrologic Unit Code: 180500020501). Runoff from the site directly discharges to Huichica Creek. According to the Department Storm Drain System Inventory, a discharge point is located at PM 0.748 along the south side of SR 121. From the project location, flow proceeds in a south-southeasterly direction for approximately 28,100 feet to the confluence with the Napa Slough. From the Napa Slough, flow continues easterly for approximately 13,200 feet, to the Napa River. From the Napa River, flow continues for approximately 51,500 feet, until it discharges to San Pablo Bay at Carquinez Strait. The total flowpath is approximately 92,800 feet, or 17.6 miles. Huichica Creek is not Clean Water Act (CWA) Section 303(d) listed as a water body with limited water quality segments. The project is located within the San Francisco Bay Regional Water Quality Control RWQCB Region 2, and the Napa County Municipal Separate Storm Sewer System (MS4).

The RWQCB Region 2 Basin Plan establishes beneficial uses for waterways and water bodies within the region. Beneficial uses include: Agricultural Supply (AGR), Areas of Special Biological Significance (ASBS), Municipal and Domestic Supply (MUN), Freshwater Replenishment (FRSH), Groundwater Recharge (GWR), Industrial Service Supply (IND), Industrial Process Supply (PRO), Commercial and Sport Fishing (COMM), Shellfish Harvesting (SHELL), Cold Freshwater Habitat (COLD), Estuarine Habitat (EST), Marine Habitat (MAR), Fish Migration (MIGR), Preservation of Rare and Endangered Species (RARE), Fish Spawning (SPWN), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), Contact/Non-Contact Water Recreation (REC-1/REC-2), and Navigation (NAV). Beneficial uses are listed for Huichica Creek and include: COLD, MIGR, RARE, SPIWN, WARM, WILD, REC-1, and REC-2.

Concerning groundwater resources, the project site is included as part of the Department of Water Resources (DWR) Bulletin 118, as the “Napa-Sonoma Lowlands” sub-basin (number 2-002.03). Per the Basin Plan, beneficial uses for this sub-basin include: MUN, PRO, IND, and AGR. Further, from the DWR Groundwater Information Center Interactive Map Application, the location has been assigned a California Statewide Groundwater Elevation Monitoring (CAGSEM) prioritization of “Very Low” and a potential subsidence rating described as “Insufficient Data”. Though there is “insufficient data” for subsidence, the sub-basins to the east and west are “Low to Medium” and “Medium to High”, respectively.

**Environmental Consequences**

As proposed construction operations will occur within Huichica Creek, a Clean Water Act (CWA) Section 404 permit will be required. The 404 permit will be issued by the United States Army
Corps of Engineers (USACE), with the tandem 401 certification required from RWQCB Region 2.

There will be an increase of pollutant-generating impervious surface, due to the new bridge and roadway widening. This net new impervious surface quantity is anticipated to be approximately 0.096 acre. As the bridge will replace the existing roadway at this location, the footprint of the bridge that corresponds to the alignment of the roadway is considered as reworked impervious surface; this quantity is anticipated to be approximately 0.036 acre. The summation of these results is approximately 0.13 acre of new impervious surface. The quantity of DSA is contingent upon the footprint of the proposed widening and fish passage, as well as any temporary staging, stockpiling, and access roads. Considering these, the total DSA is anticipated to be approximately 0.40 acre. These quantities will be refined during the subsequent design phase of the project.

Potential temporary impacts to existing water quality will result from staging and active construction areas, which could result in the release of fluids, concrete material, construction debris, sediment, and litter beyond the perimeter of the site. Impacts may include a change in localized pH (potential of hydrogen) and turbidity of Huichica Creek. This can occur by a variety of means, including, but not exclusive to unstabilized land surface, uncovered stock piles, poor equipment maintenance, careless material handling, and lack of perimeter control.

Potential long-term impacts to existing water quality are the same for the existing facility, including the deposition and transport of sediment and vehicular-related pollutants, as well as potential for flooding. Permanent impacts are also manifest by any grading of the creek banks and bed.

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

**Temporary Impacts**

As stated above, the primary concern is unintended discharge beyond the perimeter of the construction site. Temporary Construction Site Best Management BMPs, such as silt fence, fiber roll, drainage inlet protection, concrete wash-out, street sweeping, and construction entrance will be deployed for sediment control and material management. These BMPs are representative of those which may be recommended during the subsequent design phase of the project. Additionally, a creek diversion will be implemented, in order to provide for a dry working environment within the creek channel. This can take different forms, though gravel bag cofferdams are anticipated. An option requiring a smaller footprint would be the installation of sheet-pile cofferdams.

**Permanent Impacts**

As a 401 certification will be required, implementation of permanent stormwater treatment measures will be included as a condition, equivalent to the new impervious surface of 0.13 acre. The preferred Treatment BMP type is bioretention, which may be designed as either a basin or swale configuration. As the soils within the project limits may provide adequate infiltration, site soils may remain for any Treatment BMP. A swale exists north of the SR 121 alignment, west of the bridge. If feasible, this swale may be modified to serve as a Treatment BMP.

**Water Pollution Control Program**
As stated above, as the DSA is anticipated to be at least 0.40 acre, a WPCP will be required. Prior to commencement of construction activities, a WPCP must be prepared by the contractor and approved by the Department, pursuant to Department 2015 Standard Specification 13-2. The WPCP addresses potential temporary impacts via implementation of appropriate BMPs, such as those mentioned above, to the maximum extent practicable. Further, sampling and monitoring of construction site discharge point(s) may be recommended as part of the WPCP during the subsequent design phase of the project.

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 (CEQA).

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. Structures are designed using the Department’s Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge’s category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Department’s Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Affected Environment

A Structures Preliminary Geotechnical Report for Huichica Bridge Replacement Project was prepared in July 2012; and a Preliminary Seismic Design Recommendations memorandum was prepared in January 2017 for the project.

Geology and Subsurface Conditions

Huichica Creek is located in southern Napa County, near the city of Napa. The site lies at approximately 120 feet in elevation above sea level. The area topography is gently rolling small hills of up to 200 feet in elevation. The project site lies on the Quaternary Huichica and Glen Ellen formations. These are fluvial deposits of gravel, sand, silt and clay.

The As-built Log-of-Test Borings (LOTB) from 1961 include one 2.5-inch wet rotary boring (B-1), drilled on the east side of the creek, as well as one 2.25-inch Cone Penetrometer Test hole (B-2) drilled on the west side of the creek. Based on boring B-1 drilled to a depth of 41 feet, the geology at the site consists of dense to very dense clayey sandy silt and stiff to hard sandy silty clay down to the maximum drilling depth.

Groundwater and Liquefaction Potential

Groundwater was not measured at the time of drilling. However, the LOTBs show the creek at an elevation of 108.6 feet, corresponding to about 11 feet below ground. Due to the nature of
materials at the site which consist of mostly dense to very dense clayey sandy silt and stiff to hard sandy silty clay, the potential for liquefaction during a seismic event does not exist.

Seismicity

According to the latest California Seismic Hazard Map (Version 2.3.08), which is based on the United States Geological Survey (USGS) and California Geological Survey (CGS) maps, the principal active faults are the West Napa Fault Zone (Browns valley section Strike-slip) with Maximum Magnitude, $M_{\text{max}}=6.6$, located about 3 miles east of the site, Rodgers Creek (Strike-slip) with Maximum Magnitude, $M_{\text{max}}=7.3$, located about 7.2 miles west/northwest of the site, and the West Napa Fault Zone (Napa County Airport section Strike-slip) with Maximum Magnitude, $M_{\text{max}}=6.6$, located about 4.8 miles southeast of the site.

Fault Rupture Potential

This area is not mapped as active as part of the Alquist Priolo Special Studies Zone Act, and not zoned for fault rupture by the CGS. Therefore, the potential for rupture does not exist.

Environmental Consequences

There are no hazardous geotechnical conditions at the project site. The potential impacts from ground-shaking are minimal.

Avoidance, Minimization, and/or Mitigation Measures

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

PALEONTOLOGY

Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

16 United States Code (USC) 431-433 (the “Antiquities Act”) prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are considered “objects of antiquity” by the Bureau of Land Management, the National Park Service, the Forest Service, and other federal agencies.
16 United States Code (USC) 461-467 (the National Registry of Natural Landmarks) establishes the National Natural Landmarks (NNL) program. Under this program property owners agree to protect biological and geological resources such as paleontological features. Federal agencies and their agents must consider the existence and location of designated NNLs, and of areas found to meet the criteria for national significance, in assessing the effects of their activities on the environment under NEPA.

16 United States Code (USC) 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.

23 United States Code (USC) 1.9(a) requires that the use of federal-aid funds must be in conformity with federal and state law.

23 United States Code (USC) 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

Affected Environment

A Paleontological Identification Report was completed for this project in February 2017.

Site Geology

The project area is located in southern Napa County, Huichica area, which is bordered by the Carneros Valley to the east and the southern extensions of Arrowhead Mountain to the west. The project lies in the northern Coast Range Province.

The project site is underlain by recent stream bed sediments which overlie surficial alluvium of Holocene and late Pleistocene age. Immediately north of SR 121 lies the Quaternary Huichica and Glen Ellen Formations. At the bridge location, these units are indistinguishable. Alluvium is sand, silt, and gravel deposited in fan, valley fill, terrace, or basin environments. The Huichica and Glen Ellen Formations are composed of massive, yellow siltstone, well-sorted quartz-lithic sandstone, and poorly consolidated gravel. Detritus includes varicolored chert, quartz-lithic sandstone, biotite wacke, rhyolite, metachert, and tuff reflecting derivation from Franciscan Complex, Great Valley Complex, and older Tertiary rocks.

Paleontological Sensitivity of Geologic Units

The paleontological sensitivity, per Department guidelines, of each geologic unit that underlies or surrounds the project area is described as follows:

For the recent stream bed sediments and the alluvium deposits of Holocene and late Pleistocene age, no fossils have been found in these unconsolidated deposits, per University of California Paleontology Museum Database. Additionally, these recent deposits are generally
too young geologically speaking to contain significant fossils. Therefore, these deposits have a “low potential” to contain significant paleontological resources.

Based on a California Public Utilities Commission 2013 Pacific Gas & Electric (PG&E) substation Draft CEQA Initial Study, the sedimentary rocks of the Huichica and Glen Ellen Formation have not been identified as important paleontological resource formations. Therefore, these formations have a “low potential” to contain significant paleontological resources.

**Environmental Consequences**

Based on the low paleontological sensitivity of associated geologic units, and the project’s excavation parameters, the proposed project will not disturb any paleontologically sensitive resources.

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

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

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.

Affected Environment

A Natural Environment Study (NES) was completed for this project in August 2017.

A plant and habitat biological study area (BSA) was defined that consists of the footprint of the project as well as all areas that may be affected directly or indirectly by the construction activity or action. Wildlife with the potential to occur within the BSA includes species associated with rural development, agriculture, riparian, creek, and ruderal grassland habitats. Species most likely to use the work areas include fish species such as western mosquitofish (Gambusia affinis) and California roach (Hesperoleucus symmetricus); bird species such as American crow (Corvus brachyrhynchos), American cliff swallow (Petrochelidon pyrrhonota), black phoebe (Sayornis nigricans); reptile and amphibian species such as pacific tree frog (Pseudacris regilla), fence lizard (Sceloporus occidentalis), and various snake species; and larger mammalian species such as striped skunks (Mephitis mephitis), Virginia opossum (Didelphis virginiana), raccoon (Procyon lotor), and mule deer (Odocoileus hemionus).

Creek and riparian habitat covers approximately 17.6% of the plant and habitat BSA. The dominant vegetation type within the BSA is ruderal (44.4%, See Table 3 below). The remaining habitat types include trees (0.9%), and vineyard (1.3%). Un-vegetated areas consisting of pavement, dirt roads, and barren ground cover 35.8% of the BSA.

<table>
<thead>
<tr>
<th>Habitat type</th>
<th>Acres</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>pavement/barren</td>
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<td>35.8</td>
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<tr>
<td>riparian</td>
<td>1.11</td>
<td>14.1</td>
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</tr>
<tr>
<td>Waters of the US</td>
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<td>3.5</td>
</tr>
</tbody>
</table>

Tree Survey

Department biologists and surveyors conducted a tree survey within the plant and habitat BSA in December 2016 and January 2017. During the wetland delineation, Department-contracted biologists delineated the riparian area along the outer edge of tree vegetation that at least
shaded the top of the Huichica Creek outer banks. A portion of both the riparian and creek area will be impacted during the removal and replacement of the bridge and the majority of impacts will occur during fish passage construction.

Fourteen tree species totaling 181 individuals were mapped and measured within the plant and habitat BSA (see Table 4 below) within the mapped riparian area.

Table 4 – Tree Species Mapped within the Riparian Area

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Average # stems</th>
<th>Number of trees by Diameter at Breast Height (DBH) class (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Acer macrophyllum</em></td>
<td>Big leaf maple</td>
<td>1.7</td>
<td>0 2 0 0 1 0</td>
</tr>
<tr>
<td><em>Aesculus californica</em></td>
<td>CA Buckeye</td>
<td>3.0</td>
<td>2 4 1 1 0 0</td>
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<tr>
<td><em>Ailanthus altissima</em></td>
<td>Tree of heaven</td>
<td>2.9</td>
<td>5 7 1 2 1 0</td>
</tr>
<tr>
<td><em>Alnus rhombifolia</em></td>
<td>White alder</td>
<td>9.9</td>
<td>4 5 7 0 0 0</td>
</tr>
<tr>
<td><em>Eucalyptus</em> sp.</td>
<td>Eucalyptus</td>
<td>8.5</td>
<td>1 0 1 0 0 1</td>
</tr>
<tr>
<td><em>Fraxinus latifolia</em></td>
<td>Oregon ash</td>
<td>2.0</td>
<td>4 7 0 0 0 0</td>
</tr>
<tr>
<td><em>Juglans hindsii</em></td>
<td>Black walnut</td>
<td>2.1</td>
<td>4 12 4 3 1 2</td>
</tr>
<tr>
<td><em>Platanus racemosa</em></td>
<td>CA Sycamore</td>
<td>6.0</td>
<td>0 0 0 1 0 0</td>
</tr>
<tr>
<td><em>Prunus</em> sp.</td>
<td>Cherry</td>
<td>7.0</td>
<td>0 2 1 0 0 0</td>
</tr>
<tr>
<td><em>Quercus agrifolia</em></td>
<td>Coast live oak</td>
<td>2.2</td>
<td>17 19 10 2 2 4</td>
</tr>
<tr>
<td><em>Quercus lobata</em></td>
<td>Valley oak</td>
<td>1.0</td>
<td>0 0 0 1 0 2</td>
</tr>
<tr>
<td><em>Salix laevigata</em></td>
<td>Red willow</td>
<td>8.6</td>
<td>3 11 8 0 1 0</td>
</tr>
<tr>
<td><em>Sambucus nigra</em></td>
<td>Black elderberry</td>
<td>8.0</td>
<td>1 0 0 0 0 0</td>
</tr>
<tr>
<td><em>Umbellularia californica</em></td>
<td>Bay laurel</td>
<td>3.0</td>
<td>5 4 3 0 0 1</td>
</tr>
</tbody>
</table>

Of these fourteen tree species, eleven are native. The three non-native species are eucalyptus (*Eucalyptus* sp.), tree of heaven (*Ailanthus altissima*), and cultivated cherry (*Prunus* sp.). Common understory layer species included mugwort (*Artemisia douglasiana*), California blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus armeniacus*), and stinging nettle (*Urtica dioica*).

Environmental Consequences

The Department proposes to conduct most of the fish passage work within the existing outer banks of Huichica Creek. This work is best approximated by the mapped Waters of the state area (discussed in the next section of this chapter) which covers the hinge point of the outer bank top. Trees within this zone may be impacted by fish passage restoration activities. In addition, any trees within 50 feet of the bridge are assumed to be potentially impact due to space required for bridge construction and associated fish passage activities (see Table 5 below). Taken together, 102 trees occur within these two areas.
Table 5 - Tree Species that may be Potentially Impacted by the Project

<table>
<thead>
<tr>
<th>Tree Species</th>
<th>Common Name</th>
<th>Average # stems</th>
<th>Number of trees by Diameter at Breast Height (DBH) class (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acer macrophyllum</td>
<td>Big leaf maple</td>
<td>1.7</td>
<td>0 2 0 0 0 1 0</td>
</tr>
<tr>
<td>Aesculus californica</td>
<td>CA Buckeye</td>
<td>6.0</td>
<td>0 1 0 0 0 0 0</td>
</tr>
<tr>
<td>Ailanthus altissima</td>
<td>Tree of heaven</td>
<td>10.9</td>
<td>0 4 1 2 1 1 0</td>
</tr>
<tr>
<td>Alnus rhombifolia</td>
<td>White alder</td>
<td>15.3</td>
<td>1 2 3 0 0 0 0</td>
</tr>
<tr>
<td>Eucalyptus sp</td>
<td>Eucalyptus</td>
<td>22.0</td>
<td>0 1 0 0 0 0 0</td>
</tr>
<tr>
<td>Fraxinus latifolia</td>
<td>Oregon ash</td>
<td>2.3</td>
<td>3 5 0 0 0 0 0</td>
</tr>
<tr>
<td>Juglans hindsii</td>
<td>Black walnut</td>
<td>1.9</td>
<td>2 8 1 2 1 2 2</td>
</tr>
<tr>
<td>Platanus racemosa</td>
<td>CA Sycamore</td>
<td>6.0</td>
<td>0 0 0 1 0 0 0</td>
</tr>
<tr>
<td>Prunus sp</td>
<td>Cherry</td>
<td>7.0</td>
<td>0 3 1 0 0 0 0</td>
</tr>
<tr>
<td>Quercus agrifolia</td>
<td>Coast live oak</td>
<td>1.8</td>
<td>3 10 7 1 0 3</td>
</tr>
<tr>
<td>Quercus lobata</td>
<td>Valley oak</td>
<td>1.0</td>
<td>0 0 0 1 0 0 0</td>
</tr>
<tr>
<td>Salix laevigata</td>
<td>Red willow</td>
<td>7.8</td>
<td>2 10 6 0 1 0</td>
</tr>
<tr>
<td>Sambucus nigra</td>
<td>Black elderberry</td>
<td>8.0</td>
<td>1 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Umbellularia californica</td>
<td>Bay laurel</td>
<td>3.4</td>
<td>2 3 3 0 1 0</td>
</tr>
</tbody>
</table>

a All impacts are based on preliminary design and may change. Impacts will be updated if needed during the permitting process.

The number of trees impacted will likely be less than in Table 5 and The Department will make every effort to limit tree removals where possible. The amount of removal will not exceed 102 trees and every effort will be made to avoid or prune trees instead of removing them.

For the CDFW riparian zone, temporary impacts include access and construction impact to the creek bed by heavy machinery below the ordinary high water mark (OHWM)\(^7\), and two temporary access roads into the creek bed within the riparian area.

Permanent impacts include the construction of the new bridge deck and associated wing walls. The new bridge will be wider than the existing bridge. However, the new structure will be an improvement over the existing condition of the triple barrel culvert structure.

The new bridge structure, despite being wider to conform to Department standards, will allow for more light penetration over the existing condition. The new bridge will free span the creek and also will contain a natural creek bottom. The increased lighting and natural creek bottom will allow for more natural physical and biotic conditions and processes to persist into the future. Finally, in addition to the existing fish passage barrier downstream of the bridge, the triple barrel culverts are likely a movement barrier to other terrestrial and aquatic wildlife species. Table 6 below shows impacts to the riparian area, resulting in a net permanent impact of 0.04 acre.

\(^7\) Federal regulations (33 CFR 328.3(e)) define the "ordinary high water mark" (OHWM) as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."
Table 6 – Impacts to the Riparian Area$^a$

<table>
<thead>
<tr>
<th>Habitat</th>
<th>potential temporary impacts (acres)$^b$</th>
<th>potential permanent impacts (acres)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian Area and Waters of the U.S.</td>
<td>0.72</td>
<td>0.04</td>
<td>Fish passage work is considered temporary and beneficial long-term; permanent impacts are due to removal of the triple culverts (36 feet) and concrete apron (75 feet) over 111 feet and 0.05 acre of Waters of the U.S.</td>
</tr>
</tbody>
</table>

$^a$ All impacts are based on preliminary design and may change. Impacts will be updated if needed during the permitting process
$^b$ Temporary impacts will be restored onsite

Avoidance, Minimization, and/or Mitigation Measures

Where applicable the Department has incorporated a number of general avoidance and minimization measures into the proposed project that apply to natural communities. (These general avoidance and minimization measures also apply to wetlands and other waters, and threatened and endangered species, which are discussed in other sections of this chapter.)

- **Permits.** The Department will include a copy of all relevant regulatory permits within the construction bid package of the proposed project. The Resident Engineer or their designee will be responsible for implementing the Terms and Conditions of those regulatory permits.

- **Biological Monitor Approval.** The USFWS and CDFW will review and approve the qualifications of the biological monitor(s) prior to initiating construction activities for the proposed project.

- **Biological Monitoring.** The approved biologist(s) will be on-site during initial ground-disturbing activities, and thereafter as needed to fulfill the role of the approved biologist as specified in the avoidance and minimization measures, and/or project permits. The biologist(s) will keep copies of applicable permits in their possession when on-site. Through the Resident Engineer or their designee, the approved biologist(s) shall be given the authority to communicate either verbally, by telephone, email or hardcopy with all project personnel to ensure that the risk of take to listed species is minimized, and that any permit requirements are fully implemented. Through the Resident Engineer or their designee, the approved biologist(s) shall have the authority to stop project activities to minimize take of listed species or if he/she determines that any permit requirements are not fully implemented.

- **Worker Environmental Awareness Training.** Prior to working on the project, all construction personnel will attend a mandatory environmental education program delivered by an approved biologist. At a minimum the training will include a description of Central California coastal steelhead (CCCS), California red-legged frog (CRLF), and California freshwater shrimp (CFS), and other listed species, migratory
birds and their habitats. The training will also discuss the potential occurrence of these species within the action area; an explanation of the status of these species and protection under the Endangered Species Act and other laws; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur.

- **Pre-construction Surveys.** Prior to any ground disturbance, pre-construction surveys for listed species will be conducted by an approved biologist. These surveys will consist of walking surveys of the project limits and, if possible, accessible adjacent areas within at least 50 feet of the project limits. The biologist(s) will investigate all potential cover sites. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, tree cavities, and debris. Native vertebrates found in the cover sites within the project limits will be documented and relocated to an adequate cover site in the vicinity.

- **Wildlife Exclusion Fencing.** High visibility wildlife exclusion fencing (WEF) at least 4 feet in height will be installed around suitable habitat for listed species within the outer footprint of the project to prevent wildlife from accessing work areas. The fencing will be removed only when all construction equipment is removed from the site. No project activities will occur outside the delineated project area. The WEF will be monitored periodically and all areas will be checked following rain events.

- **Listed Species On Site.** The Resident Engineer will immediately contact the agency-approved project biologist(s) in the event that a listed species is observed within a construction zone. The Resident Engineer will suspend construction activities within a 50-foot radius of the animal until the animal leaves the site voluntarily or an agency-approved protocol for removal has been established.

- **Prevention of Wildlife Entrapment.** To prevent inadvertent entrapment of wildlife species during construction, excavated holes or trenches more than one foot deep with walls steeper than 30 degrees will be covered at the close of each working day by plywood or similar materials. Alternatively, an additional four-foot high vertical barrier, independent of exclusionary fences, will be used to further prevent the inadvertent entrapment of wildlife species. If it is not feasible to cover an excavation or provide an additional four-foot high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist will immediately place escape ramps or other appropriate structures to allow the animal to escape. If the animal is a listed species, the CDFW or USFWS will be contacted by telephone for guidance.

- **Work Window for Nesting Birds.** To the extent practicable, clearing and grubbing activities and any tree removal will be conducted during the non-nesting season, from September 1 to February 14.

- **Pre-construction Surveys for Nesting Birds.** Pre-construction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction for activities occurring during the breeding season (February 1 to September 30).
• **Non-Disturbance Buffer for Nesting Birds.** If work is to occur within 300 feet of active raptor nests or 50 feet of active non-raptor nests, a non-disturbance buffer will be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species’ sensitivity to disturbance, and the intensity/type of potential work activities.

• **Water Quality Inspection.** Water quality inspector(s) will inspect the site after a rain event to ensure that the stormwater BMPs are adequate.

• **Vehicle Use.** Project employees will be required to comply with guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.

• **Night Work.** To the extent practicable, nighttime construction will be minimized.

• **Night Lighting.** Artificial lighting of the project site during nighttime hours will be minimized and directed away from non-paved surfaces to the maximum extent practicable.

• **Trash Control.** All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a day from the work area.

• **Firearms.** No firearms will be allowed in the project area except for those carried by authorized security personnel, or local, State, or federal law enforcement officials.

• **Pets.** To prevent harassment, injury or mortality of sensitive species, no pets will be permitted on the project site.

• **Department Standard BMPs.** The potential for adverse impacts to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 7-1.01G of the Department’s Standard Specifications. Department erosion control BMPs will be used to minimize any wind or water-related erosion. The State SWRCB has issued a NPDES Statewide Storm Water Permit to the Department to regulate storm water and non-storm water discharges from Department facilities. A SWPPP will be developed for the project, as one is required for all projects that have at least 1.0 acre of soil disturbance. The SWPPP complies with the Department SWMP. The SWMP includes guidance for Design staff to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize storm water and non-storm water discharges.

The SWPPP will reference the Department Construction Site BMPs Manual. This manual is comprehensive and includes many other protective measures and guidance to prevent and minimize pollutant discharges and can be found at the following website:


Protective measures will be included in the contract, including, at a minimum:

a. No discharge of pollutants from vehicle and equipment cleaning are allowed into the storm drain or water courses.
b. Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses.

c. Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses.

d. Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rockin temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.

e. Coir rolls will be installed along or at the base of slopes during construction to capture sediment and temporary organic hydro-mulching will be applied to all unfinished disturbed and graded areas.

f. Work areas where temporary disturbance has removed the pre-existing vegetation will be re-seeded with a native seed mix.

g. Graded areas will be protected from erosion using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate.

h. A Revegetation Plan will be prepared for restoration of temporary work areas. Pavement and base will be removed; topography blended with the surrounding area; and topsoil will be salvaged from the new alignment area to be placed over the restored area, which will then be revegetated with native grassland species.

• **Monofilament Erosion Control.** Plastic mono-filament netting (erosion control matting) or similar material will not be used for the project because wildlife may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

• **Concrete Waste and Stockpiles.** All grindings and asphaltic-concrete waste will be stored within previously disturbed areas absent of habitat and at a minimum of 50 feet from any aquatic habitat, culvert, or drainage feature.

• **Revegetation Following Construction.** All areas that are temporarily affected during construction will be revegetated with an assemblage of native grass and shrubs as appropriate. Invasive, exotic plants will be controlled within the project site to the maximum extent practicable, pursuant to Executive Order 13112.

Avoidance and minimization measures specific to riparian habitat and trees include:

• Working in the Huichica Creek riparian and creek area during low-flow periods between June 1 and October 15 to avoid impacts to habitat during the wet season. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that
revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

- Storing all equipment outside of the Huichica Creek riparian and creek area.

- Installing temporary high visibility fencing that will outline and protect non-impacted creek and riparian areas prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until project completion.

- Installing silt fences on the slopes adjacent to the work area to prevent silt from entering the watershed. Erosion controls will be maintained during the construction period.

- Replanting on-site of any removed native riparian tree species at a ratio of at least 1:1. Replanted trees will be monitored for at least five years for plant establishment. An onsite restoration plan will be developed for agency review and approval.

- Specific avoidance and minimization measures from all regulatory permits to be obtained will be incorporated into the project plans and specifications and enforced during construction.

**Compensatory Mitigation**

The Department preliminarily finds that the project as a whole is self-mitigating due to the improvement over existing conditions and the restoration of natural creek processes. The removal the fish passage barrier, triple barrel culverts, and creek apron over 111 feet of creek will have beneficial impacts both onsite and both up and downstream of the project footprint.

The Department proposes the following onsite improvements to the creek and riparian area:

- Removal of triple barrel culverts and replacement with a free span bridge (fish passage barrier #714975).

- Removal of concrete apron on the creek bed with replacement of natural stream bottom.

- The original proposed fish passage design was 2.9% grade, which met CDFW and NOAA Fisheries fish passage guidelines. The Department has worked with the CDFW and has redesigned the grade to 2.5% in order to allow for more potential stability through time. This change requires 80 more feet of creek restoration.

- The addition of habitat features that may enhance the creek for special-status species. Habitat features will be determined in coordination with regulatory agencies, but may include downed woody debris, logs, root wads, and habitat structures that may enhance the site for California freshwater shrimp.
Replanting on-site of any removed native riparian tree species at a ratio of at least 1:1. Replanted trees will be monitored for at least 5 years for plant establishment. An onsite restoration plan will be developed for agency review and approval.

A qualified biological monitor will eradicate American bullfrogs, green sunfish, and other invasive aquatic species if encountered during construction.

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 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. 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 U.S. Environmental Protection Agency (U.S. EPA).

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. 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 allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE’s Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA’s Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the 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 the 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 (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as FHWA and/or the Department, 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. A Wetlands Only Practicable Finding must be made.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the 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 CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW 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 CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. 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. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for more details.

Affected Environment

The Department completed an NES for the project in August 2017.

Department-contracted consultant biologists conducted a USACE wetland delineation within the plant and habitat BSA, and was completed in August 2016. Only waters of the U.S. were detected within the BSA. It was determined that Huichica Creek met the requirements as waters of the U.S. under USACE guidelines (USACE 2008). USACE jurisdiction consists of all area below the OHWM. Within the project plant and habitat BSA, waters of the U.S. cover 0.326 acre and 788 linear feet along Huichica Creek. A portion of this area will be impacted during the removal and replacement of the bridge and the fish passage remediation along 480 linear feet of channel.

Waters of the state also occur within the project footprint, and are administered by the RWQCB under authority from Section 401 of the CWA. For the purposes of this study, waters of the state are assumed to include all area under the OHWM and all riparian habitat. During the delineation, both the outer top of banks, and outer dripline of riparian trees were delineated. These two areas together cover 1.39 acres within the plant and habitat BSA. A portion of this area will be impacted by construction.
Environmental Consequences

Table 7 and Figure 8 below display the potential impacts from the project to waters of the U.S. Temporary impacts include access to the creek bed by heavy machinery below the OHWM and creek bed contouring.

Permanent impacts occur from the bridge widening from 35 feet in width to 44 feet in width within the creek channel and the addition of an abutment wingwall. These impacts cover approximately 0.01 acre of waters of the U.S. However, the direct removal the triple barrel culverts and concrete apron downstream over 111 feet (as measured in the 2016 California Freshwater Shrimp Habitat Report), will remove permanent concrete and metal structures from over approximately 0.05 acre of waters of the U.S. This results in a net permanent 0.04 acre.

Table 7 – Impacts to Wetlands and Waters

<table>
<thead>
<tr>
<th>Habitat</th>
<th>potential temporary impacts (acres)</th>
<th>potential permanent impacts (acres)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waters of U.S.</td>
<td>0.28</td>
<td>0.04</td>
<td>Fish passage work is considered temporary and beneficial long-term; permanent impacts are due to removal of the triple culverts (36 feet) and concrete apron (75 feet) over 111 feet and 0.05 acre of Waters of the U.S.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>0.00</td>
<td>0</td>
<td>No wetlands were delineated</td>
</tr>
</tbody>
</table>

a All impacts are based on preliminary design and may change. Impacts will be updated if needed during the permitting process
b Temporary impacts will be restored onsite

Because the fish passage project will be restoring function and values to the creek, the actual creek bed work is considered a temporary impact. Creek restoration will occur over approximately 480 feet of Waters of the U.S., covering 0.28 acre.
Avoidance, Minimization, and/or Mitigation Measures

The Department has incorporated general avoidance and minimization measures for this project that apply to waters, which are found in the Natural Communities section of this chapter.

Avoidance and minimization measures specific to waters include the following:

- Working in the Huichica Creek riparian area during low-flow periods between June 1 and October 15 to avoid impacts to wetlands and waters. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools
be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

• Storing all equipment outside of the Huichica Creek riparian area.

• Installing temporary high visibility fencing that will outline and protect non-impacted waters areas prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until job completion.

• Installing silt fences on the slopes adjacent to the work area to prevent silt from entering the watershed. Erosion controls will be maintained during the construction period.

• The Department will prepare water diversion and dewatering plan and avoid any work within wetted creek channel.

• Specific avoidance and minimization measures from all permits will be incorporated into the project plans and specifications and enforced during construction.

Compensatory Mitigation

The Department preliminarily finds that the project as a whole is self-mitigating due to the improvement over baseline and restoration of natural creek processes. The removal the fish passage barrier, triple barrel culverts, and creek apron over 111 feet of creek will have beneficial impacts both onsite and both up and downstream of the project footprint.

The Department proposes the following onsite improvements to the creek and riparian area:

• Removal of triple barrel culverts and replacement with a free span bridge (fish passage barrier #714975).

• Removal of concrete apron on the creek bed with replacement of natural stream bottom.

• The original proposed fish passage design was 2.9% grade, which met CDFW and NOAA Fisheries fish passage guidelines. The Department has worked with the CDFW and has redesigned the grade to 2.5% in order to allow for more potential stability through time. This change requires 80 more feet of creek restoration.

• The addition of habitat features that may enhance the creek for special status species. Habitat features will be determined in coordination with regulatory agencies, but may include downed woody debris, logs, root wads, and habitat structures that may enhance the site for California freshwater shrimp.

• Replanting on-site of any removed native riparian tree species at a ratio of at least 1:1. Replanted trees will be monitored for at least 5 years for plant establishment. An onsite restoration plan will be developed for agency review and approval.

• A qualified biological monitor will eradicate American bullfrogs, green sunfish, and other invasive aquatic species if encountered during construction.
PLANT SPECIES

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section in this document for detailed information about these species.

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

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

Affected Environment

An NES was completed for this project in August 2017.

Appendix E lists state and federally listed and special-status plant species with a potential to occur within the project area and surrounding landscape, called the plant and habitat BSA. A species list was generated for federal and state-listed species using the USFWS Information for Planning and Consultation (IPaC) threatened and endangered species database, the CDFW California Natural Diversity Database (CNDDB 2017), and the CNPS Inventory of Rare and Endangered Plants (CNPS 2017) for the Napa and eight surrounding United States Geological Survey (USGS) quadrangles.

The Department has determined that no special-status plants have the potential to occur within the project footprint based on the plants observed in the plant and habitat BSA, the habitat types present, and the special-status plant species-specific habitat requirements.

Environmental Consequences

The project is not expected to have any impacts to special-status plant species because they are highly unlikely to be present within the plant and habitat BSA.

Avoidance, Minimization, and/or Mitigation Measures

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

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries Service) and the California Department of Fish and Wildlife (CDFW) 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 federal or state 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 CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

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

Foothill Yellow-legged Frog

Affected Environment

An NES was completed for this project in August 2017.

The foothill yellow-legged frog (FYLF) is a California species of special concern and candidate threatened, and is currently under review for federal listing as threatened or endangered by the USFWS. The FYLF occurs from the Coast Ranges in Oregon south to the Transverse Mountains in southern California, in most of northern California west of the Cascade crest, and along the western flank of the Sierra. The FYLF occurs from sea level to over 6,000 feet in elevation within California.

Habitat consists of rocky streams that can occur in a variety of forest, shrub, and wet meadow habitats. The FYLF is typically found in small to moderate sized streams with shallow flowing water and at least some cobble substrate. The FYLF is absent or occurs in low densities where introduced aquatic predators such as fish and bullfrogs are present. Egg-laying is typically timed to follow high stream flows associated with winter rainfall and spring snowmelt, and typically occurs between late March and early June. Metamorphosis takes a minimum of 15 weeks and can occur between July and September.
The nearest CNDDB occurrence by linear distance is approximately 5 miles to the north in Redwood Creek. This observation is not hydrologically connected to Huichica Creek, but occurs near the northern boundary of the Huichica Creek watershed. There are no hydrologically connected FYLF CNDDB occurrences to Huichica Creek.

Although there are no recorded occurrences within the Huichica Creek watershed, the Department has determined that FYLF has the potential to occur within the project footprint.

**Environmental Consequences**

This project is anticipated to potentially impact the FYLF. Because the FYLF is highly aquatic, potential aquatic impacts are shown below in Table 8. These impacts are the same as those for the California Red-legged frog, which is discussed in the Threatened and Endangered Species section of this chapter, but no upland impacts are anticipated.

<table>
<thead>
<tr>
<th>Habitat</th>
<th>potential temporary impacts (acres)</th>
<th>potential permanent impacts (acres)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic</td>
<td>0.28</td>
<td>0.04</td>
<td>Fish passage work is considered temporary and beneficial long-term; permanent impacts are due to removal of the triple culverts (36 feet) and concrete apron (75 feet) over 111 feet and 0.05 acre of Waters of the U.S.</td>
</tr>
</tbody>
</table>

*a Temporary impacts will be restored onsite

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

The FYLF will be protected with the same avoidance and minimization measures as the California Red-legged frog (CRLF), which is discussed in the Threatened and Endangered Species section of this chapter. These measures include the following:

- Working in Huichica Creek and the riparian area during low and no-flow periods between June 1 and October 30 to avoid potential impacts to FYLF individuals. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

- Storing all equipment outside of Huichica Creek and the riparian area.
• Installing temporary high visibility fencing that will outline and protect ESAs prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until job completion.

• Installing temporary WEF around potential FYLF habitat

• The Department will prepare a water diversion and dewatering plan.

• A qualified biologist will be on-site during construction to monitor construction activities to ensure take is avoided or minimized.

• Specific avoidance and minimization measures from all permits and authorizations will be incorporated into the project plans and specifications and enforced during construction.

There is no specific compensatory mitigation proposed for the FYLF. Onsite improvements will benefit this species if it is present within Huichica Creek.

**Western Pond Turtle**

**Affected Environment**

An NES was completed for this project in August 2017.

The western pond turtle (WPT) is a state species of special concern, and is currently under review for federal listing as threatened or endangered by the USFWS. According to the CDFW, WPT habitat is described as follows:

> Individuals normally associate with permanent ponds, lakes, streams, irrigation ditches or permanent pools along intermittent streams.

> Pond turtles require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. Turtles slip from basking sites to underwater retreats at the approach of humans or potential predators. Hibernation in colder areas is passed underwater in bottom mud.

Western pond turtles rarely move away from water sources except to nest and overwinter. Of the hundreds of WPTs that have been monitored using radio-telemetry, only two movement records are greater than 500 meters (0.31 miles) from water.

John Cleckler of USFWS observed the WPT in the project footprint on July 15, 2016. The nearest CNDDB occurrence is approximately 3.5 miles to the east of the project footprint and occurred in a “large pond whose deepest point is 3 feet.” No WPT CNDDB records occur within the Huichica Creek watershed. The WPT is assumed present within the footprint, and no formal surveys were conducted.

**Environmental Consequences**

This project is anticipated to potentially impact the WPT. Because the WPT is highly aquatic, potential aquatic impacts are shown in Table 9 below. These impacts are the same as those for
the California freshwater shrimp for aquatic and riparian areas, which is discussed in the Threatened and Endangered Species section of this chapter, but no upland impacts are anticipated.

Table 9 - Impacts to Potential Western Pond Turtle (WPT) Aquatic Habitat

<table>
<thead>
<tr>
<th>Habitat</th>
<th>potential temporary impacts (acres)</th>
<th>potential permanent impacts (acres)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic</td>
<td>0.28</td>
<td>0.04</td>
<td>Fish passage work is considered temporary and beneficial long-term; permanent impacts are due to removal of the triple culverts (36 feet) and concrete apron (75 feet) over 111 feet and 0.05 acre of Waters of the U.S.</td>
</tr>
<tr>
<td>Riparian habitat</td>
<td>0.44</td>
<td>0</td>
<td>Fish passage work is considered temporary and beneficial long-term.</td>
</tr>
</tbody>
</table>

*Temporary impacts will be restored onsite*

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

Avoidance and minimization measures specific to the WPT include the following:

- A preconstruction survey will be performed prior to the start of construction
- During construction, an approved biological monitor will be onsite during ground and structure disturbing activities within the riparian and creek areas

There is no specific compensatory mitigation proposed for the WPT. Onsite improvements will benefit this species if it is present within Huichica Creek.

**Migratory and Nongame birds**

**Affected Environment**

An NES was completed for this project in August 2017.

Birds may nest within and on structures or habitat within the project footprint. Formal nesting surveys have not been completed, but several bird species have the potential to nest within tree, shrub, and ground layers in the project footprint. Swallow colonies have not been observed on the bridge structure or within the triple barrel culverts. No raptors have been observed nesting during any of the previous site visits, however there are large eucalyptus trees within the footprint and vicinity that provide potential raptor nest habitat.

**Environmental Consequences**

Impacts to known active bird nests will be avoided by following the avoidance and minimization measures discussed in the next section.
Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures for migratory and nongame birds include the following:

- Prior to construction, the project footprint and immediate vicinity will be surveyed for nesting birds.

- To minimize and avoid take of migratory birds, their nests and young, the Department will conduct vegetation and tree trimming between September 30 and January 30 before the start of project construction. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs.

- If vegetation removal must occur during the nesting season, a qualified biologist must inspect the area no more than three days prior to removal. Vegetation removal can occur no longer than 72 hours after approval is given by the Engineer. After 72 hours, another nesting survey must be performed before any more vegetation removal can take place.

- If an active nest is found, a no work buffer will be enforced and maintained around the nest and identified with high visibility markers or fencing. Buffers will be 300 feet for raptors and 50 feet for all other birds protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. If work is required inside the buffer, the Department will contact the CDFW and/or USFWS for guidance prior to any work being performed.

Bat Species

Affected Environment

An NES was completed for this project in August 2017.

California provides habitat for twenty-four bat species in the Families Phyllostomidae, Vespertilionidae, and Molossidae. Fifteen are rare and/or considered Mammal Species of Special Concern by the CDFW, Species of Concern by the USFWS or the US Forest Service. Townsend’s big-eared bat (Corynorhinus townsendii) was a CDFW candidate species for listing under the California Endangered Species Act as threatened or endangered but the listing was denied in 2016.

All of these species are known to have behavioral and ecological interactions with the transportation system, directly or indirectly. These interactions can be positive, such as roosting opportunities, or negative, such as physical injury from moving vehicles (Erickson 2002).

Bats may be found on bridges located throughout California. The species found on a particular bridge is subject to the geographical location and habitat features available. Lack of species records in a particular habitat or geographic area is more likely a reflection of inefficient survey methods rather than species absence. Within the Department’s District 4, seventeen bat species are known to use bridge structures. Bat species that roost on structure walls have the potential to use the Huichica Creek bridge for night roosting.
There are seven pallid bat CNDDB occurrences (*Antrozous pallidus*) located five miles from the project footprint. The pallid bat is categorized as “commonly found on bridges.” No other bat species occurrences were in the CNDDB within five miles of the project footprint.

Department biologists have inspected the Huichica Creek culverts during the daytime for evidence of potential bat use (feces and urine staining). Department biologists have not detected both feces and urine staining within the culverts or outside the bridge. The circular metal substrate of the culverts is likely unsuitable for perching and roosting. In addition, the culverts and outer bridge faces lack crevices which could be used for roosting. Bats may also use trees in the riparian zone for roosting.

**Environmental Consequences**

Bats are not anticipated to use the Huichica Creek bridge as a day or night roost and no evidence of roosting has been detected to date. Bats likely use the Huichica Creek corridor for foraging.

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

Avoidance and minimization measures specific to bat species include the following:

- The Department will conduct a preconstruction surveys to verify potential use by bats.
- If bats are observed, the Department will use exclusion measures to prevent use during construction in order to avoid potential mortality.

No compensatory mitigation is proposed for bat species.

**THREATENED AND ENDANGERED SPECIES**

**Regulatory Setting**

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (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 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of 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 Wildlife (CDFW) 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 the CDFW. For species listed under both the FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW 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

An NES was completed for this project in August 2017.

Huichica Creek is critical habitat for Central California coastal steelhead (CCCS, *Oncorhynchus mykiss*), which is federally listed as threatened under the FESA. The Department will be submitting a Biological Assessment (BA) to NOAA Fisheries for the CCCS. The Department will then be in formal Section 7 consultation with NOAA Fisheries and will obtain a Biological Opinion (BO) for this species.

In addition to the CCCS, the federally and state endangered California freshwater shrimp (CFS, *Syncaris pacifica*) occurs within the project area, and the federally threatened California red-legged frog (CRLF, *Rana draytoni*) may potentially occur within the project area. These three species are discussed in detail in the next section.

For the CFS and CRLF species, the Department will be submitting a BA to the USFWS. The Department will then be in formal Section 7 consultation with the USFWS and will obtain a BO for these species. The Department will also be in consultation with the CDFW for the CFS, and will obtain an Incidental Take Permit (ITP) for this species under the CESA.

Appendix E shows federally or state listed and candidate species, critical habitat, or special status species occurring or known to occur in the project vicinity. Data for listed species are from the USFWS IPaC species database, and CDFW CNDDB and CNPS rare plant database for the Napa USGS and eight surrounding quadrangles.

In addition to the completed Duhig Roadway Rehabilitation and Curve Realignment Project which obtained a BO in 2005, the Department has been in technical assistance with USFWS since 2015 and met with John Cleckler of the USFWS on July 15, 2016.

The project “May Affect, and is Likely to Adversely Affect” the CCCS, the CFS and the CRLF during construction, but due to the fish passage barrier removal and creek improvements, the
project will likely benefit these species in the future. For all other federally-listed species shown in Appendix E, the Department has determined the project will have No Effect on these species.

**Central California Coastal Steelhead**

**Affected Environment**

An NES was completed for this project in August 2017.

The CCCS is the anadromous form of the rainbow trout, a salmonid species, which is native to western North America and the Pacific coast of Asia. CCCS is a subspecies of steelhead found in watersheds from the Russian River, Sonoma County, California to Aptos Creek, Santa Cruz County, California, and the San Francisco Bay and San Pablo Bay basins.

CCCS are born in fresh water, emigrate to the ocean for two to three years to complete most of their growth cycle, and then return to fresh water to spawn. In California, most CCCS spawn from December through April in small streams and tributaries where cool, well-oxygenated water is available year-round. The length of time for egg hatching depends primarily on water temperature. Fry emerge from the gravel about four to six weeks after hatching, but factors such as the depth of the redd (spawning nest), gravel size, siltation, and water temperature could speed up or retard this time.

The newly emerged fry move to the shallow, protected areas associated with the margins of the stream. The fry soon move to other areas of the stream and establish feeding locations that they defend. Most juveniles inhabit riffles, but some of the larger ones inhabit pools or deeper runs.

Juvenile CCCS generally rear in freshwater between one to three years, and both adults and juveniles are variable in the amount of time they spend in fresh and salt water. Throughout their range, the CCCS typically remain at sea for one or two growing seasons before returning to the freshwater to spawn. The CCCS do not necessarily migrate at any set age. Some individuals may never go out to sea and instead remain in the stream throughout their lives, and some steelhead will migrate out to sea at less than a year old.

Huichica Creek is federally-designated as CCCS critical habitat. The CCCS is inferred present within the project footprint, and both upstream and downstream of the footprint. In a review of historical and current steelhead distribution in the San Francisco Estuary, several sampling efforts document where CCCS were detected in Huichica Creek both upstream and downstream from the project footprint.

The Department has inferred presence for the CCCS due to Huichica Creek’s designation as critical habitat, relatively recent historical records of *Oncorhynchus mykiss*, and through technical assistance with NOAA Fisheries.

Direct effects to the migratory life stages of CCCS (both adult and juveniles) in Huichica Creek will be avoided through adherence to the proposed work window of June 1 through October 15. The Department conducted an interagency site visit with Darren Howe of NOAA on July 15, 2016 to discuss the current project design. In addition, the Department met with species and fish passage specialists from CDFW on April 4, 2016, August 26, 2016, and March 27, 2017.

The project "May Affect, and is Likely to Adversely Affect" the CCCS during construction. Table 10 below summarizes the impacts to the CCCS. CCCS individual and critical habitat is all
waters below the OHWM and is equivalent to the “waters of the U.S.” habitat noted in the Wetlands and Other Waters section of this chapter.

Table 10 – Impacts to the Central California Coastal Steelhead (CCCS) and CCCS Aquatic Critical Habitat/Riparian Habitat

<table>
<thead>
<tr>
<th>Habitats</th>
<th>potential temporary impacts (acres)</th>
<th>potential permanent impacts (acres)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCCS and CCCS aquatic Critical Habitat</td>
<td>0.28</td>
<td>0.04</td>
<td>Fish passage work is considered temporary and beneficial long-term; permanent impacts are due to removal of the triple culverts (36 feet) and concrete apron (75 feet) over 111 feet and 0.05 acre of Waters of the U.S.</td>
</tr>
<tr>
<td>CCCS riparian habitat</td>
<td>0.44</td>
<td>0</td>
<td>Fish passage work is considered temporary and beneficial long-term for CCS. The proposed fish passage remediation project will free up to 1.45 miles upstream CCCS critical habitat according to the 2011 Napa River Fish Barrier Plan (Napa Resource Conservation District 2011).</td>
</tr>
</tbody>
</table>

a All impacts are based on preliminary design and may change. Impacts will be updated if needed during the permitting process.
b Temporary impacts will be restored onsite.

Avoidance, Minimization, and/or Mitigation Measures

The Department has incorporated general avoidance and minimization measures for this project that apply to the CCCS, which are found in the Natural Communities section of this chapter.

Avoidance and minimization measures specific to the CCCS include the following:

- Working in Huichica Creek and the riparian area during low and no-flow periods between June 1 and October 30 to avoid potential impacts to CCCS individuals. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

- No pile-driving will be used for the project.

- Storing all equipment outside of Huichica Creek and the riparian area.
• Installing temporary high visibility fencing that will outline and protect ESAs prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until project completion.

• Installing silt fences on the slopes adjacent to the work area to prevent silt from entering the watershed. Erosion controls will be maintained during the construction period.

• The Department will prepare a water diversion and dewatering plan.

• All excess soil will be disposed of at an approved upland site.

• A qualified biologist will be on-site during construction to monitor construction activities to ensure take is avoided or minimized.

• Specific avoidance and minimization measures from all permits will be incorporated into the project plans and specifications and enforced during construction.

Compensatory Mitigation

The Department preliminarily finds that the project is self-mitigating for the CCCS. Onsite improvements should result in improved conditions for the CCCS and other species in general.

The Department will improve CCCS habitat based on the following:

• Removing the triple culverts and paved creek bottom downstream from the bridge will restore a more natural stream bottom and allow for natural stream processes to occur underneath the bridge (36 feet) and approximately 75 feet downstream.

• Replacement of the triple culverts will remove a creek constriction flow point, allowing for a natural creek bottom and plant colonization of areas under the bridge and within the former concrete apron area.

• The original proposed fish passage design was 2.9% grade, which met CDFW and NOAA Fisheries fish passage guidelines. The Department has worked with CDFW and has redesigned the grade to 2.5% in order to allow for more potential creek stability through time. This change requires 80 more feet of work upstream of the bridge.

• The proposed fish passage remediation project will free up to 1.45 miles upstream CCCS critical habitat according to the 2011 Napa River Fish Barrier Plan. If all upstream barriers were removed, approximately 3.3 miles of CCCS critical habitat would become available. Thus, barrier removal will have considerable beneficial impacts for the CCCS well outside of the project footprint.
California Freshwater Shrimp

Affected Environment

An NES was completed for this project in August 2017.

The CFS was listed as endangered by the State of California on October 2, 1980, and the species was federally listed as endangered on October 31, 1988. A recovery plan was published for the California freshwater shrimp on July 31, 1998. Critical habitat was designated for this species on April 13, 2006.

CFS are decapod crustaceans that reach a length of less than 2.17 inches in length. Their coloration is variable but generally translucent to nearly transparent with small surface and internal color-producing cells that help the shrimp mimic submerged, decaying vegetation. They feed on aquatic detritus, primarily food material that settles out on the fine roots and other vegetation as the water slows in the habitats the shrimp prefer. Their food sources include fecal material produced by shredders, organic fines, periphytic and planktonic algae, aquatic macrophyte fragments, zooplankton, dissolved organic matter particles formed into clusters by flocculation, aufwuch (the algae, plant and animal forms that become encrusted on rocks and other hard surfaces), and they can scavenge dead fish and shrimp.

The reproductive ecology of the CFS has not been completely discerned or described, but scientific observations have shown reproduction occur once a year in late summer or early fall when stream conditions are relatively calm. Egg-bearing females have been observed as early as September and by November most adult females are bearing eggs. Adult females produce generally 50 to upwards of 200 eggs and they retain the fertilized eggs on her swimming legs (pleopods) throughout the winter. The young are released as miniature adults in late spring and grow rapidly throughout the summer to reach 0.75 inch in length by early autumn. Approximately sixteen months after release they are mature enough to breed. The California freshwater shrimp may live longer than three years.

The CFS is endemic to perennial lowland streams in Sonoma, Marin and Napa counties. Long term population trends are not available for Huichica Creek, although as the result of severe drought, the entire Huichica Creek population consisted of approximately 500 individuals in 1983, including adults and juveniles. The CFS population at Huichica is considered present by USFWS in review years 1988, 1998, and 2011. Areas with undercut banks are important high-flow refugia for the species, and this habitat feature may be a limiting factor for expansion and further recovery of the species.

This portion of Huichica Creek within the footprint is known to support CFS. According to the CNDDDB, this species was most recently captured within the project area in 1990 (CDFW 2017). During the 1990 survey, a total of 123 individual shrimp were netted within 0.5 miles upstream of the Highway 12/121 crossing, and an additional 280 individuals were netted within 1.25 miles downstream of the crossing (CDFW 2017). Although this record is over 25 years old, the Huichica Creek CFS population is presumed to still be extant.

In December 2016, the Napa Resource Conservation District (RCD) surveyed CFS habitat type and quality approximately 1,500 feet upstream and 1,500 feet downstream of Huichica Creek bridge.

Habitat type was classified as:
Winter: Undercut banks with a minimum horizontal extent of 2 feet

Summer: No significant undercut banks; areas of low water velocity present (i.e. pools, glides, runs in summer); suitable vegetation or other cover present

Dispersal: Swift moving water (i.e. riffles, runs) or otherwise lacking vegetation/cover

CFS habitat types are hierarchical with winter habitat also providing summer and dispersal habitat, and summer habitat also functioning as dispersal habitat. Dispersal habitat is generally not habitable by the species due to high water velocity, yet provides essential connectivity within the larger population.

Habitat quality was defined as follows:

Poor: Water depth less than six inches; sheer banks (earth or rock); very little cover (roots, branches, vegetation, etc.)

Moderate: Water depth greater than six inches; at least one cover feature present (roots, branches, vegetation, undercut bank, etc.)

Good: Water depth of one to four feet; at least two cover features present (roots, branches, vegetation, undercut bank, etc.)

Excellent: Water depth of one to four feet; at least two cover features present (roots, branches, vegetation, undercut bank, etc.); must be better developed for environmental enhancement or more abundant than “Good” habitat

Within the project footprint, only summer and dispersal habitat was found. A total of six pools were found to contain suitable winter habitat conditions for the CFS. All of these pools were located upstream of the Highway 12/121 crossing, beginning approximately 414 feet upstream of the SR 121 culvert inlet.

Environmental Consequences

The Department has inferred presence for the CFS. Huichica Creek is one of only twenty-three creeks known to harbor CFS (USFWS 2011). The section of Huichica Creek within the project footprint is also known to support CFS. According to the CNDDDB, this species was most recently captured within the project area in 1990. During the 1990 survey, a total of 123 individual shrimp were netted within 0.5 miles upstream of the SR 12/121 crossing, and an additional 280 individuals were netted within 1.2 miles downstream of the crossing.

The project “May Affect, and is Likely to Adversely Affect” the CFS during construction. Table 11 below summarizes the impacts to the CFS. CFS aquatic habitat is all waters below the OHWM and is equivalent to the “waters of the U.S.” habitat within the Wetlands and Other Waters section of this chapter. Impacts to riparian areas are summarized in the Natural Communities section of this chapter, and for account for 0.44 acre.
Table 11 - Impacts to California Freshwater Shrimp (CFS) and CFS Aquatic and Riparian Habitat

<table>
<thead>
<tr>
<th>Habitat</th>
<th>potential temporary impacts (acres)</th>
<th>potential permanent impacts (acres)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFS aquatic habitat</td>
<td>0.28</td>
<td>0.04</td>
<td>Fish passage work is considered temporary and beneficial long-term; permanent impacts are due to removal of the triple culverts (36 feet) and concrete apron (75 feet) over 111 feet and 0.05 acre of Waters of the U.S.</td>
</tr>
<tr>
<td>CFS riparian habitat</td>
<td>0.44</td>
<td>0</td>
<td>Fish passage work is considered temporary and beneficial long-term. CFS habitat enhancements will be added to the fish passage design in consultation with regulatory agencies.</td>
</tr>
</tbody>
</table>

a All impacts are based on preliminary design and may change. Impacts will be updated if needed during the permitting process
b Temporary impacts will be restored onsite

Avoidance, Minimization, and/or Mitigation Measures

The Department has incorporated general avoidance and minimization measures for this project that apply to the CFS, which are found in the Natural Communities section of this chapter.

Avoidance and minimization measures specific to the CFS include the following:

- Working in Huichica Creek and the riparian area during low and no-flow periods between June 1 and October 15 to avoid potential impacts to CFS individuals. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

- No pile-driving will be used for the project.

- Storing all equipment outside of Huichica Creek and the riparian area.

- Installing temporary high visibility fencing that will outline and protect ESAs prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until job completion.
• Installing silt fences on the slopes adjacent to the work area to prevent silt from entering the watershed. Erosion controls will be maintained during the construction period.

• The Department will prepare a water diversion and dewatering plan.

• All excess soil will be disposed of at an approved upland site.

• A qualified biologist will be on-site during construction to monitor construction activities to ensure take is avoided or minimized.

• Specific avoidance and minimization measures from all permits will be incorporated into the project plans and specifications and enforced during construction.

Compensatory Mitigation

The Department preliminarily finds that the project is self-mitigating for the CFS. Onsite improvements should result in improved conditions for the CFS and other species in general.

The Department will improve CFS habitat based on the following:

• Removing the triple culverts and paved creek bottom downstream from the bridge will restore a more natural stream bottom and allow for natural stream processes to occur underneath the bridge (36 feet) and approximately 75 feet downstream.

• Replacement of the triple culverts will remove a creek constriction flow point, allowing for a natural creek bottom and plant colonization of areas under the bridge and within the former concrete apron area.

• The original proposed fish passage design was 2.9% grade, which met CDFW and NOAA Fisheries fish passage guidelines. The Department has worked with the CDFW and has redesigned the grade to 2.5% in order to allow for more potential stability through time. This change requires 80 more of creek restoration.

• The proposed fish passage remediation project will free up to 1.45 miles upstream of CCCS critical habitat according to the 2011 Napa River Fish Barrier Plan. If all upstream barriers were removed, approximately 3.3 miles of CCCS critical habitat would become available. This barrier removal will likely have considerable beneficial impacts for the CFS well outside of the project footprint considering CFS winter habitat is located upstream of the triple culverts and fish passage barrier.

California Red-legged Frog

Affected Environment

An NES was completed for this project in August 2017.

The CRLF was federally listed as threatened species on May 23, 1996. A recovery plan was published for CRLF on September 12, 2002. Critical habitat was designated for this species on
April 13, 2006, and a final revision was published on March 17, 2010. This project falls outside of the critical habitat for the CRLF.

The historical range of the CRLF extended coastally from the vicinity of Elk Creek in Mendocino County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico. The CRLF was historically documented in 46 counties, but the species is now extant in 238 drainages within 23 counties, representing a loss of 70 percent of its former range. CRLF is still locally abundant within portions of the San Francisco Bay Area and the Central Coast.

The CRLF predominantly inhabits permanent water sources such as streams, lakes, marshes, natural and constructed ponds, and ephemeral drainages in valley bottoms and foothills up to 4,921 feet in elevation. These areas may be characterized by the presence of dense, shrubby, or emergent vegetation closely associated with deep-water pools with fringes of cattails and dense stands of overhanging vegetation, and frogs will remain active throughout the summer. The species may also be found in ephemeral creeks and drainages and in disturbed areas such as channelized creeks and drainage ditches in urban and agricultural areas. CRLF habitats have been characterized by the USFWS, based on functional value, as aquatic breeding habitat, non-breeding aquatic and riparian habitat, upland habitat, and dispersal habitat. These habitats comprise the primary constituent elements for the CRLF, which are physical or biological features essential to the conservation of a species and which designation of its critical habitat is based on. Such features include areas used for normal feeding and sheltering behaviors and space for breeding and population growth and undisturbed habitats.

For CRLF, aquatic breeding habitat includes natural water features, such as slow-moving streams and pools within streams and manmade ponds that are capable of sustaining all aquatic life stages of the CRLF. These areas must hold water for at least twenty weeks during the year, which is the minimum amount of time needed for CRLF breeding and tadpole development and metamorphosis. Aquatic habitat need not be present every year, because CRLF can live eight to ten years in the wild.

Non-breeding aquatic and riparian habitat includes areas such as springs, seeps, moist cracks within dried ponds, and vegetated areas growing within the floodplains of rivers and streams. These areas do not hold enough water for CRLF breeding but provide the space needed for foraging and cover to sustain CRLF individuals. These areas are also important for retaining moisture and avoiding solar exposure and are important particularly during drought periods and for dispersal to other breeding habitats.

Upland habitats are important, because they buffer suitable aquatic habitat for dispersal movements and provide space for foraging, sheltering, and avoiding predation. These areas generally support plant species such as blackberry (Rubus spp.), poison oak (Toxicodendron diversilobum), coyote brush (Baccharis pilularis), oaks (Quercus spp.), and grasses. Upland habitat also consists of areas where CRLF can seek shelter such as under boulders, rocks, animal burrows, fallen logs, and agricultural debris like watering troughs and hay stacks and forage on terrestrial species.

Dispersal habitat refers to accessible upland or riparian habitat located within one mile of occupied breeding areas. This includes natural habitats and altered habitats such as agricultural fields that do not contain barriers (e.g., heavily traveled roads without bridges or culverts) to dispersal.
The CRLF typically breeds between November and April, with earlier breeding records occurring in southern localities. Breeding often occurs in still or slow moving water at least 2.5 feet deep with emergent vegetation, such as cattails (*Typha* spp.), tules (*Scirpus* spp.), or overhanging willows. The CRLF has paired vocal sacs and vocalize in air. Female CRLF deposit egg masses on emergent vegetation so that the egg mass floats on or near the surface of the water. Individuals occurring in coastal drainages are active year-round, whereas those found in interior sites are normally less active during the cold season.

CRLF are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring. Egg masses containing 2,000 to 5,000 eggs are attached to vegetation below the surface and hatch after six to 14 days. In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity. Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3.5 to seven months following hatching and reach sexual maturity at two to four years of age.

CRLF do not have a distinct breeding migration. Adult CRLF are often associated with permanent bodies of water. Some CRLF remain at breeding sites all year while others disperse. Dispersal distances are typically less than 0.5-mile, with a few individuals moving up to distances of one to two miles. The CRLF has been observed dispersing along riparian corridors and overland to other aquatic sites. The CRLF may move through riparian corridors, but some individuals, especially on rainy nights, move directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas. Migratory movements have been characterized as the movement between aquatic sites and are most often associated with breeding activities. The CRLF has been documented traveling up to two miles without apparent regard to topography, vegetation type, or riparian corridors. Meanwhile, non-migrating frogs typically stay within 200 feet of aquatic habitat and are most often associated with dense vegetative cover, such as California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), and coyote brush.

A review of the CNDDB identified ten documented CRLF occurrences within a ten-mile radius of the project footprint. The nearest occurrence is CNDDB #1062 which is located approximately 7.3 miles to the southeast of the project footprint, and was observed in 2008.

At the time of this study, no CNDDB records occur within Huichica Creek, or are hydrologically connected to Huichica Creek and the project footprint. However, the Department has inferred presence based on past consultation with USFWS in a 2005 BO for the Duhig Roadway Rehabilitation and Curve Realignment project, which at that time included the current Huichica Creek project footprint. The 2005 BO states in part:

> Protocol surveys have not been conducted in the action area; however, potential breeding ponds are in the vicinity and suitable dispersal habitat is present in Huichica Creek and several agricultural drainage ditches. California red-legged frogs have been recorded moving 1-2 miles. The action area contains habitat components that can be used by CRLF for feeding, resting, mating, movement corridors, and other essential behaviors. Therefore, the USFWS believes that CRLF is reasonably certain to occur within the action area because of recent records in the vicinity of the action area, biology and ecology of the animal, and the presence of suitable habitat in and adjacent to the action area.
There is no CRLF USFWS critical habitat or core recovery units within the footprint or BSA. The nearest critical habitat unit occurs over approximately 7.5 miles in horizontal distance to the southeast in Napa County. No critical habitat or core recovery unit is hydrologically connected to the footprint or the BSA.

**Environmental Consequences**

The Department has inferred presence for the CRLF through past formal consultation and current technical assistance with the USFWS. The Department conducted an interagency site visit with John Cleckler of the USFWS on July 15, 2016 to discuss the current project design.

The project "May Affect, and is Likely to Adversely Affect" the CRLF during construction. Table 12 below summarizes impacts to the CRLF. CRLF aquatic habitat is all waters below the OHWM and is equivalent to the “waters of the U.S.” habitat. CRLF upland habitat includes the riparian area along Huichica Creek and the non-riparian upland along SR 121. Impacts to riparian areas are summarized in the Natural Communities section of this chapter.

Table 12 - Impacts to Potential California Red-legged Frog (CRLF) Upland and Aquatic Habitat

<table>
<thead>
<tr>
<th>Habitat</th>
<th>potential temporary impacts (acres)</th>
<th>potential permanent impacts (acres)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upland</td>
<td>3.69</td>
<td>0.39</td>
<td>Permanent impacts to upland occur from shoulder widening along SR 121 directly adjacent to the roadway. This habitat consists of ruderal vegetation that is highly disturbed from day and nighttime traffic, mowing, and other maintenance activities. It is also bounded by intensive viticulture. Fish passage work is considered temporary and beneficial long-term. Barrier removal and a grade of 2.5% should enhance potential frog movements within the Huichica Creek riparian corridor.</td>
</tr>
<tr>
<td>Aquatic</td>
<td>0.28</td>
<td>0.04</td>
<td>Fish passage work is considered temporary and beneficial long-term; permanent impacts are due to removal of the triple culverts and concrete apron over 111 feet and 0.05 acre of Waters of the U.S.</td>
</tr>
</tbody>
</table>

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*a All impacts are based on preliminary design and may change. Impacts will be updated if needed during the permitting process*

*b Temporary impacts will be restored onsite*
Avoidance, Minimization, and/or Mitigation Measures

The Department has incorporated general avoidance and minimization measures for this project that apply to the CRLF, which are found in the Natural Communities section of this chapter.

Avoidance and minimization measures specific to the CRLF include the following:

• Working in Huichica Creek and the riparian area during low and no-flow periods between June 1 and October 30 to avoid potential impacts to CRLF individuals. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

• Storing all equipment outside of Huichica Creek and the riparian area.

• Installing temporary high visibility fencing that will outline and protect ESAs prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until job completion.

• Installing temporary WEF around potential CRLF habitat

• The Department will prepare a water diversion and dewatering plan.

• A qualified biologist will be on-site during construction to monitor construction activities to ensure take is avoided or minimized.

• Specific avoidance and minimization measures from all permits will be incorporated into the project plans and specifications and enforced during construction.

Compensatory Mitigation

The Department preliminarily finds that the project is self-mitigating for the CRLF. Onsite improvements should result in improved conditions for the CRLF and other species in general.

The Department will improve CRLF habitat from existing conditions based on the following:

• Removing the triple culverts and paved creek bottom downstream from the bridge will restore a more natural stream bottom and allow for natural stream processes to occur underneath the bridge (36 feet) and approximately 75 feet downstream.

• Replacement of the triple culverts will remove a creek constriction flow point, allowing for a natural creek bottom and plant colonization of areas under the bridge and within the former concrete apron area.
The original proposed fish passage design was 2.9% grade, which met CDFW and NOAA Fisheries fish passage guidelines. The Department has worked with the CDFW and has redesigned the grade to 2.5% in order to allow for more potential stability through time. This change requires 80 more feet of work upstream of the bridge.

The current fish passage barrier is also a potential barrier to tadpole movements if the CRLF is present in the system or it colonizes Huichica Creek in the future. The proposed fish passage remediation project will free up to 1.45 miles upstream according to the 2011 Napa River Fish Barrier Plan. If all upstream barriers were removed, approximately 3.3 miles of habitat would become available. Thus, barrier removal could have considerable beneficial impacts for the CRLF well outside of the project footprint.

INVASIVE SPECIES

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State’s invasive species list maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

Affected Environment

An NES was completed for this project in August 2017.

Invasive aquatic species are present within or adjacent to the plant and habitat BSA, including bullfrogs and green sunfish. Invasive plant species are also present within or adjacent to the BSA, including eucalyptus and tree of heaven.

Environmental Consequences

None of the species on the California list of invasive species is used by the Department for erosion control or landscaping in Napa County. All equipment and materials will be inspected for the presence of invasive species.

Avoidance, Minimization, and/or Mitigation Measures

Limited exotics control is being proposed pursuant to Executive Order 13112 (1999). Pending agency approval, the Department proposes to eradicate bullfrogs, green sunfish, and other invasive aquatic species if encountered during construction monitoring. Department standard BMPs will ensure avoidance of the spread of exotics due to construction-related activities.
In compliance with the Executive Order on Invasive Species, EO 13112, and guidance from the FHWA, the landscaping and erosion control included in the project will not use species listed as invasive. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.
Cumulative Impacts

Regulatory Setting

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

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR), Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

Affected Environment

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

Resources with No Cumulative Effects

As stated previously at the beginning of this chapter, scoping for the environmental review of this SR 121 Huichica Creek Bridge Replacement and Fish Passage Project Initial Study/Environmental Assessment identified certain resource topics that are not applicable to the proposed project; therefore, the proposed project will not result in cumulative impacts to the following resources:

- Existing and Future Land Use
- Consistency with Federal, State, Regional and Local Plans and Programs
- Growth
- Community Character and Cohesion
- Environmental Justice
- Farmlands/Timberlands
- Coastal Zone
- Parks and Recreational Facilities
- Wild and Scenic Rivers
- Air Quality
- Noise
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Hazardous Waste

Similarly, the following resources were evaluated in this chapter, but it has been determined that the proposed project will not result in a direct or indirect adverse effect on the resource, and therefore will not contribute to a cumulative impact on that resource:

- Relocations and Real Property Acquisition
- Utilities/Emergency Services
- Hydrology and Floodplain
- Paleontology
- Plant Species (Special-status)

The following resources were evaluated as noted in this chapter, but it has been determined that the proposed project will not result in adverse effects, thus no cumulative impacts, on the following resources:

- Visual/Aesthetics
- Water Quality and Storm Water Runoff
- Natural Communities
- Wetlands and other Waters
- Animal Species (Special-status except those that are Threatened and Endangered species discussed below)
- Invasive Species

Certain resources are not susceptible to incremental/cumulative effects. One example is Geology/Soils/Seismic/Topography. These resources are site-specific and relate to the type of building or structure proposed as well as soil composition and slope on the site. There is no additive effect of the geologic/seismic hazards associated with other approved or foreseeable development together with the proposed project; therefore, no further cumulative analysis of this resource is warranted.

**Resources with the Potential to Contribute to Cumulative Effects**

**Threatened and Endangered Species**

As discussed in the Threatened and Endangered Species section of this chapter, the Department has preliminarily determined that the project “May Affect, and is Likely to Adversely Affect” the CCCS, the CFS, and the CRLF during construction.

The Department preliminarily finds that the project is self-mitigating for the CCCS, CFS and CRLF. Thus, the project will not result in a direct or indirect adverse effect on threatened and endangered species, and therefore not contribute to cumulative impacts. Onsite improvements should result in improved conditions for the CCCS, CFS, CRLF and other species in general.

The Department will improve CCCS, CFS and CRLF habitat based on the following:

- Removing the triple culverts and paved creek bottom downstream from the bridge will restore a more natural stream bottom and allow for natural stream processes to occur underneath the bridge (36 feet) and approximately 75 feet downstream.
• Replacement of the triple culverts will remove a creek constriction flow point, allowing for a natural creek bottom and plant colonization of areas under the bridge and within the former concrete apron area.

• The original proposed fish passage design was 2.9% grade, which met CDFW and NOAA Fisheries fish passage guidelines. The Department has worked with the CDFW and has redesigned the grade to 2.5% in order to allow for more potential creek stability through time. This change requires 80 more feet of work upstream of the bridge.

For the CCCS, the proposed fish passage remediation project will free up to 1.45 miles upstream CCCS critical habitat according to the 2011 Napa River Fish Barrier Plan. If all upstream barriers were removed, approximately 3.3 miles of CCCS critical habitat would become available. Thus barrier removal will have considerable beneficial impacts for the CCCS well outside of the project footprint.

This barrier removal will also likely have considerable beneficial impacts for the CFS well outside of the project footprint considering CFS winter habitat is located upstream of the triple culverts and fish passage barrier.

The current fish passage barrier is also a potential barrier to tadpole movements if the CRLF is present in the system or it colonizes Huichica Creek in the future. The proposed fish passage remediation project will free up to 1.45 miles upstream according to the 2011 Napa River Fish Barrier Plan. If all upstream barriers were removed, approximately 3.3 miles of habitat would become available. Thus, barrier removal could have considerable beneficial impacts for the CRLF well outside of the project footprint.

Cultural Resources

Resource Study Area

The Resource Study Area (RSA) for cultural resources is the Lower Napa Valley and San Pablo Bay estuary. Bounded by the Mayacamas Mountains to the west and the Vaca Mountains to the east and opening into the northern San Pablo Bay, the RSA encompasses portions of several subsidiary drainages of the larger Napa River watershed. Table 13 shows projects within the RSA, and Figure 9 depicts the RSA.

Health and Historical Context

With access to marsh, bay, riparian, and quarry resources, the RSA would have provided ideal conditions for human settlement, as confirmed by dozens of archaeological investigations conducted from the 1910s onward that have identified Native American residential, task-specific, and cemetery sites distributed throughout the valley. The amassed body of knowledge has culminated into major research themes such as settlement patterning, subsistence strategies, environmental reconstruction, and refinement of a regionally specific chronology.

The project area has been historically altered primarily by agricultural development generally confined to the establishment of vineyards and wineries. Aside from this, and the construction of State Route 121, the area has remained minimally developed. These activities have nonetheless affected the preservation of archaeological site CA-NAP-189/H, as discussed below. The attenuation of Native American archaeological resources is by its nature a cumulative impact to the physical existence of sacred sites and the potential to address the
research issues discussed above. Considering the health of the resource in terms of physical preservation, much of the site has been previously removed through road construction and archaeological data recovery, suggesting a state of moderate health. However, mitigation measures previously enacted have contributed to the informative health of the resource; data recovery resulted in a detailed record of the site’s history.

Cumulative Impacts

While much of the RSA has been intensively studied, the level of prehistoric activity in the region suggests that many as-yet undiscovered sites are present. Past, current, and funded future projects in the greater RSA that have identified impacts to Native American archaeological sites are listed in the table below. If these projects ultimately resulted or will result in the physical destruction of known or as-yet undiscovered resources, this may constitute a cumulative impact to the archaeological landscape.

As discussed in the Cultural Resources section of this chapter, three historic properties, all archaeological sites, were identified within the APE. CA-NAP-190 and the reburial site associated with CA-NAP-189/H will not be impacted by the project. The project will result in the physical destruction of portions of CA-NAP-189/H. CA-NAP-189/H was similarly impacted by the now-complete Duhig Road Improvements project. The currently proposed project has the potential to result in further physical destruction of portions of CA-NAP-189/H that remained after the Duhig Road project was complete. It is currently unknown precisely where these remaining site deposits may be located, as testing was precluded during the environmental phase of the project by denial of access to private property. If deposits associated with CA-NAP-189/H are found within the project footprint, then a site-specific cumulative impact will exist.

None of the current or future projects listed below were determined to create or increase impacts within the Huichica Creek project area. Therefore, no further impacts to CA-NAP-189/H are expected as a result of the projects reviewed. The proposed Huichica Creek Culvert Replacement and Fish Passage Repair project includes mitigation measures (as implemented through the Archaeological Treatment Plan, which includes data recovery, monitoring, reporting, and fencing to protect portions of the site) at CA-NAP-189/H that would reduce the loss of archeological data from the lower Napa Valley and San Pablo Bay region. The impact to the site imposed by the Duhig Road project was mitigated to a less-than-significant level under CEQA through a program of archaeological data recovery similar to the program currently proposed. The cumulative impact to CA-NAP-189/H will be mitigated by further data recovery and protective measures.

No net loss to the archaeological landscape of the RSA will occur as a result of the direct impacts of the project to CA-NAP-189/H. A substantial body of data has been compiled thus far of similar site types, and many sites of this nature are known within the RSA. While several development projects have been approved or recently completed within the RSA, the majority of those projects did not or will not impact Native American archaeological sites.
Table 13 – Projects within the Cultural Resources Resource Study Area

<table>
<thead>
<tr>
<th>Figure 9 Key</th>
<th>Project /Location</th>
<th>Project Type</th>
<th>Document Type</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Duhig Road Improvements (SR 121 PM 0.3/2.1)</td>
<td>Transportation</td>
<td>Categorical Exclusion (CE)/Initial Study (IS)-Mitigated Negative Declaration (MND)</td>
<td>Complete</td>
</tr>
<tr>
<td>3</td>
<td>Milliken-Sarco-Tulocay Pipeline Project</td>
<td>Environmental</td>
<td>EIR</td>
<td>Complete</td>
</tr>
<tr>
<td>4</td>
<td>Syar Napa Quarry Expansion (west of Skyline Wilderness Park)</td>
<td>Industrial</td>
<td>EIR</td>
<td>Approved</td>
</tr>
</tbody>
</table>

Figure 9 – Projects within the Cultural Resources Resource Study Area

![Map of Projects](image-url)
Climate Change

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

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

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation.8 In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of GHG emissions.9 The dominant GHG emitted is CO2, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: “greenhouse gas mitigation” and “adaptation.” "Greenhouse gas mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. “Adaptation” refers to planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

REGULATORY SETTING

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.10 This approach encourages planning for sustainable highways by addressing climate risks while

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9 https://www.arb.ca.gov/cc/inventory/data/data.htm
10 https://www.fhwa.dot.gov/environment/sustainability/resilience/
balancing environmental, economic, and social values—"the triple bottom line of sustainability." Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR): With this act, Congress set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Standards: This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, 74 Federal Register 52117 (October 8, 2009): This federal EO set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. It instituted as policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities.

Executive Order 13693, Planning for Federal Sustainability in the Next Decade, 80 Federal Register 15869 (March 2015): This EO reaffirms the policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. It sets sustainability goals for all agencies to promote energy conservation, efficiency, and management by reducing energy consumption and GHG emissions. It builds on the adaptation and resiliency goals in previous executive orders to ensure agency operations and facilities prepare for impacts of climate change. This order revokes Executive Order 13514.

U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court’s ruling,
U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court’s interpretation of the existing Act and EPA’s assessment of the scientific evidence that form the basis for EPA’s regulatory actions.

U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010 and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules’ long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target.

NHTSA and EPA issued a Final Rule for “Phase 2” for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO₂ emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth, of March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

State

With the passage of legislation including State Senate and Assembly bills and executive orders, California has been innovative and proactive in addressing GHG emissions and climate change.

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

Executive Order S-3-05 (June 1, 2005): The goal of this executive order (EO) is to reduce California’s GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and SB 32 in 2016.

Assembly Bill 32 (AB 32), Chapter 488, 2006: Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

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

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor’s 2030 and 2050 GHG reduction goals.

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

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

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

Executive Order B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Finally, it requires the Natural Resources Agency to update the state’s climate adaptation strategy, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, (SB 32) Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.
ENVIRONMENTAL SETTING

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. ARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. ARB is moving forward with a discussion draft of an updated Scoping Plan that will reflect the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California.14 ARB is responsible for maintaining and updating California’s GHG Inventory per H&SC Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 10 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in demonstrating progress toward meeting the 2020 goal of 431 MMTCO2e15. The 2017 edition of the GHG emissions inventory (released June 2017) found total California emissions of 440.4 MMTCO2e, showing progress towards meeting the AB 32 goals.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 MMTCO2e total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 MMTCO2e.

14 2016 Edition of the GHG Emission Inventory Released (June 2016): https://www.arb.ca.gov/cc/inventory/data/data.htm
15 The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4)
PROJECT ANALYSIS

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

GHG emissions for transportation projects can be divided into those produced during operations and those produced during construction. The following represents a best faith effort to describe the potential GHG emissions related to the proposed project.

Operational Emissions

The purposes of the proposed project are to reduce the potential for cross-centerline and run-off-the road accidents on SR 121; provide continuity to the widening of SR 121 constructed in a previous project east and west of the Huichica Creek bridge; and satisfy regulatory fish passage requirements. This project proposes to widen SR 121 over Huichica Creek, remove the existing triple metal culvert, replace it with a free span bridge, and incorporate fish passage improvements and creek bed restoration along the creek. The proposed project is not a capacity increasing project so it is not anticipated to have any increase in operational GHG emissions as a result. The project is located in a semirural area outside any city’s sphere of influence or urban growth boundary, and the surrounding communities are not likely to experience significant increases in growth. As discussed below, construction emissions will be unavoidable, but there will likely be long-term GHG benefits associated with reduced maintenance and improved operation through smoother pavement surfaces.
Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and 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 offset to some degree by longer intervals between maintenance and rehabilitation activities.

Construction generated GHG includes emissions resulted from material processing by onsite construction equipment, workers commuting to and from the project site, and traffic delays due to construction. The emissions will be produced at different rates throughout the project depending on the activities involved at various phases of construction. The analysis was focused on carbon dioxide (CO₂) emissions, as it is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHG, including methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbon (HFCs) and black carbon (BC).

Based on project information available for environmental studies, the construction-related CO₂ emissions were calculated using the Road Construction Emissions Model (RCEM), version 8.1.2, provided by the Sacramento Metropolitan Air Quality Management District. It was estimated that the total amount of CO₂ produced due to bridge replacement and fish passage construction would be 1,108 tons annually for construction duration of 24 months with an estimated project total of 2,215 tons.

To further reduce construction emissions, all construction contracts include the Caltrans Standard Specification 14-9.02, Air Pollution Control, requiring contractors to comply with air-pollution-control rules, regulations, ordinances, and statutes; some of those provisions help reduce GHG emissions. The project will also implement a construction traffic management plan to minimize delays and idling traffic.

CEQA CONCLUSION

While the project will result in a slight increase in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. While 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 impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

GREENHOUSE GAS REDUCTION STRATEGIES

Statewide Efforts

In an effort to further the vision of California’s GHG reduction targets outlined an AB 32 and SB 32, Governor Brown identified key climate change strategy pillars (concepts). These pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the 2030 GHG emissions target. These pillars are (1) reducing today’s petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent
our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state’s climate adaptation strategy, Safeguarding California.

Figure 11 – The Governor’s Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants from transportation and goods movement activities. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. One of Governor Brown’s key pillars sets the ambitious goal of reducing today’s petroleum use in cars and trucks by up to 50 percent by 2030.

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove carbon dioxide from the atmosphere through biological processes, and to then sequester carbon in above- and below-ground matter.

**CALTRANS ACTIVITIES**

Caltrans continues to be involved on the Governor’s Climate Action Team as the ARB works to implement EO S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set a new interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

**CALIFORNIA TRANSPORTATION PLAN (CTP 2040)**

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California’s future statewide,
integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391 (Liu 2009) requires the CTP to meet California’s climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state’s transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

**CALTRANS STRATEGIC MANAGEMENT PLAN**

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT per capita
- Reducing Caltrans’ internal operational (buildings, facilities, and fuel) GHG emissions

**FUNDING AND TECHNICAL ASSISTANCE PROGRAMS**

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several funding and technical assistance programs that have GHG reduction benefits. These include the Bicycle Transportation Program, Safe Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in *Caltrans Activities to Address Climate Change* (2013).

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

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

**Project-Level GHG Reduction Strategies**

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

- Replant trees removed due to construction activities to restore riparian zone. Trees help remove CO₂ from the atmosphere.
- According to Caltrans’ Standard Specifications, the contractor must comply with all local Air Pollution Control District’s rules, ordinances, and regulations for air quality restrictions.
ADAPTATION STRATEGIES

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

Federal Efforts

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

The federal Department of Transportation issued U.S. DOT Policy Statement on Climate Adaptation in June 2011, committing to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely and that transportation infrastructure, services and operations remain effective in current and future climate conditions.”

To further the DOT Policy Statement, in December 15, 2014, FHWA issued order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events). This directive established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The FHWA will work to integrate consideration of these risks into its planning, operations, policies, and programs in order to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation’s transportation systems.

FHWA has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels.

State Efforts

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

16 https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience
18 https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm
19 https://www.fhwa.dot.gov/environment/sustainability/resilience/
of sea-level rise and directed all state agencies planning to construct projects in areas vulnerable to future sea-level rise to consider a range of sea-level rise scenarios for the years 2050 and 2100, assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea-level rise. Sea-level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, and storm surge and storm wave data.

Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future sea-level rise. The final report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (Sea-Level Rise Assessment Report) was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates; and the range of uncertainty in selected sea-level rise projections. It provided 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; and a discussion of future research needs regarding sea-level rise.

In response to EO S-13-08, the California Natural Resources Agency (Resources Agency), in coordination with local, regional, state, federal, and public and private entities, developed *The California Climate Adaptation Strategy* (Dec 2009), which summarized the best available science on climate change impacts to California, assessed California’s vulnerability to the identified impacts, and outlined solutions that can be implemented within and across state agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan).

Governor Jerry Brown enhanced the overall adaptation planning effort by signing EO B-30-15 in April 2015, requiring state agencies to factor climate change into all planning and investment decisions. In March 2016, sector-specific Implementation Action Plans that demonstrate how state agencies are implementing EO B-30-15 were added to the Safeguarding California Plan. This effort represents a multi-agency, cross-sector approach to addressing adaptation to climate change-related events statewide.

EO S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided “guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California,” specifically, “information and recommendations to enhance consistency across agencies in their development of approaches to SLR.” The March 2013 update finalizes the SLR Guidance by incorporating findings of the National Academy’s 2012 final Sea-Level Rise Assessment Report; the policy recommendations remain the same as those in the 2010 interim SLR Guidance. The guidance will be updated as necessary in the future to reflect the latest scientific understanding of how the climate is changing and how this change may affect the rates of SLR.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation,

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and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is actively engaged in working towards identifying these risks throughout the state and will work to incorporate this information into all planning and investment decisions as directed in EO B-30-15.

The proposed project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.
Chapter 3 – Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization and/or 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 (PDT) 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.

Cultural Resources

Correspondence from the SHPO to the Department is located in Appendix F.

The Department received concurrence from the SHPO on August 25, 2016 that the built resource located at 5500 Sonoma Highway is not eligible for inclusion in the National Register of Historic Places. The July 2016 HPSR documented that the Department will continue to consult with the SHPO on assessment of effects to archaeological site CA-NAP-189/H, the associated reburial site, and site CA-NAP-190.

A draft MOA stipulating mitigation measures is currently being circulated with the SHPO and the Department’s Cultural Studies Office. Mitigation measures will be implemented through methods specified in an ATP, appended to the MOA. The ATP includes provisions for avoidance and mitigation to the historic resources in the project area such as data recovery, archaeological monitoring, establishment of ESAs, and continued consultation with Native American tribes.

Federal Endangered Species Act Consultation Summary

For the CCCS, the Department will be submitting a BA to NOAA Fisheries. In addition to the Duhig Roadway Rehabilitation and Curve Realignment Project, which obtained a BO in 2005, the Department has been in contact with NOAA Fisheries since 2013 regarding fish passage design and recently met with Darren Howe of NOAA on July 15, 2016.

For the CFS and the CRLF, the Department will be submitting a BA to the USFWS. In addition to the parent project which obtained a BO in 2005, the Department been in technical assistance with USFWS since 2015 and met with John Cleckler of the USFWS on July 15, 2016.

Essential Fish Habitat Consultation Summary

The proposed project occurs within Essential Fish Habitat (EFH) for Chinook and Coho salmon. This EFH unit covers parts of Alameda, Contra Costa, Marin, Napa, San Francisco, Solano, and Sonoma Counties. NOAA has provided technical assistance to the Department for the project and its potential impacts to federally protected fisheries. The Department will be submitting a BA to NOAA Fisheries which will include consultation on EFH.
California Endangered Species Act Consultation Summary

The potential for species take, as defined under the CESA, is anticipated for the CFS. The Department has been in consultation with biologists from the CDFW since 2016 on both the fish passage design and potential onsite habitat improvements for the CFS. The Department will apply for a CDFW ITP during the design phase for this project.

Wetlands and Other Waters Coordination Summary

The Department conducted a wetland delineation for the project footprint in 2016. The Department has submitted the delineation to the USACE for review and the review is currently pending. The Department will be submitting an application for a Clean Water Act 404 Nationwide Permit from USACE and for a 401 water quality certification with the RWQCB.

For riparian and creek impacts, the Department will submit a Lake and Streambed Agreement application to CDFW during the design phase of the project.
Chapter 4 – List of Preparers

California Department of Transportation

*Project Management*
Ahmad Rahimi, Project Manager

*Environmental Analysis*
Wahida Rashid, Branch Chief
Thomas Rosevear, Associate Environmental Planner

*Environmental Engineering – Water Quality*
Brian Rowley, Transportation Engineer

*Environmental Engineering – Hazardous Waste*
Chris Wilson, Branch Chief

*Environmental Engineering – Air and Noise Studies*
Ray Boyer, Branch Chief

*Cultural Resource Studies*
Helen Blackmore, Associate Environmental Planner
Noah Stewart, Branch Chief, Built Resources/Architectural History
Jennifer Blake, Associate Environmental Planner
Kathryn Rose, Branch Chief, Archaeology

*Landscape Architecture*
Susan Lindsay, Branch Chief
Kasaia Luckel, Landscape Associate

*Biological Sciences and Permits*
Andy Amacher, Associate Environmental Planner
John Yeakel, Branch Chief

*Hydraulic Engineering*
Brian Wolcott, Transportation Engineer
Robin Amatya, Transportation Engineer
Joe Peterson, Office Chief

*Geotechnical Design*
Sunny Yang, Transportation Engineer
Hooshmand Nikooui, Branch Chief
Hossain Salimi, Senior Materials and Research Engineer
Rifaat Nashed, Engineering Geologist
Chris Rissden, Branch Chief

*Design-SHOPP*
Stewart Lee, Branch Chief
Bill Fong, Transportation Engineer
Chapter 5 – Distribution List

Federal Agencies

Environmental Protection Agency, Region IX
Federal Activities Office, CMD-2
75 Hawthorne Street
San Francisco, CA 94105-3901

National Marine Fisheries Services
777 Sonoma Avenue Room 325
Santa Rosa, CA 95404

U.S. Army Corps of Engineers, Sacramento District
ATTN: Regulatory Branch
1325 J Street, Room 1480
Sacramento, CA 95814

U.S. Fish and Wildlife Service
2800 Cottage Way W-2605
Sacramento, CA 95825

State Agencies

State Clearinghouse, Executive Officer
1400 Tenth Street, Room 156
P.O. Box 3044
Sacramento, CA 95812-3044

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

California Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

California Department of Fish & Wildlife
Region 3
7329 Silverado Trail
Napa, CA 94558

California Office of Historic Preservation
1416 Ninth Street, Room 1442
Sacramento, CA 95814
California Transportation Commission
1120 N Street, MS-52
Sacramento, CA 95814

Department of Toxic Substances Control
1001 I Street
Sacramento, CA 95814-2828
P.O. Box 806
Sacramento, CA 95812

Native American Heritage Commission
Executive Secretary
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

Regional Water Quality Control Board
District 2
1515 Clay Street, Suite 1400
Oakland, CA 94612

Regional and Local Agencies

Association of Bay Area Governments
101 Eighth Street, P.O. Box 2050
Oakland, CA 94604-2050

Metropolitan Transportation Commission
101 Eighth Street – Metrocenter
Oakland, CA 94607

Federal and Statewide Elected Officials

The Honorable Kamala Harris
United States Senate
70 Washington Street, Suite 203
Oakland, CA 94607

The Honorable Dianne Feinstein
United States Senate
1 Post Street #2450
San Francisco CA 94104

The Honorable Bill Dodd
California State Senate, 3rd District
2721 Napa Valley Corporate Drive
Napa, CA 94558

The Honorable Mike Thompson
United States Congress, 5th District
2721 Napa Valley Corporate Drive
Napa, CA 94558
The Honorable Cecilia Aguiar-Curry  
California State Assembly, 4th District  
2721 Napa Valley Corporate Drive  
Napa, CA 94558

County Board of Supervisors

The Honorable Brad Wagenknecht  
Napa County Board of Supervisors, District 1  
County Administration Building  
1195 Third Street, Suite 310  
Napa, CA  94559

The Honorable Ryan Gregory  
Napa County Board of Supervisors, District 2  
County Administration Building  
1195 Third Street, Suite 310  
Napa, CA  94559

The Honorable Diane Dillon  
Napa County Board of Supervisors, District 3  
County Administration Building  
1195 Third Street, Suite 310  
Napa, CA  94559

The Honorable Alfredo Pedroza  
Napa County Board of Supervisors, District 4  
County Administration Building  
1195 Third Street, Suite 310  
Napa, CA  94559

The Honorable Belia Ramos  
Napa County Board of Supervisors, District 5  
County Administration Building  
1195 Third Street, Suite 310  
Napa, CA  94559

City of Napa

Mayor Jill Techel  
City of Napa  
955 School Street  
Napa, CA 94559

City of Sonoma

Mayor Rachel Hundley  
City of Sonoma  
No. 1 The Plaza  
Sonoma, CA 95476
Appendix A - CEQA Checklist

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

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### I. AESTHETICS
Would the project:

- a) Have a substantial adverse effect on a scenic vista? [ ] [ ] [ ] [ ]
- b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? [ ] [ ] [ ] [ ]
- c) Substantially degrade the existing visual character or quality of the site and its surroundings? [ ] [ ] [ ] [ ]
- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? [ ] [ ] [ ] [ ]

### 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? [ ] [ ] [ ] [ ]
- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? [ ] [ ] [ ] [ ]
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))?

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d) Result in the loss of forest land or conversion of forest land to non-forest use?

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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?

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III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

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b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

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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)?

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d) Expose sensitive receptors to substantial pollutant concentrations?

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e) Create objectionable odors affecting a substantial number of people?

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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?

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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?

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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?

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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?

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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

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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?

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V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

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b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

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c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

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d) Disturb any human remains, including those interred outside of dedicated cemeteries?

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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?

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ii) Strong seismic ground shaking?

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iii) Seismic-related ground failure, including liquefaction?

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

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<td>a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</td>
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<td>b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</td>
<td>Caltrans has used the best available information based to the extent possible on scientific and factual information, to describe, calculate, or estimate the amount of greenhouse gas emissions that may occur related to this project. The analysis included in the climate change section of this document provides the public and decision-makers as much information about the project as possible. It is Caltrans' determination that in the absence of statewide-adopted thresholds or GHG emissions limits, it is too speculative to make a significance determination regarding an individual project's direct and indirect impacts with respect to global climate change. Caltrans remains committed to implementing measures to reduce the potential effects of the project. These measures are outlined in the body of the environmental document.</td>
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### VIII. HAZARDS AND HAZARDOUS MATERIALS
Would the project:

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<td>a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</td>
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<td>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?</td>
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<td>c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</td>
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<td>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?</td>
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<td>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?</td>
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<td>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?</td>
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<td>g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</td>
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<td>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?</td>
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**IX. HYDROLOGY AND WATER QUALITY:** Would the project:

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<td>a) Violate any water quality standards or waste discharge requirements?</td>
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<td>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)?</td>
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<tr>
<td>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?</td>
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<td>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?</td>
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<td>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?</td>
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<td>f) Otherwise substantially degrade water quality?</td>
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<td>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?</td>
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<td>h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?</td>
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<td>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?</td>
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<td>j) Inundation by seiche, tsunami, or mudflow</td>
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X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
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<td>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?</td>
<td>Potentially Significant Impact</td>
<td>Less Than Significant with Mitigation</td>
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<tr>
<td>c) Conflict with any applicable habitat conservation plan or natural community conservation plan?</td>
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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? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
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<td>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?</td>
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XII. NOISE: Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | Potentially Significant Impact | Less Than Significant with Mitigation | Less Than Significant Impact | No Impact |
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<td>b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?</td>
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<td>c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
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<td>d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?</td>
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<td>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?</td>
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<td>f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?</td>
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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)? | ☐ | ☐ | ☐ | ☒ |

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

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:

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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?

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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?

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XVI. TRANSPORTATION/TRAFFIC: Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

☐ ☐ ☐ ☒

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

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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?

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d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

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e) Result in inadequate emergency access?

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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?

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XVII. TRIBAL CULTURAL RESOURCES: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

☐ ☐ ☐ ☒
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

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

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

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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?

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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?

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d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

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e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?

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

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

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XIX. MANDATORY FINDINGS OF SIGNIFICANCE

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

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

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? □ □ □ ☒
Appendix B – Title VI Policy Statement

March 2013

NON-DISCRIMINATION POLICY STATEMENT

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

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/6_violated.htm.

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

MALCOLM DOUGHERTY
Director

"California improves mobility across California"
Appendix C – List of Technical Studies

Natural Environment Study, August 2017

Water Quality Study, August 2017

Summary of Section 106 Compliance Measures Completed for the Huichica Creek Culvert Replacement and Fish Passage Repair Draft Environmental Document, May 2017


Paleontological Identification Report for Replacing Huichica Creek Bridge and Fish Passage Project, February 2017

Visual Impact Assessment (for) Huichica Creek Bridge Widening, July 2017

Structures Preliminary Geotechnical Report for Huichica Creek Bridge Replacement, July 2012.

Appendix D – Avoidance, Minimization and/or Mitigation Summary

**Air Quality:** Short term air quality effects during the proposed project’s construction period will be addressed by Department Special Provision and Standard Specification 14-9.02. Trucks and construction equipment emit hydrocarbons, oxides of nitrogen, carbon monoxide and particulates. Most project-related pollution during construction will consist of wind-blown dust generated by excavation, grading, hauling and various other activities. The effects from these activities will vary from day to day as construction progresses. The Special Provisions and Standard Specifications will include requirements to minimize or eliminate dust during construction through the application of water or dust palliatives.

**Noise:** Construction noise will be temporary and will be within acceptable levels for construction activity. The Department Standard Specifications Section 7-1.01l, “Sound Control Requirements” regulates construction noise, 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 manufacturer’s specifications.

**Hazardous Waste:** An asbestos and lead-containing paint survey will be needed prior to the demolition of the Huichica Creek bridge. This survey will be conducted during the design phase of the project. The results will determine if any hazardous-material minimization measures will be necessary before bridge demolition work begins and which contract specification will be drafted for directing the work.

**Visual/Aesthetics:** Avoidance or minimization measures can diminish visual impacts of the project. Below are avoidance and/or minimization measures that would address specific visual issues, to be implemented with input from the District Landscape Architect:

- Hydroseed all disturbed areas with a mix of locally native vegetation to blend with the surrounding natural environment.
- Replant trees removed due to construction activities to restore riparian zone.
- Safety barriers for vehicles and cyclists will be constructed on the sides of the bridge deck. A see-through barrier such as the ST-70 barrier will likely be selected for aesthetic characteristics that are compatible with the visual characteristics of the setting, and consistent in appearance with other barriers in the vicinity. Final specifications will be determined during final project design with input from the Department Landscape Architect.

**Cultural Resources:** A draft MOA stipulating mitigation measures is currently being circulated with the SHPO and the Department’s Cultural Studies Office. Mitigation measures will be implemented through methods specified in an ATP, appended to the MOA. The ATP includes provisions for avoidance and mitigation to the historic resources in the project area such as data recovery, archaeological monitoring, establishment of ESAs, and continued consultation with Native American tribes.

Under the CEQA, the mitigation measures required to bring project impacts to a level of Less than Significant with Mitigation include the previously described ATP.
The other archaeological resources within the APE, CA-NAP-190 and the reburial site associated with CA-NAP-189/H are outside of the project footprint and will be protected in their entirety from inadvertent project impacts through establishment of ESAs.

**Water Quality and Storm Water Runoff**

*Temporary Impacts*

Temporary Construction Site BMPs, such as silt fence, fiber roll, drainage inlet protection, concrete wash-out, street sweeping, and construction entrance will be deployed for sediment control and material management. These BMPs are representative of those which may be recommended during the subsequent design phase of the project. Additionally, a creek diversion will be implemented, in order to provide for a dry working environment within the creek channel. This can take different forms, though gravel bag cofferdams are anticipated. An option requiring a smaller footprint would be the installation of sheet-pile cofferdams.

*Permanent Impacts*

As a 401 certification will be required, implementation of permanent stormwater treatment measures will be included as a condition, equivalent to the net new impervious surface of 0.13 acre. The preferred Treatment BMP type is bioretention, which may be designed as either a basin or swale configuration. As the soils within the project limits may provide adequate infiltration, site soils may remain for any Treatment BMP. A swale exists north of the SR 121 alignment, west of the bridge. If feasible, this swale may be modified to serve as a Treatment BMP.

**Water Pollution Control Program**

As the DSA is anticipated to be at least 0.40 acre, a WPCP will be required. Prior to commencement of construction activities, a WPCP must be prepared by the contractor and approved by the Department, pursuant to Department 2015 Standard Specification 13-2. The WPCP addresses potential temporary impacts via implementation of appropriate BMPs, such as those mentioned above, to the maximum extent practicable. Further, sampling and monitoring of construction site discharge point(s) may be recommended as part of the WPCP during the subsequent design phase of the project.

**Natural Communities/Wetlands and Other Waters/Threatened and Endangered Species:**

The Department proposes that the project as a whole is self-mitigating due to the improvement over existing conditions and the restoration of natural creek processes. The removal the fish passage barrier, triple barrel culverts, and creek apron over 111 feet of creek will have beneficial impacts both onsite and both up and downstream of the project footprint.

The Department proposes the following onsite improvements to the creek and riparian area:

- Removal of fish passage barrier #714975
- Removal of triple barrel culverts with replacement of a free span bridge.
- Removal of concrete apron on the creek bed with replacement of natural stream bottom.
• The original proposed fish passage design was 2.9% grade, which met CDFW and NOAA Fisheries fish passage guidelines. The Department has worked with the CDFW and has redesigned the grade to 2.5% in order to allow for more potential stability through time. This change requires 80 more feet of creek restoration.

• The addition of habitat features that may enhance the creek for special-status species. Habitat features will be determined in coordination with regulatory agencies, but may include downed woody debris, logs, root wads, and habitat structures that may enhance the site for California freshwater shrimp.

• Replanting on-site of any removed native riparian tree species at a ratio of at least 1:1. Replanted trees will be monitored for at least 5 years for plant establishment. An onsite restoration plan will be developed for agency review and approval.

• A qualified biological monitor will eradicate American bullfrogs, green sunfish, and other invasive aquatic species if encountered during construction.

**Natural Communities/Wetlands and Other Waters/Threatened and Endangered Species:**

• **Permits.** The Department will include a copy of all relevant regulatory permits within the construction bid package of the proposed project. The Resident Engineer or their designee will be responsible for implementing the Terms and Conditions of those regulatory permits.

• **Biological Monitor Approval.** The USFWS and CDFW will review and approve the qualifications of the biological monitor(s) prior to initiating construction activities for the proposed project.

• **Biological Monitoring.** The approved biologist(s) will be on-site during initial ground-disturbing activities, and thereafter as needed to fulfill the role of the approved biologist as specified in the avoidance and minimization measures, and/or project permits. The biologist(s) will keep copies of applicable permits in their possession when on-site. Through the Resident Engineer or their designee, the approved biologist(s) shall be given the authority to communicate either verbally, by telephone, email or hardcopy with all project personnel to ensure that the risk of take to listed species is minimized, and that any permit requirements are fully implemented. Through the Resident Engineer or their designee, the approved biologist(s) shall have the authority to stop project activities to minimize take of listed species or if he/she determines that any permit requirements are not fully implemented.

• **Worker Environmental Awareness Training.** Prior to working on the project, all construction personnel will attend a mandatory environmental education program delivered by an approved biologist. At a minimum the training will include a description of CCCS, CRLF, and CFS, and other listed species, migratory birds and their habitats. The training will also discuss the potential occurrence of these species within the action area; an explanation of the status of these species and protection under the Endangered Species Act and other laws; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur.
• **Pre-construction Surveys.** Prior to any ground disturbance, pre-construction surveys for listed species will be conducted by an approved biologist. These surveys will consist of walking surveys of the project limits and, if possible, accessible adjacent areas within at least 50 feet of the project limits. The biologist(s) will investigate all potential cover sites. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, tree cavities, and debris. Native vertebrates found in the cover sites within the project limits will be documented and relocated to an adequate cover site in the vicinity.

• **WEF.** High visibility WEF at least 4 feet in height will be installed around suitable habitat for listed species within the outer footprint of the project to prevent wildlife from accessing work areas. The fencing will be removed only when all construction equipment is removed from the site. No project activities will occur outside the delineated project area. The WEF will be monitored periodically and all areas will be checked following rain events.

• **Listed Species On Site.** The Resident Engineer will immediately contact the agency-approved project biologist(s) in the event that a listed species is observed within a construction zone. The Resident Engineer will suspend construction activities within a 50-foot radius of the animal until the animal leaves the site voluntarily or an agency-approved protocol for removal has been established.

• **Prevention of Wildlife Entrapment.** To prevent inadvertent entrapment of wildlife species during construction, excavated holes or trenches more than one foot deep with walls steeper than 30 degrees will be covered at the close of each working day by plywood or similar materials. Alternatively, an additional four-foot high vertical barrier, independent of exclusionary fences, will be used to further prevent the inadvertent entrapment of wildlife species. If it is not feasible to cover an excavation or provide an additional four-foot high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earth fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist will immediately place escape ramps or other appropriate structures to allow the animal to escape. If the animal is a listed species, the CDFW or USFWS will be contacted by telephone for guidance.

• **Work Window for Nesting Birds.** To the extent practicable, clearing and grubbing activities and any tree removal will be conducted during the non-nesting season, from September 1 to February 14.

• **Pre-construction Surveys for Nesting Birds.** Pre-construction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction for activities occurring during the breeding season (February 1 to September 30).

• **Non-Disturbance Buffer for Nesting Birds.** If work is to occur within 300 feet of active raptor nests or 50 feet of active non-raptor nests, a non-disturbance buffer will be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species’ sensitivity to disturbance, and the intensity/type of potential work activities.

• **Water Quality Inspection.** Water quality inspector(s) will inspect the site after a rain
event to ensure that the stormwater BMPs are adequate.

- **Vehicle Use.** Project employees will be required to comply with guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.

- **Night Work.** To the extent practicable, nighttime construction will be minimized.

- **Night Lighting.** Artificial lighting of the project site during nighttime hours will be minimized and directed away from non-paved surfaces to the maximum extent practicable.

- **Trash Control.** All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a day from the work area.

- **Firearms.** No firearms will be allowed in the project area except for those carried by authorized security personnel, or local, State, or federal law enforcement officials.

- **Pets.** To prevent harassment, injury or mortality of sensitive species, no pets will be permitted on the project site.

- **Department Standard Best Management Practices BMPs.** The potential for adverse impacts to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 7-1.01G of the Department’s Standard Specifications. Department erosion control BMPs will be used to minimize any wind or water-related erosion. The SWRCB has issued a NPDES Statewide Storm Water Permit to the Department to regulate storm water and non-storm water discharges from Department facilities. A SWPPP will be developed for the project, as one is required for all projects that have at least 1.0 acre of soil disturbance. The SWPPP complies with the Department SWMP. The SWMP includes guidance for Design staff to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize storm water and non-storm water discharges.

The SWPPP will reference the Department Construction Site BMPs Manual. This manual is comprehensive and includes many other protective measures and guidance to prevent and minimize pollutant discharges and can be found at the following website:


Protective measures will be included in the contract, including, at a minimum:

- a. No discharge of pollutants from vehicle and equipment cleaning are allowed into the storm drain or water courses.

- b. Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses.

- c. Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses.
d. Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.

e. Coir rolls will be installed along or at the base of slopes during construction to capture sediment and temporary organic hydro-mulching will be applied to all unfinished disturbed and graded areas.

f. Work areas where temporary disturbance has removed the pre-existing vegetation will be re-seeded with a native seed mix.

g. Graded areas will be protected from erosion using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate.

h. A Revegetation Plan will be prepared for restoration of temporary work areas. Pavement and base will be removed; topography blended with the surrounding area; and topsoil will be salvaged from the new alignment area to be placed over the restored area, which will then be revegetated with native grassland species.

- **Monofilament Erosion Control.** Plastic mono-filament netting (erosion control matting) or similar material will not be used for the project because wildlife may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

- **Concrete Waste and Stockpiles.** All grindings and asphaltic-concrete waste will be stored within previously disturbed areas absent of habitat and at a minimum of 50 feet from any aquatic habitat, culvert, or drainage feature.

- **Revegetation Following Construction.** All areas that are temporarily affected during construction will be revegetated with an assemblage of native grass and shrubs as appropriate. Invasive, exotic plants will be controlled within the project site to the maximum extent practicable, pursuant to Executive Order 13112.

**Natural Communities:** Avoidance and minimization measures specific to riparian habitat and trees include:

- Working in the Huichica Creek riparian and creek area during low-flow periods between June 1 and October 15 to avoid impacts to habitat during the wet season. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

- Storing all equipment outside of the Huichica Creek riparian and creek area.
• Installing temporary high visibility fencing that will outline and protect non-impacted creek and riparian areas prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until project completion.

• Installing silt fences on the slopes adjacent to the work area to prevent silt from entering the watershed. Erosion controls will be maintained during the construction period.

• Replanting on-site of any removed native riparian tree species at a ratio of at least 1:1. Replanted trees will be monitored for at least 5 years for plant establishment. An onsite restoration plan will be developed for agency review and approval.

• Specific avoidance and minimization measures from all regulatory permits to be obtained will be incorporated into the project plans and specifications and enforced during construction.

_Wetlands and Other Waters:_ Avoidance and minimization measures for waters include the following:

• Working in the Huichica Creek riparian area during low-flow periods between June 1 and October 15 to avoid impacts to wetlands and waters. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

• Storing all equipment outside of the Huichica Creek riparian area.

• Installing temporary high visibility fencing that will outline and protect non-impacted waters areas prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until job completion.

• Installing silt fences on the slopes adjacent to the work area to prevent silt from entering the watershed. Erosion controls will be maintained during the construction period.

• The Department will prepare water diversion and dewatering plan and avoid any work within wetted creek channel.

• Specific avoidance and minimization measures from all permits will be incorporated into the project plans and specifications and enforced during construction.
Animal Species (FYLF), Threatened and Endangered Species (CRLF): The FYLF will be protected with the same avoidance and minimization measures as the CRLF. These measures include the following:

- Working in Huichica Creek and the riparian area during low and no-flow periods between June 1 and October 15 to avoid potential impacts to CRLF and FYLF individuals. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

- Storing all equipment outside of Huichica Creek and the riparian area.

- Installing temporary high visibility fencing that will outline and protect ESAs prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until job completion.

- Installing temporary WEF around potential CRLF and FYLF habitat

- The Department will prepare a water diversion and dewatering plan.

- A qualified biologist will be on-site during construction to monitor construction activities to ensure take is avoided or minimized.

- Specific avoidance and minimization measures from all permits will be incorporated into the project plans and specifications and enforced during construction.

Animal Species (WPT): Avoidance and minimization measures specific to the WPT include the following:

- A preconstruction survey will be performed prior to the start of construction

- During construction, an approved biological monitor will be onsite during ground and structure disturbing activities within the riparian and creek areas

Animal Species (Migratory and Nongame Birds): Avoidance and minimization measures for migratory and nongame birds include the following:

- Prior to construction, the project footprint and immediate vicinity will be surveyed for nesting birds.

- To minimize and avoid take of migratory birds, their nests and young, the Department will conduct vegetation and tree trimming between September 30 and January 30 before the start of project construction. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur.
Upon completion of this work, the Department will install storm water and erosion control BMPs.

- If vegetation removal must occur during the nesting season, a qualified biologist must inspect the area no more than three days prior to removal. Vegetation removal can occur no longer than 72 hours after approval is given by the Engineer. After 72 hours, another nesting survey must be performed before any more vegetation removal can take place.

- If an active nest is found, a no work buffer will be enforced and maintained around the nest and identified with high visibility markers or fencing. Buffers will be 300 feet for raptors and 50 feet for all other birds protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. If work is required inside the buffer, the Department will contact the CDFW and/or USFWS for guidance prior to any work being performed.

**Animal Species (Bat Species):** Avoidance and minimization measures specific to bat species include the following:

- The Department will conduct a preconstruction surveys to verify potential use by bats.

- If bats are observed, the Department will use exclusion measures to prevent use during construction in order to avoid potential mortality.

**Threatened and Endangered Species (CCCS, CFS):** Avoidance and minimization measures specific to the CCCS and CFS include the following:

- Working in Huichica Creek and the riparian area during low and no-flow periods between June 1 and October 15 to avoid potential impacts to CCCS and CFS individuals. However, to minimize and avoid take of migratory birds, their nests and young, the Department proposes to conduct vegetation and tree removal within the riparian area between September 30 and January 30. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground disturbing actions will occur. Upon completion of this work, the Department will install storm water and erosion control BMPs. In addition, the Department proposes that revegetation work using hand tools be allowed to occur outside of the dry season work window to ensure successful revegetation outcomes.

- No pile-driving will be used for the project.

- Storing all equipment outside of Huichica Creek and the riparian area.

- Installing temporary high visibility fencing that will outline and protect ESAs prior to the start of construction. The ESA fencing will be delineated on the final plans, and the fence will remain on-site until job completion.

- Installing silt fences on the slopes adjacent to the work area to prevent silt from entering the watershed. Erosion controls will be maintained during the construction period.

- The Department will prepare a water diversion and dewatering plan.
• All excess soil will be disposed of at an approved upland site.

• A qualified biologist will be on-site during construction to monitor construction activities to ensure take is avoided or minimized.

• Specific avoidance and minimization measures from all permits will be incorporated into the project plans and specifications and enforced during construction.

**Invasive Species:** Limited exotics control is being proposed pursuant to Executive Order 13112 (1999). Pending agency approval, the Department proposes to eradicate bullfrogs, green sunfish, and other invasive aquatic species if encountered during construction monitoring. Department standard BMPs will ensure avoidance of the spread of exotics due to construction-related activities.

In compliance with the Executive Order on Invasive Species, EO 13112, and guidance from the FHWA, the landscaping and erosion control included in the project will not use species listed as invasive. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.
Appendix E – Special-status Plant and Animal Species Lists

Federally or state listed and candidate species, critical habitat, or special status species occurring or known to occur in the Project Area vicinity are listed below. Data for listed species are from the USFWS Information for IPaC species database, and CDFW CNDDDB and CNPS rare plant database for the USGS and eight surrounding quadrangles.

*Status: E = Endangered, T = Threatened, X = Critical Habitat, PX = Proposed Critical Habitat, D = Delisted, R = Rare, SC= Special Concern, FPS = Fully Protected Species, BEGE = Bald Eagle and Golden Eagle Protection Act

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Species Status</th>
<th>Habitat requirements (from CNDDDB, USFWS, or NMFS)</th>
<th>Habitat present/absent</th>
<th>Species present/absent</th>
<th>Rationale</th>
<th>Effect Determination</th>
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</thead>
<tbody>
<tr>
<td><strong>Plants:</strong></td>
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<tr>
<td>Henderson's bent grass</td>
<td><em>Agrostis hendersonii</em></td>
<td>3.2</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pools are not present in the footprint.</td>
<td></td>
</tr>
<tr>
<td>Franciscan onion</td>
<td><em>Allium peninsulare</em></td>
<td>1B.2</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
</tr>
<tr>
<td>Napa false indigo</td>
<td><em>Amorpha californica</em></td>
<td>1B.2</td>
<td>Present</td>
<td>Absent</td>
<td>Habitat is present. Habitat is primarily ruderal and riparian and the footprint below known elevation range.</td>
<td></td>
</tr>
<tr>
<td>Rincon Ridge manzanita</td>
<td><em>Arctostaphylos stanfordiana ssp. decumbens</em></td>
<td>1B.1</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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</tr>
<tr>
<td>Common Name</td>
<td>Species Status</td>
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<td>Habitat present/absent</td>
<td>Species present/absent</td>
<td>Rationale</td>
<td>Effect Determination</td>
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</tr>
<tr>
<td>Clara Hunt’s milk-vetch Astragalus claranus</td>
<td>E</td>
<td>Found in cismontane woodland, valley and foothill grassland, and chaparral. Found on open grassy hillsides, esp. on exposed shoulders in thin, volcanic clay moist soil in spring. The species is now restricted to five localities in northwestern Napa and eastern Sonoma County, four of which were known at the time of listing (USFWS 5-year review, 2009). From 246-770 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td>No Effect</td>
</tr>
<tr>
<td>Alkali milk-vetch Astragalus tener var. tener</td>
<td>1B.2</td>
<td>Found in alkali playa, valley and foothill grassland, and vernal pools on low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. From 1-558 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pools are not present in the footprint.</td>
<td></td>
</tr>
<tr>
<td>Big-scale balsamroot Balsamorhiza macrolepis</td>
<td>1B.2</td>
<td>Found in valley and foothill grassland, cismontane woodland, and sometimes on serpentine. Plant is considered a “strong indicator” of serpentine soil (Calflora 2013). From 6-3028 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
</tr>
<tr>
<td>Sonoma sunshine Blennosperma bakeri</td>
<td>E</td>
<td>Found in vernal pools within Valley grassland, freshwater wetlands, and wetland-riparian habitats.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pools are not present in the footprint.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Narrow-anthered Brodiaea Brodiaea leptandra</td>
<td>1B.2</td>
<td>Found in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland in volcanic substrates. From 360-3001 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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</tr>
<tr>
<td>Mt. Diablo fairy-lantern Calochortus pulchellus</td>
<td>1B.2</td>
<td>Found on wooded and bushy slopes within chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland from 656-2624 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer) and below known elevation range.</td>
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<tr>
<td>Common Name</td>
<td>Species Status</td>
<td>Habitat requirements (from CNDDDB, USFWS, or NMFS)</td>
<td>Habitat present/absent</td>
<td>Species present/absent</td>
<td>Rationale</td>
<td>Effect Determination</td>
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<tr>
<td>Lyngbye’s sedge</td>
<td></td>
<td>Found in marshes and swamps (brackish or freshwater from 0 to 656 feet in elevation.)</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Marshes and swamps are not present.</td>
<td></td>
</tr>
<tr>
<td>Carex lyngbyei</td>
<td>2B.2</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Riburon paintbrush</td>
<td></td>
<td>Found on rocky serpentine slopes within valley and foothill grassland.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td>No Effect</td>
</tr>
<tr>
<td>Castilleja affinis ssp. neglecta</td>
<td>E T 1B.2</td>
<td></td>
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</tr>
<tr>
<td>Mead’s owl clover</td>
<td></td>
<td>All populations of var. meadii occur within a highly localized district of the Atlas Peak plateau on a single site type characterized by very gradual slopes, shallow clay soils of volcanic origin, and numerous surface rock outcrops (rubble) (Egger et al. 2012).</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
</tr>
<tr>
<td>Castilleja ambiguus ssp. meadii</td>
<td>1B.1</td>
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<tr>
<td>Rincon Ridge ceanothus</td>
<td></td>
<td>Found in closed-cone coniferous forest, chaparral, and cismontane woodland. Known from volcanic or serpentine soils, and dry shrubby slopes. From 246-3493 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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</tr>
<tr>
<td>Ceanothus confusus</td>
<td>1B.1</td>
<td></td>
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<tr>
<td>Calistoga ceanothus</td>
<td></td>
<td>Found in chaparral on rocky, serpentine or volcanic sites. From 557-3116 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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<tr>
<td>Ceanothus diversgens</td>
<td>1B.2</td>
<td></td>
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<tr>
<td>Common Name</td>
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</tr>
<tr>
<td>Holly-leaved ceanothus</td>
<td></td>
<td>Found in chaparral on rocky, volcanic slopes from 393 to 2099 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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<tr>
<td>Ceanothus purpureus</td>
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<tr>
<td>Sonoma ceanothus</td>
<td></td>
<td>Found in chaparral on sandy, serpentine or volcanic soils. From 688-2624 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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<tr>
<td>Ceanothus sonomensis</td>
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</tr>
<tr>
<td>Pappose tarplant</td>
<td></td>
<td>Found in coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland. Microhabitat is vernally mesic, often alkaline sites. From 6-1378 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Footprint is not vernally mesic or alkaline.</td>
<td></td>
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<tr>
<td>Centromadia parryi ssp. parryi</td>
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<tr>
<td>Parry’s rough tarplant</td>
<td></td>
<td>Found in alkaline, vernally mesic seeps, sometimes roadsides within valley and foothill grassland and vernal pools.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Footprint is not vernally mesic or alkaline.</td>
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<tr>
<td>Centromadia parryi ssp. rudis</td>
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<tr>
<td>Soft bird’s-beak</td>
<td></td>
<td>Found in coastal salt marsh with Distichlis, Salicornia, Frankenia, etc., from 0-10 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Footprint is not coastal marsh habitat.</td>
<td>No Effect</td>
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<tr>
<td>Chlorropyron molle ssp. molle</td>
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<tr>
<td>Sonoma spineflower</td>
<td></td>
<td>Found in coastal prairie on sandy soil. From 32-164 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Chorizanthe valida</td>
<td></td>
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<tr>
<td>Serpentine cryptantha</td>
<td></td>
<td>Found in chaparral in serpentine outcrops. From 443-2411 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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<tr>
<td>Cryptantha dissita</td>
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<tr>
<td>Common Name</td>
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<td>Habitat requirements (from CNDDB, USFWS, or NMFS)</td>
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<td>Species present/absent</td>
<td>Rationale</td>
<td>Effect Determination</td>
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<tr>
<td>Dwarf downingia</td>
<td></td>
<td>Found in valley and foothill grassland (mesic sites) and vernal pools. Found in vernal lake and pool margins with a variety of associates. Found in several types of vernal pools from 0-1591 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pools are not present in the footprint.</td>
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<tr>
<td>Downingia pusilla</td>
<td>2B.2</td>
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<tr>
<td>Streamside daisy</td>
<td></td>
<td>Found in boodeleafed upland forest, cismontane woodland, and north coast coniferous forest in rocky and mesic areas From 98-3608 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Footprint is not rocky mesic</td>
<td></td>
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<tr>
<td>Erigeron biottii</td>
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<tr>
<td>Greene's narrow-leaved daisy</td>
<td></td>
<td>Found in chaparral on serpentine and volcanic substrates, generally in shrubby vegetation. From 246-3476 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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<tr>
<td>Erigeron greenei</td>
<td>1B.2</td>
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<tr>
<td>Tiburon buckwheat</td>
<td></td>
<td>Found in serpentine sandy to gravelly soil in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
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</tr>
<tr>
<td>Eriogonum luteolum var. caninum</td>
<td>1B.1</td>
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<tr>
<td>Jepson's coyote-thistle</td>
<td></td>
<td>Found in vernal pools, valley and foothill grassland in clay. From 10-1001 feet in elevation</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pool habitat is not present.</td>
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<tr>
<td>Eryngium jepsonii</td>
<td>1B.2</td>
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<tr>
<td>San Joaquin spearscale</td>
<td></td>
<td>Found in Chenopod scrub, alkali meadow, and valley and foothill grassland habitats. Microhabitat is seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. From 0-620 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Footprint is not seasonally mesic or alkaline.</td>
<td></td>
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<tr>
<td>Extriplex joaquiniana</td>
<td>1B.2</td>
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</tr>
<tr>
<td>Woolly-headed gilia</td>
<td></td>
<td>Found in serpentine soils and rocky outcrops within coastal bluff scrub, and valley and foothill grassland. From 32-722 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
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<tr>
<td>Gilia capitata ssp. tomentosa</td>
<td>1B.1</td>
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<tr>
<td>Common Name</td>
<td>Species Status</td>
<td>Habitat requirements (from CNDDDB, USFWS, or NMFS)</td>
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</tbody>
</table>
| **Diablo helianthella**  
*Helianthella castanea* | 1B.2 | *Found in broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils, often in partial shade. From 82-3772 feet in elevation.* | Absent | Absent | Habitat not present. |
| **White seaside tarplant**  
*Hemizonia congesta ssp. congesta* | 1B.2 | *Found in coastal scrub and valley and foothill grassland in grassy valleys and hills, often in fallow fields. From 82-656 feet in elevation.* | Absent | Absent | Habitat not present.  
Footprint is mainly ruderal grassland and active viticulture. |
| **Two-carpellate western flax**  
*Hesperolinon bicarpellatum* | 1B.2 | *Found in serpentine chaparral in serpentine barrens at edge of chaparral. From 492-2689 feet in elevation.* | Absent | Absent | Habitat not present.  
Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer). |
| **Brewer’s western flax**  
*Hesperolinon breweri* | 1B.2 | *Often found in rocky serpentine soil in serpentine chaparral and serpentine grassland. From 98-2903 feet in elevation.* | Absent | Absent | Habitat not present.  
Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer). |
| **Sharsmith’s western flax**  
*Hesperolinon sharsmithiae* | 1B.2 | *Found between 1082 and 1902 feet in elevation in chaparral in serpentine soils.* | Absent | Absent | Habitat not present.  
Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer). |
| **Thin-lobed Horkelia**  
*Horkelia tenuiloba* | 1B.2 | *Found in coastal scrub, chaparral in sandy soils; mesic openings. Found from 45-2151 feet in elevation.* | Absent | Absent | Habitat not present. |
| **Coast iris**  
*Iris longipetala* | 4.2 | *Found in coastal prairie, lower montane coniferous forest, meadows and seeps on mesic sites in heavy soils from 0-1968 feet in elevation.* | Absent | Absent | Habitat not present.  
Coastal prairie not present |
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Species Status</th>
<th>Habitat requirements (from CNDDB, USFWS, or NMFS)</th>
<th>Habitat present/absent</th>
<th>Species present/absent</th>
<th>Rationale</th>
<th>Effect Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carquinez goldenbush</td>
<td></td>
<td>Within valley and foothill grassland, found in alkaline soils, flats, and lower hills on low benches near drainages and on tops and sides of mounds in swale habitat. From 0-66 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Footprint does not consist of swale habitat.</td>
<td></td>
</tr>
<tr>
<td>Isocoma arguta</td>
<td>1B.1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Northern California black walnut</td>
<td></td>
<td>Found in riparian forest and riparian woodland. Few extant native stands remain; widely naturalized. Found on deep alluvial soil associated with a creek or stream. From 0-1443 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. The nearest CNDDB occurrence is over 13 miles to the east (CNDDB # 1)</td>
<td>No Effect</td>
</tr>
<tr>
<td>Juglans hindsii</td>
<td>1B.1</td>
<td></td>
<td></td>
<td></td>
<td>Habitat not present. Vernal pools and mesic depressions are not present in the footprint.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Contra Costa goldfields</td>
<td></td>
<td>Valley and foothill grassland, vernal pools, cismontane woodland. Extirpated from most of its range; extremely endangered. Found in vernal pools, swales, low depressions, and in open grassy areas. Found from 0-1460 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pools and mesic depressions are not present in the footprint.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Lasthenia conjugens</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td>Habitat not present. Vernal pool habitat is not present.</td>
<td></td>
</tr>
<tr>
<td>Delta tule pea Lathyrus jepsonii var. jepsonii</td>
<td></td>
<td>Found in freshwater and brackish marshes. Often found w/ Typha, Aster lentus, Rosa californica, Juncus spp., Scirpus, etc. Usually on marsh and slough edges.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Marsh habitat not present in the project footprint.</td>
<td></td>
</tr>
<tr>
<td>Legenere Legenere limosa</td>
<td></td>
<td>Found in beds of vernal pools from 3-2890 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pool habitat is not present.</td>
<td></td>
</tr>
<tr>
<td>Jepson's leptosiphon</td>
<td></td>
<td>Found in chaparral, and cismontane woodland on open to partially shaded grassy slopes. On volcanics or the periphery of serpentine substrates. From 328-1640 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
</tr>
<tr>
<td>Leptosiphon jepsonii</td>
<td>1B.2</td>
<td></td>
<td></td>
<td></td>
<td>Habitat not present. Vernal pool and mesic depression habitat is not present.</td>
<td></td>
</tr>
<tr>
<td>Mason's lilaeopsis</td>
<td>R</td>
<td>Found in freshwater and brackish marshes, riparian scrub; in tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. Found at elevations between 0 and 33 feet.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pool and mesic depression habitat is not present.</td>
<td></td>
</tr>
<tr>
<td>Lilaeopsis masonii</td>
<td>1B.1</td>
<td></td>
<td></td>
<td></td>
<td>Habitat not present. Vernal pool and mesic depression habitat is not present.</td>
<td></td>
</tr>
<tr>
<td>Sebastopol meadowfoam</td>
<td>E</td>
<td>Mesic meadows, vernal pools, valley and foothill grassland. Swales, wet meadows and marshy areas in valley oak savanna; on poorly drained soils of clays and sandy loam. From 49-1000 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Vernal pool and mesic depression habitat is not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Common Name</td>
<td>Species Status</td>
<td>Habitat requirements (from CNDDB, USFWS, or NMFS)</td>
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<td>Species present/absent</td>
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<td>Effect Determination</td>
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<tr>
<td>Cobb Mountain lupine</td>
<td></td>
<td>Found in chaparral, cismontane woodland, and lower montane coniferous forest in stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine. From 590-4920 feet in elevation.</td>
<td>1B.2</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
</tr>
<tr>
<td>Lupinus sericatus</td>
<td></td>
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<tr>
<td>Mt. Diablo cottonweed</td>
<td></td>
<td>Found in valley and foothill grassland, cismontane woodland, and broadleaved upland forest in bare, grassy or rocky slopes. From 164-2624 feet in elevation.</td>
<td>3.2</td>
<td>Absent</td>
<td>Habitat not present. Rocky slopes are not present.</td>
<td></td>
</tr>
<tr>
<td>Micropus amphibolus</td>
<td></td>
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<tr>
<td>Few-flowered navarretia</td>
<td></td>
<td>Found in volcanic ash flow, and volcanic substrate vernal pools. From 1312-2804 feet in elevation.</td>
<td>E T 1B.1</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
</tr>
<tr>
<td>Navarretia leucocephala ssp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No Effect</td>
</tr>
<tr>
<td>pauciflora</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Sonoma beardtongue</td>
<td></td>
<td>Found in chaparral in crevices in rock outcrops and talus slopes from 2296-4493 feet in elevation.</td>
<td>1B.3</td>
<td>Absent</td>
<td>Habitat not present. Rocky slopes are not present.</td>
<td></td>
</tr>
<tr>
<td>Penstemon newberryi var.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>sonomensis</td>
<td></td>
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</tr>
<tr>
<td>Marin knotweed</td>
<td></td>
<td>Found in coastal salt marshes and brackish marshes from 0-32 feet in elevation.</td>
<td>3.1</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Polygonum marinense</td>
<td></td>
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</tr>
<tr>
<td>California beaked-rush</td>
<td></td>
<td>Found in bogs and fens, marshes and swamps, lower montane coniferous forest, meadows and seeps. Microhabitat are freshwater seeps and open marshy areas. 148-886 feet in elevation.</td>
<td>1B.1</td>
<td>Absent</td>
<td>Habitat not present. Marsh habitat is not present.</td>
<td></td>
</tr>
<tr>
<td>Rhytchospora californica</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Napa checkerbloom</td>
<td></td>
<td>Found in chaparral on rhyolitic substrates. From 1361-200 feet in elevation.</td>
<td>1B.1</td>
<td>Absent</td>
<td>Habitat not present. Marsh habitat is not present.</td>
<td></td>
</tr>
<tr>
<td>Sidalcea hickmanii ssp. napensis</td>
<td></td>
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<td></td>
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<tr>
<td>Marin checkerbloom</td>
<td></td>
<td>Found in chaparral on serpentine or volcanic soils; sometimes appears after burns. From 164-1410 feet in elevation.</td>
<td>1B.3</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>Keck’s checkerbloom Sidalcea keckii</td>
<td>E</td>
<td>Found in cismontane woodland, valley and foothill grassland grassy slopes in blue oak woodland. From 246-2132 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Blue oak woodland is not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Most beautiful jewel-flower Streptanthus albidus ssp. peramoenus</td>
<td>E</td>
<td>Found in chaparral, valley and foothill grassland, and cismontane woodland habitats on serpentine outcrops, on ridges and slopes. From 39-2394 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td>No Effect</td>
</tr>
<tr>
<td>Tiburon jewel-flower Streptanthus glandulosus ssp. niger</td>
<td>E</td>
<td>Found in valley and foothill grassland on shallow, rocky serpentine slopes between 98-492 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td>No Effect</td>
</tr>
<tr>
<td>Green jewelflower Streptanthus hesperidis</td>
<td></td>
<td>Found in chaparral and cismontane woodland in openings in chaparral or woodland; serpentine, rocky sites. From 426-760 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Primary parent material in the footprint is sandstone and secondary is conglomerate (USGS GIS data layer).</td>
<td></td>
</tr>
<tr>
<td>Suisun Marsh aster Symphyotrichum lentum</td>
<td></td>
<td>Found in marshes and swamps (brackish and freshwater).</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Marsh habitat is not present.</td>
<td></td>
</tr>
<tr>
<td>Napa bluecurls Trichostema ruygii</td>
<td></td>
<td>Found in cismontane woodland, chaparral, valley and foothill grassland, vernal pools, and lower montane coniferous forest. Often in open, sunny areas. Also has been found in vernal pools. From 98-1935 feet in elevation.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Footprint is primarily ruderal, disturbed habitat.</td>
<td></td>
</tr>
<tr>
<td>Common Name</td>
<td>Species Status</td>
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<td>Effect Determination</td>
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</tr>
</tbody>
</table>
| **Showy rancheria clover/ Two forked chintler**  
Trifolium amoenum | E 1B.1 | Found in valley and foothill grassland, and coastal bluff scrub. Sometimes found on serpentine soil, open sunny sites, and swales. Most recently sighted on roadside and eroding cliff face. The only known natural site is on the bluffs at Dillon Beach in Marin County, discovered in 1996 (USFWS 2012). In addition to the natural site, two small experimental populations were reintroduced at the Bodega Marine Laboratory in Sonoma County and two experimental populations persist at two sites on D Ranch at Point Reyes National Seashore in Marin County (USFWS 2012). There are no known natural populations of the upright inland form. From 15-1837 feet in elevation. | Absent | Absent | Habitat not present. Project footprint is outside of known range. | No Effect |
| **Saline clover**  
Trifolium hydrophilum | 1B.2 | Found in marshes and swamps, valley and foothill grassland, and vernal pools on mesic, alkaline sites. From 0-984 feet in elevation. | Absent | Absent | Habitat not present. Footprint is not mesic or alkaline. | |
| **Oval-leaved viburnum**  
Viburnum ellipticum | 2.3 | Found in chaparral, cismontane woodland, and lower montane coniferous forest from 705-4592 feet in elevation. | Absent | Absent | Habitat not present. Footprint is below known elevation range. | |
| **Invertebrates:** | | | | | | |
| **Conservancy fairy shrimp**  
Branchinecta conservatio | E | Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium filled by winter/spring rains that last until June. | Absent | Absent | Habitat not present. | No Effect |
| **Vernal pool fairy shrimp**  
Branchinecta lynchi | T | Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools. | Absent | Absent | Habitat not present. | No Effect |
| **Monarch butterfly**  
Danaus plexippus | | Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. | Absent | Absent | Habitat not present. | |
<table>
<thead>
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<th>Rationale</th>
<th>Effect Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valley elderberry longhorn beetle <em>Desmocerus californicus dimorphus</em></td>
<td>T</td>
<td>Occurs only in the Central Valley of California, in association with blue elderberry (<em>Sambucus mexicana</em>). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference is shown for &quot;stressed&quot; elderberries.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present. Project is outside presumed historical range (USFWS).</td>
<td>No Effect</td>
</tr>
<tr>
<td>Callippe silverspot butterfly <em>Speyeria callippe</em></td>
<td>E</td>
<td>Restricted to the northern coastal scrub of the San Francisco peninsula. Host plant is <em>Viola pedunculata</em>. Most adults found on east-facing slopes; males congregate on hilltops in search of females.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td>California freshwater shrimp <em>Syncaris pacifica</em></td>
<td>E, E</td>
<td>Endemic to Marin, Napa, and Sonoma Counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy in shallow pools away from main stream flow. In the winter, inhabits undercut banks with exposed roots. In the summer, inhabits leafy branches touching water.</td>
<td>Present</td>
<td>Present</td>
<td>Species and habitat are inferred to be present.</td>
<td>May Affect, Likely to Adversely Affect</td>
</tr>
<tr>
<td>Fish:</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Delta smelt <em>Hypomesus transpacificus</em></td>
<td>T, E</td>
<td>Found in Sacramento-San Joaquin delta. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay. Seldom found at salinities &gt; 10 parts per thousand. Most often at salinities &lt; 2 parts per thousand.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Central Valley coastal steelhead <em>Oncorhynchus mykiss</em></td>
<td>T, X</td>
<td>Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria river.</td>
<td>Present</td>
<td>Present</td>
<td>Species and habitat are inferred to be present.</td>
<td>May Affect, Likely to Adversely Affect</td>
</tr>
<tr>
<td>Sacramento splittail <em>Pogonichthys macrolepidotus</em></td>
<td>SC</td>
<td>Endemic to the lakes and rivers of the Central Valley, but now confined to the delta, Suisun Bay and associated marshes. Slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Longfin smelt <em>Spirinchus thaleichthys</em></td>
<td>T</td>
<td>Species is, euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 parts per thousand, but can be found in completely freshwater to almost pure seawater.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Amphibians:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Common Name</td>
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</tr>
<tr>
<td><strong>California giant salamander</strong></td>
<td>SC</td>
<td>Known from wet coastal forests near streams and seeps from Mendocino Co. south to Monterey Co. and east to Napa Co. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td><em>Dicamptodon ensatus</em></td>
<td></td>
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</tr>
<tr>
<td><strong>Foothill yellow-legged frog</strong></td>
<td>SC</td>
<td>Found in partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td><em>Rana boylii</em></td>
<td></td>
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<tr>
<td><strong>California red-legged frog</strong></td>
<td>T, X</td>
<td>Found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation habitat.</td>
<td>Present</td>
<td>Present</td>
<td>Species is inferred present.</td>
<td>May Affect, Likely to Adversely Affect</td>
</tr>
<tr>
<td><em>Rana draytonii</em></td>
<td>SC</td>
<td></td>
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<tr>
<td><strong>Reptiles:</strong></td>
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</tr>
<tr>
<td><strong>Western pond turtle</strong></td>
<td>SC</td>
<td>A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.3 miles from water for egg-laying.</td>
<td>Present</td>
<td>Present</td>
<td>Species observed by USFWS within footprint during a site visit.</td>
<td></td>
</tr>
<tr>
<td><em>Emys marmorata</em></td>
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</tr>
<tr>
<td><strong>Birds:</strong></td>
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</tr>
<tr>
<td><strong>Tricolored blackbird</strong></td>
<td>SC</td>
<td>Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td><em>Agelaius tricolor</em></td>
<td></td>
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</tr>
<tr>
<td><strong>Golden eagle</strong></td>
<td>BEGE FPS</td>
<td>Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td><em>Aquila chrysaetos</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common Name</td>
<td>Species Status</td>
<td>Habitat requirements (from CNDDB, USFWS, or NMFS)</td>
<td>Species present/absent</td>
<td>Rationale</td>
<td>Effect Determination</td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>Burrowing owl</td>
<td></td>
<td>Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. The owl is a subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.</td>
<td>Absent</td>
<td></td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Swainson's hawk</td>
<td></td>
<td>Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.</td>
<td>Potential</td>
<td>Potential</td>
<td>Current observations in Napa County are approximately 5 miles to the east. Species has not been observed within or near the footprint to date.</td>
<td></td>
</tr>
<tr>
<td>Western snowy plover</td>
<td>T, X</td>
<td>Found on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.</td>
<td>Absent</td>
<td>Absent</td>
<td>No Effect</td>
<td></td>
</tr>
<tr>
<td>Northern Harrier</td>
<td></td>
<td>Found in coastal salt and fresh-water marsh. Nests and forages in grasslands, from salt grass in desert sink to mountain Cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Black swift</td>
<td></td>
<td>Found in the coastal belt of Santa Cruz and Monterey Counties; central and southern Sierra Nevada; San Bernardino and San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>White-tailed kite</td>
<td></td>
<td>Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>American peregrine falcon</td>
<td></td>
<td>Found near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Common Name</td>
<td>Species Status</td>
<td>Habitat requirements (from CNDDB, USFWS, or NMFS)</td>
<td>Habitat present/absent</td>
<td>Species present/absent</td>
<td>Rationale</td>
<td>Effect Determination</td>
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</tr>
<tr>
<td>Saltmarsh common yellowthroat</td>
<td>SC</td>
<td>Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Bald eagle</td>
<td>D, BEGE</td>
<td>Found along Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree w/open branches, especially Ponderosa pine. Roosts communally in winter.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Caspian tern</td>
<td>T, FPS</td>
<td>Nests on sandy or gravely beaches and shell banks in small colonies inland and along the coast. Inland fresh-water lakes and marshes; also, brackish or salt waters of estuaries and bays.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>California black rail</td>
<td>T, FPS</td>
<td>Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that does not fluctuate during the year and dense vegetation for nesting habitat.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Suisun song sparrow</td>
<td>SC</td>
<td>Resident of brackish-water marshes surrounding Suisun Bay. Inhabits cattails, tules and other sedges, and Salicornia; also known to frequent tangles bordering sloughs.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>San Pablo song sparrow</td>
<td>SC</td>
<td>Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the Salicornia marshes; nests in Grindelia bordering slough channels.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Ridgway’s rail</td>
<td>E, FPS</td>
<td>Found in salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td>Bank swallow</td>
<td>T</td>
<td>Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td>Common Name</td>
<td>Species Status</td>
<td>Habitat requirements (from CNDDB, USFWS, or NMFS)</td>
<td>Habitat present/absent</td>
<td>Species present/absent</td>
<td>Rationale</td>
<td>Effect Determination</td>
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<tr>
<td>California least tern</td>
<td></td>
<td>Nests along the coast from San Francisco Bay south to northern Baja California. Is a colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td><em>Sternula antillarum browni</em></td>
<td>E, FPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Spotted Owl</td>
<td>T,X</td>
<td>Inhabits old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests w/patches of big trees.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td><em>Strix occidentalis caurina</em></td>
<td></td>
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<tr>
<td><strong>Mammals:</strong></td>
<td></td>
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</tr>
<tr>
<td>Pallid bat</td>
<td>SC</td>
<td>Found in deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.</td>
<td>Absent</td>
<td>Potential</td>
<td>Species likely present foraging in the vicinity. Roosting habitat not present.</td>
<td></td>
</tr>
<tr>
<td><em>Antrozous pallidus</em></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Western red bat</td>
<td>SC</td>
<td>Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges &amp; mosaics with trees that are protected from above &amp; open below with open areas for foraging.</td>
<td>Potential</td>
<td>Potential</td>
<td>Roosting and foraging habitat potentially present.</td>
<td></td>
</tr>
<tr>
<td><em>Lasiurus blossevillii</em></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Salt marsh harvest mouse</td>
<td>SC</td>
<td>Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is the primary habitat. Does not burrow, but builds loosely organized nests. Requires higher areas for flood escape.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td>No Effect</td>
</tr>
<tr>
<td><em>Reithrodontomys raviventris</em></td>
<td>E, FPS</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Suisun shrew</td>
<td>SC</td>
<td>Tidal marshes of the northern shores of San Pablo and Suisun bays. Requires dense low-lying cover and driftweed and other litter above the mean high tide line for nesting and foraging.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td><em>Sorex ornatus sinuosus</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American badger</td>
<td>SC</td>
<td>Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.</td>
<td>Absent</td>
<td>Absent</td>
<td>Habitat not present.</td>
<td></td>
</tr>
<tr>
<td><em>Taxidea taxus</em></td>
<td></td>
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</tbody>
</table>

**CNPS California Rare Plant Rank:**
(1A) Presumed extinct in California, (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list

**Threat Rank:**
0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree of immediacy of threat)
0.2 Fairly threatened in California (20% to 80% occurrences threatened / moderate degree of immediacy of threat)
0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

References


USFWS Species List

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: August 01, 2017
Consultation Code: 08ESMF00-2017-SLI-0498
Event Code: 08ESMF00-2017-E-07670
Project Name: Huichica Creek Bridge Replacement and Fish Passage Project

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:


New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(c) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to
utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm;
http://www.towerkill.com; and

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

137
Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600
Project Summary

Consultation Code: 08ESMF00-2017-SLI-0498
Event Code: 08ESMF00-2017-E-07670
Project Name: Huichica Creek Bridge Replacement and Fish Passage Project
Project Type: TRANSPORTATION
Project Description: Replace Huichica Creek Bridge on SR 121 in Napa County, widen approach shoulders to Caltrans standards, and remove a fish passage barrier within Huichica Creek. Creek work will occur over two dry seasons.

Project Location:
Approximate location of the project can be viewed in Google Maps:
https://www.google.com/maps/place/38.25564922037655N122.36728659476006W

Counties: Napa, CA
Endangered Species Act Species

There is a total of 16 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office’s jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME
Salt Marsh Harvest Mouse *Reithrodontomys raviventris*
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/613

STATUS
Endangered

Birds

NAME
California Least Tern *Sterna antillarum browni*
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8104

Northern Spotted Owl *Strix occidentalis caurina*
There is a final critical habitat designated for this species. Your location is outside the designated critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1123

STATUS
Endangered

Amphibians

NAME
California Red-legged Frog *Rana draytonii*
There is a final critical habitat designated for this species. Your location is outside the designated critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2891

STATUS
Threatened
USFWS Species List (continued)

Fishes

NAME

Delta Smelt *Hypomesus transpacificus*

There is a final critical habitat designated for this species. Your location is outside the designated critical habitat.

Species profile: https://ecos.fws.gov/cep/species/321

STATUS

Threatened

Steelhead *Oncorhynchus (~*Salmo*) mykiss*

Population: Northern California DPS

There is a final critical habitat designated for this species. Your location overlaps the designated critical habitat.

Species profile: https://ecos.fws.gov/cep/species/1007

Crustaceans

NAME

California Freshwater Shrimp *Synacrus pacifica*

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/cep/species/7903

STATUS

Endangered

Conservancy Fairy Shrimp *Branchinecta conservatorio*

There is a final critical habitat designated for this species. Your location is outside the designated critical habitat.

Species profile: https://ecos.fws.gov/cep/species/4546

Flowering Plants

NAME

Contra Costa Goldfields *Lasthenia congneri*

There is a final critical habitat designated for this species. Your location is outside the designated critical habitat.

Species profile: https://ecos.fws.gov/cep/species/7053

STATUS

Endangered

Showy Indian Clover *Trifolium amoenum*

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/cep/species/6429

STATUS

Endangered
Critical habitats

There are 5 critical habitats wholly or partially within your project area under this office’s jurisdiction.

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
</tr>
</thead>
</table>
| Steelhead *Oncorhynchus (=Salmo) mykiss*  
  Population: Northern California DPS  
  https://ecos.fws.gov/ecp/species/1097/crithab | Final designated        |
| Steelhead *Oncorhynchus (=Salmo) mykiss*  
  Population: South-Central California Coast DPS  
  https://ecos.fws.gov/ecp/species/1099/crithab | Final designated        |
| Steelhead *Oncorhynchus (=Salmo) mykiss*  
  Population: Central California Coast DPS  
  https://ecos.fws.gov/ecp/species/1095/crithab | Final designated        |
| Steelhead *Oncorhynchus (=Salmo) mykiss*  
  Population: California Central Valley DPS  
  https://ecos.fws.gov/ecp/species/1097/crithab | Final designated        |
| Steelhead *Oncorhynchus (=Salmo) mykiss*  
  Population: Southern California DPS  
  https://ecos.fws.gov/ecp/species/1093/crithab | Final designated        |
Thank you for using NMFS' California species list, providing information for ESA, MSA, and MMPA resources under the jurisdiction of NMFS. Messages sent to this email address are not responded to directly. For questions, please contact Darren Howe by phone at 787-573-3152 or by email at Darren_Howe@nmsa.gov.
DEAR NOAA Fisheries:

Caltrans Huichica Creek Bridge Replacement and Fish Passage Project (EA 4G210)

Napa quad results from 08/01/2017 are pasted below.

Agency Info:
Caltrans, District 4
111 Grand Avenue
Oakland, CA 94612

Point of Contact info:

Quad Name: Napa
Quad Number: 38122-C3

ESA Anadromous Fish
SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -

Andrew Amacher, PhD
Associate Biologist
Caltrans, District 4
111 Grand Avenue
Oakland, CA 94612
(510) 622-8727
NOAA Species List (continued)

Eulachon (T) - 
sDPS Green Sturgeon (T) - X 

**ESA Anadromous Fish Critical Habitat**
SONCC Coho Critical Habitat - 
CCC Coho Critical Habitat - 
CC Chinook Salmon Critical Habitat - 
CVSR Chinook Salmon Critical Habitat - 
SRWR Chinook Salmon Critical Habitat - 
NC Steelhead Critical Habitat - 
CCC Steelhead Critical Habitat - X 
SCCC Steelhead Critical Habitat - 
SC Steelhead Critical Habitat - 
CCV Steelhead Critical Habitat - 
Eulachon Critical Habitat - 
sDPS Green Sturgeon Critical Habitat - X 

**ESA Marine Invertebrates**
Range Black Abalone (E) - 
Range White Abalone (E) - 

**ESA Marine Invertebrates Critical Habitat**
Black Abalone Critical Habitat - 

**ESA Sea Turtles**
East Pacific Green Sea Turtle (T) - 
Olive Ridley Sea Turtle (T/E) - 
Leatherback Sea Turtle (E) - 
North Pacific Loggerhead Sea Turtle (E) - 

**ESA Whales**
Blue Whale (E) - 
Fin Whale (E) - 
Humpback Whale (E) - 
Southern Resident Killer Whale (E) - 
North Pacific Right Whale (E) - 
Sei Whale (E) - 
Sperm Whale (E) - 

**ESA Pinnipeds**
Guadalupe Fur Seal (T) - 
Steller Sea Lion Critical Habitat - 

**Essential Fish Habitat**
Coho EFH - 
Chinook Salmon EFH - X 
Groundfish EFH - 
Coastal Pelagics EFH - X
Highly Migratory Species EFH -
MMPA Species (See list at left)
ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000
MMPA Cetaceans -
MMPA Pinnipeds -
## Selected Elements by Scientific Name

**California Department of Fish and Wildlife**  
California Natural Diversity Database

### Query Criteria:
- (Species: *Astragalus cicer*)  
- (State: California)  
- (Status: Endangered)  
- (Rank: G1)  
- (Listed: Yes)

---

<table>
<thead>
<tr>
<th>Species</th>
<th>Scientific Name</th>
<th>Federal Status</th>
<th>State Status</th>
<th>Global Rank</th>
<th>State Rank</th>
<th>Race Plant Rank/CDFW SSC or FP</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Astragalus cicer</em></td>
<td>Cicer's milk-vetch</td>
<td>Candidate</td>
<td>None</td>
<td>G2</td>
<td>S1</td>
<td>S3</td>
</tr>
<tr>
<td><em>Agrostis hendersoni</em></td>
<td>Henderso's bent grass</td>
<td>None</td>
<td>None</td>
<td>G2</td>
<td>S2</td>
<td>3.2</td>
</tr>
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<td><em>Allium peninsulare var. franscencum</em></td>
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**Government Version – Date: July 30, 2017 – Biogeographic Data Branch**  
**Report Printed on: August 01, 2017**

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**Information Expires: 10/30/2018**

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## CDFW CNDDB (continued)

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### Selected Elements by Scientific Name

**California Department of Fish and Wildlife**

**California Natural Diversity Database**

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Government Version — Dated July, 30 2017 — Biogeographic Data Branch
Report Printed on Tuesday, August 01, 2017
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### CNPS Species List

#### CNPS Inventory of Rare and Endangered Plants

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August 25, 2016

VIA EMAIL

In reply refer to: FHWA_2016_0802_001

Brett Rushing
Office Chief, Office of Cultural Resource Studies
Caltrans District 4
111 Grand Avenue
PO Box 23660
Oakland, CA 94623-0660

Subject: Determination of Eligibility for the Proposed Huichica Creek Bridge Replacement and Fish Passage Repair Project in Napa County, CA

Dear Mr. Rushing:

Thank you for consulting with me about the subject undertaking in accordance with the January 1, 2014 First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA).

Caltrans is proposing to replace the Huichica Creek Bridge (21 0001) on State Route 121 at post mile 0.75 in Napa County, CA. A full project description can be found on page 1 on the Historic Property Survey Report.

Caltrans has determined that 5500 Sonoma Highway is not eligible for the listing in the National Register of Historic Places (NRHP). Based on my review of the submitted documentation I concur.

I look forward to working with Caltrans in the future with regards to this project. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 with e-mail at natalie.lindquist@parks.ca.gov or Alicia Perez at (916) 445-7020 with e-mail at alicia.perez@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer
January 13, 2017

Reply in Reference To: FHWA_2016_0802_001

Brett Rushing
Office Chief, Office of Cultural Resource Studies
Caltrans District 4
111 Grand Avenue
PO Box 23660
Oakland, CA 94623-0660

Subject: Notification of a Finding of Adverse Effect for the Huichica Creek Bridge Replacement and Fish Passage Repair Project on State Route 121 in Napa County

Dear Mr. Rushing:

The Office of Historic Preservation (OHP) received your letter on December 20, 2016 with regard to the above-referenced undertaking. The California Department of Transportation (Caltrans) is continuing consulting with the State Historic Preservation Officer (SHPO) in accordance with the January 2014 First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Office, 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 (Section 106 PA). The following documentation was submitted with your most recent letter:

- Supplemental Historic Property Survey Report and Finding of Adverse Effect for the Huichica Creek Bridge Replacement and Fish Passage Repair Project (December 2016).

Initial consultation with the SHPO for this undertaking included a Historic Property Survey Report (HPSR), Archaeological Survey Report (ASR), and Historic Resources Evaluation Report (HRER) submitted on July 27, 2016. Four cultural resources, one built resource and three archaeological resources, were identified within the Area of Potential Effects (APE) for the undertaking and include the following:

- 5500 Sonoma Highway, a farm complex consisting of ten buildings;
- CA-NAP-189/H (P-28-000175), a midden deposit occupation from the Lower Archaic to historic period that represents an "intensively occupied village
mound containing human interments. The resource also contains various concentrations of historic materials:
- NAP-190, a prehistoric village site consisting of a midden mound and associated artifact scatters, including a potential human humerus; and
- The reburial site associated with NAP-189/H of fifteen individuals, isolated human bones, associated grave goods, and midden soils removed during the 2005-2010 data recovery efforts at NAP-189/H.

In previous consultation, the SHPO concurred with Caltrans’ determination that 5500 Sonoma Highway is ineligible for listing on the NRHP (SHPO, OHP Reference #FHWA_2016_0802_001, 25 August 2016). NAP-189/H and the associated reburial site were previously found eligible for inclusion on the National Register of Historic Places (NRHP) on March 30, 2005 under Criterion D (SHPO Reference #FHWA050218A).

Pursuant to Stipulations IX.B and X.A of the Section 106 PA, Caltrans has applied the criteria of adverse effects to assess the undertaking’s effects on historic properties and has concluded that construction related activities have the potential to adversely affect portions of NAP-189/H located within the area of direct impact (ADI) within the APE. Furthermore, the geoarchaeological modeling indicates a high potential exists for encountering additional archaeological deposits within the ADI. Therefore, Caltrans has determined that the undertaking as a whole will result in an adverse effect. In addition, in accordance with Attachment 5 of the Section 106 PA, the reburial site associated with NAP-189/H will be protected from adverse effects through the establishment of an environmentally sensitive area (ESA). NAP-100 has never been formally evaluated and because it is located outside of the ADI Caltrans will assume its eligibility for listing on the NRHP under Criterion D for the purposes of this undertaking only and will be designated as an ESA.

Upon review of Caltrans’ supporting documentation, I have no comment on Caltrans’ finding of adverse effect. Caltrans will continue consultation with the SHPO to resolve adverse effects pursuant to Stipulation XI of the PA through preparation of a Memorandum of Agreement (MOA) and the implementation of an Archaeological Treatment Plan. If you require further information, please contact Alicia Perez of my staff at 916-445-7020 or Alicia.Perez@parke.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer
Appendix G – Flood Insurance Rate Map