

Ritchie Creek Bridge Replacement Project for Fish Passage Improvement

NAPA COUNTY, CALIFORNIA
DISTRICT 4 – NAPA-29 (PM 33.13)
EA 04-4J990/EFIS 0416000037

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



Prepared by the
State of California, Department of Transportation

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



June 2021

General Information about This Document

The California Department of Transportation (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 Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (project) located in Napa County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The document explains why the project is being proposed, what alternatives Caltrans considered for the project, potential effects to the environment resulting from the project, potential impacts of each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures (all measures are listed in Appendix B).

The IS/EA was circulated for 39 days between December 1, 2020 and January 8, 2021. A virtual public meeting was held on December 15, 2020; slides from the meeting are available at the following website: https://dot.ca.gov/-/media/dot-media/district-4/documents/d4-environmental-docs/ritchie-creek-bridge/4j990_public-meeting-ada-compliant-slides.pdf. One comment letter was received during the public review period. Revisions to the draft document were made to refine to the project description, reflect the Biological Opinions from the U.S. Fish and Wildlife Service and National Marine Fisheries Service as well as the Section 4(f) *De Minimis* Determination letter of concurrence, and respond to the California Department of Fish and Wildlife comment letter. Revisions made since the draft document circulation are indicated throughout the document with a vertical line in the margin. An electronic copy of this document is available for review at the following website: <https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>.

Alternative formats:

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 alternative formats, please call or write to Department of Transportation, District 4, Attn: Nathan Roberts, Environmental Planning, PO Box 23660, MS 8B, Oakland, CA 94623; (510) 286-5935 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1-800-855-3000 (Spanish TTY to Voice and Voice to TTY), 1 (800) 854-7784 (Spanish and English Speech-to-Speech), or 711. An Americans with Disabilities Act-compliant electronic copy of this document is also available to download at <https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>.

SCH# 2020120007
04-NAPA-29 PM 33.13
EA: 4J990
Project ID: 04-16000037

Improve fish passage conditions at the State Route 29 crossing over Ritchie Creek in Napa County by removing fish barriers to obtain Total Maximum Daily Load compliance unit credits from State Water Resources Control Board under the Caltrans Statewide National Pollutant Discharge Elimination System permit.

**INITIAL STUDY WITH MITIGATED NEGATIVE
DECLARATION/ENVIRONMENTAL ASSESSMENT WITH FINDING OF NO
SIGNIFICANT IMPACT (FONSI)**

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

THE STATE OF CALIFORNIA
Department of Transportation

RESPONSIBLE AGENCIES:
California Department of Fish and Wildlife
California Department of Parks and Recreation
California Transportation Commission
Regional Water Quality Control Board

COOPERATING AGENCIES:
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
National Marine Fisheries Service



6/25/2021

Dina El-Tawansy
District 4 Director
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NEPA/CEQA Lead Agency

Date

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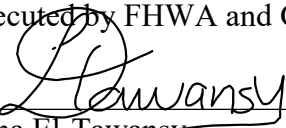
**CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

FOR

**Ritchie Creek Bridge Replacement Project for Fish Passage
Improvement**

The California Department of Transportation (Caltrans) has determined that the Build Alternative will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA) which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA and Section 4(f) *De Minimis* Determination.

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 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.



Dina El-Tawansy
District 4 Director
California Department of Transportation
NEPA/CEQA Lead Agency

6/25/2021

Date

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

Caltrans proposes to replace the existing Ritchie Creek Bridge (Bridge No. 21-0057) with a new bridge at post mile (PM) 33.13, located on State Route 29 (SR 29) southeast of the city of Calistoga in Napa County. The new bridge dimensions would be similar to the existing bridge and would include a 12-foot travel lane and 8-foot shoulder in each direction.

The existing bridge is classified as having as a depth barrier and jump barrier to adult and juvenile salmonids according to CalFish Passage Assessment Database (CalFish 2020).

Caltrans is proposing to remove the fish passage barriers by replacing the existing bridge. As a result, the State Water Resources Control Board (SWRCB) would grant 50 Total Maximum Daily Load (TMDL) compliance unit credits in addressing requirements of the Caltrans Statewide National Pollutant Discharge Elimination Service (NPDES) for the project.

Determination

Caltrans has prepared an Initial Study for this project, and following public review, has determined from this study that the proposed project would not have a significant effect on the environment for the reasons described below.

The proposed project would have no effect on energy, growth, land use and planning, mineral resources, paleontology, environmental justice, and population and housing.

In addition, the proposed project would have less than significant effects on aesthetics, agricultural and forest resources, air quality, geology and soils, greenhouse gas, hazards and hazardous materials, hydrology and water quality, noise, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire.

With the following mitigation measures incorporated, the proposed project would have less than significant effects on biological resources and cultural resources.

- Caltrans or its contractor will incorporate the preferred habitat substrate vegetation for California freshwater shrimp into the onsite Habitat Mitigation and Monitoring Plan (HMMP) to recreate beneficial habitat for this species and compensate for temporary habitat impacts. The HMMP will be developed during the design phase in coordination with the regulatory agencies and in accordance with Caltrans standard specifications. The

specifications include requirements for native and non-invasive and non-noxious plants, quality assurance, installation methods, and documentation.

- Caltrans and the State Historic Preservation Officer executed the Memorandum of Agreement (MOA) on March 11, 2021 (Appendix I). In accordance with the executed MOA, Caltrans will implement Stipulation II, Treatment of the Historic Properties during construction. Caltrans will implement the *2020 Archeological Treatment Plan (ATP)* (Attachment C of the MOA). The ATP provisions for avoidance and mitigation to the archaeological resources in the project area include data recovery, archaeological monitoring of archaeological resources outside the area of direct impact, establishment of environmentally sensitive areas, and continued consultation with Native American tribes. In addition, Caltrans will collaborate with other MOA parties to finalize the technical reports that document the results of implementing and completing the ATP.



Dina El-Tawansy
District 4 Director
California Department of Transportation
NEPA/CEQA Lead Agency

6/25/2021

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), as assigned by the Federal Highway Administration (FHWA) for the Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (project). Caltrans proposes to replace the existing Ritchie Creek Bridge (Bridge No. 21-0057) with a new bridge at post mile (PM) 33.13, located on State Route 29 (SR 29) southeast of the city of Calistoga and to the north of the city of St. Helena in Napa County (Figure 1-1). The new bridge dimensions would be similar to the existing bridge and would include a 12-foot travel lane and an 8-foot shoulder in each direction.

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 United States Code (USC) 327, for more than 5 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, Caltrans 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 5 years. In summary, Caltrans 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 Caltrans 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.



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Legend
 Project Site

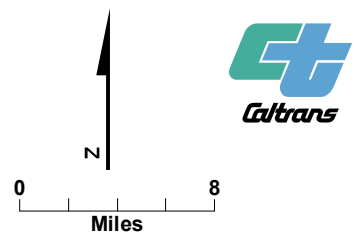


Figure 1-1
Project Location and Vicinity
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

The existing bridge on SR 29 is classified as a depth and jump barrier to adult and juvenile salmonids. Caltrans is proposing to remove the fish passage barriers by replacing the existing bridge, grading the creek bed and constructing a roughened channel to allow for fish passage. In exchange, the State Water Resources Control Board (SWRCB) would grant 50 Total Maximum Daily Load (TMDL) compliance unit credits pursuant to requirements of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) permit (Caltrans 2017). As further described in Section 1.1.1.2, a TMDL is the calculation of the maximum amount of a pollutant allowed in a waterbody, and it serves as a planning tool to restore water quality (Clean Water Act [CWA] Section 303(d)).

The project also furthers the goals of California Streets and Highways Code Section 156.1, Fish Passage, which requires Caltrans to remediate fish passage barriers posed by state highways and related structures when there is a transportation nexus. The NPDES permit has provided Caltrans with an opportunity to remove an existing fish passage barrier, which may not have happened otherwise as the bridge itself is in good condition. Overall, this project would improve fish migration and contribute to recovering declining fish populations.

SR 29 is a major north-south route that traverses Napa County; the highway starts in Vallejo in Solano County and links agricultural areas and the cities of Napa, Yountville, St. Helena, and Calistoga. SR 29 also serves Vallejo and East Bay cities to the south. The portion of SR 29 within the project limits is a two-lane conventional highway.

The project is programmed under the 2018 State Highway Operation and Protection Program (SHOPP). SHOPP funds the repair and preservation of the State Highway System, safety improvements, and some highway operational improvements. The project is listed in the 2020 Transportation Improvement Program (TIP) under the grouped listings under the 2018 State Highway Operation and Protection Program (SHOPP) – Mandates (ID 0416000037). The cost of the project is estimated to be \$13 million.

1.1.1 Project Background

1.1.1.1 RITCHIE CREEK

The existing bridge over Ritchie Creek¹ is a modified stone-arched structure built in the early 1900s and expanded in the 1940s. Ritchie Creek at SR 29 drains approximately 1,600 acres of land largely from Bothe-Napa Valley State Park into the Napa River. Southwest of SR 29, Ritchie Creek travels through Bothe-Napa Valley State Park; northeast of SR 29, Ritchie Creek traverses privately owned property until it flows into the Napa River. Anadromous fish

¹ Ritchie Creek may also be spelled as “Ritchey Creek”; however, the bridge is spelled “Ritchie Creek Bridge” and the creek will be referred to as “Ritchie Creek” throughout this document.

have historically used the tributaries to the Napa River, including Ritchie Creek, to reach upstream habitat. Several barriers to anadromous fish passage have been created over the years, blocking fish movement in historically occupied streams.

1.1.1.2 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Section 303(d) of the Clean Water Act requires states to identify waters that do not meet water quality standards after applying certain required technology-based effluent limits. States are required to compile this information in a list and submit the list to the U.S. Environmental Protection Agency (EPA) for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of the listing process, states are required to prioritize waters or watersheds for the future development of TMDLs.

A TMDL is the calculation of the maximum amount of a pollutant allowed to enter a waterbody and it serves as a planning tool for restoring water quality standards for that particular pollutant. A TMDL determines a pollutant reduction target and allocates load reductions necessary to the source(s) of the pollutant. Pollutant sources are characterized as either point sources that receive a wasteload allocation, or nonpoint sources that receive a load allocation. The SWRCB has ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to subsequently develop TMDLs. Caltrans has been assigned mass-based and concentration-based wasteload allocations for constituents contributing to a TMDL in specific regions throughout California.

Caltrans is required to comply with the Caltrans NPDES Statewide Stormwater Permit (Order No. 2012-0011-DWQ, NPDES Number CAS000003), which includes requirements to address stormwater discharges into sediment-impaired surface waters subject to the Napa River and Sonoma Creek sediment TMDLs. Per the permit, Caltrans is granted one compliance unit for every one acre of land treated by stormwater treatment or controls and must achieve a minimum of 1,650 compliance units per year.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the proposed project is to address fish passage barriers at the SR 29 crossing over Ritchie Creek to obtain TMDL compliance unit credits from SWRCB under the Caltrans Statewide NPDES permit.

1.2.2 Need

The project is needed to improve fish passage. The existing bridge and its downstream concrete apron are classified as depth and jump barriers to adult and juvenile salmonids.

During low flows, the water depth within Ritchie Creek can become impassable. The depth barrier within the culvert is due to the smooth, wide, and flat surface crossing; the jump barrier is the result of ongoing erosion and scouring over time at the concrete apron just downstream of the bridge crossing. Additionally, this project is needed so Caltrans can continue to comply with the Caltrans NPDES Statewide Stormwater Permit (Order No. 2012-0011-DWQ, NPDES Number CAS000003). Caltrans would receive 50 compliance unit credits for completion of this project.

1.2.3 Independent Utility And Logical Termini

FHWA regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the action evaluated do the following:

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 be 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.

The proposed project includes logical starting and ending points, or termini, that are centered around the replacement of the existing bridge. The project would have independent utility, which means that the proposed improvements can be implemented within the project limits, and completion of other projects would not be required to gain the operational benefits of the proposed improvements. The project would not preclude consideration of alternatives for other reasonable, foreseeable transportation improvements in the area. The project would improve fish migration, regardless of whether other transportation improvement projects in the area are implemented. In addition, the project would not be a segment of a larger project or a commitment to a larger project with significant environmental effects. Therefore, the project would have independent need and utility.

1.3 Project Description

Caltrans proposes to replace the existing Ritchie Creek Bridge with a new bridge at PM 33.13, located on SR 29 in Napa County. Replacing the bridge would remove the fish passage barriers and allow Caltrans to obtain 50 TMDL compliance unit credits to meet the requirements of the Caltrans Statewide NPDES Permit.

1.3.1 Project Alternatives

This section describes the proposed alternatives that were developed to meet the purpose and need of the project. The Build Alternative and the No-Build Alternative are considered, as described below.

1.3.1.1 BUILD ALTERNATIVE

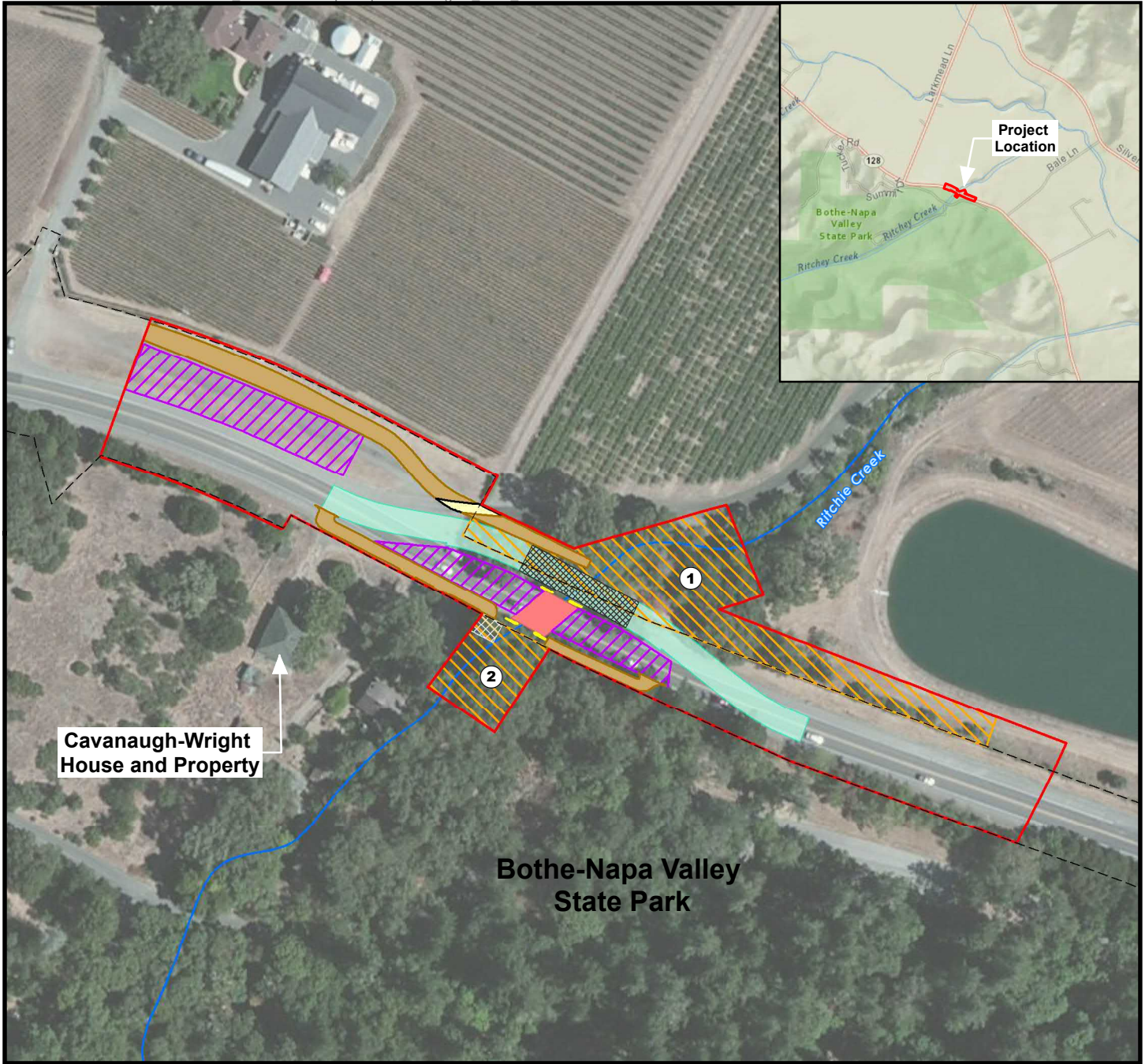
The Build Alternative would replace the existing Ritchie Creek Bridge to improve fish passage. The project limits extend from PM 32.98 to PM 33.28. The project footprint includes the realignment of two lanes to divert traffic from the existing bridge to a temporary detour bridge, temporary access roads to the creek, and staging areas (Figure 1-2).

The existing Ritchie Creek Bridge is 16.4 feet long and 43.3 feet wide. The bridge accommodates two, 12-foot travel lanes and 8-foot shoulders in each direction with concrete barrier rails. Figure 1-3 depicts the existing northbound view on SR 29 from the bridge; Figure 1-4 depicts the upstream view of the bridge opening. The new bridge would be 35 feet long and 44 feet wide with a 12-foot travel lane and 8-foot shoulder in each direction. Accordingly, the channel would be wider under the Build Alternative. The new bridge railing would include an architectural surface treatment that matches the immediate surroundings to the maximum extent feasible and would use one of the four approved *Manual for Assessing Safety Hardware* compliant railings, as approved by FHWA for the State of California (AASHTO 2016).




A two-lane temporary detour bridge would be constructed parallel to the northbound lane of the existing bridge to detour traffic during construction. The temporary detour bridge would be constructed outside the Caltrans right of way and would include Type K rails and a 5-foot-wide footpath on each side of the temporary bridge. The Build Alternative would also involve temporary relocation of existing aboveground and underground utilities.

The Build Alternative would include restoring the creek. The proposed Ritchie Creek streambed restoration would improve fish passage at the downstream reach. Replacement of the existing bridge would allow for the creek to be regraded and roughened to improve conditions for fish. The total project boundary area is 3.11 acres.

This project contains a number of standardized project features, which are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2 and included as Appendix D.



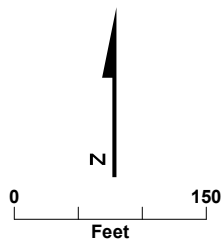
Legend

-  Project Limits
-  Caltrans Right-of-Way
-  Permanent Right of Way Easement

Project Components

-  New Bridge
-  Wing Wall
-  Temporary Construction Easement
-  Staging Area
-  Access
-  Access to Private Property
-  Temporary Modular Steel Bridge
-  Temporary Roadway Detour

- ① Private Property
- ② Bothe-Napa State Park Property



**Figure 1-2
Build Alternative**

Ritchie Creek Bridge Replacement Project
for Fish Passage Improvement
EA 04-4J990, NAPA-29 PM 33.13
Napa County, California

Figure 1-3 Northbound View of Existing Bridge



Figure 1-4 Upstream View of Bridge Opening



Build Alternative Features

Pre-Construction

Site Preparation

Site preparation would include delineating construction work areas, installing environmentally sensitive area (ESA) fencing around sensitive habitats and cultural resource areas, installing wildlife exclusion fencing around staging areas, installing best management practices (BMPs) in accordance with the project's Stormwater Pollution Prevention Plan (SWPPP), and removing vegetation.

Vegetation clearing would be required and would be confined to the area within the project footprint, including construction access routes. Vegetation removal and clearing would be completed with hand tools where possible. Chainsaws, grinders, and excavators would be used for vegetation that cannot be removed by hand.

Staging Areas and Temporary Construction Access Roads

Staging areas for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants would be located within the Caltrans right of way on the north side of SR 29 (0.24 acre) and on SR 29 (0.17 acre) as depicted on Figure 1-2. ESA fencing would be used to delineate sensitive areas during construction. The total area of temporary disturbance of construction staging areas would be 0.41 acre.

The existing bridge would continue to be used to carry traffic during the installation of the temporary detour bridge. Traffic would be diverted to the two-lane temporary detour bridge while the existing bridge is removed and the new bridge is constructed. The temporary detour bridge would have a 5-foot-wide footpath on each side for pedestrian and bicyclist access. Minor roadway widening would be required to allow for alignment of the temporary detour bridge with the existing roadway. The existing pavement would be conformed to match the elevation of the new temporary detour bridge structure.

A temporary 16-foot-wide access road would be created on the north side of SR 29 to provide access to the creek during construction. While the access road would intersect with an existing driveway, access to the private property would be maintained during construction, as shown in Figure 1-2. On the south side of the SR 29, two temporary 12-foot-wide access roads would be created. The temporary access road southwest of the bridge would allow for continued access to a residential driveway and the work area within the creek, and the temporary access road on the southeast side would also allow for access to the creek.

Right of Way and Temporary Construction Easements

The project would be located almost entirely within Caltrans right of way. The project would not result in the displacement of residents or businesses. Two temporary construction easements (TCEs), totaling 0.83 acre would be required for construction; these easements would be located on both sides of the existing bridge. The TCE 1 on the north side of SR 29 would be approximately 0.66 acre on private property, and the TCE 2 on the south side of SR 29 would be approximately 0.17 acre in Bothe-Napa Valley State Park. Caltrans would coordinate with State Parks to obtain a permanent right of way easement on State Parks property within TCE 2 to access and maintain the retaining walls. Figure 1-2 shows the permanent right of way easement (0.01 acre) within TCE 2.

Utility Relocation

Pacific Gas and Electric Company (PG&E) and Comcast overhead facilities are located within the Caltrans right of way. Two overhead poles are located on either side of Ritchie Creek on the north side of SR 29. These poles convey an overhead PG&E 12 kV distribution line and Comcast cable to the local community. There is a 6-inch PG&E gas pipeline on the north side of the existing bridge. The gas line is supported on either end of the creek by a cylindrical metal structure. The gas line is not attached to the existing bridge. A 4-inch telephone conduit is also located on the north side of the existing bridge.

Prior to construction, the existing overhead poles, Comcast cable, gas line, and telephone conduit would be temporarily relocated within the project footprint.

Construction

Temporary Creek Diversion System

A temporary creek diversion system would be installed to divert creek flow around the work area during the dry season. The temporary creek diversion system would use diversion plastic pipes with temporary cofferdams located at the upstream and downstream ends. The cofferdams would be assembled before the beginning of any work in the creek and removed at the end of construction. Timber mat systems are often used to create a flat working surface for construction activities. Construction activities within the creek would be limited to the dry season between June 1 and October 31 to reduce the potential for work during high water flows in Ritchie Creek.

Channel Widening

Grading in the creek would be necessary to accommodate the new wider crossing, both upstream and downstream, of the proposed bridge. The embankment toe along both sides of the channel, both upstream and downstream of the new bridge, would be lined with rock slope protection (RSP) and appropriate filter material. The RSP would extend up the

embankment slopes up to the top of the slope and up to 6 feet below the toe of slope. Rocks from the existing channel would be removed and replaced after the channel is realigned. A total of 0.24 acre of the creek would be graded and temporarily impacted. The creek bed and surrounding vegetation temporarily affected during construction would be restored after construction.

Construct Temporary Detour Bridge

A two-lane temporary detour bridge would be installed adjacent to and approximately 8 feet away from the north side of the existing bridge to maintain traffic flow and construction clearance (Figure 1-5). The temporary detour bridge would be a prefabricated steel-modular bridge measuring approximately 41 feet wide and 120 feet long and would include two 12-foot-wide lanes with a 5-foot-wide footpath on each side for pedestrian and bicyclist access. There would be railings measuring approximately 3.5 feet wide in between the roadway and footpath. The temporary detour bridge would be assembled on-site at a temporary staging area located just northeast of the northbound approach to the existing bridge. A temporary concrete abutment would be installed at the approaches of the temporary detour bridge. It would take 1 to 3 months to construct the temporary detour bridge.

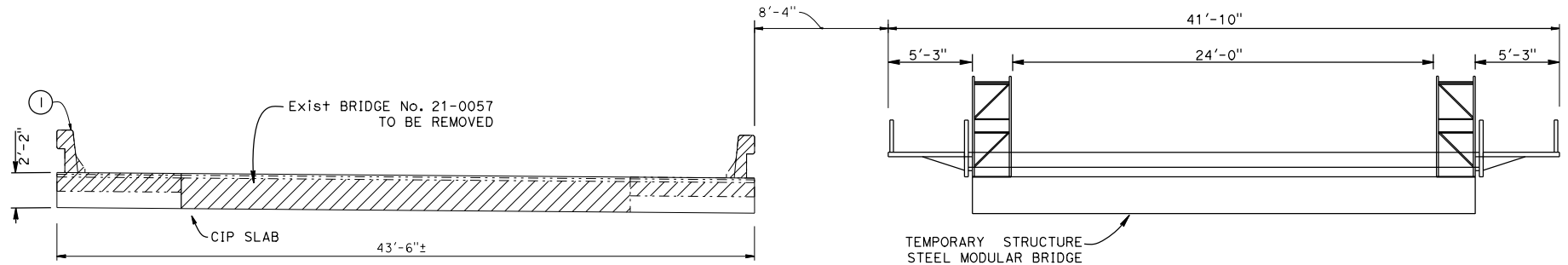
Traffic Management

Traffic would be diverted to the two-lane, temporary detour bridge during bridge construction. Various Transportation Management Plan elements such as portable Changeable Message Signs and California Highway Patrol Construction Zone Enhanced Enforcement Program would be used to minimize delays to the traveling public. After the permanent bridge is constructed, traffic would be shifted back from the temporary detour bridge to the new permanent bridge, and the temporary detour bridge would be removed. Flaggers would be used to divert traffic from and to the existing bridge to the temporary detour bridge during low peak times.

Demolish Existing Bridge

Bridge demolition would begin in the middle of the bridge and work backwards toward the abutments. Breakers or hoe rams would be used to break the deck into smaller pieces. A timber mat would be constructed to contain any construction debris that would fall outside of the existing concrete apron. Access to the creek bed for bridge demolition would be via the temporary construction access roads within the Caltrans right of way along southbound SR 29. The remaining portions of the bridge abutments would be removed to 10 feet below the existing channel grade and hauled away.

Dist	COUNTY	ROUTE	POST MILE
04	NAP	29	33.13



TYPICAL SECTION
1/4"=1'-0"

NOTES:

- ① Concrete Barrier Type 742

LEGEND:

- Existing Structure
- ▨ Limits of Bridge Removal

STRUCTURES DESIGN ADVANCE PLANNING STUDY SHEET
(ENGLISH) (REVISION 17/11/2019)

DATE PLOTTED => 3-MAY-2021
FILE => 21-0057-ops-02.dgn
TIME PLOTTED => 10:09
USERNAME => s150890

DESIGNED BY Ben Nguyen	DATE X
DRAWN BY W. Zhang/S. Hossen	DATE X
CHECKED BY X	DATE X
APPROVED X	DATE X

4	STRUCTURE DESIGN	PLANNING STUDY 2 OF 2
	DESIGN BRANCH	RITCHIE CREEK BRIDGE (REPLACE)
	UNIT: 3579	BRIDGE No.: 21-0057
PROJECT EA: 4J990K		PROJECT No. & PHASE: 04000206200



Figure 1-5
Temporary Detour Bridge Cross-Section
Ritchie Creek Bridge Replacement Project
for Fish Passage Improvement
EA 04-4J990, NAPA-29 PM 33.13
Napa County, California

Construct Abutment and Bridge

The foundations for the abutments would be constructed first. Caltrans would install a seating-type abutment on spread footings at the SR 29 crossing over Ritchie Creek. After excavating 15 feet below existing channel grade, placing formworks at the perimeters, and setting the steel reinforcements, concrete would be poured to form the spread footing.

The seat-type abutments would be built with reinforced concrete to provide support to the bridge deck and would extend 5 to 10 feet beyond the edge of the bridge on each side. The main components of a seat-type abutment are back wall, stem, wing walls, and foundation. Wing walls would be constructed from reinforced concrete on each side of the abutment to act as retaining walls to the dirt embankment around the abutment. Once the abutments are constructed, the new cast-in-place slab bridge deck would be installed. Construction of the new bridge abutment and bridge would occur over 2 to 6 months.

Fish Passage Improvements

Removing the barriers would require the elimination of the bottom concrete portions of the existing culvert. The proposed design is a roughened channel with rock ramps to simulate a natural stream and a pool for fish to rest in. The channel bed would be graded to accommodate the new wider crossing, both upstream and downstream of the proposed bridge. A pool would be created approximately 75 feet downstream of the upstream face of the existing bridge along with buried weirs on the upstream and downstream end of the pool to maintain channel stability. Then, a grid of 15 feet by 7 feet rock bands would be placed along the rock ramp portions of the proposed terrain. Rock bands allow for energy dissipation and increase the channel roughness, creating more favorable conditions for fish passage. A V-shaped notch would be created along the centerline of the rock ramp portions to increase depths for fish passage during low flows. RSP would be installed along the channel banks for erosion protection.

Remove Temporary Bridge

The temporary detour bridge, including the two 5-foot-wide footpaths, would be disassembled and removed after the existing bridge is operating. Additional roadway pavement would be removed, and the terrain would be regraded prior to construction completion.

Construction Equipment

Equipment used for utility relocation and drainage adjustments would include light equipment such as backhoes, hand-operated augers, and trenchers. Dozers would be used for grading temporary roads to access the creek bed. A backhoe or excavator with a fitted ram would be used to break up the roadway deck and abutments. Then a loader would be used to

collect the debris to be hauled away by trucks. Bridge demolition would be completed using concrete saws, jackhammers, and excavators to break up the roadway deck, bents, and abutments. Cranes, excavators, and loaders would be used to collect debris. Dust control would be implemented as required. Other equipment may include concrete mixer trucks, pump trucks, manlifts, paver, hoe ram, jackhammers, and compaction equipment. Pile driving installation equipment is not anticipated for the construction of the foundation. Equipment would be staged at the staging area located to the north of the bridge and on SR 29 during construction. After construction, these areas would be restored to pre-construction conditions in accordance with applicable permits and Caltrans requirements. Construction would require up to 30 to 55 construction workers at any given time.

Post-Construction

Site Cleanup and Post-Construction Activities

All construction materials and debris would be removed from the construction work areas and recycled or properly disposed of off-site. Caltrans would restore all areas temporarily disturbed by project activities, such as staging areas and access roads, to near or better than pre-construction conditions in accordance with applicable permits and Caltrans requirements. Caltrans would revegetate all previously disturbed areas with appropriate native species in accordance with State Parks requirements as applicable.

Construction Schedule

Construction would occur from February 2023 to November 2023. Construction activities within the creek would be limited to the dry season between June 1 and October 31 to avoid working during high water flows in Ritchie Creek.

Caltrans would divert traffic from the existing bridge to the temporary detour bridge over several days. The majority of construction activities would occur outside of nighttime hours of 9:00 PM to 6:00 AM. Nighttime construction activities would occur after 9:00 PM for up to 12 nonconsecutive nights between April 2023 and November 2023. Construction activities may include a potential lane closure during low peak volume times. Table 1-1 shows the nighttime activities that would occur during construction.

Table 1-1 Nighttime Construction Activities

Months	Duration	Activity
April to June	2 Days	Place temporary K-rails.
April to June	2 Days	Install the temporary detour bridge.
April to June	2 Days	Stripe and divert traffic to the temporary bridge.
October to November	2 Days	Pave, stripe, and divert traffic to the new bridge.
October to November	2 Days	Remove temporary K-rails.
October to November	2 Days	Remove the temporary detour bridge.

Vegetation removal would be scheduled to avoid impacts to nesting birds; however, if clearing and grubbing occur during the nesting bird season (between February 1 and September 30), a qualified biologist would survey for nesting birds within the areas to be disturbed no more than 72 hours prior to construction.

1.3.1.2 NO-BUILD ALTERNATIVE

Under the No-Build Alternative, there would be no improvements to fish passage at Ritchie Creek at SR 29. The Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain as is. The stone-arched culvert would remain a fish passage barrier at Ritchie Creek. The No-Build Alternative is considered the environmental baseline against which potential environmental effects of the Build Alternative are evaluated.

1.4 Comparison of Alternatives

This section compares the No-Build and Build Alternative analyzed in this environmental document.

Under the Build Alternative, Caltrans proposes to address fish passage at Ritchie Creek by removing two existing fish passage barriers. Removal of the fish passage barriers would allow Caltrans to comply with NPDES permit requirements by receiving 50 compliance credit units for remediation of a fish passage barrier on the State Highway System.

Under the No-Build Alternative, Caltrans would not remove the fish passage barriers nor replace the existing arched bridge structure. Under the No-Build Alternative, there would be no improvements to fish passage in Ritchie Creek, the project would not meet the purpose and need, and Caltrans would not receive compliance credit units from SWRCB.

The IS/EA was circulated for public comment from December 1, 2020 to January 8, 2021. Caltrans received one comment letter from the California Department of Fish and Wildlife (CDFW) (Appendix K). Under CEQA, Caltrans has prepared a Mitigated Negative Declaration as no significant unmitigable impacts were identified. Similarly, Caltrans, as assigned by FHWA, has determined that the entirety of the preferred alternative would not adversely affect the human and natural environment. Therefore, Caltrans has prepared a Finding of No Significant Impact (FONSI) in accordance with NEPA.

1.5 Identification of a Preferred Alternative

Under the Build Alternative, the fish barriers would be removed by eliminating the existing culvert's bottom concrete portions. The restoration under the Build Alternative would improve fish passage at the downstream reach. Improvements would also increase depths for fish passage during low flows. In summary, the Build Alternative would remove the fish passage barriers at the SR 29 crossing over Ritchie Creek, which would allow Caltrans to receive 50 compliance unit credits under the NPDES Statewide Stormwater Permit. Therefore, Caltrans selected the Build Alternative as the preferred alternative because it is technically feasible and meets the purpose and need of the project.

1.6 Alternatives Considered but Eliminated from Further Discussion Prior to the Draft IS/EA

Two additional alternatives were considered during the project development process but were eliminated before preparation of the draft environmental document because they would result in impacts to sensitive cultural resources and/or increased traffic through Bothe-Napa Valley State Park. A description of each alternative and the reason for elimination from consideration are provided below.

1.6.1 Accelerated Bridge

Caltrans proposed a detour alternative that involved a complete closure of the Ritchie Creek Bridge at SR 29. During the period of bridge closure at SR 29, a detour plan of approximately 3.5 miles was proposed through Bothe-Napa Valley State Park. Caltrans estimated a period of 3 to 6 months for the bridge closure for an accelerated bridge replacement. This alternative was dismissed from consideration because a detour through the Bothe-Napa Valley State Park would not have been permitted.

1.6.2 Bridge Widening

Caltrans proposed widening the existing bridge in three separate stages of demolition and construction. Traffic would flow through the construction site during each stage. In stage

one, one side of the bridge would be demolished and reconstructed, allowing traffic to flow on the other side. In stage two, the other side of the bridge would undergo demolition and construction. In the final stage, the center of the bridge would be closed off for construction while traffic would be diverted on to the edges of the bridge. This alternative was dismissed from consideration to minimize direct impacts to sensitive cultural resources in the vicinity of the project site and long traffic delays.

1.7 Permits and Approvals Needed

The permits, agreements, and certifications that would be required for project construction are outlined in Table 1-2.

Table 1-2 Permit or Approval Document and Approving Agency

Approving Agency	Permit or Approval Document	Status
California Department of Parks and Recreation	Section 4(f) <i>De Minimis</i> Determination	State Parks signed the Letter of Concurrence on January 29, 2021 (Appendix A).
California Department of Fish and Wildlife (CDFW)	1602 Lake and Streambed Alteration Agreement Incidental Take Permit	Following approval of the MND and issuance of the FONSI, permit applications will be submitted.
National Marine Fisheries Service (NMFS)	Formal section 7 consultation for threatened and endangered species	Consultation with NMFS is ongoing. A BO from NMFS will be obtained during the design phase.
Regional Water Quality Control Board – San Francisco Bay (RWQCB)	Clean Water Act Section 401 Water Quality Certification	Following approval of the MND and issuance of the FONSI, a permit application will be submitted.
State Historic Preservation Officer	Finding of Effect and Memorandum of Agreement (MOA)	The MOA between Caltrans and SHPO was executed on March 11, 2021 (Appendix I).
U.S. Fish and Wildlife Service (USFWS)	Formal section 7 consultation for threatened and endangered species (biological opinion)	USFWS issued a Biological Opinion on February 5, 2021 (Appendix J)
U.S. Army Corps of Engineers (USACE)	Clean Water Act Section 404 Nationwide Permit 14	Following approval of the MND and issuance of the FONSI, a permit application will be submitted.

Notes:

FONSI = Finding of No Significant Impact

MND = Mitigated Negative Declaration

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

The chapter discusses potential environmental impacts of the Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (project) and recommended avoidance, minimization and/or mitigation measures (AMMs), and mitigation measures (MMs). The proposed AMMs and MMs are also summarized in Appendix B. A list of abbreviations used in this document is available in Appendix C, the list of technical studies prepared for this project is available in Appendix E, and the list of references is available in Appendix F. In addition, Caltrans' Title VI Policy Statement is included in Appendix G. This chapter also addresses issues of concern pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Please see Chapter 3 for the CEQA Checklist.

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 the following issues in this document.

Coastal Zone – The proposed project is not located within the California Coastal Zone. As such, no coastal resources would be affected by construction or operation of the project.

Wild and Scenic Rivers – The project area does not traverse any rivers designated as part of the National Wild and Scenic Rivers System. As such, no wild or scenic rivers would be affected by construction or operation of the project.

Growth – The proposed bridge would carry the same capacity as the existing bridge and would carry the same number of travel lanes. The project would neither provide new access to an undeveloped area nor influence development opportunities by expanding capacity. Construction employees would be sourced from a local contractor, and temporary construction activities are not expected to increase the demand for housing. As a result, implementation of the project would not induce growth.

Relocations and Real Property Acquisition – Construction activities would require two temporary construction easements (TCEs); however, the project would not require in permanent or temporary displacements or relocations. There would be no impact.

Environmental Justice – Construction activities would result in temporary construction-related impacts in the project area. There are no minority and low-income populations. 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.

Timberlands – The project area is not located near timberlands. Therefore, the project would not convert timberlands to a non-timberland use or otherwise affect timberlands.

Paleontology – The project area is underlain entirely by Holocene alluvial fan deposits. Fossils transported during the Holocene, or during historic times and deposited in an alluvial fan have a low sensitivity for significant paleontological resources. As such, there would be no adverse effects to paleontological resources (Caltrans 2020a).

2.1 Human Environment

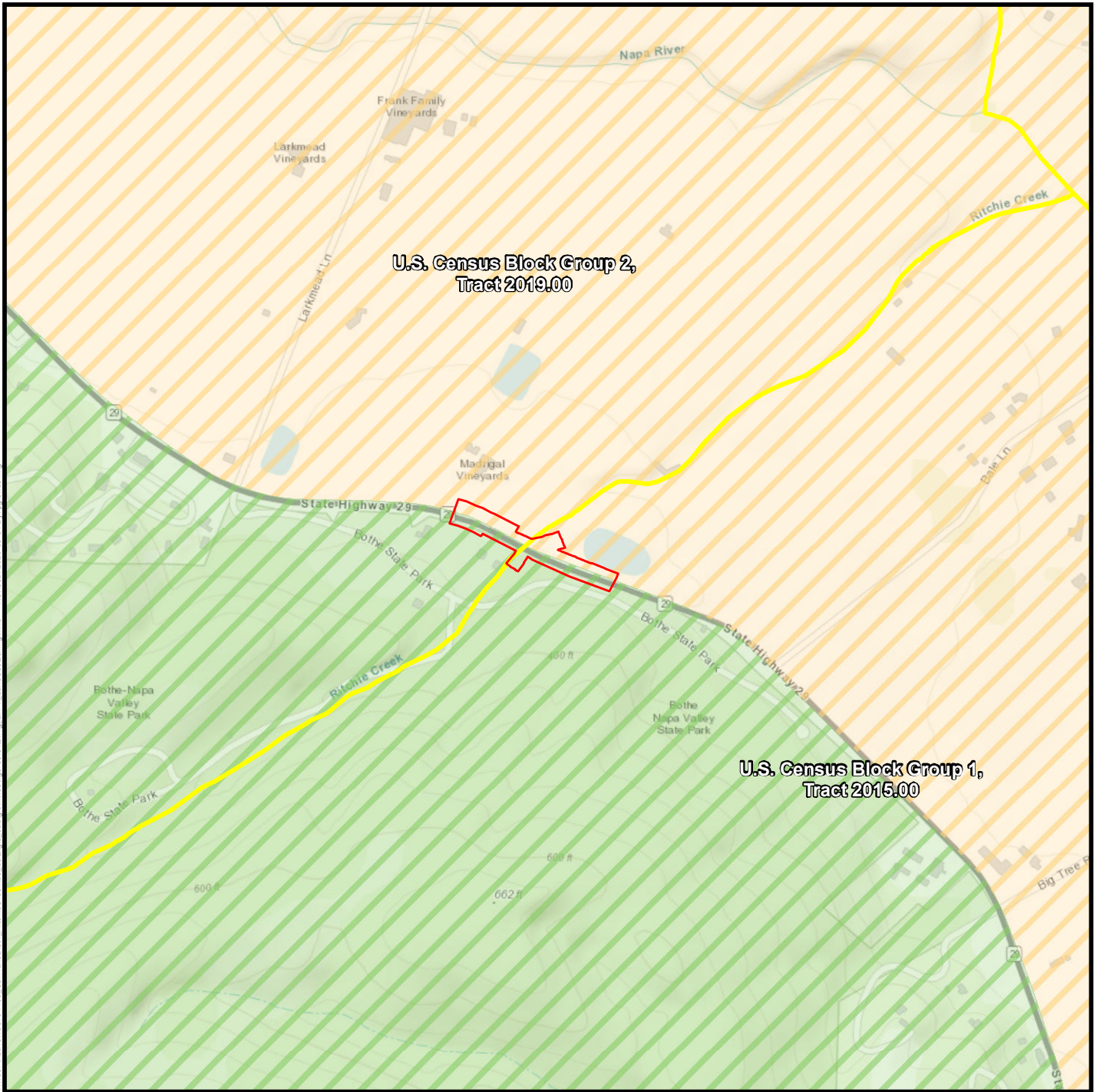
2.1.1 Existing and Future Land Use

2.1.1.1 AFFECTED ENVIRONMENT

Information in this section is based on the Community Impact Assessment (CIA) memorandum prepared for the project (Caltrans 2020b). The project area is located approximately 4 miles southeast of the City of Calistoga and 3.5 miles north of the City of St. Helena in northwestern Napa County on State Route 29 (SR 29). SR 29 is a major north-south route traversing Napa County and links agricultural areas, wineries, and the Cities of Napa, Yountville, St. Helena, and Calistoga. The portion of SR 29 within the project limits is a two-lane conventional highway with no high-occupancy vehicle lanes.

The project area is a transportation corridor surrounded by land uses that are predominately categorized as agricultural resources, open space, and watershed. Active agricultural land uses (vineyards/wineries) are directly adjacent to the north of the project, and Bothe-Napa Valley State Park is directly adjacent to the south of the project. Accordingly, the project is surrounded by lands zoned as Agricultural Preserve (AP) and Agricultural Watershed (AW) (Napa County Planning, Building, and Environmental Services 2015). Figure 2.1-1 depicts land use and zoning designations in the CIA study area.

According to the Napa County General Plan, there has been very little urbanization or urban development in the unincorporated areas of the county over the past 15 years; therefore, urbanization or development within the project area is not anticipated.



V:\1857\Active\185704409_CalTrans\Desk_RitchieCreek\03_data\qa_cadd\slms\figures\C10\Fig_2.1-1_LandUseZoning.mxd - Revised: 2020-08-31 By: optandeng

Legend

- Project Site
- Census Block Group

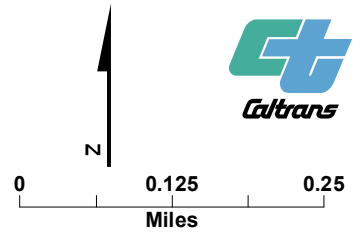
Land Use

- Agricultural Resource
- Agriculture, Watershed & Open Space

Zoning

- AP: Agricultural Preserve
- AW: Agricultural Watershed

Source: County of Napa



**Figure 2.1-1
Land Use and Zoning
Designations**

Ritchie Creek Bridge Replacement Project
for Fish Passage Improvement
EA 04-4J990, NAPA-29 PM 33.13
Napa County, California

Service Layer Credits:

ESRI, National Geographic, DigitalGlobe, GeoEye

Consistency with Regional, and Local Plans and Programs

The following paragraphs provide an overview of the plans that are applicable to the proposed project.

Napa County General Plan

The Napa County General Plan aims to protect agriculture and agricultural, watershed, and open space lands by maintaining existing parcel sizes; limiting uses allowed in agricultural areas; designating agriculture as the primary land use; providing transportation policies aimed at addressing congestion, safety, and accessibility; emphasizing alternatives to the private automobile; and proposing limited road improvements.

The project is located within the Napa Valley Floor-Unincorporated/Western Mountains Area of the county. This area of Napa County is largely agricultural, with vineyards, wineries, farming, and grazing uses. More than a third of the area of this region is undeveloped, and of the developed areas, farming and winery development is the most prevalent use.

Although none of the roads are officially designated as Scenic Highways by the State of California, segments of SR 29 are eligible for scenic highway designation, and SR 29 is a county-designated Scenic Roadway subject to viewshed protection.

Plan Bay Area: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2013 to 2040

Plan Bay Area (Metropolitan Transportation Commission 2013) charts a course for accommodating growth while fostering an innovative, prosperous, and competitive economy; preserving a healthy and safe environment; and allowing all Bay Area residents to share the benefits of vibrant, sustainable communities connected by an efficient and well-maintained transportation network.

Napa Countywide Transportation Plan – Vision 2040: Moving Napa Forward

The Napa Countywide Transportation Plan – Vision 2040: Moving Napa Forward is a long-range transportation plan that includes a list of transportation investments for the next 25 years. The Napa Countywide Transportation Plan identifies goals and objectives that apply to all modes of transportation and identifies issues and challenges while setting the stage for a long-range vision for the county (NVTA 2015).

Table 2.1-1 provides a consistency evaluation of the proposed project and state, regional, and local plans and programs.

Table 2.1-1 Consistency with State, Regional, and Local Plans and Programs

	Policy	Build Alternative	No-Build Alternative
Napa County General Plan	Policy CC-13: The County’s roadway construction and maintenance standards and other practices shall be designed to enhance the attractiveness of all roadways and in particular scenic roadways. New roadway construction or expansion shall retain the current landscape characteristics of County-designated scenic roadways, including retention of existing trees to the extent feasible and required re-vegetation and re-contouring of disturbed areas. In addition: a) The development of hiking trails and bicycle lanes should be coordinated, when possible, with scenic roadway corridors and should provide access for the elderly and disabled in accordance with the Americans with Disabilities Act. b) A program to replant trees and shrubbery should be implemented in cases where they are removed during new roadway alignment. c) Opportunities should be explored for joint public/private participation in developing locations for roadside rests, picnic areas and vista points. d) Installation of landscaping shall be required in conjunction with major roadway improvements where necessary to screen existing residences from glare generated by vehicle headlights.	Consistent. The Build Alternative proposes to replace the existing bridge with a similar bridge and would be consistent with current landscape characteristics in with implementation of Project Features AES-1 through AES-5, and AMMs AES-1, AES-2, and AES-3. The Build Alternative does not involve the development of hiking trails or bicycle lanes. Vegetation clearing would be required and would be confined to the area within the project footprint. The creek bed and surrounding vegetation temporarily affected during construction would be restored post-construction in accordance with AMM AES-4. The Build Alternative does not involve roadside rests, picnic areas, vista points, or landscaping.	Inconsistent. The No-Build Alternative would not involve any roadway improvements.
	Policy CIR-5: Roadways outside the urbanized areas of the county shall reflect the rural character of the county.	Consistent. The Build Alternative would involve the replacement of an existing bridge, and the visual character would be minimally changed by construction of the new bridge and would maintain the rural character of the area. Implementation of Project Features AES-1 through AES-5, and AMMs AES-1, AES-2, and AES-3 would help minimize potential visual impacts.	Inconsistent. The No-Build Alternative would not involve any construction and would not affect the areas outside of the county or the rural character of the county.
	Policy CIR-6: The county’s roadway improvements should minimize disruption to residential neighborhoods, communities, and agriculture.	Consistent. The Build Alternative would involve Project Features, and AMMs such as Project Features AES-1 through AES-5 and AMMs AES-1 through AES-3 for any impacts adjacent to agricultural operations and would not result in any permanent changes to residential	Inconsistent. The No-Build Alternative would not involve any roadway improvements.

	Policy	Build Alternative	No-Build Alternative
		neighborhoods, communities, and agriculture.	
	Policy CIR-7: Roadway improvements shall be designed to conform to existing landforms and shall include landscaping and/or other treatments to ensure that aesthetics and rural character are preserved.	Consistent. The Build Alternative would involve the replacement of an existing bridge, and the visual character would be minimally changed by construction of the new bridge.	Inconsistent. The No-Build Alternative would not involve any roadway improvements.
	Policy CIR-8: Roadway, culvert, and bridge improvements and repairs shall be designed and constructed to minimize fine-sediment and other pollutant delivery to waterways, to minimize increases in peak flows and flooding on adjacent properties, and where applicable to allow for fish passage and migration, consistent with all applicable codes and regulations.	Consistent. The Build Alternative would involve the replacement of an existing bridge to address stormwater discharges into sediment-impaired surface waters and would remove existing fish passage barriers and improve fish migration.	Inconsistent. The No-Build Alternative would not involve any roadway improvements.
	Policy CIR-36: The needs of pedestrians and bicyclists shall be routinely considered and, where possible, accommodated in all roadway construction and renovation projects.	Consistent. During construction, access to pedestrians and bicyclists would be maintained with two 5-foot-wide footpaths, one in each direction. Therefore, the proposed project would not have an effect on access to SR 29, streets, or sidewalks in the study area.	Inconsistent. The No-Build Alternative would not involve any roadway construction or renovation.
	Policy CIR-37: Where sufficient right-of-way is available, bicycle lanes shall be added to county roadways when repaving or upgrading of the roadway occurs, provided that the bicycle facility would implement the Countywide Bicycle Master Plan. Additional paving shall be provided only where the facility meets the "Regional Assessment System" adopted by the Napa County Transportation and Planning Agency. The County shall encourage Caltrans to follow these same guidelines on state highways in Napa County.	Consistent. This segment of SR 29 is parallel to a segment of the Napa Vine Trail that is currently in development through Bothe-Napa Valley State Park. The Napa Countywide Bicycle Plan proposes this segment of SR 29 as a Class III bike route (shared facility). Given this, the provision of 8-foot shoulders is recommended for shared use by bicyclists, which is consistent with these plans. During construction, access to pedestrians and bicyclists would be maintained with two 5-foot-wide footpaths, one in each direction.	Inconsistent. The No-Build Alternative would not involve any roadway construction or renovation.

	Policy	Build Alternative	No-Build Alternative
	Policy CON-10: The County shall conserve and improve fisheries and wildlife habitat in cooperation with governmental agencies, private associations and individuals in Napa County. [Implemented by Action Item CON NR-2]	Consistent. The Build Alternative would involve replace an existing bridge to address stormwater discharges into sediment-impaired surface waters and would remove existing fish passage barriers and improve fish migration.	Inconsistent. The No-Build Alternative would not improve fish passage, as the existing bridge is a fish passage barrier.
	Policy CON-11: The County shall maintain and improve fisheries habitat through a variety of appropriate measures, including the following as well as best management practices developed over time (also see Water Resource Policies, below): a) Consider the feasibility of using reclaimed wastewater as a means of maintaining adequate water flow to support fish life and reduce pollution of the Napa River. b) Consider all feasible ways to maintain and restore sufficient flows and channel characteristics necessary for fish passage consistent with state and federal guidelines. c) Undertake and publicize water use conservation strategies necessary to protect and prolong the duration of in-stream flows for aquatic resources including migrating anadromous fish such as steelhead and Chinook salmon. d) Encourage and support programs and efforts related to fishery habitat restoration and improvement including steelhead presence surveys, development and utilization of hydraulic modeling, and removal of fish barriers. e) Manage the removal of invasive vegetation and the retention of other riparian vegetation to reduce the potential for increased water temperatures and siltation and to improve fishery habitat. f) Pursue consolidated and streamlined regulatory review of fisheries and wildlife habitat restoration projects. g) Encourage the retention of large woody debris in streams to the extent consistent with flood control considerations. h) Encourage the use of effective vegetated buffers between urban runoff and local storm drains. i) Promote and support forest management efforts and fire reduction practices in coordination with the California Department of Forestry and Fire Protection that reduce fuel loads and provide protection for water quality and fish habitat. j) Require mitigation of gravel removal activities so they result in no net adverse effects to streambed attributes, temperature, habitat, and water quality necessary for native fisheries health. This may include restoration and improvement of impacted areas	Consistent. The Build Alternative would replace an existing bridge to address stormwater discharges into sediment-impaired surface waters and would remove existing fish passage barriers and improve fish migration.	Inconsistent. The No-Build Alternative would not improve fish passage, as the existing bridge is a fish passage barrier.

	Policy	Build Alternative	No-Build Alternative
	(e.g., gravel areas and pools and woody-debris areas). Gravel removal that results in adverse impacts to native fisheries shall be determined to have a significant impact under CEQA. [Implemented by Action Item CON NR-3] k) Implement sediment reduction measures in sand and gravel operations and other high sediment-producing land uses. l) Control gravel removal and degradation from stream beds to minimize the adverse effects upon the spawning and feeding areas of fish. m) Control sediment production from mines, roads, development projects, agricultural activities, and other potential sediment sources. n) Implement road construction and maintenance practices to minimize bank failure and sediment delivery to streams. o) Enforce boat speed limits to reduce damage to warm water game fish fisheries. [Implemented by Action Item CON NR-2]		
	Policy CON-16: The County shall require a biological resources evaluation for discretionary projects in areas identified to contain or potentially contain special-status species based upon data provided in the Baseline Data Report (BDR), California Natural Diversity Database (CNDDDB), or other technical materials. This evaluation shall be conducted prior to the approval of any earthmoving activities. The County shall also encourage the development of programs to protect special-status species and disseminate updated information to state and federal resource agencies. [Implemented by Action Item CON NR-5]	Consistent. An evaluation of biological impacts would be conducted in accordance with existing regulations prior to project approval.	Inconsistent. The No-Build Alternative is not a discretionary project.
Goals and Objectives from Vision 2040: Moving Napa Forward	Vision 2040 Goals and Objectives adopted by the Board (goals are considered of equal importance): Goal 1: Serve the transportation needs of the entire community regardless of age, income or ability. Goal 2: Improve system safety in order to support all modes and serve all users. Goal 3: Use taxpayer dollars efficiently. Goal 4: Support Napa County's economic vitality. Goal 5: Minimize the energy and other resources required to move people and goods. Goal 6: Prioritize the maintenance and rehabilitation of the existing system.	Consistent. The Build Alternative would meet each of these goals, as it is programmed under the SHOPP. The SHOPP funds the repair and preservation of the State Highway System, safety improvements, and some highway operational improvements.	Inconsistent. The No-Build Alternative does not involve development or transportation project.

Notes:

AMM = Avoidance, Minimization and/or Mitigation Measures

Caltrans = California Department of Transportation

CEQA = California Environmental Quality Act

CIA = Community Impact Assessment

SHOPP = 2018 State Highway Operation and Protection Program

SR 29 = State Route 29

2.1.1.2 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

The Build Alternative would be constructed within existing transportation right of way. Accordingly, no changes to existing land uses would occur. TCEs would be required to accommodate construction activities; however, such activities would not result in conversion of existing land uses adjacent to the project. No impact to existing or future land uses would occur. Therefore, the Build Alternative would have no impacts to existing and future land uses during construction.

As shown in Table 2.1-1, the Build Alternative would be consistent with state, regional, and local plans and policies.

Operation

The Build Alternative proposes a permanent right of way easement (0.01 acre) on Bothe-Napa Valley State Park for access and maintenance of the retaining walls. However, the permanent right of way easement would not prohibit the continued use of the area by State Parks as the easement is proposed where the existing retaining wall is located. Therefore, the permanent right of way easement does not propose to change land uses in or around the project area. The predominant land uses in the project area are agriculture and open space. Operation of the Build Alternative would not result in changes to existing land uses. Therefore, the Build Alternative would have no adverse effect to existing and future land uses during operation.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. As such, the No-Build Alternative, as shown in Table 2.1-1, would be inconsistent with regional and local policies. There would be no impact to existing and future land uses.

2.1.1.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Land use in the area would be unaltered by the Build or No-Build Alternatives. No land use AMMs would be required for the proposed project.

2.1.2 Parks and Recreational Facilities

2.1.2.1 REGULATORY SETTING

The Park Preservation Act (California Public Resources Code [PRC] Sections 5400-5409) prohibits local and state agencies from acquiring any property that is in use as a public park at the time of acquisition unless the acquiring agency pays sufficient compensation, land, or both to enable the operator of the park to replace the park land and any park facilities on that land.

2.1.2.2 AFFECTED ENVIRONMENT

Information in this section is based on the CIA memorandum and Section 4(f) prepared for the project (Caltrans 2020b, c). Bothe-Napa Valley State Park, immediately south of the project area, is public recreational area owned by California Department of Parks and Recreation (State Parks) and is operated by the Napa County Regional Park and Open Space District. Bothe-Napa Valley State Park is protected by Section 4(f) of the Department of Transportation Act of 1966. Bothe-Napa Valley State Park is approximately 1,900 acres with more than 10 miles of hiking trails. The park is the farthest inland of the coast redwood state parks and contains a range of coast redwoods, Douglas fir, and madrone trees because of the weather conditions (State Parks 2010). The project would be located near the Redwood Trail, Ritchie Creek Canyon Trail, History Trail, Native American Garden Trail, the visitor center, the day use area, a seasonal horse concession, and a public pool. Ritchie Creek Group Campground is the only campground within the park and has 45 tent and recreational vehicle family campsites and 10 furnished yurts for rent. Vehicular access to the park is north of the project area. Local and regional visitors have access to the visitor center, trails, and campground year-round.

2.1.2.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

During construction, the project would require a TCE on a private parcel (TCE 1) and in Bothe-Napa Valley State Park (TCE 2). TCE 2 (0.17 acre) in Bothe-Napa Valley State Park would accommodate construction of new retaining walls, wing walls, and provide access for fish passage improvement. Temporary work would occur within the creek channel and up to the edges of SR 29, but would not occur in areas that contain recreational facilities or areas accessed by the public as shown in Figure 2.1-2.

There may be minimal disruption related to construction activities inside the park, such as noise or dust, but construction activities would not be near an area with public access, and these impacts would be temporary and would cease upon project completion. In addition, Project Features NOI-1 through NOI-5 and AIR-1 through AIR-4 would further reduce any potential noise or air quality impacts during construction. Access to park facilities would not be disrupted, and park users would not be impacted. None of the temporary construction-related impacts would adversely affect the activities, features, or attributes of the park. Accordingly, the work would not generate any constructive use, impair the features, or affect activities within the park.

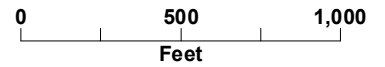
As further described in Appendix A, construction activities would not generate any constructive use, impair the features, or affect activities within the park in any way. However, a temporary occupancy would occur for such construction-related activities. Because recreational activities would be unaffected by construction of the project, and the land being used would be returned to a condition as that which existed prior to the project, the temporary occupancy supports the *de minimis* finding under Section 4(f).



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Legend

- Project Site
- Trail
- Recreational Facility



**Figure 2.1-2
Park and Recreational
Resources**

Ritchie Creek Bridge Replacement Project
for Fish Passage Improvement
EA 04-4J990, NAPA-29 PM 33.13
Napa County, California

Service Layer Credits:
ESRI, National Geographic, DigitalGlobe, GeoEye

As required by Section 4(f), the official with jurisdiction, State Parks, signed the letter of concurrence on January 29, 2021. The signed letter of concurrence is included as part of Appendix A.

Operation

Replacement of the existing bridge would involve replacing wing-walls and providing for a permanent right of way easement on the Bothe-Napa Valley State Park property to access and maintain the retaining walls (0.01 acre). This permanent use of the park would not permanently or temporarily affect the use of the recreational facilities available for public enjoyment at the park. Recreational activities would be unaffected by operation of the Build Alternative. Therefore, the proposed project would have a *de minimis* impact to this Section 4(f) resource, and there would be no impact to parks and recreational facilities.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. Therefore, there would be no impact to parks or recreational areas.

2.1.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Recreational facilities in the area would be unaltered by both the Build and No-Build Alternatives. No AMMs would be required.

2.1.3 Farmlands

2.1.3.1 REGULATORY SETTING

NEPA and the Farmland Protection Policy Act (FPPA, 7 United States Code [USC] 4201-4209; and its regulations, 7 Code of Federal Regulations [CFR] Part 658) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service if their activities may irreversibly convert Farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, Farmland includes Prime Farmland, Unique Farmland, and Farmland of Statewide Importance or Farmland of Local Importance.

The California Environmental Quality Act (CEQA) requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

2.1.3.2 AFFECTED ENVIRONMENT

Information in this section is based on the CIA memorandum prepared for the project (Caltrans 2020b). Agricultural areas are widespread throughout Napa County, and include vineyards and rangelands, row crops, field crops, orchards, and grazing lands. In 2005, there were 50,573 acres of farmland under active cultivation in Napa County and 53,800 acres were used for grazing (Napa

County 2007). According to the Napa County Crop Report, the gross crop value for Napa County in 2018 was \$1,043,192,400 (Napa County Department of Agriculture and Weights & Measures 2018). Fruit and nut crops, such as wine grapes, account for the highest production value of the agricultural economy of Napa County, with livestock and poultry and other animal products as the second- and third-highest grossing production values.

The Department of Conservation Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data use for analyzing impacts on California agricultural resources. Within the project area, the following important farmland category types are classified:

Prime Farmland – Prime Farmland is land which has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Local Importance – Farmland of Local Importance is either currently producing crops, has the capability of agricultural production, or is used for the production of confined livestock. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. This land may be important to the local economy due to its productivity or value. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Unique Farmland – Unique Farmland is land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance that has been used for the production of specific high economic value crops at some time during the 4 years prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agriculture use.

Urban and Built-Up Land – Urban and Built-Up Land is used for residential, industrial, commercial, construction, institutional, public administrative process, railroad yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment plants, water control structures, and other development purposes. Highways, railroads, and other transportation facilities are mapped as a part of Urban and Built-Up Land if they are a part of the surrounding urban areas.

According to the California Department of Conservation FMMP, as of 2016, Napa County had 30,619 acres of Prime Farmland, 9,593 acres of Farmland of Statewide Importance, 16,803 acres of Unique Farmland, 18,326 acres of Farmland of Local Importance, and 179,202 acres of grazing land

(California Department of Conservation 2016a). The primary conversion of Farmland in Napa County has been to higher classifications of Farmlands. Important Farmlands (Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance) have increased in acreage from 69,427 acres in 1984 to 75,341 acres in 2016, with a net acreage increase of 5,914 acres.

Williamson Act lands are classified as prime or nonprime. In 2015, Napa County contained 20,889 acres of Prime Farmland and 53,067 acres of Nonprime Farmland under the Williamson Act (California Department of Conservation 2016b). Land placed under a Williamson Act contract is restricted to agricultural use. Figure 2.1-3 shows FMMP farmland and Williamson Act land adjacent to the project. The parcels north of the project within the study area are designated as Prime Farmland and under the Williamson Act contract.

2.1.3.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

During construction, ground disturbance would be located within the Caltrans right of way and TCEs. The TCE for the construction of the temporary detour bridge is on private property under Williamson Act contract. The TCE would result in temporary impacts to 0.39 acre of Williamson Act contract land (Figure 2.1-3); however, no impact on prime farmland would occur. All temporary impact areas in the TCE would be revegetated once all construction activities on the project site are completed. Implementation of AMM AG-1 would require Caltrans to coordinate with landowners prior to construction, typically when the TCE is obtained. The temporary impacts would not preclude agricultural operations on the remainder of the parcel, and no acquisition of land under Williamson Act contract or permanent conversion would occur. Therefore, no permanent impacts would occur, and the Build Alternative would not involve conversion of existing farmland.

Operation

The Build Alternative would not result in a permanent conversion of land under Williamson Act contract or prime farmland. Therefore, no permanent impacts would occur.

No-Build Alternative

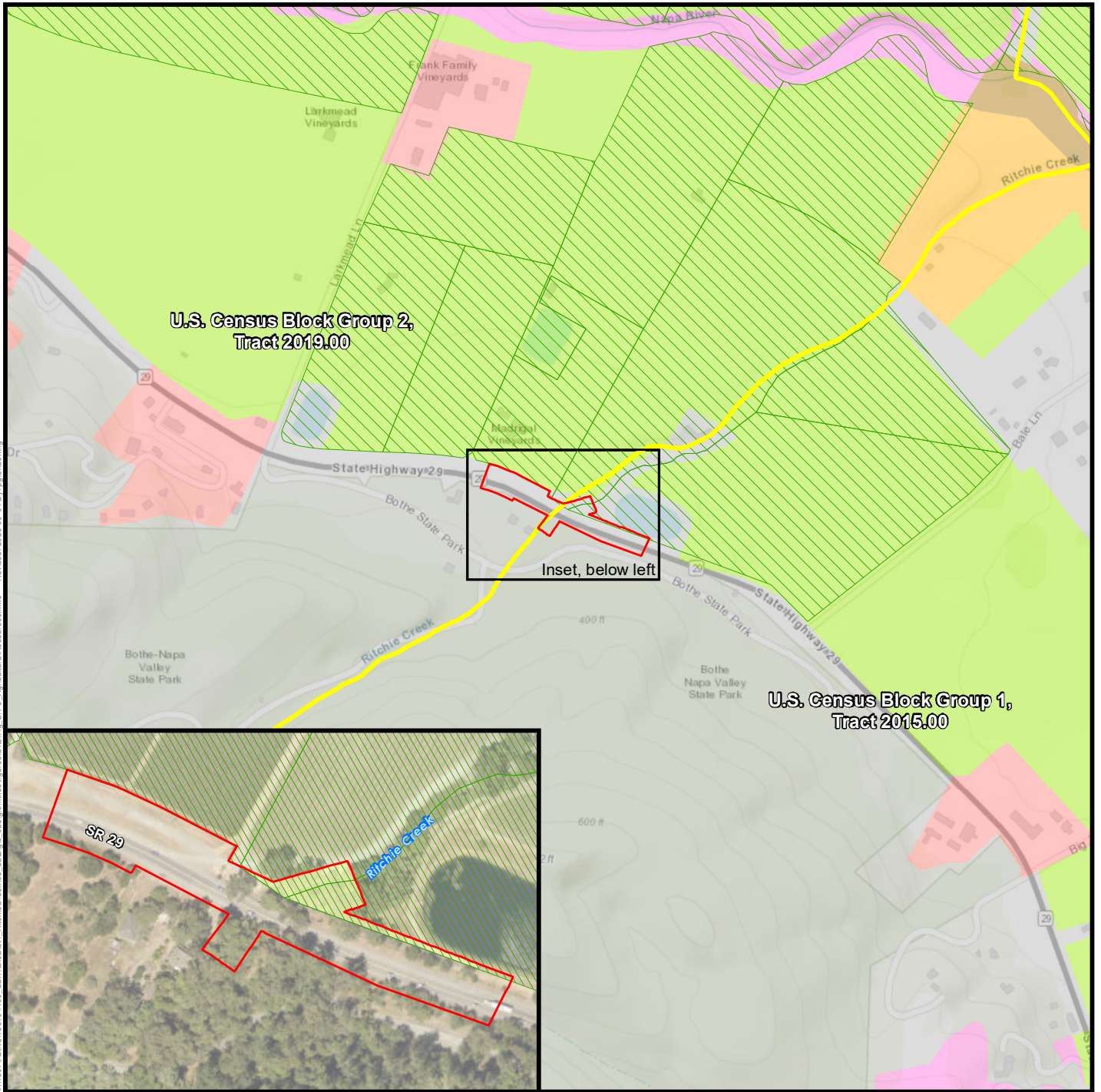
Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. There would be no impact to farmland or Williamson Act land.

2.1.3.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Caltrans would implement the following AMM to reduce temporary construction effects on farmlands:

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Legend

- Project Site
- Census Block Group
- Farmland Type**
- Prime Farmland
- Farmland of Local Importance
- Unique Farmland
- Grazing Land
- Urban and Built-up Land
- Other Land
- Williamson Act Lands (2006)

Project Impacts

- Temporary Impact

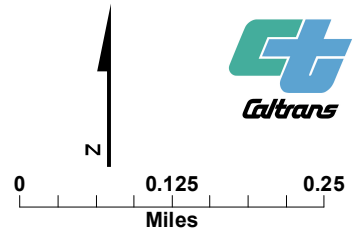


Figure 2.1-3
Agricultural Resources
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Sources: California Dept. of Conservation, Farmland Mapping and Monitoring Program, 2016. Bay Area Open Space Council, Williamson Act Lands database, 2006.

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

AMM AG-1: Minimize Impacts on Active Agricultural Areas. Prior to construction, Caltrans would provide written notice to landowners outlining construction activities, preliminary schedule, and timing of restoration efforts, and would coordinate with landowners to minimize construction-related disruptions to seasonal farming operations. After construction, Caltrans or its contractor would revegetate temporarily impacted agricultural areas in the TCE.

2.1.4 Community Character and Cohesion

2.1.4.1 REGULATORY SETTING

NEPA of 1969, as amended, established that the federal government use all practicable means to ensure that all Americans have safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 USC 4331[b][2]). FHWA in its implementation of NEPA (23 CFR 109[h]) directs that final decisions on projects are to be made in the best overall interest of the public. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

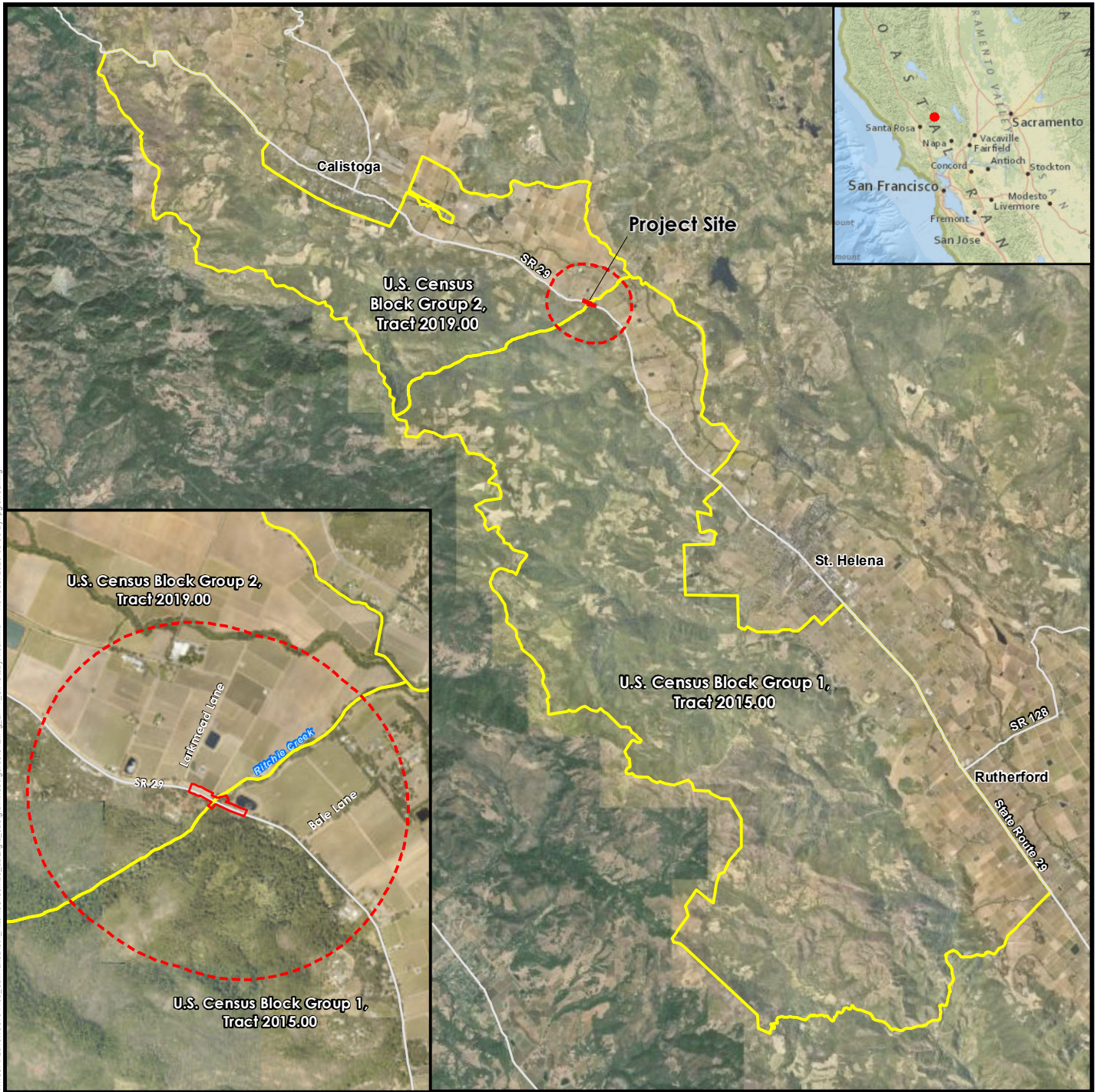
Under CEQA, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since the proposed project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the proposed project's effects.

2.1.4.2 AFFECTED ENVIRONMENT

Regional Population Characteristics

Information in this section is based on the CIA prepared for the project (Caltrans 2020c) and review of land use plans, growth policies, and demographic statistics of the community. The CIA study area for the project includes the populations and communities most likely to experience potential adverse effects from the physical improvements associated with the project (e.g., construction areas, temporary right of way needs, and staging areas). Demographic data for population, age, race, ethnicity, income, and area household's characteristics were collected from the 2013-2017, 5-year American Community Survey. Figure 2.1-4 depicts the primary CIA study area for the project, which included the following census block groups (CIA study area):

1. U.S. Census Block Group 1, Tract 2015.00 (Block Group 1)
2. U.S. Census Block Group 2, Tract 2019.00 (Block Group 2)



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- Legend**
- Project Site
 - Study Area
 - Census Block Group

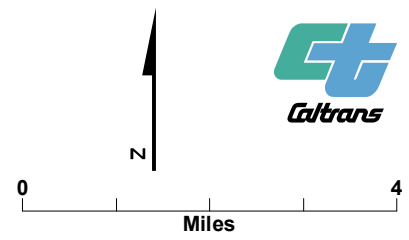


Figure 2.1-4
CIA Study Area
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

Table 2.1-2 shows the historical and projected populations for Napa County and California. Napa County is projected to continue to grow at a slower rate than the State of California.

Table 2.1-2 Regional Historical and Projected Populations

Area	2010	2015	2020	2030	2040	Change in Population 2010 to 2040
Napa County	136,585	141,205	139,652	141,930	143,631	5%
California	37,367,579	39,055,383	40,129,160	42,263,654	43,946,643	18%

Source: California Department of Finance 2020

Table 2.1-3 summarizes population and age within the CIA study area and Napa County. As shown in Table 2.1-3, the CIA study area contains an older population compared to Napa County. While the total population for the CIA study area is approximately 1,823 people, as described in Section 2.1.1, Existing and Future Land Use, there are only a few households or businesses located immediately adjacent to the project area. No schools, community centers, hospitals, or senior centers are located within 1 mile of the project area.

Table 2.1-3 Population and Age

Area	Total Population	Median Age
CIA Study Area		
U.S. Census Block Group 1, Tract 2015.00	1,219	60.4
U.S. Census Block Group 2, Tract 2019.00	604	55
County		
Napa County	141,005	40.8

Source: United States Census Bureau 2017

Housing

Table 2.1-4 summarizes income in the CIA study area and Napa County. The CIA study area has a higher median household income when compared to Napa County. Block Group 1 and Block Group 2 have a higher percentage of the population below the poverty level when compared to the rest of Napa County.

Table 2.1-4 Household Income and Poverty Status

Area	Median Household Income (2017)	Below Poverty Level (Percent)
CIA Study Area		
U.S. Census Block Group 1, Tract 2015.00	95,288.00	10.2
U.S. Census Block Group 2, Tract 2019.00	103,889.00	7.1
County		
Napa County	79,637	5.3

Source: United States Census Bureau 2017

2.1.4.3 NEIGHBORHOODS/COMMUNITIES/COMMUNITY CHARACTER

Community character is defined as the combination of demographics, housing characteristics, economic conditions, and community facilities. Community cohesion is defined as the degree to which residents have a sense of belonging in their neighborhood; a level of commitment to the community; or a strong attachment to neighbors, groups, and institutions, usually as a result of the continued association over time.

Other potential indicators of cohesion (Caltrans 2011) include a high proportion of the following: ethnic homogeneity, long-term residents, households of two or more people, rates of home ownership, and percentage of elderly residents. In addition, Napa County’s arts and cultural institutions benefit local residents and enhance the County’s identity as the nation’s premier wine country and a top tourist destination, since arts programs and installations allow tourists to have a richer experience. Accordingly, the demographic data for the CIA study area has a high ethnic homogeneity (more than 80 percent white), and also has a high proportion of owner-occupied housing units, all of which promote high community cohesiveness. The majority of homes in Napa County are occupied (approximately 88 percent). Of the 12 percent that are considered to be vacant, approximately 6 percent of household units in Napa County are seasonal or vacation homes (United States Census Bureau 2017). Given the demographic indicators, community cohesion is likely to be relatively high.

2.1.4.4 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

The Build Alternative would not create new or increased barriers that would physically or adversely divide the local community or disrupt cohesion. SR 29 already serves as a barrier that separates Bothe-Napa Valley State Park to the south and active vineyards to the north. The Build Alternative would not affect access to SR 29 or associated tourist locations and wineries because traffic would be detoured to a temporary detour bridge during construction. The temporary detour bridge would maintain access for pedestrians and bicyclists with a 5-foot-wide footpath in each direction.

Construction would result in temporary visual impacts; increase noise levels; and increase air pollutants such as dust and particulate matter due to the excavation, grading, hauling, and other construction-related activities. However, these construction activities would be short-term.

Once construction is complete, the proposed bridge would have similar dimensions as the existing bridge; would carry the same number of travel lanes as existing conditions; and would not result in visual, noise, or air quality impacts. The project would also implement Project Features AIR-1 through AIR-4, NOI-1 through NOI-5, AES-1 through AES-5, and AMM AES-1 through AMM AES-4 to further reduce potential impacts resulting from construction activities, as described in Appendix D. Minor temporary roadway widening would be required to allow for construction of the temporary detour bridge alignment with the existing roadway. A temporary 16-foot-wide access road would be created on the north side of SR 29 to provide access to the creek during construction. While the access road would intersect with an existing driveway, access to the private property would be maintained during construction. On the south side of SR 29, two temporary 12-foot-wide access roads would be created. The temporary access road southwest of the bridge would allow for continued access to a residential driveway and the work area within the creek, and the temporary access road on the southeast side would also allow for access to the creek.

Construction employees would be sourced from a local contractor, and temporary construction activities are not expected to increase the demand for housing. As a result, implementation of the project would not induce growth or disrupt cohesion. Therefore, no long-term impacts to surrounding businesses, jobs, parking, or the tax base are anticipated. In addition, access would be maintained during construction with a temporary detour bridge and would not result in out-of-direction travel to existing businesses or construction-related delays to local businesses. In summary, the Build Alternative would not create new social or geographic barriers that would hinder community interaction or access nor would it result in long-term visual, noise, or air quality impacts.

Operation

Once construction is complete, the proposed bridge would carry the same number of travel lanes as existing conditions. The Build Alternative would not provide new access to an undeveloped area nor would it influence development opportunities by expanding capacity. Further, as previously discussed, the Build Alternative would not influence growth nor influence development opportunities by expanding capacity. Therefore, no impact would occur.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. Therefore, it would not result in displacement or relocation of any housing or people.

2.1.4.5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No community character and cohesion AMMs would be required for the proposed project.

2.1.5 Utilities/Emergency Services

2.1.5.1 AFFECTED ENVIRONMENT

Utilities

Pacific Gas and Electric (PG&E) and Comcast overhead facilities are located within the Caltrans right of way. Two overhead poles are located on either side of Ritchie Creek on the north side of SR 29. These poles convey an overhead PG&E 12-kilovolt distribution line and Comcast cable to the local community. There is a 6-inch PG&E gas pipeline on the north side of the existing bridge. The gas line is supported on either end of the creek by a cylindrical metal structure. The gas line is not attached to the existing bridge. A 4-inch telephone conduit is also located on the north side of the existing bridge.

Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) and the Napa County Fire Department (NCFD) provide fire protection and emergency medical response to nearly 30,000 residents, covering 728 square miles of unincorporated Napa County except for 83 parcels that are served by the America Canyon Fire Protection District. NCFD also provides fire protection and related services to smaller communities and various agencies in unincorporated portions of the county. NCFD owns the fire protection stations and equipment but contracts with CAL FIRE for staffing and management of the facilities (Napa County 2007).

The closest fire stations to the proposed project are the NCFD, located at 3535 St. Helena Hwy, Calistoga, CA 94515, and the CAL FIRE Sonoma-Lake Napa Unit Headquarters, located at 1199 Big Tree Road, Saint Helena, CA 94574. Both fire stations are located 0.44 mile south of the proposed project area.

Police Protection

The Napa County Sheriff's Department provides law enforcement services to unincorporated portions of the county and through mutual aid agreements with the Napa City Police Department, the Vallejo City Police Department, and the California Highway Patrol. The Saint Helena Regional Office at 3801 N. St. Helena Highway, Saint Helena, CA 94574, is located adjacent to the proposed project in Bothe-Napa Valley State Park.

No emergency evacuation routes have been identified in the project area; however, SR 29 is the largest-capacity road running north and south through Napa Valley and provides important access and linkage during hazardous events. State Routes 128, 121, and 12 also serve as linkages and access throughout the county (Napa County 2020).

2.1.5.2 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

During construction, a temporary detour bridge would be constructed to detour traffic. Traffic would be diverted from SR 29 to the temporary detour bridge over several days and up to 12 nonconsecutive

nights, which would include a potential lane closure during low peak volume times. As such, construction activities would require a reduction of vehicular travel speed and result in minimal delays. Implementation of Project Feature TRA-1, Traffic Management Plan, as described in the Traffic and Transportation/Pedestrian and Bicycle Facilities section, would maintain access for emergency services throughout all phases of construction. Therefore, impacts to emergency services would be minimal.

During construction, the existing overhead utility poles and gas line would be relocated within the project area. The overhead utilities would be located outside sensitive or protected resource areas and would not limit access to adjacent properties. The project would temporarily disrupt utility services during the relocation. Caltrans would coordinate with the utility service providers prior to construction. The utility service provider would be responsible for notifying the affected household of temporary service disruption.

The project would also implement Project Features UTI-1 and UTI-2 to further reduce any utilities impacts resulting from construction activities.

Operation

The new bridge would provide the same service capacity as the existing bridge. Therefore, there would be no impact on emergency services. The project would not increase the demand for utility service, and there would be no impact.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish passage barrier would not be removed by replacing the bridge at Ritchie Creek. Therefore, there would be no impact to utilities or emergency services.

2.1.5.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No utilities AMMs would be required for the proposed project.

2.1.6 Traffic and Transportation

2.1.6.1 REGULATORY SETTING

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

In July 1999, the U.S. Department of Transportation (USDOT) issued an accessibility policy statement pledging a fully accessible multimodal transportation system. Accessibility in federally

assisted programs is governed by USDOT regulations (49 CFR Part 27) implementing Section 504 of the Rehabilitation Act (29 USC 794). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to federal-aid projects, including transportation enhancement activities.

2.1.6.2 AFFECTED ENVIRONMENT

Roadway

SR 29 is a major south-north route traversing Napa County and the City of Vallejo in Solano County. It links agricultural areas and wineries and the cities of Napa, Yountville, St. Helena, and Calistoga in the northern two-thirds of the county with more suburbanized and industrial areas in the southern portion. The portion of the route within the project limits is a conventional, two-lane highway with no high-occupancy vehicle lanes. There is no parking within the project area.

Transit

The SR 29 corridor is served by the Valley Intercity Neighborhood Express (VINE) bus service, as well as VINE Go, which provides paratransit for the elderly and disabled.

Bicycle/Pedestrian Access

There are no designated bicycle and pedestrian facilities within the project limits. Noncontinuous segments of SR 29 have shoulders that provide adequate widths (minimum 5 feet) for pedestrians and cyclists. In addition, the Silverado Trail, Napa Valley's only other south-north arterial, is a designated bike route with Class II bike facilities between the cities of Napa and Calistoga, and is less than 1 mile east of SR 29.

Current and Forecasted Traffic

Annual Average Daily Traffic (AADT) provides an overall assessment of traffic flow over the course of one year. Table 2.1-5 lists 2018 AADT, peak hour, and peak month for a segment of SR 29 in Napa County. In addition, the table includes an estimate of traffic congestion experienced during "peak hour" and "peak month".

Table 2.1-5 Current Annual Average Daily Traffic

Intersection	Back*			Ahead**		
	Peak Hour	Peak Month	AADT	Peak Hour	Peak Month	AADT
NAP-PM 22.520/Oakville Grade Road	3,700	38,000	36,200	2,800	29,500	27,400
NAP-PM 24.595/Rutherford, Jct. Rte. 128 East	2,800	29,500	27,400	2,700	27,500	25,500
NAP-PM 26.570/Zinfandel Lane	2,700	27,500	25,500	2,500	25,500	23,500
NAP-PM 28.750/St. Helena, Adams Street	2,500	25,500	23,500	2,300	23,500	21,600
NAP-PM 29.250/St. Helena, Pratt Avenue	2,300	23,500	21,600	2,000	20,600	19,600
NAP-PM 30.660/Lodi Lane	2,000	20,600	19,600	1,800	18,600	17,600
NAP-PM 33.470/Larkmead Lane	1,800	18,600	17,600	1,600	16,700	15,700
NAP-PM 36.893/Calistoga, Jct.Rte.128 Northwest	1,600	16,700	15,700	1,400	14,700	13,700
NAP-PM 37.902/Calistoga, Silverado Trail	1,400	14,700	13,700	1,300	12,800	11,800

* Back = south or west of monitoring location based on highway direction.

** Ahead = north or east of monitoring location based on highway direction.

Notes:

AADT = Annual Average Daily Traffic

PM = post mile(s)

Source: California Department of Transportation 2020d

Table 2.1-6 lists the forecast traffic data for the project vicinity. The Average Daily Traffic (ADT) were derived from Caltrans traffic census counts, the Metropolitan Transportation Commission’s Travel Demand Model, and the ADT truck traffic on the California State Highway System. Aligned with the projected county population growth (Table 2.1-2), the ADT would also increase over the next 20 years.

Table 2.1-6 Traffic Forecast Data

Year	ADT
Current Year (2020)	21,121
10-Year (2034)	26,600
20-Year (2044)	30,591

Notes:

ADT = Average Daily Traffic

Source: Caltrans 2020d

2.1.6.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

During construction, a two-lane, temporary detour bridge would be used to detour traffic while the existing bridge is undergoing demolition and the new bridge is under construction. The temporary bridge would have a 5-foot-wide footpath on the north and south sides for pedestrians and bicyclists. Detouring traffic to the temporary bridge would occur over several days. Nighttime construction activities would occur after 9:00 PM for up to 12 nonconsecutive nights between April 2023 to November 2023. The traffic detour, as well as other construction activities such as a potential lane closure, would result in temporary traffic delays

Minor roadway widening would be required to allow for the construction of the temporary detour bridge alignment with the existing roadway. A temporary 16-foot-wide access road would be created on the northwest side of SR 29 to provide access to the creek during construction. While the access road would intersect with an existing driveway, access to the private property would be maintained during construction. On the south side of the SR 29, two temporary 12-foot-wide access roads would be created within the Caltrans right of way. The temporary access road southwest of the bridge would allow for continued access to a residential driveway and the work area within the creek, and the temporary access road on the southeast side would also allow for access to the creek. The project would not provide new access to an undeveloped area nor would it influence development opportunities by expanding capacity.

The Build Alternative would not alter or reduce transit service provided by VINE or VINE Go. These transit services would remain available to local residents that are dependent on public transportation. Operation of the VINE within the project area, may experience temporary delays during construction traffic detours between SR 29 and the temporary bridge.

To minimize impacts to motorists, bicyclist, or pedestrians using local streets or SR 29, Caltrans would implement Project Feature TRA-1, Traffic Management Plan (TMP), during construction, as summarized in Appendix D. The TMP would include elements such as portable changeable message signs, and the California Highway Patrol Construction Zone Enhanced Enforcement Program would be used to minimize delays to the traveling public.

Prior to construction, Caltrans would notify adjacent property owners, businesses, Napa County Regional Park and Open Space District, and local bicycle organizations regarding construction activities and access changes.

Operation

The Build Alternative would not directly or indirectly increase or decrease capacity for vehicular traffic on local streets or SR 29. The Build Alternative would not affect access to streets, or sidewalks. Bicyclists would need to continue sharing the roadway with other vehicles as is consistent

with existing conditions. No operational impacts to circulation, bicycle and pedestrian access, or emergency access would occur as a result of the Build Alternative. The Build Alternative would have no impact on the access routes for emergency vehicles and law enforcement.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. Therefore, there would be no impact to access, circulation, and parking.

2.1.6.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs would be required.

2.1.7 Visual/Aesthetics

2.1.7.1 REGULATORY SETTING

NEPA, as amended, establishes that the federal government use all practicable means to ensure that all Americans have access to safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 USC 4331[b][2]). 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 and take into account adverse environmental effects, including, among other effects, the destruction or disruption of aesthetic values.

Likewise, CEQA establishes that the state's policy is to take all action necessary to provide the people of the state "with...enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (California PRC Section 21001[b]).

California Streets and Highways Code Section 92.3 directs Caltrans to use drought resistant landscaping and recycled water when feasible, and incorporate native wildflowers and native and climate-appropriate vegetation into the planting design when appropriate.

2.1.7.2 AFFECTED ENVIRONMENT

Information in this section is based on the Visual Impact Assessment (VIA) prepared for the project in April 2020 (Caltrans 2020e). The purpose of the VIA is to document potential visual impacts caused by the project and to propose measures to lessen any detrimental impacts that are identified. Visual impacts are demonstrated by identifying visual resources in the project area, measuring the amount of change that would occur as a result of the project, and predicting how the affected public would respond to or perceive those changes. This VIA follows the guidance outlined in the publication *Visual Impact Assessment for Highway Projects* (FHWA 2015).

Visual Setting

The project is located at Ritchie Creek Bridge, on SR 29 at post mile 33.13 in Napa County, California. At the project location, SR 29 runs north-northwest and east-southeast; for purposes of the VIA, the highway is referred to in the northbound and southbound directions, and the neighboring

lands as west and east of the highway. At the project location, SR 29 is a conventional highway, with the northbound lane overlooking private vineyards to the east and the southbound lane passing Bothe-Napa Valley State Park to the west. Ritchie Creek bisects the State Park lands upstream of the highway and runs between private vineyards downstream of the highway. Utility poles are visible running parallel to the northbound side of the highway.

The existing visual environment of SR 29 is rural with native and climatically adapted vegetation within the riparian corridor and along both sides of the highway. This vegetation includes mature trees, sub-canopy shrubs, forbs, and grasses. Vineyards located east of the highway are partially screened by a narrow strip of riparian trees within Ritchie Creek and intermittent trees located along the highway south of the bridge. Beyond the vineyards, SR 29 provides expansive views across Napa Valley and of the Vaca Mountains, which border the east side of the valley floor. Portions of the roadside between the highway and vineyards north of the bridge include a large gravel pullout and staging areas, but these areas do not interfere with the panoramic views beyond. Overall, views east of the project area consist of a highly intact agricultural and rural mountain panorama.

Dense riparian and upland vegetation screens views of Ritchie Creek and Bothe-Napa Valley State Park from the highway. The Cavanaugh-Wright House, a historic built resource located within Bothe-Napa Valley State Park, is visible near the north end of the existing bridge. Visually prominent features of the historic site include the residence, which is well set back from the highway, a broad and roughly circular gravel driveway between the residence and the highway, and rectilinear masonry walls that are partly obscured by forest duff and vegetation including grass, forbs, and moss. The historic walls associated with this site sit behind a guardrail at the north end of the bridge and continue throughout the historic site, surrounding the gravel driveway and residence. A gravity wall is present along the west bank of Ritchie Creek, and portions of this wall outside the right of way are considered a part of the historic site.

The landscape bordering Ritchie Creek consists of lush riparian vegetation with mature native trees. Presence of this vegetation provides only a brief glimpse of the creek in the southbound direction. Large oak trees at the north and south ends of the existing bridge are visually prominent in the northbound direction. There are also a few large trees, including native buckeye, willow, and oak, that flank the creek and upland areas at the north end of the existing bridge where the creek flares outward as a broader channel and provides greater visibility of the riparian corridor.

There is a prevalence of stone construction in the Napa Valley, including stone fences and walls. This architecture exists in a range of formality from rectilinear, mortared walls to loosely structured piled rock or rubble walls. The character of these walls helps visually identify the Napa Valley region, and such walls are visible from SR 29 and near the project location.

Visual Resources and Resource Change

Visual resources of the project setting are defined by assessing visual character and visual quality along a project corridor. Resource change is assessed by evaluating the visual character and quality of the visual resources that comprise the project corridor before and after construction of a project.

Visual Resources

SR 29 is listed as eligible for State Scenic Highway designation. Additionally, the following scenic resources were identified within the corridor: large oak trees adjacent to the northbound side of the bridge, remnants of the gravity stone walls adjacent to the southbound side of SR 29, rubble walls at the southbound side of the bridge adjacent to and north of the guardrail, the Cavanaugh-Wright House adjacent to the highway in Bothe-Napa Valley State Park, and the panoramic view of Napa Valley and the Vaca Mountains to the east of the project.

Visual Character

Visual character includes attributes such as form, line, color, and texture. The term is used to describe, not to evaluate areas; that is, these attributes are neither considered good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a project would be with the existing condition by using visual character attributes as an indicator.

Visual Quality

Visual quality is evaluated by identifying the vividness, intactness, and unity in the project corridor. Public attitudes validate the assessed level of quality and predict how changes to the project corridor can affect these attitudes. This process helps identify specific methods for addressing each visual impact that may occur as a result of the proposed project.

Viewers and Viewer Response

Viewer groups identified within the project area include *neighbors*, *visitors*, and *highway users*. These viewer groups fall into two categories: highway neighbors and highway users. In general, highway neighbors have views to the road, and highway users have views from the road. Viewer sensitivity and exposure to proposed resource changes varies for each viewer group based on their level of awareness. As a result, potential visual concerns can be assumed for each viewer group in response to resource change.

Highway Neighbors

Highway neighbors include residents of the historic house at Bothe-Napa Valley State Park; workers at Bothe-Napa Valley State Park and nearby winery; and visitors to the historic property, winery, and Bothe-Napa Valley State Park.

Neighbors looking to the highway from the historic property are expected to have moderate viewer exposure due to the duration of their views, vegetation removal to facilitate construction, and the tendency of residents to look out to their surroundings from their home. As such, historic property neighbors are anticipated to have high sensitivity to visual changes.

Workers at Bothe-Napa Valley State Park and nearby winery are expected to have low viewer exposure as views of the project site are heavily screened by existing vegetation. Therefore, Bothe-Napa Valley State Park and vineyard workers are expected to have low sensitivity to visual changes.

Visitors at the historic property are expected to have moderate to low viewer exposure following revegetation. Bothe-Napa Valley State Park visitors and visitors at the nearby winery are expected to have low viewer exposure of the project site due to the screening of existing vegetation. Visitors at the nearby winery would also have low viewer exposure because access to the winery is on the north side of the facility, therefore, views are away from the project location. Visitors at the historic property and winery are expected to have low sensitivity to visual changes.

Highway Users

Highway users are the largest group of viewers in the project area and include workers (regular commuters and workers travelling the corridor occasionally) and tourists traveling in Napa Valley.

Workers and tourists would have low viewer exposure due to the short duration of exposure to the project site as they would be travelling at 55 miles per hour on the highway. Tourists would also have low viewer exposure because drivers are typically less familiar with the route, which requires a higher level of attention to the roadway. Workers traveling the project corridor are expected to have moderate viewer sensitivity to visual changes. Tourists are likely to have a low viewer sensitivity to visual change because this viewer group is not anticipated to be highly familiar with the visual conditions of the existing location.

2.1.7.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

The construction and operation of the Build Alternative would result in temporary and permanent changes to visual resources within the corridor. Figure 2.1-5 depicts the existing and view of the bridge from northbound SR 29 and the view from northbound SR 29 with the Build Alternative.

Temporary visual changes are expected to be greater than permanent visual changes associated with the project due to vegetation clearing along Ritchie Creek and both sides of the highway materials staging, presence of construction equipment, and potential construction-related light and glare. To reduce temporary construction impacts, Caltrans would implement proposed Project Features AES-1 through AES-5, and AMM AES-1. Implementation of the proposed Project Features and the AMM would address effects related to the removal of vegetation and minimize the appearance of

construction equipment and staging areas along the highway. Once construction of the new bridge is completed, Caltrans would restore all areas temporarily disturbed to near pre-construction conditions in accordance with applicable permits and Caltrans' requirements. In addition, Caltrans would revegetate all previously disturbed areas with native, climate-adaptive species. Revegetation with fast-growing natives and natural hydraulic evolution of the creek channel would be expected to reduce temporary impacts to upland and riparian areas in the first 5 years following completion of the project.

Operation

Permanent changes to visual resources would result with the construction of the new bridge and the removal of vegetation. The new bridge would appear similar to the existing bridge; however, the proposed bridge rails would be taller than the existing bridge rails, and the overall length of the bridge would be longer than the existing structure to facilitate removal of the fish passage barriers. These factors would increase the visual dominance of the bridge structure and would reduce the intactness and unity of the setting, which is currently dominated by nonlinear vegetative forms, colors, and textures.

The linear form of the new bridge and simple materials employed in its construction would be similar in form and materials to the existing bridge. The new walls and concrete portions of the bridge would present a much lighter color and a uniform texture compared to the existing bridge. The new bridge would also become un-shaded as a result of the anticipated tree removals. The new bridge railing would include an architectural surface treatment that matches the immediate surroundings to the maximum extent feasible and would use one of the four approved *Manual for Assessing Safety Hardware* compliant railings, as approved by FHWA for the State of California. To reduce the effects of these changes, the project would implement AMMs AES-2 and AES-3, which would apply aesthetic treatments on the concrete portions of the new bridge and walls. The project would also install see-through bridge rails to allow visual access through the bridge rails to the riparian vegetative forms, textures, and colors, as well as to provide views of Ritchie Creek.

Caltrans would revegetate all previously disturbed areas to the maximum extent feasible. Trees replaced along the northbound side of Ritchie Creek Bridge would not duplicate the visual character of the existing scenic trees, but would in time provide a similar character. Due to anticipated vegetation removal by the utility owner, in response to vegetation management clearance requirements, permanent loss of vegetative massing on the vineyard side of the highway is expected. However, the reduction of vegetation in this area may increase the vividness of views as it would increase visibility of the scenic panorama of the Napa Valley and Vaca Mountains located east of the project area.

The Build Alternative is expected to remove and replace a portion of the retaining wall located near the guardrail north of the bridge on the north bank of the creek. These features are not visible from the highway or Bothe-Napa Valley State Park. Therefore, the removal and replacement of these

features would not result in a substantial visual change. The Build Alternative would not affect the Cavanaugh-Wright House or other portions of the historic site.

Overall, the Build Alternative would result in changes to the visual character and quality. However, with the implementation of proposed Project Features AES-1 through AES-5, and AMMs AES-1 through AES-4, such changes would be minimal, and the resulting views would be anticipated to have similar character and quality to views that are present within the corridor.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish passage barrier would not be removed by replacing the bridge at Ritchie Creek. Vegetation would remain, as would the existing historic wall adjacent to the guardrail north of the bridge. Recurring vegetation management by the utility service provider would occur along the power line and within the right of way for safety purposes. Vegetation management by the utility service provider could improve visual access to the scenic view of the Vaca Mountains and Napa Valley located east of the project. However, the view would be limited when compared to the Build Alternative. As such, the No-Build Alternative would have lower visual benefit than the Build Alternative.

2.1.7.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Caltrans would implement the following AMMs to reduce visual resources effects from construction and from the design of the new bridge:

AMM AES-1: Minimize Construction Appearance. During Construction, Caltrans would minimize the appearance of construction equipment and staging areas on SR 29 and would locate construction equipment below or clear of the highway users' line of sight of the panoramic view of the Napa Valley to the maximum extent feasible.

AMM AES-2: Bridge Rail Design. During the design phase, Caltrans would design the bridge to incorporate see-through bridge rails that allow views of the creek and adjacent vegetation as directed by Caltrans Landscape Architecture staff.

AMM AES-3: Glare Effects. During the design phase, Caltrans would design the concrete portions of the bridge including the concrete anchor blocks, wing walls, and abutments. The design would be treated with a combination of roughening surface texture and coloring concrete to reduce glare, as directed by Caltrans Landscape Architecture staff.

AMM AES-4: Post-Construction Site Grading and Contours. Prior to completion of construction activities, Caltrans would use contour grading and slope rounding to produce smooth, flowing contours consistent with site topography, to increase context sensitivity and reduce engineered appearance of slopes.

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Existing view of Ritchie Creek bridge from northbound SR 29.



View of the proposed Build Alternative from northbound SR 29.



Figure 2.1-5
View from Northbound SR 29
Ritchie Creek Bridge Replacement Project
for Fish Passage Improvement
EA 04-4J990, NAPA-29 PM 33.13
Napa County, California

2.1.8 Cultural Resources

2.1.8.1 REGULATORY SETTING

The term “cultural resources,” as used in this document, refers to the “built environment” (including structures, bridges, railroads, and water conveyance systems), 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 those described below.

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 ACHP (36 CFR 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among FHWA, ACHP, the California State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements ACHP’s regulations (36 CFR 800), streamlining the Section 106 process and delegating certain responsibilities to Caltrans. FHWA’s responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 USC 327).

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the “use” of land from historic properties (in Section 4(f) terminology, “historic sites”). See Appendix A for specific information about Section 4(f).

CEQA requires the consideration of cultural resources that are historic resources and tribal cultural resources, as well as “unique” archaeological resources. 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 historic resource. Historic resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill (AB) 52 added the term “tribal cultural resources” to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process for identifying 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 that has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historic 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 NRHP listing criteria. It further requires Caltrans to inventory state-owned structures in its

rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion on the NRHP, or are registered or eligible for registration as California historical landmarks. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding between Caltrans and the 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.

2.1.8.2 AFFECTED ENVIRONMENT

The studies for this undertaking were carried out by Caltrans Professionally Qualified Staff (PQS) in a manner consistent with Caltrans regulatory responsibilities under Section 106 of the NHPA (36 CFR Part 800) and pursuant to the January 2014 PA among FHWA, ACHP, the California SHPO, and Caltrans regarding compliance with Section 106 of the NHPA, as it pertains to the administration of the Federal Aid Highway Program in California. These studies include the results of background literature and records research, pedestrian field surveys, and consultations with the Native American community, the SHPO, other interested parties, as well as local and state authorities. The reports in Table 2.1-7 document Caltrans’ compliance with Section 106 of the NHPA.

Table 2.1-7 Section 106 Technical Reports

Report Title	Date
<i>Historic Property Survey Report</i>	May 8, 2019
<i>Archaeological Survey Report</i>	June 2019
<i>Historic Resources Evaluation Report</i>	April 2020
<i>Finding of Effect</i>	November 6, 2020

Area of Potential Effects

The Area of Potential Effects (APE) was established in consultation with Caltrans PQS in June 2019. The APE for both architectural history and archaeology encompasses the project footprint, including all areas of ground disturbing activity, and all areas of potential indirect effects. The architectural APE includes two parcels in their entirety (Assessor’s Parcel Number [APN] 022-020-003-000 and APN 022-020-004-000) and four parcels partially (APN 022- 020-005-000, APN 022-010-007-000, APN 022-033-008-000 and APN 022-033-029-000) since there is no potential to affect any built resources on other portions of those parcels.

The archaeological APE was established as all areas of project work, staging, TCEs, the boundaries of three archaeological resources, and other areas where there is a potential for direct and indirect effects to cultural resources. The vertical APE varies between 3 feet above surface for vegetation removal, access roads, road grading, metal beam guard rail replacement, and concrete pads required for the temporary detour bridge to 15 feet below ground surface for abutment removal and bridge replacement on either side of the creek.

Archaeology

Caltrans PQS conducted archaeological surveys within the archaeological APE in on October 26, 2018, and February 20, 2019, and Extended Phase I and Phase II Investigations took place from November 6, 2019, to November 15, 2019.

Caltrans contacted the Native American Heritage Commission (NAHC) on December 6, 2018, requesting a Sacred Lands File search of the proposed project location. NAHC responded on December 12, 2018, with negative results for the Sacred Lands File records search and a list of interested Native American groups and individuals. Formal notification under Section 106 and AB 52 began with letters sent on December 17, 2018, to Charlie Wright of the Cortina Indian Rancheria of Wintun Indians; Jose Simon III, Chairperson of Middletown Rancheria; Scott Gabaldon, Chairperson of Mishewal-Wappo Tribe of Alexander Valley; and Anthony Roberts, Chairperson of Yoche Dehe Wintun Nation. Sally Peterson, Tribal Vice Chairwoman for Middletown Rancheria, responded by letter on December 21, 2018, stating that they had no comments at the time and requested to be contacted if any new information was found. Leland Kinter, Tribal Historic Preservation Officer for the Yoche Dehe Wintun Nation, responded by letter on January 16, 2019. He stated that the project was not in their territory and deferred to Scott Gabaldon of the Mishewal-Wappo Tribe of Alexander Valley. On March 5, 2019, Mr. Wright was reached by phone and he stated that Napa is usually outside their territory, and he had no comments at the time. An email was sent to Mr. Gabaldon on March 5, 2019. A phone call was placed to Mr. Gabaldon on May 29, 2019, and a message was left. Mr. Gabaldon was reached by phone and was present for the archaeological testing in November 2019. Consultation is ongoing.

Identification efforts found three previously recorded prehistoric, dual-component archaeological sites (P-28-000062, P- 28-000369, and P-28-000464) within the APE. No new archaeological resources were identified as part of this effort. All three sites are recommended eligible for the NRHP under Criterion D, for their demonstrated and potential contributions to regional research issues and as historical resources under CEQA. On June 15, 2020 Caltrans received concurrence from the SHPO that P-28-000369/CA-NAP-482, P-28-000464/CA-NAP-582, P-28-000062/CA-NAP-58/H were found eligible for the NRHP.

Architectural History

Caltrans conducted architectural history surveys and research in February 2019 and January 2020. Caltrans PQS searched for properties listed or determined eligible for NRHP, CRHR, California Historical Landmarks, and California Points of Historical Interest through the National Parks Service's online NRHP library, and the California Office of Historic Preservation on-line registry inventory, and the Napa County Assessor's Office records. PQS also sought specific information on the history of the buildings on the Cavanaugh-Wright (APN 022-020-004-000) and Mitchell-Wright (APN 022-020-003 000) parcels, and information on the historic context that would not only inform their evaluations of the significance of those properties but would also uncover other properties that were not otherwise apparent.

PQS conducted research using historical contexts, comparable properties, and other available documents on the Caltrans Cultural Resource Database, online resources such as the California Digital Newspaper Collection, Heritage Quest, Sanborn Maps, David Rumsey Map Collection, and Caltrans highway as-built maps. In addition, PQS conducted research using cultural resource project files at the Caltrans District 4 Division of Environmental Planning and Engineering in Oakland, primary and secondary documentary sources at the County of Napa Planning Department, the County of Napa Library, Napa County Landmarks, and the Napa County Tax Assessors Office.

On January 8, 2019, Caltrans sent letters initiating consultation to the City of Napa, the City of Calistoga, State Parks, Napa County Historical Society, Napa County Landmarks, and the Sharpsteen Museum of Calistoga History. None of those groups responded to Caltrans' initial contact. Caltrans sent follow-up emails on March 12, 2019. The County of Napa, Napa County Historical Society, and Napa County Landmarks responded that they had no comments. No other replies were received. Caltrans has continued consultation with State Parks, the owner of the Cavanaugh-Wright and Mitchell-Wright buildings.

Two built properties within the APE required evaluation for the NRHP:

- 3701 St. Helena Highway (Cavanaugh-Wright property), Calistoga (APN 022-020-004-000)
- 3705 St. Helena Highway (Mitchell-Wright), Calistoga (APN 022-020-003-000)

The Cavanaugh-Wright property was found to be eligible for the NRHP under Criterion C and as a historical resource under CEQA because it meets CRHR criteria under Criterion 3. The Cavanaugh-Wright House at 3701 St. Helena Highway embodies virtually all the characteristics of Craftsman-style architecture as practiced throughout California in the first two decades of the twentieth century. Built in rural Napa County, its large size, its ancillary structures, and its extensive garden hardscape are not often found with such a high degree of integrity. This is especially evident in the primary residence with its sloping shed roof and dormer with recessed full-length porch, tapered columns set on the stone porch railing, stone chimney, wood siding and roof brackets, and multi-paned windows. There are other Craftsman homes in St. Helena, Calistoga, and other parts of Napa County and throughout California. However, when considered with its rural setting and unique elaborate landscaping surrounding it, the property possesses high artistic value. Therefore, the Cavanaugh-Wright property was found to be eligible for the NRHP and CRHR as described above. Under Section 106, the Cavanaugh-Wright property is considered a historic property and a state-owned historical resource under PRC Section 5024.

None of the buildings and structures at 3705 St. Helena Highway are eligible for NRHP or CRHR, and are not historical resources under CEQA. On June 15, 2020, Caltrans received concurrence from the SHPO that the Cavanaugh-Wright property at 3701 St. Helena Highway was found eligible for the NRHP.

2.1.8.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Archaeology

As described, identification efforts found three previously recorded prehistoric, dual-component archaeological sites (P-28-000062, P-28-000369, and P-28-000464) within the APE. All three archaeological sites would have portions of intact cultural deposits (identified during archaeological testing) removed during proposed construction activities, such as construction of the new bridge, temporary detour bridge, and access roads and other creek activities. Accordingly, it was determined that the Build Alternative would result an adverse effect to these three archaeological resources. The SHPO provided concurrence of this finding on November 6, 2020. The Historic Property Survey Report (HPSR) documented that Caltrans will continue to consult with the SHPO on assessment of effects to P-28-000369/CA-NAP-482, P-28-000464/CA-NAP-582, P-28-000062/CA-NAP-58/H. MM CUL-1 includes a Memorandum of Agreement (MOA) for an Archaeological Treatment Plan (ATP) and data recovery associated with the three archaeological resources to reduce the adverse effect.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find as outlined in Project Feature CUL-1.

If human remains are discovered, California 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 shall be contacted. If the remains are thought by the coroner to be Native American, the coroner will notify NAHC, who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains would contact Kathryn Rose, Branch Chief, Senior Environmental Planner, Archaeology Branch at the Caltrans Office of Cultural Resource Studies in District 04, Oakland, 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. Project Feature CUL-2 outlines requirements in the event human remains are discovered.

Architectural History

Caltrans identified one historic built resource, the Cavanaugh-Wright House, as eligible for listing on the NRHP within the APE. The Cavanaugh-Wright House at 3701 St. Helena Highway (APN 022-020-004-000) was found eligible for the NRHP under Criterion C. Contributing elements to this historic built resource include the circular driveway, a portion of the property's retaining wall along the creek, and decorative landscaping.

The Build Alternative would access the project site using an access road adjacent to the Cavanaugh-Wright House, as shown in Figure 1-2 within Chapter 1.0, Proposed Project; however, the access road would be within the Caltrans right of way and would not impact contributing historic features of the

property. In addition, the Build Alternative would remove and replace a portion of the retaining wall located along Ritchie Creek to resemble the concrete retaining wall located further upstream. In addition, the project would remove and replace a portion of the retaining wall located near the guardrail north of the bridge on the north bank of the creek to be in-kind¹. However, such removal and replacement would not result in an adverse effect to the Cavanaugh-Wright House or its contributing elements because the portion of the retaining wall is not considered to be historic or would be replaced in-kind. In order to avoid the circular driveway within the Cavanaugh-Wright property, AMM CUL-1 would require environmentally sensitive area (ESA) fencing to be installed prior to construction to visibly mark the boundaries of avoidance.

Construction would result in temporary visual impacts, increased noise levels, and increased air pollutants such as dust and particulate matter due to excavation, grading, hauling, and other construction-related activities. In addition, activities such as grading and paving would generate vibration, but no pile driving would occur, and vibration-related effects would not be excessive. As such, construction activities would be temporary and would not result in a potential indirect or direct impact to the Cavanaugh-Wright House. Therefore, construction of the Build Alternative would not result in an adverse effect the Cavanaugh-Wright House or other portions of the historic site. This determination was documented in a Supplemental HPSR with an attached Finding of Adverse Effect. The SHPO provided concurrence of this finding on November 6, 2020.

Operation

Archaeology

Operation of the Build Alternative would not require earth-moving activity or ground disturbance. The Build Alternative would not have any permanent impacts.

Architectural History

Operation of the Build Alternative would not require earth-moving activity or ground disturbance. While ADT is anticipated to increase over the next 20 years, which could result in increased traffic-related noise and vibration, the proposed bridge would carry the same capacity as the existing bridge; therefore, the Build Alternative would not have any permanent impacts.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish passage barrier would not be removed by replacing the bridge at Ritchie Creek. Therefore, there would be no impact to cultural resources.

Section 4(f)

As a historic property, Caltrans identified the Cavanaugh-Wright House as a Section 4(f) resource. A Section 4(f) *de minimis* determination was prepared to assess the Project's uses of the Section 4(f)

¹ In-kind replacement is when a new feature meets the design specification of the item it is replacing.

resources (Appendix A). The SHPO concurred with Caltrans' Finding of No Adverse Effect and *de minimis* determination on November 6, 2020. Caltrans conducted studies that evaluated archaeological resources in the vicinity of the project area in 2018 and 2019. The results of these studies identified three previously recorded archaeological resources within the study area (P-28-000369/CA-NAP-482, P-28-000464/CA-NAP-582, and P-28-000062/CA-NAP-58/H,) as eligible for listing on the NRHP and that may be affected by the project. All archaeological resources were found to be eligible for the NRHP under Criterion D for their demonstrated and potential contributions to regional research issues. Because they are found eligible under Criterion D and their value lies in the data that they may contain rather than in preserving in-place, the archaeological resources are not considered 4(f) resources and are not discussed further.

2.1.8.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

AMM CUL-1: Environmentally Sensitive Area Fencing. Prior to construction, a qualified cultural professional would install environmentally sensitive area fencing around the contributing historic elements, such as the circular driveway, of the Cavanaugh-Wright Property to visibly mark the boundaries of avoidance.

MM CUL-1: Memorandum of Agreement. In accordance with the executed MOA, Caltrans will implement Stipulation II, Treatment of the Historic Properties during construction. Caltrans will implement the *2020 Archeological Treatment Plan (ATP)* (Attachment C of the MOA). The ATP provisions for avoidance and mitigation to the archaeological resources in the project area include data recovery, archaeological monitoring of archaeological resources outside the area of direct impact, establishment of environmentally sensitive areas, and continued consultation with Native American tribes. In addition, Caltrans will collaborate with other MOA parties to finalize the technical reports that document the results of implementing and completing the ATP. The MOA is presented in Appendix I.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

2.2.1.1 REGULATORY SETTING

Executive Order 11988

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 (FHWA) 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 or 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.”

2.2.1.2 AFFECTED ENVIRONMENT

This section was prepared using the Location Hydraulic Study prepared for this project (WRECO 2020).

Watershed Description

Ritchie Creek drains a watershed area of nearly 1,600 acres at the Ritchie Creek Bridge. The bridge is located 4 miles downstream from the origin of the creek in Bothe-Napa Valley State Park, and 0.7 mile upstream from its confluence with the Napa River. The watershed basin mostly consists of forested areas and has a topographic relief of 1,999 feet.

Floodplain

In Napa County, the Napa River, a Federal Emergency Management Agency (FEMA)-designated floodway, is the primary source of flooding events. As part of the FEMA National Flood Insurance Program, each county has a Flood Insurance Study, which is used to develop Federal Insurance Rate

Maps (FIRM) and base flood elevations. The Flood Insurance Study was used to examine the floodplains in the Project area.

Storms longer than 12 hours, combined with inadequate drainage of floodwaters, can result in devastating and frequent flooding throughout the Napa Valley floor (WRECO 2020).

The project site is located within the FIRM panel number 06055C0245E, effective September 26, 2008. The 100-year flood elevation at the project site is approximately 348.3 feet North American Vertical Datum of 1988 (NAVD 88). As shown in Figure 2.2-1, a portion of the project site is within Special Flood Hazard Area (SFHA) Zone A, which represents areas subject to flooding by the 100-year flood event. A portion of the project site is located within an unshaded Zone X area, which represents areas that have moderate to minimal flood hazard and is above the 500-year flood level (WRECO 2020).

Natural and Beneficial Floodplain Uses

According to the San Francisco Bay RWQCB Basin Plan, beneficial uses for Ritchie Creek include cold and warm freshwater habitat, fish migration, preservation of rare and endangered species, contact and non-contact water recreation, fish spawning, and wildlife habitat. Beneficial uses for the Napa River include agricultural supply, municipal and domestic supply, cold and warm freshwater habitat, navigation, contact, and non-contact water recreation, wildlife habitat, and fish spawning. Ritchie Creek and the Napa River are designated high-risk receiving watersheds because they contain all three beneficial uses of cold freshwater habitat, fish migration, and fish spawning (San Francisco Bay RWQCB 2017).

2.2.1.1 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Short-term effects on the natural and beneficial floodplain uses of Ritchie Creek would occur during the construction phase. The total project boundary area is 3.11 acres, including 0.24 acre of grading within the creek area. The two-lane temporary detour bridge would be constructed to the north of the existing bridge within the SFHA Zone A floodplain. The temporary detour bridge would result in temporary fill inside the SFHA Zone A floodplain. Construction activities in the creek would be limited to the dry season (June 1 to October 31). Additionally, a temporary creek diversion system would be installed to divert creek flows around the work area during construction. Upon completion of the new bridge, the temporary detour bridge and construction equipment would be removed from the SFHA Zone A floodplain. There would be no adverse effects or encroachment on the floodplain.

Operation

The Build Alternative does not propose to change land uses in or around the project area. The predominant land uses in the project area are agriculture and open space. As discussed in

Section 2.1.1, Existing and Future Land Use, the Build Alternative would not convert existing land uses and would not displace existing businesses or residences.

The Build Alternative would not change the amount of impervious surface or add new, permanent fill inside the floodplain.

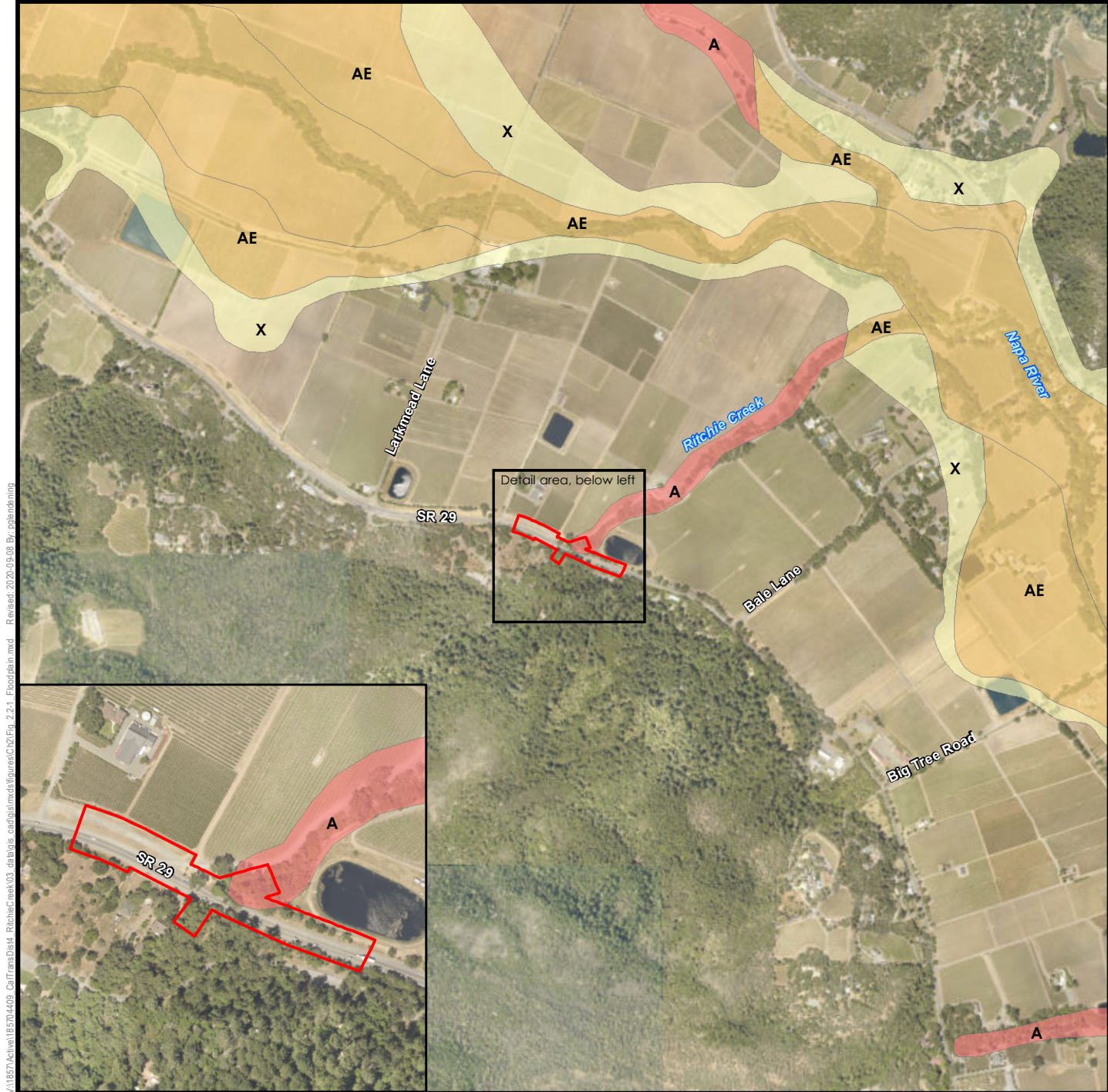
Pursuant to Chapter 820 of the California Department of Transportation's (Caltrans') Highway Design Manual, the criteria for the hydraulic design of bridges is that they are designed to pass the 50-year design discharge with at least 2 feet of distance between the water surface and the bridge or freeboard. Bridges should also be designed to pass the 100-year design discharge without freeboard added to the base flood.

Under existing conditions, there is no freeboard as the soffit elevation is 343.6 feet, and the water surface elevation is 348.3 feet during a 100-year flood event. Under the Build Alternative, the soffit elevation of the new bridge would be 344.6 feet, and the water surface elevation would be reduced by 3.3 feet to 344.9 feet during a 100-year flood event because the proposed bridge would replace the existing bridge masonry. However, the roadway elevation at the bridge is 346.7 feet, and therefore, the water surface elevation during a 100-year flood event would not overtop the bridge crossing, and the Build Alternative would not have an adverse risk of interrupting traffic flow, emergency vehicles, or emergency access on State Route 29 (SR 29).

Although the modeling results in the LHS indicate that the Build Alternative would not meet the Caltrans or FEMA bridge freeboard criteria, the Build Alternative would decrease the 100-year water surface elevation upstream and downstream of the bridge because the cross-sectional area beneath the bridge would increase (WRECO 2020). Therefore, the Build Alternative would not result in an adverse risk to property or hazard to life.

The Build Alternative would not add permanent fill inside the floodplain. Permanent beneficial impacts would result from the removal of fish passage barriers, including the subsequent habitat enhancement, and the increase in aquatic habitat. Therefore, there would be no effect on the natural and beneficial floodplain uses of Ritchie Creek. Like the existing bridge, the new bridge would continue to be located within the SFHA Zone A floodplain. As such, the Build Alternative would not introduce a new use or fill within the floodplain.

As defined by FHWA, a longitudinal encroachment is an action within the limits of the base floodplain that is longitudinal to the normal direction of the floodplain. The Build Alternative would not be parallel to the flow of Ritchie Creek. Therefore, the Build Alternative would not result in a significant encroachment into the base floodplain and there would be no significant risk with implementation of the proposed action.



V:\18571\active\185704409_CalTransDesk_RitchieCreek\03_data\figs\mxd\figures\CI02\Fig_2.2-1_Floodplain.mxd Revised: 2020-09-08 By: cplanning

Legend

- Project Site
- FEMA Flood Hazard Zones**
- A: 1% annual chance of flooding, base flood elevations not determined
- AE: 1% annual chance of flooding, base flood elevations determined
- X: Outside 500-year floodplain

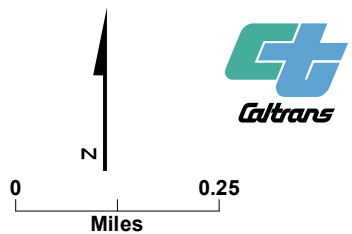


Figure 2.2-1
Floodplain Map
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, there would be no improvements to fish passage at Ritchie Creek over SR 29. The Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. Therefore, the No-Build Alternative would not have any effects related to hydrology and floodplains. No changes to the Ritchie Creek hydrology or flood flow would occur.

2.2.1.2 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or mitigation measures (MMs) are required to reduce effects related to hydrology and floodplains.

2.2.2 Water Quality And Stormwater Runoff

2.2.2.1 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 U.S. from any point source¹ unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination Service (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 stormwater 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. RWQCBs administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the United States Army Corps of Engineers (USACE).

¹ A point source is any discrete conveyance such as a pipe or a human-made ditch.

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

USACE issues two types of 404 permits: 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 a permit is based on compliance with the U.S. Environmental Protection Agency’s (EPA’s) Section 404 (b)(1) Guidelines (40 CFR Part 230), and whether the permit approval is in the public’s interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the 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 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 effluent² 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 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 least environmentally damaging practicable alternative determination, if any, for the document is included in Section 2.3.2, Wetlands and Other Waters.

State Requirements: Porter-Cologne Water Quality Control Act

California’s Porter-Cologne Water Quality Control Act (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 waters of the U.S., as well as waters like groundwater and surface waters, which are not considered waters of the U.S. Additionally, it prohibits discharges of “waste” as defined; 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.

² 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) that are required by the CWA and for regulating discharges to ensure compliance with those water quality standards. Details about water quality standards in a study area are included in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those 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 listed by the state, 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 nonpoint source controls (NPDES permits or WDRs), then the CWA requires the establishment of total maximum daily loads. Total maximum daily loads specify allowable pollutant loads from all sources (point, nonpoint, 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, total maximum daily loads, 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 Program

Caltrans Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater discharges, including MS4s. An MS4 is defined as a conveyance system (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a public body having jurisdiction over stormwater, that is designed or used for collecting or conveying stormwater. The SWRCB has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans' MS4 permit covers all Caltrans ROWs, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for 5 years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012, and became effective on July 1, 2013. It was amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014), Order No. 2015-0036-EXEC (confirmed and effective April 7, 2015), and Order No. 2017-0026-EXEC (effective November 27, 2017). The permit has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (CGP) (see below).

2. Caltrans must implement a year-round program in all parts of the state to effectively control stormwater and non-stormwater discharges.
3. Caltrans stormwater 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, Caltrans developed the Statewide Stormwater Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater 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 Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The project would be programmed to follow the guidelines and procedures outlined in the latest SWMP to address stormwater runoff.

Construction General Permit

The CGP (Order No. 2009-0009-DWQ) was adopted on September 2, 2009, and became 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 CGP regulates stormwater discharges from construction sites that result in a Disturbed Soil Area (DSA) of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activities where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than 1 acre is subject to this CGP 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 a SWPPP; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the CGP.

The CGP separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during project planning and design, and they 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 stormwater runoff pH and turbidity monitoring, and before-construction and after-construction aquatic biological assessments during specified seasonal windows. For all projects subject to the CGP, applicants are required to develop and implement an effective SWPPP. In accordance with Caltrans standard specifications, a water pollution control program is necessary for projects with a DSA of less than 1 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 waters of the U.S. must obtain a 401 water quality certification, which verifies that the project would be in compliance with state water quality standards. The most common federal permit triggering 401 certification is a CWA Section 404 permit, which is issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, depending on the project location, and are required before USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act), which defines 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 permanent and temporary discharges of a project.

2.2.2.2 AFFECTED ENVIRONMENT

Caltrans completed a Water Quality Study for the project (Caltrans 2020f). This section summarizes the findings of that review.

Regional and Local Hydrology

The project is located within the Napa River-San Pablo Hydraulic Sub-Area (206.50). The project area is within the jurisdiction of the San Francisco Bay RWQCB (Region 2) and within the jurisdiction of the Napa County MS4 permit. The San Francisco Bay Water Quality Control Plan (Basin Plan) covers all water quality regulations for the project area. The Basin Plan states the goals and policies, beneficial uses, and water quality objectives that seek to protect surface waters and groundwater throughout the San Francisco Bay region, including Ritchie Creek and the Napa River.

Ritchie Creek travels southwest to northeast and drains approximately 1,600 acres of land upstream in Bothe-Napa Valley State Park. Ritchie Creek is a tributary to the Napa River, located about 0.70 mile east of the project area. The Napa River discharges to San Pablo Bay, located about 30 miles south of the project. This area is characterized by warm and dry summers and mild, wet winters. The average precipitation is about 43 inches in the project area. As described in section 2.2.1.2, Hydrology and Floodplain, according San Francisco Bay RWQCB Basin Plan, beneficial uses for Ritchie Creek include cold and warm freshwater habitat, fish migration, preservation of rare and endangered species, contact and non-contact water recreation, fish spawning, and wildlife habitat.

Clean Water Act 303(d) List

Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of water quality limited segments that do not meet water quality standards. The Napa River is listed on the CWA 2014–2016 TMDLs and the EPA’s 303(d) List of Water Quality Limited Segments. Pollutants of concern for the Napa River are nutrients, pathogens, and sedimentation and

siltation. Water bodies that are listed under the 303(d) List as being impaired for sediment, siltation, or turbidity are also designated high-risk receiving watersheds.

2.2.2.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Construction of the Build Alternative would include relocation of existing utilities, demolition of the existing bridge, and construction of the new bridge. The amount of disturbed soil areas is estimated to be 1 acre and would include construction access routes, bridge demolition and construction areas, excavation areas, and staging areas. Construction activities would occur above, next to, and within Ritchie Creek. As such, the Build Alternative would require a Section 404 permit from USACE and a Section 401 certificate from the San Francisco Bay RWQCB.

Construction activities could result in the degradation of water quality by discharging sediment, concrete, debris, and other chemicals into Ritchie Creek and beyond the site perimeter. Access to the creek bed for demolition would be via the temporary construction access road within the Caltrans ROW along southbound SR 29. A timber mat would be constructed to contain any construction debris that would fall outside of the existing concrete apron.

Construction in the creek would be limited to the dry season between June 1 and October 31 to reduce the potential for work during high water flows in Ritchie Creek. A temporary creek diversion system would be installed to divert creek flow around the work area during construction. The temporary creek diversion system would use diversion plastic pipes with corrugated inner walls and temporary cofferdams located at the upstream and downstream ends. The cofferdams would be assembled before the beginning of any work in the creek or any water body and removed at the end of construction.

The Build Alternative would comply with the NPDES Construction General Permit and the Caltrans MS4 Permit. In accordance with the NPDES Construction General Permit, the Build Alternative would implement Project Feature HYD-1 and implement a SWPPP during construction. Prior to commencement of construction activities, the SWPPP would be prepared by the Contractor and approved by Caltrans, pursuant to the Construction General Permit and the Caltrans MS4 Permit. The SWPPP would include BMPs to protect sensitive areas, and to prevent and minimize stormwater and non-stormwater discharges.

In addition, the Build Alternative would implement Project Feature HYD-2 and incorporate temporary construction site BMPs for sediment control and material management. As outlined in Appendix D, temporary construction site BMPs would include job site management, such as the use of check dams, temporary active treatment systems, temporary cover, temporary fiber rolls, temporary silt fence, drainage inlet protection, street sweeping, and concrete washouts. Disturbed soil areas would also be stabilized by paving, rock slope protection, or erosion control. The Build Alternative would also implement AMM HYD-1, which would require Caltrans to complete

stormwater monitoring and water quality monitoring for turbidity and pH, and to prepare rain event action plans that would reduce potential impacts from the proposed in-water work and sedimentation. Therefore, with implementation of Project Features HYD-1 and HYD-2, and AMM HYD-1, potential temporary construction effects on water quality would be minimal.

Operation

Once construction is completed, the Build Alternative would include 0.24 acre of replaced impervious surface; however, the Build Alternative would have no net new impervious surface. No new impervious surface would be anticipated by the Build Alternative and thus would not increase the volume of stormwater runoff at the site. In accordance with the Caltrans MS4 permit, the Build Alternative would implement Project HYD-3 and incorporate post-construction water quality treatment BMPs and low-impact development controls to reduce non-point source pollutants. Therefore, operation of the Build Alternative would have minimal effects on water quality.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. The Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. Therefore, the No-Build Alternative would not have any effects related to water quality and stormwater runoff.

2.2.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Caltrans would implement the following AMM to reduce temporary construction effects on water quality:

AMM WQ-1: Turbidity and Water Quality Monitoring. During construction, Caltrans or its contractor would monitor for turbidity and pH during and after installation and removal of the cofferdam, as well as during dewatering activities, according to Standard Specification 13-1.01D(5)(b) Water Quality Sampling and Analysis. Water quality monitoring would be performed to document changes in turbidity and pH in compliance with water quality standards, permits, and approvals from the National Oceanic and Atmospheric Administration (NOAA), NMFS and/or CDFW. If the water quality monitor observes excursions of turbidity beyond 50 nephelometric turbidity units, or as otherwise specified in regulatory agency permits and approvals, then the water quality monitor would notify the Resident Engineer. The Resident Engineer has the authority to stop all construction work in the area until the appropriate corrective measures have been conducted. Work would resume once it is determined that water quality standards will not be violated.

2.2.3 Geology/Soils/Seismic/Topography

2.2.3.1 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 CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are a prime consideration in the design and retrofit of structures. Structures are designed using Caltrans’ Seismic Design Criteria. The Seismic Design Criteria 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 Caltrans’ Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

2.2.3.2 AFFECTED ENVIRONMENT

Caltrans completed a Geologic and Seismic Memorandum for the project (Caltrans 2020g). This section summarizes the findings of that review.

Seismicity

The project area is not intersected by an active fault. However, the project is located in a seismically active region and would be exposed to periods of strong ground shaking during a seismic event along a nearby fault. The nearest fault is the Maacama Fault located about 7.5 miles southwest of the project area.

Topography/Geology

The project area is underlain entirely by Holocene alluvial fan deposits (Figure 2.2-2). Pleistocene Sonoma volcanics are also exposed near the project area in the hillsides to the west. Alluvial fan deposits consist of varying proportions of sand, gravel, and clay deposited by Ritchie Creek as well as larger flood events related to the Napa River to the east.

Soils

Soils in the project area consist of Bale clay loam. This soil unit consists of about 24 inches of clay loam overlying gravelly sandy loam. Soils are classified by the Natural Resource Conservation Service into four Hydrologic Soil Groups based on the soil's runoff potential. Bale clay loam is within Hydrologic Group B, which are soils that have a moderate rate of water transmission and a moderate infiltration rate when thoroughly wet. These soils generally consist of moderately deep or deep, moderately well-drained, or well-drained soils that have moderately fine to moderately coarse texture.

2.2.3.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Construction of the Build Alternative would include relocation of existing utilities, demolition of the existing bridge, and construction of the new bridge. The Build Alternative would disturb 0.24 acre of soil, and would involve grading and vegetation removal. These activities would expose bare soil and may result in erosion and the loss of topsoil. The Build Alternative would comply with the NPDES Construction General Permit and would implement applicable BMPs as required by Project Features HYD-1 and HYD-2 to reduce soil erosion impacts during construction. No adverse effects related to erosion would occur.

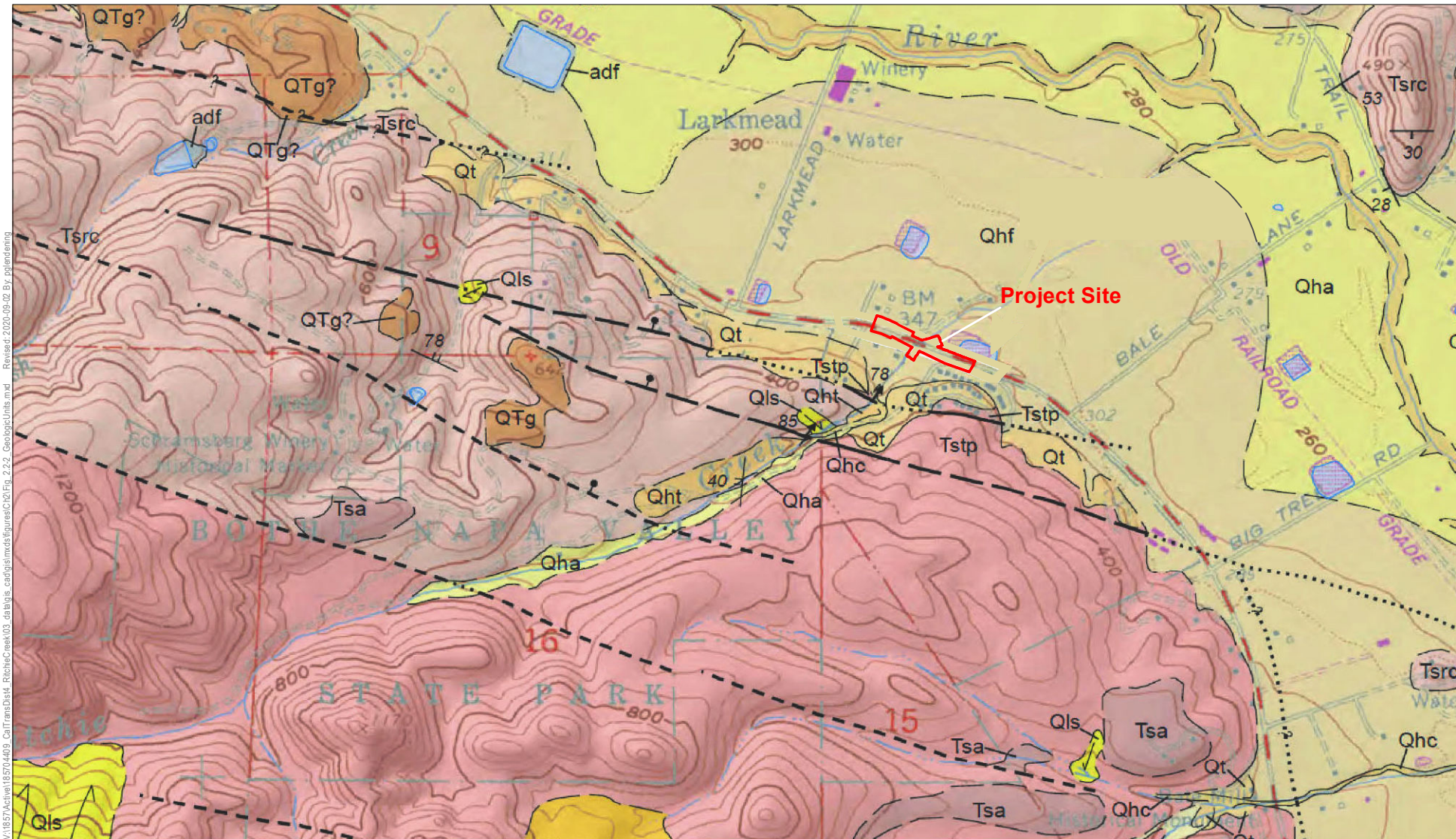
Surface Rupture

There are no active faults within the project area. Therefore, surface rupture of a known earthquake fault is not considered to pose a hazard to the Build Alternative.

Ground Shaking

Napa County is located in a highly active seismic region, and earthquake-related ground shaking is expected to occur during the design life of the Build Alternative. The nearby faults each contribute to the probability that an event would happen in the future. While strong ground shaking may occur at the site, the Build Alternative would be designed in accordance with standard engineering practices and Caltrans' current Seismic Design Criteria that would withstand the event of a strong seismic ground shaking.

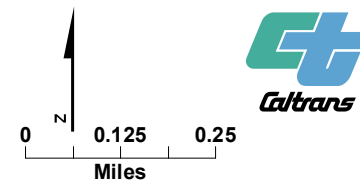
Compliance with Caltrans seismic standards would minimize the risk of strong seismic ground shaking on the structure. Therefore, the Build Alternative would not expose the public to hazards from ground shaking or to other hazards, including liquefaction, landslides, or erodible and unstable soils.



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 Revised: 2020-09-02 By: pglendenn

Legend

- Project Site
- Qhf Alluvial fan deposits (Holocene)
- Qt Stream terrace deposits (Holocene to Pleistocene)
- Qht Holocene stream terrace deposits
- Qha Holocene alluvium, undifferentiated
- Tstp Tuff of Petrified Forest (Pleistocene)
- Known Seismic Faults



**Figure 2.2-2
Geologic Unit Map**
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Loose, saturated soils pose the greatest threat during episodes of strong ground shaking. Possible hazards that could result from strong ground shaking include unstable soils, liquefaction, and landslides. Liquefaction is a phenomenon in which soils lose all shear strength and essentially turn into liquids. According to the Napa County General Plan, there is a high potential for liquefaction to occur in the project area (Napa County 2007). Future subsurface sampling would indicate if the soil within the project area is liquefiable. The project area and surrounding area are relatively flat and not located in an area subject to seismically induced landslide hazards (ABAG 2020).

Operation

The Build Alternative would be designed in accordance with Caltrans' Standard Specifications and current Seismic Design Criteria. Operation of the Build Alternative would not affect the geology and soils present at the project site. There would be no impact.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. The Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. Therefore, the No-Build Alternative would not have any effects related to geologic resources.

2.2.3.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or MMs would be required to reduce effects related to geology, soils, seismicity, and topography.

2.2.4 Hazardous Waste/Materials

2.2.4.1 REGULATORY SETTING

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

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

- Community Environmental Response Facilitation Act of 1992
- CWA
- Federal Clean Air Act [FCAA]

- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

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

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground- and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

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

2.2.4.2 AFFECTED ENVIRONMENT

Caltrans completed a Hazardous Waste Memorandum for the project (Caltrans 2020h). According to the SWRCB GeoTracker database and the California Department of Toxic Substances Control EnviroStor database, there are no known hazardous waste sites listed under Section 65962.5 of the California Government Code (also known as the Cortese list) within the project area including but not limited to hazardous waste facilities, land designated as hazardous waste property, and hazardous waste disposal sites (SWRCB 2020, DTSC 2020).

The existing Ritchie Creek Bridge structure, constructed in the 1900s and later expanded in the 1940s, may contain asbestos-containing material and lead-based paint. Heavy metals associated with vehicle tire and brake wear, oil and grease, and exhaust emissions are common pollutants along roadways. Aerially deposited lead (ADL) also exists along roadways throughout California from the historical use of leaded gasoline. As a result, surface soils under the existing bridge's steel elements may have high levels of lead due to ADL, heavy metals, and petroleum products. The project is also located in a rural agricultural area and surface soils may contain residual pesticides.

2.2.4.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

A site investigation to identify potential soil contamination levels in the project limits would be conducted prior to construction. This would help inform appropriate conditions to minimize impacts during construction. The replacement of the existing bridge would require a survey to assess the potential presence of metals, asbestos-containing material, lead-based paint, ADL, or other contaminants. Additionally, if the design of the Build Alternative would require excavation of large quantities of soil, a site investigation would be conducted to characterize the soil. The surveys and site investigation, if ultimately required, would be conducted during the design phase. The hazardous-material-related construction specifications would be developed in accordance with Section 14-11 of Caltrans Standard Specifications and would specify the handling, transportation, and disposal requirements for hazardous materials, including asbestos-containing material and lead-based paint as outlined in Project Feature HAZ-1.

ADL from the historical use of leaded gasoline exists along roadways throughout California. If encountered, soil would be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the project limits as long as all requirements of the ADL Agreement are met. As summarized in Appendix D, Project Feature HAZ-2 would require Caltrans to prepare an ADL Work Plan. In addition, Project Feature HAZ-3 would require Caltrans to prepare a Hazardous Materials Incident Contingency Plan; therefore, hazardous waste and materials would be handled in accordance with all local, state, and federal regulations and no adverse effects would occur during construction.

Operation

Operation of the Build Alternative would not release hazardous materials; however, vehicles travelling on SR 29 would continue to generate pollutants from tire and brake wear, oil and grease leaks, and exhaust emissions. The release of these pollutants would be similar to existing conditions; therefore, the Build Alternative would not result in new adverse effects.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. The Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. Therefore, the No-Build Alternative would not have any effects related to hazardous waste and materials.

2.2.4.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or MMs would be required to reduce effects related to hazardous waste and materials.

2.2.5 Air Quality

2.2.5.1 REGULATORY SETTING

The FCAA, as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by EPA and the California Air Resources Board (CARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO); nitrogen dioxide (NO₂); ozone (O₃); particulate matter, which is broken down for regulatory purposes into particulate matter of 10 micrometers or smaller (PM₁₀) and particulate matter of 2.5 micrometers and smaller (PM_{2.5}); and sulfur dioxide (SO₂). In addition, national and state standards exist for lead (Pb), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under NEPA. In addition to this environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits USDOT and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to the State Implementation Plan (SIP) for attaining the NAAQS. “Transportation Conformity” applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The Build Alternative must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. EPA regulations at 40 CFR 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for CO, NO₂, O₃, PM₁₀ and PM_{2.5}, and in some areas (although not in California), SO₂. California has nonattainment or maintenance areas for all of these transportation-related “criteria pollutants” except SO₂, and also has a nonattainment area for Pb; however, Pb is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emissions analyses of regional transportation plans (RTPs) and federal

transportation improvement programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP).

RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization, FHWA, and Federal Transit Administration make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept and scope and the “open-to-traffic” schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the Build Alternative meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and Transportation Improvement Program (TIP); the project has a design concept and scope that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and particulate matter nonattainment or maintenance areas to examine localized air quality impacts.

2.2.5.2 AFFECTED ENVIRONMENT

Caltrans completed an air quality memorandum for the project (Caltrans 2020i). The project is located within the San Francisco Bay Area Air Basin (SF Air Basin) and within the jurisdictional boundaries of the Bay Area Air Quality Management District (BAAQMD). These boundaries effectively make up the air quality study area for the project. The project is in a region characterized by warm and dry summers and mild, wet winters. The average annual precipitation is approximately 43 inches within the project area.

According to BAAQMD, O₃ and PM_{2.5} are the major regional air pollutants of concern in the San Francisco Bay Area. In Napa County, O₃ rarely exceeds health standards, but PM_{2.5} occasionally does reach unhealthy concentrations. Much of the county is wind-sheltered, which tends to trap PM_{2.5} within the Napa Valley. Napa County experiences some of the coldest nights in the Bay Area, which can lead to greater fireplace use and in turn, higher PM_{2.5} levels, and easterly winter winds often move fine-particle-laden air from the Central Valley to the Carquinez Strait and then into western Solano and southern Napa County (BAAQMD 2019).

Existing Ambient Air Quality Standards

BAAQMD monitors pollutants of concern, known as criteria pollutants, and air quality conditions throughout the SF Air Basin. Areas that do not violate ambient air quality standards are considered to have attained the standard. Table 2.2-1 summarizes state and federal attainment status for each criterial pollutant.

Table 2.2-1 State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard ⁽¹⁾	Federal Standard ⁽²⁾	Principal Health and Atmospheric Effects	Typical Sources	State Attainment Status	Federal Attainment Status
Ozone (O ₃)	1 hour	0.09 ppm	---	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from ROG _s or VOC _s and NO _x in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.	Nonattainment	---
	8 hours	0.070 ppm	0.070 ppm (Fourth highest in 3 years)			Nonattainment	Marginal Nonattainment
Carbon Monoxide (CO) ^(3, 4)	1 hour	20 ppm	35 ppm	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Attainment	Attainment
	8 hours	9.0 ppm	9 ppm			Attainment	Attainment
	8 hours (Lake Tahoe)	6 ppm	---			---	---
Respirable Particulate Matter (PM ₁₀) ⁽⁵⁾	24 hours	50 µg/m ³	150 µg/m ³ (expected number of days above standard less than or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of PM ₁₀ .	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Nonattainment	Attainment
	Annual	20 µg/m ³	--- 6			Nonattainment	---

Pollutant	Averaging Time	State Standard ⁽¹⁾	Federal Standard ⁽²⁾	Principal Health and Atmospheric Effects	Typical Sources	State Attainment Status	Federal Attainment Status
Fine Particulate Matter (PM _{2.5}) ^(5, 6)	24 hours	---	35 µg/m ³	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter—a toxic air contaminant—is in the PM _{2.5} size range. Many toxic and other aerosol and solid compounds are part of PM _{2.5} .	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NO _x , SO _x , ammonia, and ROG.	---	Moderate Nonattainment
	Annual	12 µg/m ³	12.0 µg/m ³			Nonattainment	Moderate Nonattainment
NO ₂	1 hour	0.18 ppm	0.100 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain and nitrate contamination of stormwater. Part of the “NO _x ” group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.	Attainment	Attainment
	Annual	0.030 ppm	0.053 ppm			Attainment	Attainment
SO ₂ ⁽⁷⁾	1 hour	0.25 ppm	0.075 ppm (99th percentile more than 3 years)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, and steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Attainment	Attainment
	3 hours	---	0.5 ppm			---	Attainment
	24 hours	0.04 ppm	0.14 ppm (for certain areas)			Attainment	Attainment
	Annual	---	0.030 ppm (for certain areas)			---	Attainment

Pollutant	Averaging Time	State Standard ⁽¹⁾	Federal Standard ⁽²⁾	Principal Health and Atmospheric Effects	Typical Sources	State Attainment Status	Federal Attainment Status
Sulfates	24 hours	25 µg/m ³	---	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Attainment	---
H ₂ S	1 hour	0.03 ppm	---	Colorless, flammable, and poisonous. Respiratory irritant. Neurological damage and premature death. Headache and nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Unclassified	---
Vinyl Chloride ⁽⁸⁾	24 hours	0.01 ppm	---	Neurological effects, liver damage, and cancer. Also considered a toxic air contaminant.	Industrial processes.	Unclassified	---
Visibility Reducing Particles ⁽⁹⁾	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	---	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the FCAA, which is primarily oriented toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.	Unclassified	---

Pollutant	Averaging Time	State Standard ⁽¹⁾	Federal Standard ⁽²⁾	Principal Health and Atmospheric Effects	Typical Sources	State Attainment Status	Federal Attainment Status
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Notes:

¹ California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

² Federal standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact EPA for further clarification and current national policies.

³ On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. Transportation conformity applies in newly designated nonattainment areas for the 2015 national 8-hour ozone primary and secondary standards on and after August 4, 2019 (see Transportation Conformity Guidance for 2015 Ozone NAAQS Nonattainment Areas).

⁴ Transportation conformity requirements for CO no longer apply after June 1, 2018, for the following California Carbon Monoxide Maintenance Areas (see EPA CO Maintenance Letter).

⁵ On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

⁶ The 65 µg/m³ PM_{2.5} (24-hr) NAAQS was not revoked when the 35 µg/m³ NAAQS was promulgated in 2006. The 15 µg/m³ annual PM_{2.5} standard was not revoked when the 12 µg/m³ standard was promulgated in 2012. Therefore, for areas designated nonattainment or nonattainment/maintenance for the 1997 and or 2006 PM_{2.5} NAAQS, conformity requirements still apply until the NAAQS are fully revoked.

⁷ On June 2, 2010, a new 1-hour SO₂ standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

⁸ CARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM₁₀ and, in larger proportion, PM_{2.5}. Both CARB and EPA have identified lead and various organic compounds that are precursors to ozone and PM_{2.5} as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

⁹ In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

µg/m³ = micrograms per cubic meter

CARB = California Air Resources Board

EPA = U.S. Environmental Protection Agency

FCAA = Federal Clean Air Act

NAAQS = National Ambient Air Quality Standards

NO_x = nitrous oxides

PM_{2.5} = particulate matter 2.5 microns or less in diameter

PM₁₀ = particulate matter 10 microns or less in diameter

ppb = parts per billion

ppm = parts per million

ROG = reactive organic gas

VOC = volatile organic compound

Source: EPA 2020; CARB 2019

2.2.5.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Construction activities would not last for more than 5 years at one general location. Therefore, construction-related emissions from the Build Alternative do not need to be included in a regional and project-level conformity analysis (40 CFR 93.123(c)(5)).

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment also are expected and would include CO, nitrogen oxides (NO_x), reactive organic gas (ROG), directly-emitted particulate matter (PM₁₀ and PM_{2.5}), and toxic air contaminants such as diesel exhaust particulate matter. Construction would involve minor roadway widening to accommodate the temporary bridge alignment with the existing roadway, grading, demolition of the existing bridge, building the new bridge, and removing the temporary bridge. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils.

SO₂ is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Under California law and CARB regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel (not more than 15 parts per million [ppm] sulfur), so SO₂-related issues due to diesel exhaust would be minimal. Some phases of construction, particularly asphalt paving, may result in short-term odors in the immediate area of each paving site(s). Such odors would quickly disperse to below detectable levels as the distance from the site(s) increases.

Table 2.2-2 summarizes the construction related emissions for the Built Alternative.

Table 2.2-2 Construction Related Emissions (tons per year)

Alternative	ROG	CO	NO _x	PM ₁₀	PM _{2.5}
Build Alternative	0.2	2.2	1.8	4.4	1.0
BAAQMD Thresholds of Significance	10	10	10	15	10
Exceed Threshold?	No	No	No	No	No

Notes:

CO = carbon monoxide

NO_x = nitrous oxides

PM_{2.5} = particulate matter 2.5 microns or less in diameter

PM₁₀ = particulate matter 10 microns or less in diameter

ROG = reactive organic gases

Source: Caltrans 2020h

As shown in Table 2.2.2, construction related emissions would be below the BAAQMD's thresholds of significance. Construction-related impacts to air quality would be phased over approximately 13 months and would not result in long-term adverse conditions. The Build Alternative would also implement Project Features AIR-1 through AIR-4 to further reduce any air quality impacts resulting from construction activities. Therefore, with the implementation of Project Features AIR-1 through AIR-4, temporary air quality impacts would be minimal.

Operation

The project is part of a conforming TIP and RTP and is exempt from conformity analysis per 40 CFR 93.126 (Table 2 -- Widening narrow pavements or reconstructing bridges (no additional travel lanes)). The project is listed in the 2020 TIP under the grouped listings under the 2018 State Highway Operation and Protection Program (SHOPP) – Mandates (ID 0416000037). As such, an analysis to document regional and project-level conformity is not required for the project.

Operation of the Build Alternative would carry the same number of travel lanes as the existing bridge and would not increase capacity on SR 29. Because there would be no change to the operational capacity of the highway, the Build Alternative would not increase operational criteria pollutant emissions. Furthermore, over time operational emissions would be less than existing conditions due to cleaner vehicles and more stringent regulatory requirements.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. The Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. The No-Build Alternative would not have any effects related to air quality.

2.2.5.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or MMs would be required to reduce effects related to air quality.

Climate Change

Neither the EPA nor the FHWA has issued explicit guidance or methods to conduct project-level greenhouse gas (GHG) analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the CEQA chapter of this document. The CEQA analysis may be used to inform the NEPA determination for the project.

2.2.6 Noise

2.2.6.1 REGULATORY SETTING

NEPA and CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. However, the requirements for noise analysis and consideration of noise abatement and/or mitigation differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA 23 CFR 772 noise analysis; please see Chapter 3, CEQA Evaluation, for further information on noise analysis under CEQA.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA involvement (and Caltrans, as assigned), the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 A-weighted decibels [dBA]) is lower than the NAC for commercial areas (72 dBA). Table 2.2-3 lists the NAC for use in the NEPA 23 CFR 772 analysis.

Table 2.2-3 Noise Abatement Criteria

Activity Category	Activity $L_{eq}[h]^1$	Evaluation Location	Description of Activities
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B ²	67	Exterior	Residential
C ²	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios

Activity Category	Activity $L_{eq}[h]^1$	Evaluation Location	Description of Activities
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	--	Undeveloped lands that are not permitted (without building permits)

Notes:

1. NAC, Hourly A-weighted Noise Level, $L_{eq}(h)$
2. Includes undeveloped lands permitted for this activity category.

Figure 2.2-3 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

According to Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction Reconstruction, and Retrofit Barrier Projects, April 2020*, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more) or when the future noise level with the project approaches or exceeds the NAC. A noise level is considered to approach the NAC if it is within 1 dBA of the NAC.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. Noise abatement must be predicted to reduce noise by at least 5 decibels (dB) at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible. Factors that affect the design and constructability of noise abatement include but are not limited to safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors:

- 1) The noise reduction design goal of 7 dB at one or more impacted receptors
- 2) The cost of noise abatement
- 3) The viewpoints of benefited receptors (including property owners and residents of the benefited receptors)

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft) Commercial Area	70	Vacuum Cleaner at 3 m (10 ft) Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime Quiet Suburban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Rural Nighttime	30	Library
	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Figure 2.2-3 Noise Levels of Common Activities

2.2.6.2 AFFECTED ENVIRONMENT

Information in this section is based on the Construction Noise Analysis Memorandum prepared for the project (Caltrans 2020j). The dominant sources of noise in the county are related to transportation and include automobile and truck traffic, aircraft, and trains. Stationary sources of noise in the county include construction sites, agricultural activities, and commercial and industrial facilities (Napa County 2007). Ambient noise levels in the project area were not measured but are likely moderate (71 to 80 dB) during daytime hours. This level of noise is typical of roadways with passenger vehicles and motorcycles. Noise may occasionally rise to high levels (81 to 90 dB) with larger vehicles, such as recreational vehicles, buses, or construction vehicles (USFWS 2006). There are five receptors within 1,000 feet of the project area, consisting of three residences, the Bothe-Napa Valley State Park Visitor Center, and the adjacent commercial property (winery) (Figure 2.2-4). Caltrans completed a Construction Noise Analysis Memorandum for the project to evaluate temporary construction noise (Caltrans 2020j). The findings are detailed below.

2.2.6.3 ENVIRONMENTAL CONSEQUENCES

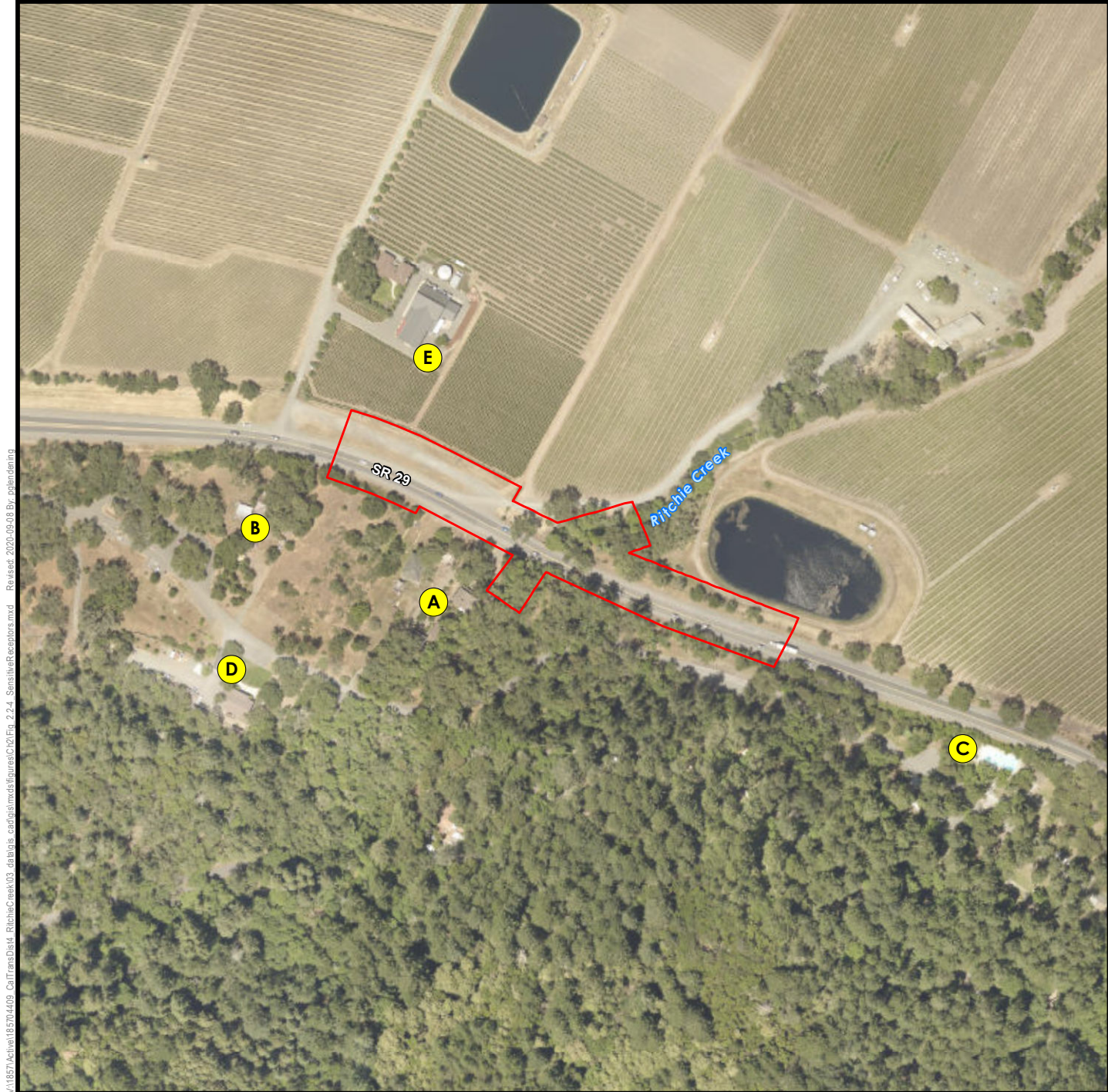
Build Alternative

Construction

Construction activities for the Build Alternative would be temporary and would be phased over approximately 13 months. No heavy construction equipment would be used from 9:00 PM to 6:00 AM as required by Section 14-8.02 of the Caltrans 2018 Standard Specifications. While the majority of construction activities would occur outside of nighttime hours of 9:00 PM to 6:00 AM, some construction activities would occur after 9:00 PM for up to 12 nonconsecutive nights between April 2023 and November 2023.

The “Procedures for Abatement of Highway Traffic Noise” (23 CFR 772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement options. Under 23 CFR 772, projects are categorized as Type I or Type II projects. Type I projects are defined as proposed federal or federal-aid highway improvements for the construction of a highway on a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. Type II projects are defined as proposed federal or federal-aid highway for noise abatement on an existing highway.

This project involves the replacement of the existing Ritchie Creek Bridge located on SR 29. The new bridge dimensions would be similar to the existing bridge and there would be no significant changes to either the horizontal or vertical alignment of the existing lanes. The project would not modify the existing number of travel lanes on SR 29, and so it would not increase traffic noise levels. Therefore, the Build Alternative is not considered a Type I or Type II project per 23 CFR 272. The Build Alternative does not require noise abatement measures. However, because of the proximity of receptors to the project, Caltrans evaluated construction noise that would be generated by the Build Alternative.



V:\1857\Active\185704409_CalTrans\Baski_RitchieCreek\03_data\figs\mxd\figures\CI02\Fig_2.2-4_SensitiveReceptors.mxd Revised: 2020-09-08 By: jopdening

- Legend**
- Project Site
 - Sensitive Receptors
 - A. Residence
 - B. Residence
 - C. Residence
 - D. State Park
 - E. Commercial (Winery)

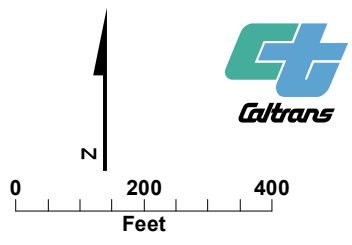


Figure 2.2-4
Sensitive Receptors within
1,000 feet of the Project Site
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

The Roadway Construction Noise Model (RCNM) was used to estimate the noise levels during construction activities at the five receptors. The model used four hypothetical non-specific locations at distances of 50 feet, 100 feet, 200 feet, and 500 feet from the project to provide a perspective on noise levels at these distances. The RCNM is FHWA's national model for the prediction of construction noise and includes representative sound levels and the estimated usage factor for the most common types of construction equipment. The usage factor represents the percentage of time that the equipment would be operating at full power. Vehicles and equipment likely to be used during each phase of construction were input into RCNM to estimate the maximum noise levels (L_{max}) and the average hourly noise levels (L_{eq}) at various distances. In some instances, the estimated L_{max} can be slightly lower than the L_{eq} . This occurs because maximum noise levels generated in short bursts by multiple pieces of construction equipment are not likely to occur at the same moment. Hourly average noise levels resulting from multiple pieces of construction equipment would be additive, resulting in slightly higher calculated noise levels. While geometric spreading (increased distance) is considered in the model, noise reduction due to other factors, such as ground absorption or shielding along the path, are not included. For this reason, the model tends to overestimate the noise levels for locations at longer distance or where obstructions (i.e., buildings) are present. Therefore, the sound levels calculated by the RCNM are conservative.

The RCNM calculated the construction noise levels for each major phase of the project, including site preparation, utility relocation, demolition of the existing bridge structure, and construction of the new bridge. Construction equipment and vehicles that are likely to be used during each construction phase were inputted into the RCNM to estimate the L_{max} and the L_{eq} at each receptor location. The RCNM results are shown in Table 2.2-4.

Section 14-8.02 of the Caltrans 2018 Standard Specifications requires that noise levels not to exceed 86 dBA within 50 feet of the job site from the hours of 9:00 PM to 6:00 AM. As shown in Table 2.2-4, the noisiest construction phase would be demolition of the existing bridge and would exceed the maximum noise limit established by Caltrans at 50 feet. However, as sound travels away from the source (activity) the sound level attenuates or drops off at a rate of 6 dBA for each doubling of the distance. This is demonstrated by the noise level results for the other hypothetical non-specific locations that are located 100 feet, 200 feet, and 500 feet from the project. The nearest receptor is a residence located 119 feet south of the project site, and based on this distance the construction noise levels would be below 86 dBA during each construction phase. The Build Alternative would also implement Project Features NOI-1, NOI-2, NOI-3, NOI-4, and NOI-5 to further reduce temporary construction noise levels. Therefore, temporary construction noise would have no adverse effects on nearby receptors. During construction, activities such as grading, and paving would generate vibration. Pile driving installation equipment is not anticipated for construction of the foundation. As such, vibration-related effects would not be excessive and would be temporary during construction.

Table 2.2-4 Roadway Construction Noise Model Results

	Map Label	Address	Type	Receptor Distance (feet)	Site Preparation (dBA)		Utility Relocation (dBA)		Bridge Demolition (dBA)		Bridge Construction (dBA)		K-Rail Placement and Removal		Erection and Removal of Temporary Bridge	
					L _{max}	L _{eq}	L _{max}	L _{eq}	L _{max}	L _{eq}	L _{max}	L _{eq}	L _{max}	L _{eq}	L _{max}	L _{eq}
Receptor Location	A	3703 St. Helena Hwy, Calistoga, CA 94515	Residence	119	76.2	72.2	76.8	71.4	82.0	78.8	76.8	76.7	74.0	70.6	74.0	73.2
	B	3720 St. Helena Hwy, Calistoga, CA 94515	Residence	292	68.4	64.4	69.0	63.6	74.3	71.0	69.0	68.9	66.3	62.8	66.3	65.4
	C	3637 CA-128, Calistoga, CA 94515	Residence	910	58.5	54.5	59.2	53.7	64.4	61.2	59.2	59.1	56.4	52.9	56.4	55.5
	D	Bothe-Napa Visitor Center, Calistoga, CA 94515	State Park	497	63.8	59.8	64.4	58.9	69.6	66.4	64.4	64.3	61.6	58.2	61.6	60.8
	E	Madrigal Family Winery 3718 St. Helena Hwy, Calistoga, CA 94515	Commercial (Winery)	253	69.6	65.7	70.3	64.8	75.5	72.3	70.3	70.2	67.5	64.1	67.5	66.6
Hypothetical Location	--	--	Hypothetical non-specific location	50	83.7	79.7	84.4	78.9	89.6	86.4	84.4	84.3	81.6	78.1	81.6	80.7
	--	--	Hypothetical non-specific location	100	77.7	73.7	78.3	72.9	83.6	80.4	78.3	78.2	75.6	72.1	75.6	74.7

	Map Label	Address	Type	Receptor Distance (feet)	Site Preparation (dBA)		Utility Relocation (dBA)		Bridge Demolition (dBA)		Bridge Construction (dBA)		K-Rail Placement and Removal		Erection and Removal of Temporary Bridge	
					L _{max}	L _{eq}	L _{max}	L _{eq}	L _{max}	L _{eq}	L _{max}	L _{eq}	L _{max}	L _{eq}	L _{max}	L _{eq}
	--	--	Hypothetical non-specific location	200	71.7	67.7	72.3	66.8	77.5	74.3	72.3	72.2	69.5	66.1	69.5	68.7
	--	--	Hypothetical non-specific location	500	63.7	59.7	64.4	57.4	69.6	66.4	64.4	64.3	61.6	58.1	61.6	60.7

Notes:

Bold: Noise level exceeds Caltrans 2015 Standard Specifications 14-8.02

dBA = A-weighted decibels

L_{eq} = average hourly noise level

L_{max} = maximum noise level

Source: Caltrans 2020j

Operation

Once construction is completed, the Build Alternative would carry the same number of travel lanes as existing conditions and would not increase traffic levels on SR 29. Therefore, operation of the Build Alternative would not increase traffic noise or vibration levels in the project area. The Build Alternative would not require implementation of noise abatement measures.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, there would be no improvements to fish passage at Ritchie Creek over SR 29. The Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. The No-Build Alternative would not have any effects related to temporary construction noise or vibration.

2.2.6.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No AMMs or MMs would be required to reduce effects from temporary construction noise and vibration.

2.3 Biological Environment

Caltrans prepared a Natural Environment Study (NES) to provide technical information to determine the extent that the project would affect plants, wildlife, and natural communities, including special-status species, potentially jurisdictional wetlands and waters, and protected natural plant communities (Caltrans 2020k). These biological resources are further detailed in the following sections. As summarized in Appendix D, Project Features BIO-1 through BIO-20 are incorporated into the project. Appendix H includes the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), California Natural Diversity Database (CNDDDB), and California Native Plant Society (CNPS) Species Lists.

2.3.1 Natural Communities

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

Project implementation may affect natural resources under jurisdiction of the California Department of Fish and Wildlife (CDFW) (Bay-Delta Region Office), NMFS, and USFWS. Regulatory requirements and laws that apply to the proposed project include California Fish and Game Code (CFGF) Sections 1600 through 1616, specifically regarding alteration of riparian habitat.

Areas that have been designated as critical habitat under the federal Endangered Species Act (FESA) are discussed in Section 2.3.5, Threatened and Endangered Species. Fish passage is also discussed in Section 2.3.5, Threatened and Endangered Species. Wetlands and other waters are discussed in Section 2.3.2, Wetlands and Other Waters.

2.3.1.1 AFFECTED ENVIRONMENT

The Biological Study Area (BSA) for the project encompasses the project area and a 100-foot buffer. The BSA is defined as the area (aquatic and terrestrial) that may be directly, indirectly, temporarily, or permanently impacted by construction. The established BSA for the project is 11.8 acres shown in Figure 2.3-1.

The BSA is located in the Mount St. Helena Flows and Valleys subsection (263Am) of the Northern California Coast section. Land use in this rural area is primarily residential and agricultural. There are large tracts of unfragmented and undeveloped natural areas near the project area, as well as active cropland, vineyards, and orchards.

Various technical studies and surveys of protected resources such as a general habitat assessment, plant surveys, wetland delineations, tree surveys, and stream surveys were conducted between October 2018 and September 2020.

Habitat Types

Habitats may be of special concern if they meet one or more of the following criteria: 1) there are federal, state, or local laws regarding their development; 2) they are limited in their distribution; and 3) they support the habitat requirements of special-status plants or animals occurring on-site. These habitats and communities include riparian corridors, waters of the U.S. and state, coastal wetlands, designated critical habitat, and essential fish habitat (EFH). Table 2.3-1 lists the habitat types present within the BSA. The following habitat types are found within the 11.8-acre BSA: developed, water, upland forest, and riparian forest. A description of each habitat type as it exists within the BSA is provided below and shown in Figure 2.3-1.

Table 2.3-1 Habitat Types in the Biological Study Area

Habitat Group	Habitat Type	Acres of BSA	Percent of BSA
Developed	Agriculture	2.04	17.3
	Roadway	1.64	13.9
	Rural Residential	3.92	33.2
Water	Agricultural Pond	0.43	3.6
	Riverine	0.25	2.1
Upland Forest	Montane Hardwood-Conifer (buckeye dominant)	0.54	4.6
	Montane Hardwood-Conifer (Douglas-fir dominant)	1.41	11.9
	Montane Hardwood-Conifer (pine-oak dominant)	0.37	3.1
Riparian Forest	Riparian Mixed Hardwood Alliance	1.22	10.3

Note:

BSA = Biological Study Area

Historically, this area of Napa County was likely dominated by seasonally flooded wet meadows and marshes supporting riparian forests, bordered by dry grassland and oak savannas. This range of habitat likely resulted in very high biodiversity. The potential natural vegetation type in the BSA is mixed evergreen, but the anthropogenic influences of agriculture and development have altered the landscape. Within the BSA today, rural residences landscaped with both native and non-native species surround the southbound side of SR 29 north of Ritchie Creek, while the northbound side is lined with vineyards abutting the riparian edges of the creek.



LEGEND

- Biological Study Area
- Habitat Types**
- Agriculture
- Montane Mixed Hardwood (Buckeye)
- Montane Mixed Hardwood (Douglas-fir)
- Montane Mixed Hardwood (Ponderosa pine-oak)
- Riparian Mixed Hardwoods
- Ritchie Creek
- Roadway
- Rural Residential

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

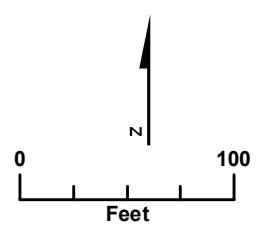


Figure 2.3-1
Habitat Characterizations
 within the BSA
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Developed areas make up 64 percent of the BSA. The portions of SR 29 and a roadway within Bothe-Napa Valley State Park account for 14 percent of the land area within the BSA. An additional 33 percent is considered rural residential, consisting of driveways, yards, houses, and retaining walls along the creek. Agricultural fields make up 17 percent of the BSA. Vineyards are particularly abundant in this area, partly due to the fertile alluvial soils found in the surrounding flat valleys and rolling foothills. These irrigated fields typically consist of one species planted in rows, sometimes with an herbaceous cover crop below. Though agricultural conversion often leads to species displacement, some wildlife species, including numerous birds, deer (*Odocoileus hemionus*), rabbit (*Lepus* or *Sylvilagus* spp.), and squirrels (various species) utilize vineyards for food and/or cover.

Water features account for 6 percent of the BSA. A portion of an approximately 1-acre pond on private property on the northbound side of SR 29 falls within the BSA. The BSA traverses 0.3 acre of Ritchie Creek. This low-elevation section of riverine habitat likely exhibits the water volumes, velocity, temperature, turbidity, and dissolved oxygen levels characteristic of a stream transitioning from a cold, fast-moving headwater stream to a lower-velocity river. Numerous species, including various aquatic invertebrates, fish, amphibians, and reptiles, depend on this type of valley stream for some or all of their life cycle. Other animals may use the creek for foraging and as a movement corridor. Riparian habitat lines the water's edges, comprising 10 percent of the BSA. Riparian habitats are often structurally complex and composed of several strata.

Along Ritchie Creek, bigleaf maple (*Acer macrophyllum*) and white alder (*Alnus rhombifolia*) are dominant in the canopy, shading an understory dominated by blackberry (*Rubus* sp.), poison oak (*Toxicodendron diversilobum*), and bigleaf periwinkle (*Vinca major*). Fish and wildlife (or signs of species) observed in the creek and riparian area include several unidentified fish, crayfish (*Pacifastacus leniusculus* or *Procambarus clarkia*), tree frog (*Pseudacris* sp.), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), California kingsnake (dead; *Lampropeltis getula californiae*), black phoebe (nest; *Sayornis nigricans*), Steller's jay (*Cyanocitta stelleri*), great blue heron (*Ardea herodias*) and black bear (scat; *Ursus americanus*).

On the south side of Ritchie Creek, the riparian hardwoods intergrade with lower montane tree species, such as Douglas fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), and various oaks (*Quercus* sp.). California bay (*Umbellularia californica*) and madrone (*Arbutus menziesii*) are also sparsely present. A portion of the west end of the BSA in Bothe-Napa Valley State Park is dominated by buckeye (*Aesculus californica*). The variable canopy cover and understory vegetation produces habitat suitable for numerous species including mule deer, black bear, wild turkey (*Meleagris gallopavo*), squirrels (*Sciurus griseus* and *Otospermophilus beecheyi*), and acorn woodpeckers (*Melanerpes formicivorus*). Reptiles may be on the forest floor in moister areas near the creek because the detritus layer may support a variety of amphibian species. Cavity nesters may find cover in the mature woodland trees. Species observed in the upland forest portions of the BSA include fence lizard (*Sceloporus occidentalis*), woodpecker, and red-shouldered hawk (*Buteo lineatus*).

Habitat Connectivity

This region of Napa County includes rural residences, vineyards, and large blocks of unfragmented habitat. Natural habitat blocks near the BSA include Sugarloaf Ridge State Park and Robert Louis Stevenson State Park. Bothe-Napa Valley State Park has been designated a small natural area and an irreplaceable and essential corridor. Ritchie Creek, as a riparian corridor, likely facilitates animal movements and flows locally between Bothe-Napa State Park and the Napa River, as well as on a landscape level between major landscape blocks. The nearly 800,000-acre Blue Ridge landscape block lies approximately 3.5 miles east of the BSA and is connected to other blocks by two major habitat linkages passing through or near the BSA.

These linkages, the Coast Range–Blue Ridge corridor and the Blue Ridge–Marin Coast corridor, potentially provide safe cover and habitat patches that support wildlife movement between the Blue Ridge and other large landscape blocks for numerous species, including bobcat, black bear, badger (*Taxidea taxus*), black-tailed deer, western gray squirrel, and mountain lion (*Puma concolor*). The eastern branch of the Blue Ridge–Marin Coast corridor, which encompasses Bothe-Napa Valley State Park and the BSA, was delineated by the least-cost movement path of mountain lion but could also serve a variety of other species, such as northern spotted owl (*Strix occidentalis caurina*), pileated (*Dryocopus pileatus*) and acorn woodpeckers, California kingsnake, western toad (*Anaxyrus boreas*), foothill yellow-legged frog (*Rana boylei*), and long-eared myotis (*Myotis evotis*). These corridors not only facilitate animal movement but also enhance climate, landscape, and population resiliency by maintaining stocks and flows across the landscape.

Tree Cover

Tree surveys were conducted in 2019 and 2020 within the BSA and the area supports several trees above 1 inch diameter breast height (dbh) including bigleaf maple (*Acer macrophyllum*), white alder (*Alnus rhombifolia*), Douglas fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), various oaks (*Quercus* sp.), California bay (*Umbellularia californica*), madrone (*Arbutus menziesii*) and buckeye (*Aesculus californica*).

2.3.1.2 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Direct temporary impacts would occur in areas where vegetation clearing would be required as part of construction for grading, construction access roads, and widening for the temporary detour bridge. Vegetation removal, including clearing and grubbing, would be completed with hand tools where possible. Chainsaws, grinders, and excavators would be used for vegetation that cannot be removed by hand. Habitat that can be avoided during construction would be flagged and delineated with an Environmentally Sensitive Area (ESA) fence as appropriate. Impacts to vegetation types are presented in Table 2.3-2.

A total of 1.22 acres of riparian habitat occurs within the project footprint. This riparian habitat is subject to regulation under California Fish and Game Code section 1600 *et seq.* and is considered a

sensitive natural community. Several Project Features would be implemented to minimize impacts to sensitive natural communities. Project Feature BIO-1 would require delineation of ESAs, and Project Feature BIO-2 would require seasonal avoidance as outlined in Appendix D. Implementation of the other Project Features listed in Appendix D and Avoidance and Minimization Measures (AMMs) listed in Appendix B would also minimize impacts to sensitive natural communities.

Tree removal would be required as part of the Build Alternative to accommodate the work area and temporary access road to the creek as well as utility relocation. An estimated 15 to 25 trees would be removed or trimmed during project activities. Tree removal and trimming may have both direct and indirect impacts on the landscape. Potential impacts include loss of food sources, as well as nesting, cover, and foraging habitat, which may affect the food web of the local community. Loss of canopy cover could also reduce wildlife movement through the BSA and alter physical and chemical characteristics of the creek, such as water temperature and dissolved oxygen levels.

To minimize impacts from tree trimming or removal, Caltrans would implement Project Feature BIO-9. This would require Caltrans to restore disturbed areas to the maximum extent practicable. In addition, AMM BIO-1 would require an approved biologist to be on-site during tree removal and trimming activities, AMM BIO-2 would require woody debris to remain on-site, AMM BIO-4 would require inspection of construction equipment prior to commencing work to prevent introduction of non-native vegetation, and AMM BIO-5 would require tree removal monitoring. Furthermore, implementation of AMM BIO-3 would require replacement planting for the loss of oak species, native species, and other species as designated by permit conditions and local ordinances. These Project Features and AMMs would minimize impacts from tree trimming or removal.

Operation

Direct permanent impacts would result from the installation of permanent structures such as the proposed wingwalls and bridge replacement. Impacts to vegetation types are presented in Table 2.3-2. Caltrans proposes to acquire a permanent right of way easement (0.01 acre) on Bothe-Napa Valley State Park for access and maintenance of the retaining walls; this would not result in changes to existing natural communities. Once construction is completed, the Build Alternative would carry the same number of travel lanes as existing conditions and would not result in changes to existing natural communities.

Table 2.3-2 Impacts to Vegetation Types

Vegetation Type	Temporary Impacts (acres)	Permanent Impacts (acres)
Agricultural Pond	0	0
Agriculture	0	0
Montane Mixed Hardwood (Buckeye)	0	0
Montane Mixed Hardwood (Douglas-fir)	0.01	0

Vegetation Type	Temporary Impacts (acres)	Permanent Impacts (acres)
Montane Mixed Hardwood (Ponderosa pine-oak)	0.18	0
Riparian Mixed Hardwoods (potentially CDFW jurisdiction)	0.37	0.01
Riverine (Ritchie Creek)	0.11	0.004
Rural Residential	0.68	0

No-Build Alternative

Construction and Operation

The No-Build Alternative would have no effect on vegetation or natural communities within the BSA because the existing Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. The fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed.

2.3.1.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following measures would be implemented:

AMM BIO-1: Approved Biologist. The names and qualifications of the proposed biomonitor(s) would be submitted to permitting agencies for approval at least 30 calendar days prior to the start of construction. Prospective credentials may be accepted and approved separately for the California freshwater shrimp and California red-legged frog (CRLF). Project activities would not begin before agency approval of the biomonitor(s).

- a) The biomonitor(s) would keep a copy of the Biological Opinions (BOs), Lake and Streambed Alteration Agreement, and other relevant permit materials in their possession when on-site.
- b) The biomonitor(s) would be on-site during all work that could reasonably result in take of the California freshwater shrimp or CRLF or other special-status wildlife, including vegetation clearing and grubbing, installation of fencing, and dewatering activities.

The biomonitor(s) would have the authority to stop work that may result in the unauthorized take of special-status species through communication with the Caltrans Resident Engineer (RE). If the biomonitor(s) exercises this authority, the applicable agencies would be notified by telephone and email within one working day.

Prior to construction, an approved biologist would coordinate with the RE to ensure that trees are removed only where necessary. Caltrans would mark trees that would be removed, and the approved biologist would be on-site during tree removal, trimming, and installation of the temporary creek diversion system. Caltrans would comply with work windows and specific removal methods to protect certain species, including birds and bats. During construction activities, an approved biologist

would be on-site to relocate California giant salamanders, western pond turtles, and foothill yellow-legged frogs to suitable habitat downstream if they are found within the project footprint. An approved biologist would be on-site to investigate burrows before grubbing or grading occur.

AMM BIO-2: Woody Debris. During construction, efforts will be made to minimize impacts to well-established vegetation, particularly within riparian areas. Snags, stumps, and woody debris will remain in place or be relocated within the riparian area if determined to be a beneficial habitat feature by the approved biologist.

After construction is complete, Caltrans would leave or return downed woody debris and snags on-site where necessary to enhance habitat complexity, provide cover, and minimize impacts to understory habitat communities.

AMM BIO-3: Tree Replacement. After construction, Caltrans or its subcontractor would conduct on-site tree replanting where feasible and/or off-site as necessary. Replacement planting would be performed for oak species for all other native species as designated by local or state permit conditions. Replanting plans would be developed during the project's design phase and in coordination with regulatory agencies, including Bothe-Napa Valley State Park. Replanting ratios are contingent upon availability of right of way.

AMM BIO-4: Equipment Inspection. During construction, to prevent the introduction of non-native vegetation to the project area, all construction-related equipment would be inspected prior to commencing work. If any such materials are present, equipment would be cleaned before commencing work.

AMM BIO-5: Tree Removal Monitoring. Regardless of bird or bat occupancy, all tree removal would be monitored by an approved biologist and conducted using a two-phase approach over two consecutive days. In the afternoon of the first day, limbs and branches would be removed using chainsaws or other hand tools, avoiding limbs with cavities, crevices, or deep bark fissures. Each tree would be shaken gently and several minutes would be allowed to pass before trimming to allow birds and bats time to arouse and leave the tree. On the second day, the remainder of the tree would be removed.

2.3.2 Wetlands And Other Waters

2.3.2.1 REGULATORY SETTING

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (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 periods of saturation and inundation). All three parameters must be present under normal circumstances for an area to be designated as a wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that decrees 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 (EPA).

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, USACE's decision to approve is based on compliance with EPA's Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Guidelines were developed by EPA in conjunction with USACE and allow for the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order (EO) 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 the Federal Highway Administration (FHWA) and Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds the following: (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 Alternative Finding must be made.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), and CDFW. Sections 1600 through 1607 of the CFGC 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 the jurisdiction of USACE may or may not be included in the area covered by a Lake and Streambed Alteration Agreement obtained from CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities that 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 Section 2.2.2, Water Quality and Stormwater Runoff, for more details.

2.3.2.2 AFFECTED ENVIRONMENT

Ritchie Creek is a tributary of Traditional Navigable Waters and is therefore considered waters of the U.S. It is also, by definition, waters of the state. The creek, including the bed, bank, channel, and adjacent riparian area, is also under the jurisdiction of CDFW.

The OHWM of Ritchie Creek was delineated on May 31, 2019, and September 19, 2019. The OHWM was established through defined bed and bank characteristics, as well as indicators such as sediment deposits, exposed roots, and drift lines. A Trimble Geo 7x handheld Global Navigation Satellite System was used to map the limits of the OHWM within the area approximately 100 feet upstream and downstream of the culvert.

2.3.2.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Work within the creek would be restricted to the dry season when flows in the creek are lowest (June 1 to October 31). Prior to work within the creek and demolition of the existing bridge, a temporary creek diversion system would be installed using diversion plastic pipes with temporary cofferdams located at the upstream and downstream ends. The cofferdams would be assembled and removed as needed during construction.

Access to the creek bed for demolition would be via the temporary construction access roads proposed within the Caltrans right of way. Removing the existing fish barriers would include eliminating the bottom concrete portions of the existing culvert and constructing a roughened channel with rock ramps to simulate a natural stream and a pool for fish to rest. As described in Chapter 1, a grid of 15-foot by 7-foot rock bands would be placed along the rock ramp portion of the proposed channel improvements. The rock bands would allow for energy dissipation and increase the channel roughness, creating more favorable conditions for fish passage. A V-shaped notch would be created along the centerline of the rock ramp portions to increase depths for fish passage during low flows. Rock slope protection (RSP) would be installed along the channel banks for erosion protection.

Impacts to Ritchie Creek are associated with project activities, including excavation, grading, installation of the temporary creek diversion system, and creation of temporary access and work areas. These activities would result in temporary impacts to the creek. A total of 0.12 acre of jurisdictional waters are estimated to be temporarily affected as shown in Table 2.3-3.

Indirect effects may stem from vegetation removal and loss of the overhanging canopy could cause changes in certain aquatic characteristics, such as water temperature and dissolved oxygen levels. Project Features would be implemented to avoid and minimize impacts to waters of the U.S. and State. Project Feature BIO-9 would require replanting, reseeding and restoration of disturbed areas, Project Feature BIO-13 would require relevant regulatory permits, Project Feature BIO-14 would require implementation of water quality and erosion control BMPs, Project Feature BIO-15 would require a water diversion plan, Project Feature BIO-16 would require bank stabilization, Project Feature BIO-17 would require minimizing ground disturbance to the extent feasible, and Project Feature BIO-18 would require agency site access if requested.

Operation

Direct permanent impacts would result from the installation of permanent structures such as the proposed wingwalls and bridge replacement. A total of 0.16 acre of jurisdictional waters are estimated to be permanently affected by this project as shown in Table 2.3-3. Removal of the existing culvert would produce a net removal of fill. Permanent beneficial impacts would result from the removal of fish passage barriers and daylighting the creek, the subsequent habitat enhancement, and the increase in aquatic habitat.

Table 2.3-3 Impacts to Waters of the U.S. and State

Aquatic Resource Type	Temporary Impact (acres)	Permanent Impact (acres)
Impacts to Waters of the U.S. and State (below ordinary high-water mark)	0.12	0.08
Impacts to Waters of the State Only (ordinary high-water mark to top of bank)	0.50	0.08
Total Impacts to Waters of the State	0.62	0.16

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the existing Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. The fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. Therefore, the No-Build Alternative would not have any effects to wetlands or other waters.

2.3.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

In addition to the Project Features listed in Appendix D, the following AMMs (also listed in Appendix B) would also be implemented for protection of Ritchie Creek:

The project would require a CWA 404 permit from USACE, a CWA 401 Water Quality Certification from the San Francisco Bay RWQCB, and a Lake and Streambed Alteration Agreement under CFGC Section 1600 from CDFW. Caltrans would consult with the San Francisco Bay RWQCB and CDFW to finalize an agreed upon list of minimization and/or mitigation measures for the permit. In addition, Caltrans would implement the following AMM to reduce temporary construction effects on water quality:

AMM WQ-1: Turbidity and Water Quality Monitoring. During construction, Caltrans or its contractor would monitor for turbidity and pH during and after installation and removal of the cofferdam, as well as during dewatering activities, according to Standard Specification 13-1.01D(5)(b), Water Quality Sampling and Analysis. Water quality monitoring would be performed to document changes in turbidity and pH in compliance with water quality standards, permits, and approvals from NMFS and/or CDFW. If the water quality monitor observes excursions of turbidity beyond 50 nephelometric turbidity units, or as otherwise specified in regulatory agency permits and approvals, then the water quality monitor would notify the Resident Engineer. The Resident Engineer has the authority to stop all construction work in the area until the appropriate corrective measures have been conducted. Work would resume once it is determined that water quality standards would not be violated.

Caltrans would also adhere to measures recommended through consultation with and required by permits from USACE, RWQCB and CDFW. Affected riparian and aquatic habitat would be restored and enhanced on-site per Project Feature BIO-9.

2.3.3 Plant Species

2.3.3.1 REGULATORY SETTING

USFWS and CDFW have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare 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 FESA or the California Endangered Species Act (CESA). Please see Section 2.3.5, Threatened and Endangered Species, for detailed information about these species.

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

The regulatory requirements of FESA can be found at 16 USC Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at CFGC Section 2050, et seq.

Department projects are also subject to the Native Plant Protection Act, found at CFGC Section 1900-1913, and the California Environmental Quality Act (CEQA), found at PRC Sections 21000-21177.

2.3.3.2 AFFECTED ENVIRONMENT

Special-Status Plants

Based on the literature review, 109 special-status plants may occur in the vicinity of the project area. Most of these species are unlikely to occur within the BSA due to lack of suitable habitat and the level of anthropogenic disturbance. Twelve special-status plant species were identified as having moderate potential to occur within the BSA based on their habitat requirements as summarized in Table 2.3-4. For a complete list of species, see the Caltrans NES (Caltrans 2020k).

Baker's Navarretia (Navarretia leucocephala ssp. bakeri)

Baker's navarretia is a CNPS List 1B.1 plant with no special state or federal status. This annual herb is endemic to California, growing at a range of elevations between the San Francisco Bay and the Oregon border. It is found in mesic areas, including meadows, seeps, woodlands, and vernal pools, and blooms between April and July.

There is one extirpated occurrence of Baker's navarretia on the California Natural Diversity Database (CNDDDB) approximately 2 miles from the BSA.

Bristly Leptosiphon (Leptosiphon acicularis)

This species, a CNPS List 4.2 plant with no special state or federal status, inhabits grassy areas in chaparral, oak woodland, and coastal prairie habitats at elevations below 2,300 feet throughout the North Coast and North Coast Ranges. This annual herb blooms between April and May and possibly through July.

This species was historically found in the area, but there are no recent observations on CNDDDB or CalFlora.

Green Monardella (Monardella viridis)

Green monardella is a CNPS List 4.3 species endemic to California. This serpentine-tolerant species inhabits chaparral, oak woodland, and conifer forest. A perennial herb in the mint family, green monardella occurs at elevations between 490 and 2,625 feet and blooms between June and September.

CalFlora has four recorded observations of this plant between 1900 and 2013 within 5 miles of the project footprint.

Table 2.3-4 Special-Status Plant Species with Potential to Occur in the Biological Study Area

Scientific Name Common Name	Listing Status			Flowering Period	Habitat Preferences and Range	Species Potential to Occur in the BSA
	Federal	State	CNPS			
<i>Amorpha californica</i> var. <i>napensis</i> Napa False Indigo			1B.2	April to July	Deciduous shrub endemic to chaparral and upland woodland openings in Napa, Sonoma, and Marin counties, 390-6,560 feet.	Moderate potential. Woodland habitat is present, though canopy may be too closed and local elevations may be too low for this species' preferences. BSA is within known range of this species. Species not found within the BSA during floristic surveys. Fourteen CNDDDB occurrences within 5 miles, but all are above 410 feet elevation.
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i> Rincon Ridge Manzanita			1B.1	February to April	Perennial evergreen shrub known from about 10 occurrences. Inhabits rhyolitic chaparral and woodland in Napa and Sonoma Counties, 245-1,215 feet. Tends to grow along slopes and ridges.	Moderate potential. Potential woodland habitat present, though terrain is flat and canopy may not be open enough for this species. BSA is within probable range of this species. Species not found within the BSA during floristic surveys. One CNDDDB occurrence and numerous CNPS observations within 5 miles of the BSA.
<i>Astragalus claranus</i> Clara Hunt's Milk-vetch	E	T	1B.1	March to May	Grows on rocky, thin clay, often serpentinite or volcanic, soils in open grassy areas and chaparral openings, 245-900 feet. Annual herb. Confined to Napa and Sonoma counties.	Moderate potential. BSA does not contain certain habitat characteristics, such as grassy or chaparral openings, but does contain volcanically-derived clay soils. BSA is within the known range of this species. Species not found within the BSA during floristic surveys, but closest CNDDDB occurrence is in Bothe-Napa State Park.
<i>Brodiaea leptandra</i> Narrow-anthered Brodiaea			1B.2	May to July	Perennial bulbiferous herb native to the southern end of the North Coast Ranges. Occupies gravelly, volcanic substrates in open forests, woodlands, and chaparral, 360-3,000 feet.	Moderate potential. BSA contains semi-open forest habitat and volcanically-derived soils; BSA is within the probable range of this species. Species not found within the BSA during floristic surveys. Closest CNDDDB occurrences in Bothe-Napa State Park.
<i>Erigeron biolettii</i> Streamside Daisy			3	June to October	Found on dry rocky slopes and ledges along rivers in woodlands and forests in the Klamath and outer North Coast Ranges, 95-3,600 feet.	Moderate potential. The banks of Ritchie Creek could provide habitat for this species. BSA is within the confirmed range of this species. Species not found within the BSA during floristic surveys. Several CNPS observations within 5 miles of the BSA.
<i>Harmonia nutans</i> Nodding Harmonia			4.3	March to May	Annual herbaceous resident of the Vaca, Howell, and southern Mayacamas ranges in Napa County. Grows on rocky, usually volcanic substrates in open or disturbed sites within chaparral and woodland, 245-3,280 feet.	Moderate potential. Disturbed woodland with volcanic soils present in the BSA; BSA is within the confirmed range of this species. Species not found within the BSA during floristic surveys, but there are numerous CNPS observations within 5 miles.
<i>Leptosiphon acicularis</i> Bristly Leptosiphon			4.2	April to July	A California endemic found west of the Central Valley from the San Francisco Bay north to Humboldt County, <2,300 feet. This annual herb prefers grassy areas of coastal prairie, chaparral, and oak woodland.	Moderate potential. Grassy woodland present. Species not found within the BSA during floristic surveys. One CNPS observation within 5 miles of the BSA.
<i>Leptosiphon jepsonii</i> Jepson's Leptosiphon			1B.2	March to May	Annual herb distributed primarily throughout Napa and Sonoma counties, occupying open or partially shaded grassy slopes in woodland and chaparral. Typically found on volcanic soils, <1,640 feet.	Moderate potential. Grassy woodland with volcanic soils present. Species not found within the BSA during floristic surveys, but numerous CNDDDB occurrences within 5 miles of the BSA.
<i>Lessingia hololeuca</i> Woolly-headed Lessingia			3	June to October	Grows in grasslands, forests, roadsides, and coastal scrub, 45-1,000 feet, along the central and northern California coast ranges and inland to the Sacramento Valley. Often associated with clay serpentine or alkaline soils.	Moderate potential. BSA contains woodland and roadsides with clay soils. Species not found within the BSA during floristic surveys, but there are several CNPS observations within 5 miles of the BSA.
<i>Monardella viridis</i> Green Monardella			4.3	June to September	Perennial herbaceous member of the mint family. Resides in foothill woodland, chaparral, and conifer forest habitats in the inner North Coast Ranges (Napa, Lake, Sonoma cos.) between 325 and 3,315 feet. Serpentine tolerant.	Moderate potential. BSA contains woodland habitat and is within the known range of this species. Species not found within the BSA during floristic surveys. Several CNPS observations within 5 miles of the BSA.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's Navarretia			1B.1	April to July	Annual herb endemic to California woodlands and grasslands from San Francisco Bay north to the Oregon border. Grows at a range of elevations in mesic areas, including meadows, seeps, and vernal pools.	Moderate potential. Woodland habitat present. Species not found within the BSA during floristic surveys. One CNDDDB occurrence within 5 miles of the BSA.
<i>Trichostema ruygtii</i> Napa Bluecurls			1B.2	June to October	Annual herb limited to moist open habitats, often with thin clay soils, in chaparral, woodland, and mixed evergreen forest in the southern Mayacamas Mountains, 95-1,970 feet.	Moderate potential. Potential woodland habitat present. Species not found within the BSA during floristic surveys. One CNDDDB occurrence within 5 miles of the BSA.

Notes:

Conservation status definitions are as follows:

Federal designations:

- C Candidate: any species proposed for federal listing.
- X Critical habitat designated.

State designations:

- R Rare: any species not currently threatened with extinction, but that exists in such small numbers throughout its range that it may become endangered if its present environment worsens.

CNPS Rankings:

- 1A Plants presumed extirpated in California, and either rare or extinct elsewhere.
- 1B Plants rare, threatened, or endangered in California and elsewhere.
- 2A Plants presumed extirpated in California, but more common elsewhere.
- 2B Plants rare, threatened, or endangered in California, but more common elsewhere.
- 3 Plants about which more information is needed

CNPS Threat Categories:

- .1 Seriously threatened in California.
- .2 Moderately threatened in California.
- .3 Not very threatened in California.

BSA = Biological Study Area

CNDDDB = California Natural Diversity Database

CNPS = California Native Plant Society

Sources: CalFlora, calscape.org, CNPS, USFWS, CDFW, Jepson Herbarium.

Jepson's Leptosiphon (Leptosiphon jepsonii)

Jepson's leptosiphon is a CNPS List 1B.2 plant with no special state or federal status. This spring-blooming annual herb occurs throughout the northern part of California's San Francisco Bay Area, growing at elevations between 325 and 1640 feet. It is found in open or partially shaded grassy slopes, woodland, and chaparral, often on volcanic soils.

There are three CNDDDB occurrences of Jepson's leptosiphon within 5 miles of the project footprint. All of these are presumed extant, and two are from 2007 and later.

Napa Bluecurls (Trichostema ruygtii)

Napa bluecurls is a CNPS 1B.2 List annual herb inhabiting open areas in a variety of habitats, often on thin clay soils, in the North Coast Ranges at elevations 95 and 1,970 feet. This species is tolerant of seasonally saturated soils. The blooming period for this member of the mint family is June to October.

The closest occurrences of Napa bluecurls to the project footprint are approximately five miles from the project site near Las Posadas State Forest.

Napa False Indigo (Amorpha californica var. napensis)

Napa false indigo is a CNPS List 1B.2 plant endemic to Napa, Sonoma, and Marin Counties. This shrub in the Fabaceae family inhabits chaparral and woodland openings at elevations 390 and 6,560 feet and blooms between April and July.

CNDDDB has 15 recorded occurrences of this plant within 5 miles of the project footprint, all of which are presumed extant. At least nine of these occurrences are less than 20 years old.

Narrow-anthered Brodiaea (Brodiaea leptandra)

Narrow-anthered brodiaea is a CNPS List 1B.2 perennial herb inhabiting gravelly, volcanic substrates in open forests, chaparral, and woodlands in the North Coast Ranges between 360 and 3,000 feet. The blooming period for this species is May to July.

There are seven CNDDDB occurrences of narrow-anthered brodiaea within 5 miles of the project footprint, and six are presumed extant. Five of these occurrences are from 2002 and later.

Nodding Harmonia (Harmonia nutans)

This species is a CNPS List 4.3 plant with no special state or federal status that resides in rocky open or disturbed areas in chaparral and woodland, often on volcanic substrates, at elevations between 245 and 3,280 feet. Endemic to the southern North Coast Ranges, this annual herb blooms between March and May and possibly through June.

There are at least 30 CalFlora observations of nodding harmonia within 5 miles of the project footprint from 1904 to 2013.

Rincon Ridge Manzanita (Arctostaphylos stanfordiana ssp. decumbens)

Rincon Ridge manzanita is a CNPS List 1B.1 plant with no special state or federal status. This early-blooming perennial evergreen shrub, known from approximately ten occurrences in Napa and Sonoma Counties, inhabits rhyolitic chaparral and woodlands at elevations between 245 and 1215 feet.

There is one CNDDDB occurrence of Rincon Ridge manzanita near the project area, approximately 3.8 miles northwest of the BSA. This occurrence, from 2008, is presumed extant.

Streamside Daisy (Erigeron biolettii)

Streamside daisy is a CNPS List 3 plant with no special state or federal status. This perennial herb is endemic to California, with occurrences along the Northern California coast and throughout the outer North Coast Ranges. This species resides on dry slopes, rocky mesic areas, and ledges along rivers in a variety of forest and woodland habitats at elevations less than 3610 feet. The blooming period for this member of the aster family is June to October.

There are eight CalFlora records for this species within 5 miles of the project footprint, with the most recent from 2007.

Woolly-headed Lessingia (Lessingia hololeuca)

This June-to-October-blooming annual herb is on the CNPS 3 List. It inhabits a variety of habitats, including chaparral, grassland, and coastal scrub, often on clay and sometimes on serpentine or alkali soils at elevations between 30 and 1,970 feet in the North and South Coast Ranges.

There are 13 CalFlora observations of woolly-headed lessingia within 5 miles of the project footprint. The most recent observation is from 1996.

2.3.3.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Twelve special-status plant species were identified as having moderate potential to occur within the BSA based on their habitat requirements. None of the special-status plants were observed during general floristic surveys completed throughout early 2020.

Project Feature BIO-4 would require a qualified biologist to conduct surveys for special-status species during construction on work days. In addition, Project Features BIO-9 and BIO-11 would reduce the spread of invasive plant species and minimize the potential decrease of palatable vegetation for wildlife species. Impacts to plants during vegetation removal would be minimized with the implementation of Project Feature BIO-10. Furthermore, AMM BIO-4 would require construction equipment to be inspected prior to commencing work. AMM BIO-6 would require an approved biologist to conduct surveys for special-status plant species prior to construction. With the

implementation of the project features and avoidance measures, impact to special-status plant species would be minimal.

Operation

Once construction is completed, the Build Alternative would carry the same number of travel lanes as existing conditions and would not result in changes to special-status plant species.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the existing Ritchie Creek Bridge would not be replaced, and the existing travel lanes, shoulders, and utilities would remain. The fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. Therefore, the No-Build Alternative would not have any effects to plant species.

2.3.3.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

In addition to the Project Features listed in Appendix D, the project would incorporate the following AMMs:

AMM BIO-4: Equipment Inspection. Refer to Section 2.3.1.3 for the description of this measure.

AMM BIO-6: Special-Status Plant Species Survey. An approved biologist would conduct surveys for special-status plant species in suitable habitat at least 48 hours and no more than one week prior to the start of construction activities within off-pavement work locations. If a special-status plant is discovered, an approved biologist would establish an appropriate exclusion buffer and coordinate with the resource agencies.)

2.3.4 Animal Species

2.3.4.1 REGULATORY SETTING

Many state and federal laws are administered to protect wildlife. USFWS, NMFS, and 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 FESA or CESA. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5, Threatened and Endangered Species. All other special-status animal species are discussed in this Section, including CDFW Fully Protected (FP) species and Species of Special Concern (SSC), and USFWS or NOAA NMFS candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act (NEPA)
- Migratory Bird Treaty Act (MBTA)
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- CEQA
- California Fish and Game Code

2.3.4.2 AFFECTED ENVIRONMENT

Based on the literature review, 33 special-status animals may occur in the vicinity of the project. Many of these species are unlikely to occur within the BSA due to a lack of suitable habitat, the level of anthropogenic disturbance, and a lack of habitat connectivity. Nine special-status animal species were identified as having a moderate or high potential to occur within the BSA based on their habitat requirements as shown in Table 2.3-5.

Bat Species

Pallid Bat (*Antrozous pallidus*)

The pallid bat is listed as an SSC by CDFW. This species can be found in deserts, oak and pine forests, and open farmland throughout much of the western half of North America. The pallid bat prefers to roost on rocky outcrops, but may also use caves, rock crevices, mines, hollow trees, and buildings. Breeding in California typically occurs between August and September.

There are six CNDDDB occurrences between 1948 and 2017 of the pallid bat within 5 miles of the BSA. Four occurrences are presumed extant; the remaining two may be extirpated.

The pallid bat or signs of its presence were not observed during surveys. One bat was observed (*Myotis* spp.) during a focused bat survey on October 16, 2020. Long vertical crevices were observed along the side walls of the culvert between the original structure and the later expansion that could be used by roosting bats.

Townsend's Big-eared Bat (*Corynorhinus townsendii*)

The Townsend's big-eared bat is listed as an SSC by CDFW. This species roosts in a variety of sites, especially in mesic habitats, throughout the western half of North America. In California, Townsend's big-eared bats usually breed between November and February.

There are five CNDDDB occurrences of this species within 5 miles of the BSA from 1945 to 2012. All are presumed extant.

The Townsend's big-eared bat or signs of its presence were not observed during surveys. Large cavities for roosting, including basal tree cavities, caves, mines, tunnels, buildings, or other man-made structures do occur adjacent to the project.

Western Pond Turtle (*Emys marmorata*)

The western pond turtle is considered an SSC by CDFW. Western pond turtles are found in ponds, marshes, rivers, streams, irrigation ditches, and other aquatic habitats, usually with

Table 2.3-5 Special-Status Animal Species with Potential to Occur in the Biological Study Area

	Common Name Scientific Name	Listing Status			Habitat Preferences and Range	Species Potential to Occur in the BSA
		Federal	State	CDFW		
Mammals	<i>Antrozous pallidus</i> Pallid Bat			SSC	Distributed throughout much of the western half of North America, from British Columbia south to Baja California. Uses a wide variety of habitats, but most common in dry, rocky habitats, such as deserts and grasslands, near water and open areas for foraging. Typically use three types of roosts—day roosts may be a warm, horizontal opening in attics or crevices; night roosts are in the open (such as open porches or under bridges) with nearby foliage, usually near foraging grounds; hibernation roosts may be in canyon wall crevices, caves, buildings, or cracks in rocks. Feeds on a wide variety of insects and arachnids.	Moderate potential. Open foraging areas available around the BSA. Species could find day or night roosting habitat within the BSA. Species not observed within the BSA during habitat surveys. Numerous CNDDDB occurrences within 5 miles of the BSA.
	<i>Corynorhinus townsendii</i> Townsend's Big-Eared Bat			SSC	Occurs throughout much of the western U.S., except alpine and sub-alpine habitats. Requires large cavities for roosting, including basal tree cavities, caves, mines, tunnels, buildings, or other man-made structures; hibernation roosts are in similar locations. In summer, females form maternity colonies to raise pups, while males are generally solitary. Hibernates in tight clusters in winter. Nocturnal predator of insects, especially (and potentially almost exclusively) moths. Prefers mesic habitats.	Moderate potential. Open foraging areas available around the BSA. Species could find day or night roosting habitat within the BSA. Species not observed within the BSA during habitat surveys. Numerous CNDDDB occurrences within 5 miles of the BSA.
Birds	<i>Accipiter cooperii</i> Cooper's Hawk			WL	Year-long inhabitant of forests, woodlands, and riparian edges throughout California. Feeds mostly on medium-sized birds; also takes small birds and mammals, often hunting stealthily from perches. Builds nests 25-50 feet above the ground in tall pines, oaks, and other tree species in dense woods.	Moderate potential. BSA contains potential nesting and foraging habitat. Species not observed within the BSA during habitat surveys. No CNDDDB occurrences within 5 miles.
	<i>Accipiter striatus</i> Sharp-shinned Hawk			WL	Native to mixed and coniferous forests, open woodlands, thickets, and forest edges of North and South America. In California, may be winter or permanent resident. Preys mainly on small birds, but also feeds on small mammals, reptiles, amphibians, and insects. Breeds in dense forests, typically mixed stands with closed canopies. Nests are well-hidden in tall, often coniferous, trees.	Moderate potential. BSA contains potential foraging and nesting habitat. Species not found within the BSA during habitat surveys. One CNDDDB occurrence within 5 miles of the BSA.
	<i>Progne subis</i> Purple Martin			SSC	Cavity-nester with scattered breeding sites around woodland edges, forest clearings, and lowland desert in northern California and a small portion of Southern California; most populations in eastern U.S. Aerial forager for insects over a wide variety of open habitats.	Moderate potential. Cavities for nesting were not observed, but BSA contains suitable woodland habitat. Species not observed during habitat surveys. Three CNDDDB occurrences within 5 miles of the BSA.
Reptiles	<i>Emys marmorata</i> Western Pond Turtle	R		SSC	Native to the west coast from Mexico to Washington. Found in aquatic habitats with suitable basking sites and vegetation for cover. Terrestrial habitats used for wintering, egg-laying, and foraging. Omnivorous, feeding on flowers, algae, amphibians, fish, crustaceans, and insects.	Moderate potential. Suitable aquatic and nesting habitat present within the BSA. Species not observed during habitat surveys. Several CNDDDB occurrences within 5 miles of the BSA.
Amphibians	<i>Dicamptodon ensatus</i> California Giant Salamander			SSC	Resides in or near streams and occasionally in lakes and ponds in humid coastal forests, especially Douglas fir, redwood, and red fir forests in montane and valley-foothill riparian habitats up to 6,500 feet. Breeds between March and May, depositing eggs on the bottom of streams with cold, relatively slow water, often concealed under rocks or debris. Adults may retain gills as aquatic adults in permanent streams. Aquatic adults and larvae consume aquatic invertebrates, fish, and amphibians. Terrestrial adults are typically found under surface litter and in tunnels and feed on a variety of small invertebrates, mammals, reptiles, and amphibians.	Moderate potential. Potential aquatic habitat present within the BSA. Burrows near aquatic habitat not observed. Species not observed during habitat surveys. Two CNDDDB occurrences within 5 miles of the BSA.
	<i>Rana boylei</i> Foothill Yellow-legged Frog, Northwest/North Coast Clade			SSC	Lives in mountainous regions throughout northern and coastal California and the Central Valley. Found in or near rocky permanent streams in a variety of habitats from sea level to 6,370 feet. Breeds in late spring to early summer; females deposit egg masses on rocks in slower-moving streams and rivers. Tadpoles feed on algae, diatoms, and detritus, while adults consume a variety of insect and other invertebrate prey.	High potential. Suitable aquatic habitat present within the BSA. Species not found within the BSA during habitat surveys. Several CNDDDB occurrences within 5 miles of the BSA.
Insects	<i>Bombus occidentalis</i> Western Bumble Bee		CE		Eusocial generalist pollinator, visiting a wide range of plant species that provide nectar and pollen during the colony's life cycle of February to November. Prior to 1998, considered widespread and common throughout its historic range of northwestern North America. Forms annual colonies; queen emerges from hibernation in late winter to early spring to select a nest site, typically an underground cavity such as an old animal burrow or nest. The queen lays 8-16 eggs to start the new colony; over the season, the colony can grow to 1,600 individuals. At the end of the season, young females leave the hive to mate. After mating, gynes dig a hole to hibernate for the winter; the rest of the colony dies out.	High potential. A variety of flowering plants grow within the BSA; species could forage and nest in the BSA. Species not observed during habitat surveys. One CNDDDB occurrence within 5 miles of the BSA.

Sources: USFWS, CDFW, NMFS IUCN Redlist.

Conservation status definitions are as follows:

Federal designations:

- E Endangered: any species in danger of extinction throughout all or a significant portion of its range.
- T Threatened: any species likely to become endangered within the foreseeable future.
- C Candidate: any species proposed for federal listing.
- R Review: listing status under review.
- X Critical habitat designated.
- Y Critical habitat proposed.

State designations:

- CE Candidate Endangered
- E Endangered: any species in danger of extinction throughout all or a significant portion of its range.
- T Threatened: any species likely to become endangered within the foreseeable future.
- R Rare: any species not currently threatened with extinction, but that exists in such small numbers throughout its range that it may become endangered if its present environment worsens.
- SSC Species of Special Concern: any species which meets the state definition of threatened or endangered, but has not been formally listed.
- FP Fully Protected: early designation given to species that were rare or facing potential extinction.

aquatic vegetation, throughout California. This species requires basking sites and nearby sandy or grassy open upland habitat for egg-laying.

There are three CNDDDB occurrences of this species from 2002 and 2017, all in waterways with connectivity to Ritchie Creek and within 5 miles of the BSA.

The western pond turtle was not observed during surveys. A targeted survey was not conducted for this species. Elements of suitable aquatic habitat, such as cover and basking sites, were observed.

California Giant Salamander (*Dicamptodon ensatus*)

The California giant salamander is considered an SSC by CDFW. This species can be found in wet coastal forests between Mendocino and Monterey Counties and east to Napa County.

The closest CNDDDB occurrences for this species are 4.3 miles south (2016) and 4.4 miles southwest (1985) of the BSA.

The California giant salamander was not observed during surveys throughout 2019 or early 2020, but potential habitat exists within the BSA. A targeted survey was not conducted for this species.

Foothill Yellow-legged Frog (*Rana boylei*)

The foothill yellow-legged frog was declared a candidate for listing as threatened under CESA in June 2017. In September 2019, CDFW released a status review report wherein the Department recommended that listing of the Northwest/North Coast clade (which includes populations within Napa County) was not warranted at that time. This determination was adopted by the Fish and Game Commission in February 2020, and this clade returned to SSC status. The historical range of this species likely included much of California and Oregon. The optimum habitat for this frog, an obligate stream-breeder, is partly-shaded, shallow, low-gradient, perennial rivers and streams with at least cobble-sized rocky substrate.

There are five records of CNDDDB occurrences of foothill yellow-legged frog in streams within 5 miles of the BSA. Four of these are from 2014 and later.

The foothill yellow-legged frog was not observed during surveys in 2019 or 2020, and a targeted survey was not conducted for this species. Potential aquatic habitat is present within the BSA. The portion of Ritchie Creek within the BSA offers suitable riffle/pool complexes with some shade provided by the riparian tree canopy overhead.

Western Bumblebee (*Bombus occidentalis*)

The western bumblebee was declared a candidate for listing as endangered under CESA on June 18, 2019. The historical range of this species included much of the state, especially cooler, wetter areas at higher latitudes or along the coast. The western bumblebee is a

generalist forager in meadows and grasslands with abundant flowering plants. It may nest underground, such as in abandoned animal burrows, or aboveground, such as in log cavities. Hibernacula may be in friable soils or under plant litter or debris.

There is one CNDDDB occurrence 2.2 miles from the BSA from 1953.

The western bumblebee was not found during surveys throughout 2019 or early 2020, but a variety of pollen-producing plant species were observed.

Raptors and Other Nesting Birds

Cooper's Hawk (Accipiter cooperii)

Cooper's hawk is on the Watch List maintained by CDFW. This species is a year-round resident throughout California. Most commonly found in riparian forests and patchy woodlands, this medium-sized hawk may also reside in suburban and urban areas with suitable nest trees. Males build stick nests lined with bark and young twigs in crotches of tall trees, usually 25 to 50 feet above ground. Medium-sized birds are the most common prey, but smaller birds, small mammals, reptiles, and amphibians are also taken.

There are no CNDDDB occurrences of this species within 5 miles of the project site. However, there are two observations near the park, one each from 2018 and 2019, on the community science database iNaturalist.

The Cooper's hawk or signs of its presence were not observed during surveys. A targeted survey was not conducted. Suitable riparian nest trees and potential foraging habitat were observed during reconnaissance surveys.

Sharp-shinned Hawk (Accipiter striatus)

The sharp-shinned hawk is listed on the Watch List maintained by CDFW. This species inhabits coniferous and mixed forests and riparian woodlands throughout North America. The hawk may also forage in open areas with lower cover near its breeding grounds.

There is one CNDDDB occurrence of the sharp-shinned hawk near Calistoga from 1993, 4.4 miles northwest of the BSA.

The sharp-shinned hawk or signs of its presence were not observed during surveys. A targeted survey was not conducted. Suitable riparian nest trees and potential foraging habitat were observed during reconnaissance surveys.

Purple Martin (Progne subis)

The purple martin is listed as an SSC by CDFW. The largest of the North American sparrows, this species is widely distributed and common east of the Rocky Mountains, where it nests almost exclusively in human-provided housing. Western populations are irregularly scattered and only locally common. In the West, nesting primarily occurs in natural and

abandoned woodpecker cavities in large, old trees and snags in woodlands, forest edges, riparian corridors, and other open areas near water. This aerial insectivore tends towards coloniality in both its breeding grounds in North America and its winter grounds in South America.

There are three CNDDDB occurrences of this species within 5 miles of the BSA from 1941 to 1995. All occurrences are presumed extant.

The purple martin or signs of its presence were not observed during habitat surveys. However, woodpeckers, whose abandoned cavities provide the primary nesting sites for purple martins, were observed within the project footprint on several occasions. The riparian area may also provide suitable foraging habitat. A targeted survey for purple martins was not conducted.

Migratory Birds

During the nesting season (February 1 – September 30), migratory birds may nest within the BSA on the ground, on or in human-made structures, and in trees, shrubs, or other vegetation. These birds receive protection under the federal MBTA and California Fish and Game Code (Sections 3503).

Several common bird species were seen or heard within the BSA during surveys, including red-tailed hawk (*Buteo jamaicensis*), California towhee (*Melospiza crissalis*), dark-eyed junco (*Junco hyemalis*), black phoebe and turkey vulture (*Cathartes aura*). Potential nesting sites (e.g., trees, bridges, groundcover, etc.) exist within the BSA.

2.3.4.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

Bat Species

Construction would lead to temporary increases in noise, dust, and human disturbance. The project would result in temporary displacement of bats and temporary loss of bat roosting habitat due to culvert removal, construction in the creek corridor, and riparian tree removal. However, implementation of AMMs BIO-5 and BIO-7 through BIO-11 would require pre-construction bat surveys and replacement of bat habitat.

Western Pond Turtle

Installation and maintenance of the temporary creek diversion system could result in a temporary loss of western pond turtle habitat. In addition, handling and relocation of this species could also result in direct harm, injury or mortality of individuals. Vegetation and tree removal would remove cover and foraging opportunities. Construction activities are not likely to impact breeding and nesting success, since construction would occur outside the turtle nesting season, and certain construction activities, such as vegetation removal and soil

compaction stemming from grading, would not affect nesting habitat. AMM BIO-1 would require an approved biologist to be on-site to relocate western pond turtles if they are found within the project footprint and AMM BIO-2 would require woody debris to remain on-site. In addition, Project Features BIO-9, BIO-10, and BIO-12 listed in Appendix D would also minimize potential impacts to western pond turtle.

California Giant Salamander

Terrestrial California giant salamander adults are typically found in the surface litter or underground tunnels. Vegetation removal, clearing, and grubbing associated with the project would directly impact California giant salamander individuals if such activities were to occur during the breeding season. However, construction work in the creek is anticipated to occur after the California giant salamander breeding season. Implementation of Project Features BIO-3, BIO-4, BIO-7, BIO-9, BIO-10, BIO-12, BIO-15 and BIO-17 listed in Appendix D, as well as AMM BIO-1, would minimize potential effects to the California giant salamander.

Foothill Yellow-Legged Frog

Construction activities in the creek, such as dewatering, could occur during the foothill yellow-legged frog breeding season. Vegetation and tree removal would remove cover and increase the amount of solar radiation reaching the creek, which may lead to increased water temperatures. Installation of the temporary creek diversion system and work in the creek would result in temporary loss of frog habitat, but subsequent habitat restoration and enhancement would lead to a permanent beneficial impact to this species. In addition, handling and relocation of this species could result in direct harm, injury, or mortality of individuals. Implementation of Project Features BIO-1, BIO-3, BIO-4, BIO-7, BIO-12, and BIO-13, as well as AMMs BIO-1 and BIO-19, would minimize potential effects to the foothill yellow-legged frog.

Western Bumblebee

Removal of flowering plants could result in a temporary loss of foraging habitat for the western bumblebee if the species is present along the Ritchie Creek riparian corridor. Nesting habitat would be lost due to soil compaction and destruction of abandoned burrows stemming from clearing and grubbing of vegetation. However, implementation of Project Features BIO-9 and BIO-11 would minimize impacts to the western bumblebee.

Raptors, Other Nesting Birds, and Migratory Birds

Tree and vegetation removal would result in a temporary loss of nesting and foraging habitat for raptors, nesting birds, and migratory birds. Tree and vegetation removal may also affect foraging success, food sources for herbivorous birds, and reduction in prey density for carnivorous or insectivorous birds. Following completion of construction, trees would be replanted, and the surrounding habitat would be restored. AMM BIO-2 would require woody debris to remain on-site and Project Feature BIO-5 and AMM BIO-9 would require preconstruction nesting surveys and the establishment of buffers for nesting raptors and all

other birds. AMM BIO-3, Project Feature BIO-9, and Project Feature BIO-10 would require replanting, reseeding, and restoration of disturbed areas along with minimizing vegetation removal. The temporary impact from the loss of nesting and foraging habitat would be minimal.

Operation

The Build Alternative proposes a permanent right of way easement (0.01 acre) on Bothe-Napa Valley State Park for access and maintenance of the retaining walls. However, this area would continue to be accessible to animal species. Once construction is completed, the Build Alternative would carry the same number of travel lanes as existing conditions.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. There would be no impacts to animal species; however, if fish passage improvements are not implemented, continued migration barriers would exist as culvert removal would not occur.

2.3.4.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

In addition to the Project Features listed in Appendix D, the project would incorporate the following AMMs:

AMM BIO-1: Approved Biologist. Refer to Section 2.3.1.3 for the description of this measure.

AMM BIO-2: Woody Debris. Refer to Section 2.3.1.3 for the description of this measure.

AMM BIO-3: Tree Replacement. Refer to Section 2.3.1.3 for the description of this measure.

AMM BIO-5: Tree Removal Monitoring. Refer to Section 2.3.1.3 for the description of this measure.

AMM BIO-7: Preconstruction Bat Surveys. At least 48 hours prior to the start of construction, an approved biologist would conduct surveys for bats and bat habitat in the project footprint. If there is a lapse in construction activities of 2 weeks or more, the area shall be resurveyed within 24 hours prior to recommencement of work.

AMM BIO-8: No Disturbance Buffer for Special-Status Bats. If during construction a pallid bat or roost is discovered within the BSA, an approved biologist would establish a no-disturbance buffer (typically 100 feet) and coordinate with CDFW. This buffer would be maintained to the extent needed as determined by the biologist.

AMM BIO-9: Bat Exclusionary Measures. Prior to construction, Caltrans or its contractor would implement bat exclusionary measures, such as filling crevices with expandable foam, on the existing bridge structure if deemed necessary by an approved biologist. In addition, these measures must be put in place either between March 1 and April 15 or between August 31 and October 15.

AMM BIO-10: Bat Presence/Absence Surveys. Prior to construction, presence/absence surveys would be conducted to assess bat occupancy no more than 72 hours prior to tree removal or trimming. If surveys are negative, then tree removal may be conducted by following a two-phased tree removal system. The two-phase system would be conducted over 2 consecutive days. On the first day, (in the afternoon) limbs and branches are removed by a tree cutter using chainsaws or other hand tools. Limbs with cavities, crevices, or deep bark fissures are avoided and only branches or limbs without those features are removed. On the second day the entire tree shall be removed.

If surveys indicate bat presence, the occupied trees may only be removed outside of maternity season (April 15 to August 31) and outside of winter hibernation (October 15 to March 1); therefore, tree removal may only be conducted between March 1 and April 15 or between August 31 and October 15 if trees are occupied. Potential avoidance may include exclusionary blocking or filling potential cavities with foam, visual monitoring, and staging project work to avoid bats. If bats are known to use the bridge structure, exclusion netting would not be used. Bats would not be disturbed without specific notice to and consultation with CDFW.

AMM BIO-11: Roosting Bat Survey. During the design phase, Caltrans would resurvey for bat occupancy on the existing bridge to determine the presence of bats and the potential for day or night roosting habitat.

2.3.5 Threatened and Endangered Species

2.3.5.1 REGULATORY SETTING

The primary federal law protecting threatened and endangered species is the FESA: 16 USC, Section 1531, et seq. See also 50 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 FHWA (and Caltrans, as assigned), are required to consult with USFWS and NMFS 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 that are 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 or a letter of concurrence. Section 3 of FESA defines take as to “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 CESA, CFGC 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-related losses of listed species populations and their essential habitats. CDFW is responsible for implementing CESA. Section 2080 of the CFGC prohibits take of any species determined to be endangered or threatened. “Take” is defined in Section 86 of the CFGC as to “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 CDFW. For species listed under both FESA and CESA as requiring a biological opinion under section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a consistency determination under Section 2080.1 of the CFGC.

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: “(1) 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 (2) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, continental shelf fishery resources, and fishery resources in special areas.”

2.3.5.2 AFFECTED ENVIRONMENT

Of the 109 special-status plants identified through database research, 13 are federally and/or state-listed plant species; however, only 1 of these species has moderate potential to occur within the BSA. A complete list of federally and/or state listed plant species are discussed in Table 2.3-6.

The database search identified four federally and/or state threatened or endangered animal species with moderate or high potential to occur within the BSA. A complete list of federally and/or state-listed species are discussed in Table 2.3-7. The following information describes these species and potential project impacts. Formal Section 7 consultation for threatened and endangered species is ongoing. Caltrans submitted a Biological Assessment to USFWS and NMFS on November 5, 2020.

A Biological Opinion from USFWS was issued on February 5, 2021 (Appendix J). Consultation with NMFS is ongoing. Caltrans will obtain a Biological Opinion from NMFS during the design phase.

Table 2.3-6 Threatened and Endangered Plant Species with Potential to Occur in the Biological Study Area

Scientific Name	Common Name	Status			General Habitat Requirements	Micro-habitat, Elevation Range	Blooming Period	Potential to Occur within the BSA	Potential Effects to Federally Listed Species
		FESA	CESA	CNPS					
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	E		1B.1	Perennial grass native to Sonoma and Marin counties	Resides in moist soils of permanent freshwater marshes and riparian scrub. 15-1200 feet	May to July	Not likely to occur. Riparian habitat present, but BSA is outside the known historical range of this species. Species not found within the BSA during floristic surveys. No CNDDDB occurrences within 5 miles.	No effect.
<i>Astragalus claranus</i>	Clara Hunt's Milk-vetch	E	T	1B.1	Grows on rocky, thin clay, often serpentinite or volcanic, soils in open grassy areas and chaparral openings.	Annual herb. Confined to Napa and Sonoma Counties. 245-900 feet	March to May	Moderate potential. BSA does not contain certain habitat characteristics, such as grassy or chaparral openings, but does contain volcanically derived clay soils. BSA is within the known range of this species. Species not found within the BSA during floristic surveys, but closest CNDDDB occurrence is in Bothe-Napa Valley State Park.	May affect, not likely to adversely effect. USFWS concurred with effect (Appendix J).
<i>Blennosperma bakeri</i>	Sonoma Sunshine	E	E	1B.1	Annual herb occurring in vernal pools, wetlands, and grassy swales.	Found in southern Sonoma County. 30-360 feet	March to May	Not likely to occur. No effect. BSA contains moist riparian habitat, but not vernal pools or wetlands. BSA is also outside of the known historic range of this species. Species not found within the BSA during floristic surveys. No CNDDDB occurrences within 5 miles.	No effect.
<i>Eryngium constancei</i>	Loch Lomond Button-celery	E	E	1B.1	Herbaceous inhabitant of vernal pools.	Found in Lake, Napa, and Sonoma counties. Known from only three occurrences. 1500-2800 feet	April to June	Not likely to occur. BSA does not contain vernal pools. Occurs at higher elevations than BSA. Species not found within the BSA during floristic surveys. One CNDDDB occurrence within 5 miles of the BSA; this occurrence is at a much higher elevation than the BSA.	No effect.
<i>Gratiola heterosepala</i>	Boggs Lake Hedge-hyssop		E	1B.2	Small annual herb in the plantain family distributed from the Central Valley to south-central Oregon.	Inhabits mud and shallow waters, such as vernal pools margins, with a preference for clay soils. 30-7790 feet	April to August	Not likely to occur. Vernal pools or other standing shallow water not present in the BSA. Species not found within the BSA during floristic surveys. No CNDDDB occurrences within 5 miles.	No effect.
<i>Lasthenia burkei</i>	Burke's Goldfields	E	E	1B.1	Annual herb endemic to mesic meadows, seeps, and vernal pools.	Found in Lake, Mendocino, Napa, and Sonoma counties. 45-1970 feet	April to June	Not likely to occur. BSA does not contain suitable moist habitat. Species not found within the BSA during floristic surveys. One CNDDDB occurrence within 5 miles of the BSA.	No effect.
<i>Lasthenia conjugens</i>	Contra Costa Goldfields	E		1B.1	Annual herbaceous resident of vernal pools, wet meadows, and wetlands in mesic woodlands, foothill grasslands, and alkaline playas.	Found in the San Francisco Bay Area. Below 1540 feet	March to June	Not likely to occur. BSA does not contain preferred habitat of vernal pools; BSA is also likely outside of the range of this species. Species not found within the BSA during floristic surveys. No CNDDDB occurrences within 5 miles of the BSA.	No effect.
<i>Limnanthes vinculans</i>	Sebastopol Meadowfoam	E	E	1B.1	Annual herb inhabiting wet meadows, pools, and other vernal mesic areas in foothill woodlands.	Found in Napa and Sonoma counties. 45-1000 feet	April to May	Low potential. BSA does not contain wet meadows or vernal pools. Species not found within the BSA during floristic surveys. One CNDDDB occurrence within 5 miles of the BSA.	No effect.
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	Many-flowered Navarretia	E	E	1B.2	Annual herb occupying vernal pools with volcanic ash flow.	Found in Lake and Sonoma counties. 95-3115 feet	May to June	Not likely to occur. BSA does not contain vernal pools. Species not found within the BSA during floristic surveys. No CNDDDB occurrences within 5 miles of the BSA.	No effect.
<i>Plagiobothrys strictus</i>	Calistoga Popcornflower	E	T	1B.1	Annual herbaceous resident of moist alkaline areas near thermal springs.	This member of the borage family may also be found in adjacent vernal pools and grassy swales. Known from only two extant occurrences near Calistoga in Napa County. 295-525 feet	March to June	Low potential. BSA does not contain springs or vernal pools but is within known range of this species. Species not found within the BSA during floristic surveys. Four CNDDDB occurrences within 5 miles of the BSA.	No effect.

Scientific Name	Common Name	Status			General Habitat Requirements	Micro-habitat, Elevation Range	Blooming Period	Potential to Occur within the BSA	Potential Effects to Federally Listed Species
		FESA	CESA	CNPS					
<i>Poa napensis</i>	Napa Blue Grass	E	E	1B.1	Perennial grass known from only two occurrences in Napa County.	Found on alkaline soils near thermal springs. 325-655 feet	May to August	Low potential. BSA does not contain thermal springs. Species not found within the BSA during floristic surveys. Two CNDDDB occurrences within 5 miles of the BSA.	No effect.
<i>Sidalcea oregana</i> var. <i>valida</i>	Kenwood Marsh Checkerbloom	E	E	1B.1	Perennial rhizomatous herb residing in freshwater marshes and swamps.	Known from only two occurrences in Sonoma County. 375-490 feet	June to September	Not likely to occur. BSA does not contain marshes or swamps. Species not found within the BSA during floristic surveys. No CNDDDB occurrences within 5 miles of the BSA.	No effect.
<i>Trifolium amoenum</i>	Two-fork Clover	E		1B.1	Annual herb of moist, heavy, and sometimes serpentine soils in coastal scrub and grassland.	Found throughout the greater San Francisco Bay Area. Tolerant of disturbed areas. Below 1360 feet	April to June	Not likely to occur. BSA does not contain coastal scrub or grassland habitat. Species not found within the BSA during floristic surveys. No CNDDDB occurrences within 5 miles of the BSA.	No effect.

Notes:

Conservation status definitions are as follows:

Federal designations:

E Endangered: any species in danger of extinction throughout all or a significant portion of its range.

T Threatened: any species likely to become endangered within the foreseeable future.

State designations:

E Endangered: any species in danger of extinction throughout all or a significant portion of its range.

T Threatened: any species likely to become endangered within the foreseeable future.

CNPS Rankings:

1A Plants presumed extirpated in California, and either rare or extinct elsewhere.

CNPS Threat Categories:

.1 Seriously threatened in California.

BSA = Biological Study Area

CESA = California Endangered Species Act

CNDDDB = California Natural Diversity Database

CNPS = California Native Plant Society

FESA = Federal Endangered Species Act

Sources: CalFlora, calscape.org, CNPS, USFWS, CDFW, Jepson Herbarium.

Table 2.3-7 Threatened and Endangered Animal Species with Potential to Occur in the Biological Study Area

	Common Name	Status			General Habitat Requirements	Micro-habitat	Potential to Occur within the BSA	Potential Effects to Federally Listed Species
		FESA	CESA	CDFW				
Amphibians	California Tiger Salamander, Sonoma County DPS	E, X	T	WL	Endemic to California; mostly found in the Central Valley, though populations occur along the coast. May consume earthworms, snails, insects, fish, and small mammals.	Resides in subterranean refugia excavated by other animals in annual grasslands and low foothills for most of the year, emerging to migrate to vernal pools and fishless ponds to breed in late fall to early spring.	Low potential. BSA does not contain suitable breeding (vernal pools) or underground (grasslands) habitat. Species or burrows not observed during habitat surveys. No CNDDDB occurrences within 5 miles of the BSA. The nearest critical habitat unit to the project area is the Santa Rosa Plain, which is 12.7 miles away.	No effect.
	California Red-Legged Frog	T, X		SSC	Highly aquatic, living near quiet pools and backwaters of streams and creeks, marshes, and occasionally ponds, from sea level to 5200 feet. Primarily feeds on various invertebrates but may also take small amphibians and mammals. Once distributed throughout California to northwestern Mexico, now most common in coastal drainages along the central coast and the Sierra Nevada foothills.	Prefers deep pools with extensive emergent vegetation, such as cattails, along the shore, and a dense overhang of riparian trees, such as willows. Breeds in aquatic habitat between November and March; egg masses are usually attached to vegetation. Optimal upland dispersal habitat contains cover, such as surface litter, downed debris, or abandoned burrows.	Moderate potential. Suitable aquatic and upland dispersal habitat are present within the BSA. Species not observed during habitat surveys. One CNDDDB occurrence within 5 miles of the BSA. The nearest critical habitat to the project area is the Sonoma 1 unit, which is located 9.9 miles.	May affect, likely to adversely affect
Birds	Swainson's Hawk		T		Long-distance migrant native to the western half of the Americas. Breeding grounds include California. Forages from perches or soaring over open fields, ranches, grasslands, and plains; diet changes seasonally, mainly consisting of small mammals, reptiles, and large insects.	Breeding pairs choose a nest site near the top of a tree in open country, typically 15 to 30 feet above the ground, or in riparian groves, concealed within foliage.	Low potential. Potential foraging habitat adjacent to the BSA, so species may occur as flyover. Species not found within the BSA during habitat surveys. No CNDDDB occurrences within 5 miles of the BSA.	No effect.
	Northern Spotted Owl	T, X	T	SSC	Native to the west coast north of the San Francisco Bay. Foraging may occur over a matrix of habitat types. Woodrats are the primary prey, but other small mammals, birds, and insects may also be taken.	Roosts in structurally complex, old-growth forests. Forest stands with adequate tree size and canopy closure sufficient to protect from predators provide dispersal habitat.	Moderate potential. Forest habitat present near BSA, but occurrences would likely be limited to foraging individuals or individuals flying over the BSA at night. Species unlikely to nest within BSA due to proximity to SR 29. Species not observed during habitat surveys. Several CNDDDB occurrences within 5 miles of the BSA. The nearest critical habitat is the Interior California Coast unit, located 4.2 miles from the project area.	May affect, not likely to adversely affect
Crustaceans	California Freshwater Shrimp	E	E		Occupies small, low elevation (below 380 feet), low gradient (less than 1 percent), perennial coastal streams north of the San Francisco Bay Area.	Optimum stream habitat has exposed live roots of trees along undercut banks greater than 6 inches with overhanging woody debris or vegetation to provide refuge. Currently found in 16 freshwater stream segments in Marin, Napa, and Sonoma Counties.	Moderate potential. Suitable aquatic habitat present within the BSA. Species not observed during habitat surveys. One CNDDDB occurrence within 5 miles of the BSA.	May affect, likely to adversely affect

	Common Name	Status			General Habitat Requirements	Micro-habitat	Potential to Occur within the BSA	Potential Effects to Federally Listed Species
		FESA	CESA	CDFW				
Fish	Delta smelt	T, X	E		Endemic to San Francisco estuary, primarily occurring in shallow areas with low salinity. Diet of larvae is mainly made up of planktonic crustaceans and algae; juveniles and adults feed almost exclusively on copepods.	Spring spawning occurs in freshwater sloughs and channel edgewaters as far as Suisun Marsh, the Upper Sacramento River, Cache Slough, and upstream regions of the Napa River. Individuals migrate varying distances to areas including downstream reaches of the Lower Sacramento River, Grizzly Bay, and low salinity zones in the San Francisco Bay to mature in the fall.	Not likely to occur. Suitable aquatic habitat is present, but BSA is outside of the species' known distribution. Species not observed during habitat surveys. No CNDDDB occurrences within 5 miles of the BSA. The nearest critical habitat to the project area is Unit 1, located 32.9 miles.	No effect.
	Central California Coast Coho Salmon	E, X	E		Spawn in gravelly streams along the Central California coast from Punta Gorda south to the San Lorenzo River and San Francisco Bay tributaries. Ocean phase individuals spend an average of 1.5 years in the Pacific, predated upon fish and shrimp.	Young remain in cold water streams for 1 to 2 years and require abundant protective cover. Juveniles then transform into smolts and migrate to the ocean between March and May.	Not likely to occur. BSA is outside of the species' current distribution. Species not found within the BSA during habitat surveys. No CNDDDB occurrences within 5 miles of the BSA. Ritchie Creek is designated as critical habitat for this species.	No effect.
	Central California Coast Steelhead	T, X			Anadromous DPS including all populations below barriers in streams from the Russian River in the north to Aptos Creek in the South, and including all drainages of San Francisco, San Pablo, and Suisun Bays.	Spawning occurs during late spring in cool, well-oxygenated streams. Smolts spend 2 years or more in larger rivers and estuaries before migrating to sea. Return to freshwater typically occurs between December and February, usually when adults are 3 to 4 years old.	High potential. Suitable aquatic habitat present within the BSA. Species not found within the BSA during habitat surveys. One CNDDDB occurrence within 5 miles of the BSA. Ritchie Creek is designated as critical habitat for this species.	May affect, likely to adversely affect; for both Central California Coast steelhead and its critical habitat.
	California Coastal Chinook	T			Fall-run salmon ESU that includes all salmon spawning in coastal watersheds from the Russian River north to Humboldt County.	Generally returns to natal streams between September and early November after spending 2 to 3 years in the ocean. Within home rivers, typically selects large, deep pools with bedrock bottoms and moderate velocities as holding areas. Tidal and flooded habitats with overhanging vegetation or undercut banks for cover and high concentrations of food are important foraging areas for migrating smolts.	Not likely to occur. BSA is outside of the species' known distribution. Species not found within the BSA during habitat surveys. No CNDDDB occurrences within 5 miles of the BSA.	No effect.
Mammals	Fisher – West Coast DPS/Northern California ESU	T		SSC	Solitary, permanent resident of the Sierra Nevada, Cascades, and Klamath Mountains, to the coast of Washington and Oregon, and south through portions of the North Coast Ranges. Opportunistic predator, primarily of squirrels, mice, hares, and birds.	Prefers mature and old-growth coniferous and mixed conifer/hardwood forests with moderate to dense canopy cover at mid- to low-elevation (but can occupy range of elevations). Favors forests with high structural complexity for diverse nesting and foraging options. Uses cavities in live trees, snags, and downed logs for reproductive dens and rest sites.	Low potential. Bothe-Napa Valley State Park provides a large area of contiguous, complex mixed forest habitat, but the BSA contains edge habitat that would very likely be avoided by fishers. Species not observed within the BSA during habitat surveys. No CNDDDB occurrences within 5 miles of the BSA.	No effect.

Notes:

Conservation status definitions are as follows:

Federal designations:

- E Endangered: any species in danger of extinction throughout all or a significant portion of its range.
- T Threatened: any species likely to become endangered within the foreseeable future.
- X Critical habitat designated.

State designations:

- E Endangered: any species in danger of extinction throughout all or a significant portion of its range.
- T Threatened: any species likely to become endangered within the foreseeable future.

BSA = Biological Study Area

CESA = California Endangered Species Act

CNDDDB = California Natural Diversity Database

DPS = Distinct Population Segment

ESU = Evolutionarily Significant Unit

FESA = Federal Endangered Species Act

SR 29 = State Route 29

Sources: USFWS, CDFW, NMFS IUCN Redlist.

Plants

Clara Hunt's Milk-vetch

This spring-blooming annual herb in the Fabaceae family is federally endangered, state threatened, and on the CNPS 1B.1 List. It grows on rocky clay, often serpentinite or volcanic soils in open grassy areas and chaparral, between 245 and 900 feet, in Napa, Sonoma, and Solano Counties.

There is one CNDDDB occurrence of Clara Hunt's milk-vetch less than 1 mile from the project footprint. This occurrence, from 2009, is presumed extant. In addition, there are six occurrences of this plant within 5 miles of the project footprint on CalFlora's database.

Wildlife

Northern Spotted Owl

The northern spotted owl is listed as threatened under both FESA (June 26, 1990) and CESA (August 25, 2016). Critical habitat was designated by USFWS on August 13, 2008. This species inhabits complex, heterogeneous old-growth forests or mixed stands of old-growth, mature, and big trees.

There are numerous observations of spotted owls and their nests within 5 miles of the BSA, but none closer than 1 mile. Suitable habitat is present west of the BSA in the Park.

The northern spotted owl was not observed during surveys throughout early 2020. Neither targeted surveys specifically for this species nor nighttime surveys were conducted.

California Red-legged Frog

The California red-legged frog was listed as a threatened species under FESA on May 23, 1996; it is also listed as an SSC by CDFW. This species is most commonly found in quiet pools of streams and marshes with little to no flow, surface water at least 2 to 3 feet deep, and abundant emergent vegetation such as cattails. Breeding occurs in a variety of aquatic habitats between November and April. Both adults and juveniles eat a variety of invertebrates; the diet of tadpoles is mainly made up of algae.

There is one extirpated occurrence of this species within 5 miles of the BSA; this species may be extirpated from the Napa Valley.

The California red-legged frog was not observed during surveys. A targeted survey was not conducted for this species. CRLF are not anticipated to breed within Ritchie Creek, as flows during the typical breeding season (November-April) would be too high for attachment of egg masses and tadpole survival. Ritchie Creek could provide summer dispersal habitat and associated upland habitat does exist within the BSA along the riparian corridor.

Central California Coast Steelhead

The Central California Coast (CCC) distinct population segment (DPS) of steelhead was listed as threatened under FESA on January 5, 2006. This DPS includes all naturally spawned populations in streams from the Russian River in Mendocino County to Aptos Creek in Santa Cruz County and all

drainages of San Francisco and San Pablo bays. The CCC steelhead is a winter-run fish, with adults entering freshwater between late December and March and spawning between February and April.

The CCC steelhead was not observed during surveys, and a targeted survey was not conducted. Based on the experience of professionals working in the area and NMFS personnel; historical observations; and the presence of suitable habitat characteristics such as cool water temperatures, a dense riparian canopy, and permanent water flows, this species is likely to be present in Ritchie Creek.

The CCC steelhead population has declined within Napa County over the past several decades. According to the Napa County General Plan, the steelhead population may be less than a few hundred adults. However, there have been ongoing efforts to monitor the population within the Napa River watershed. Although there is one CNDDDB occurrence within 2.5 miles of the BSA in 2004, the species was not observed during surveys throughout early 2020.

California Freshwater Shrimp

This small crustacean is federally (listed October 31, 1988) and state (listed October 2, 1980) endangered. It is endemic to Marin, Sonoma, and Napa Counties, inhabiting slow-moving perennial streams with undercut banks and abundant overhanging vegetation. Critical habitat has not been designated for this species.

There is one CNDDDB occurrence from 2018 less than 4 miles north of the BSA. This occurrence is in a channel with connectivity to Ritchie Creek.

The California freshwater shrimp or signs of its presence were not observed during surveys. A targeted survey was not conducted. Suitable habitat is available within the BSA. The portion of Ritchie Creek through the BSA is a relatively low-gradient stream with occasional undercut banks and abundant overhanging vegetation. During the dry season, water velocity is low. California freshwater shrimp presence is likely due to the occurrence of these habitat characteristics.

Critical Habitat – Northern Spotted Owl

Northern spotted owl critical habitat, made up of nearly 9.6 million acres in California, Oregon, and Washington, was designated by USFWS on December 4, 2012, and became effective on January 3, 2013. Critical habitat for this species is made up of forested habitat within its range that may be used to fulfill at least one of the four following essential physical and biological functions: nesting, roosting, foraging, and dispersing.

There is one small patch of critical habitat near Hood Mountain, 4.2 miles southwest of the project footprint shown in Figure 2.3-2. No critical habitat for this species occurs within the BSA.

Critical Habitat – Central California Coast Distinct Population Segment Steelhead

Final critical habitat was published by NMFS on September 2, 2005, and became effective on January 2, 2006. For this DPS, critical habitat may be found in all river reaches and estuarine areas, as well as

adjacent riparian areas, accessible to listed steelhead in coastal river basins from the Russian River to Aptos Creek and the drainages of San Francisco and San Pablo Bays.

The portion of Ritchie Creek and adjacent riparian area within the BSA is designated critical habitat for this DPS shown in Figure 2.3-2. The primary constituent elements found in this segment are freshwater rearing sites and freshwater migration corridors. This portion of the creek is not likely to be an optimum spawning site; however, salmonids will use suboptimal spawning sites if blocked from upstream reaches by passage barriers. Thus, it is possible that spawning could occur.

Fish Passage

The Napa River watershed historically supported large spawning runs of anadromous fish. CCC coho salmon (*Oncorhynchus kisutch*) were extirpated from the watershed by the late 1960s, and steelhead runs have declined since then. One of the factors behind this decline has been the construction of numerous fish passage barriers, including dams, culverts, and road crossings (Figure 2.3-3). These barriers can block or delay movement of both anadromous and resident fish into and out of historically occupied streams. The physical and physiological stress associated with a more difficult migration can lead to reduced fitness and survival.

State Senate Bill (SB) 857, approved in 2005, requires Caltrans to assess potential barriers to fish passage for any project using state or federal transportation funds that affects a stream crossing on a stream where anadromous fish are or historically were. If a barrier exists, it must be remediated as part of the project design. In response, Caltrans has developed a statewide program to address fish passage issues, prioritizing work by need, cost, and overall benefit to fish movement.

The portion of Ritchie Creek through the project footprint is an important corridor for adult steelhead migrating to and from upstream natal habitat and for smolts migrating to the ocean. Several barriers to fish passage in Ritchie Creek have been created over the years, potentially limiting fish movement within the stream. Ritchie Creek is considered a top priority for fish restoration due to historical steelhead use and the present of high-quality habitat. Two barriers to fish passage have been identified within the project footprint. Both are caused by the existing SR 29 crossing structure.

Essential Fish Habitat

The protection of EFH was established as part of the Magnuson-Stevens Fishery Conservation and Management Act of 1976. Waters designated as EFH are under the jurisdiction of NMFS.

According to NMFS resources, waters within the BSA are EFH for all life stages of coho and Chinook salmon.

2.3.5.3 ENVIRONMENTAL CONSEQUENCES

As shown in the USFWS's Biological Opinion, USFWS concurs with Caltrans' determination shown in Table 2.3-6 for the Clara Hunt's milk vetch, and in Table 2.3-7 for the northern spotted owl. USFWS's effect finding for CRLF and California freshwater shrimp are reflected in Table 2.3-7.

On May 28, 2021, Caltrans issued a memorandum titled “NEPA Process Improvement Team, Initial Implementation: Flexibility in Timing of Obtaining Biological Opinion” which states that Caltrans can exercise flexibility in the timing of Section 7 consultation process and allow it to extend beyond the Project Approval and Environmental Document milestone. Under this guidance, Caltrans would complete the consultation during the design phase and incorporate all findings into the bidding document.

Consultation on the NMFS Biological Opinion on CCC steelhead and CCC steelhead critical habitat is ongoing. In compliance with the NEPA Process Improvement Team memorandum (Stolarski 2021), Caltrans initiated consultation on February 2019 and initiated formal consultation on November 2020 with the submittal of the Biological Assessment. Once the NMFS Biological Opinion is obtained, Caltrans will incorporate its conservation measures into the project bidding documents during the design phase.

Build Alternative

Construction

Plants

Clara Hunt’s Milk-vetch

This plant species was not observed during floristic surveys throughout 2019 and early 2020. With the implementation of the Project Features BIO-1, BIO-3, BIO-4, and BIO-10, as well as AMMs BIO-4 and BIO-6, there would be no adverse effect.

Wildlife

Northern Spotted Owl

The Northern Spotted Owl is sensitive to disturbance, including noise and visual disturbances. Construction noise or encroachment of humans into owl habitat can affect reproductive success and survivorship. In general, potential impacts to this species may occur under any of the following conditions:

- Project-generated sound exceeds ambient nesting conditions by 20-25 decibels (dB).
- Project-generated sound, when added to existing ambient conditions, exceeds 90 dB.
- Human activities occur within a visual line-of-sight distance of 130 feet or less from a nest.

Ambient noise levels in the project area were not measured, but are likely moderate (71-80 dB) during daytime hours. This level of noise is typical of roadways with passenger vehicles and motorcycles. Noise may occasionally rise to high levels (81-90 dB) with larger vehicles, such as recreational vehicles, buses, or construction vehicles.

Since there would be no widening or increase in the number of lanes, a permanent increase in noise would not result from this project. The construction equipment used for the proposed project can produce sound levels of 80-90 dB at locations 50 feet from the project area, resulting in an increase

above ambient conditions. Since dB are measured on a logarithmic scale, they cannot be added arithmetically to assess the additive effects of multiple noise sources.

Based on an estimate of ambient noise levels of 71-80 dB and project-generated sound levels of 80-90 dB at 50 feet from the project area, the increased sound levels resulting from project activities could potentially harass northern spotted owls if they were to occur within 330 feet of the project footprint (Table 2.3-8).

Table 2.3-8 Estimated Harassment Distance (Feet) Due to Elevated Action-Generated Sound Levels for Proposed Actions Affecting Northern Spotted Owl, by Sound Level

Existing (Ambient) Pre-Project Sound Level (dB)	Anticipated Action-Generated Sound Level (dB)			
	Moderate (71-80)	High (81-90)	Very High (91-100)	Extreme (101-110)
“Natural Ambient” (≤50)	165	500	1,320	1,320
Very Low (51-60)	0	330	825	1,320
Low (61-70)	0	165	825	1,320
Moderate (71-80)	0	165	330	1,320
High (81-90)	0	165	165	500

*Table from United States Fish and Wildlife Service, 2006

Nests and activity centers are likely to be more than 330 feet away from construction activities. Furthermore, since noise in a free field decreases by 6 dB with each doubling of the distance away from the noise point source, even sound levels of 90 dB when measured 50 feet from the project footprint would decline to about 54 dB, close to ‘natural ambient,’ at distances of 3,200 feet (0.6 mile) from the footprint. The line-of-sight from known nests to the project footprint is at least 1.6 miles. Individual northern spotted owls could potentially forage in the BSA or fly over the BSA during nighttime hours. Nighttime construction activities would occur after 9:00 PM for up to 12 nonconsecutive night, including a maximum of six nights within the breeding season. Because nesting is close in proximity to the project area and the nighttime construction work would occur over a small area for a short duration, effects to the northern spotted owl would be minimal.

California Red-legged Frog

Impacts to CRLF breeding habitat are not anticipated based on the lack of suitable aquatic breeding habitat within the BSA. Potential temporary aquatic summer dispersal habitat and migratory impacts would occur along the Ritchie Creek riparian corridor during construction.

Implementation of Project Features BIO-1 through BIO-4, BIO-6 through BIO-9, BIO-12, BIO-14, and BIO-17, as well as AMMs BIO-16 through BIO-21, would reduce potential effects to CRLF.

Central California Coast Steelhead

Obstacles to migration, high water temperatures, problematic water quantity and quality, low permeability, and lack of spawning and juvenile rearing habitat have all been identified as factors potentially limiting the CCC steelhead population in the tributaries of the Napa River watershed.

The project may result in temporary impacts to CCC steelhead from loss of habitat stemming from dewatering activities and relocation of individuals. Removal of the tree canopy over the creek may also affect the physical characteristics of the stream, such as water temperature and dissolved oxygen levels. Implementation of Project Features BIO-2, BIO-9, BIO-10, and BIO-15, as well as AMMs BIO-12 and BIO-21, would minimize potential effects to the CCC steelhead population.

The project would remove a major barrier to fish movement, which would enhance aquatic habitat for the CCC steelhead. These improvements would include regrading, revegetation, and bank stabilization. Therefore, the project would also produce beneficial impacts for CCC steelhead.

California Freshwater Shrimp

Installation of the temporary creek diversion system and work in the creek would result in temporary loss of shrimp habitat, but subsequent habitat restoration and enhancement would lead to a permanent beneficial impact to this species. A qualified biologist would conduct relocation of any species observed during the installation of the temporary creek diversion. California freshwater shrimp would be relocated upstream of the project to a suitable site using state and federal guidelines, which may result in a potentially adverse effect. Implementation of Project Features BIO-4 and BIO-14 through BIO-16; AMMs BIO-13 through BIO-15 and BIO-21; and Mitigation Measure BIO-1 would reduce potential adverse effects.

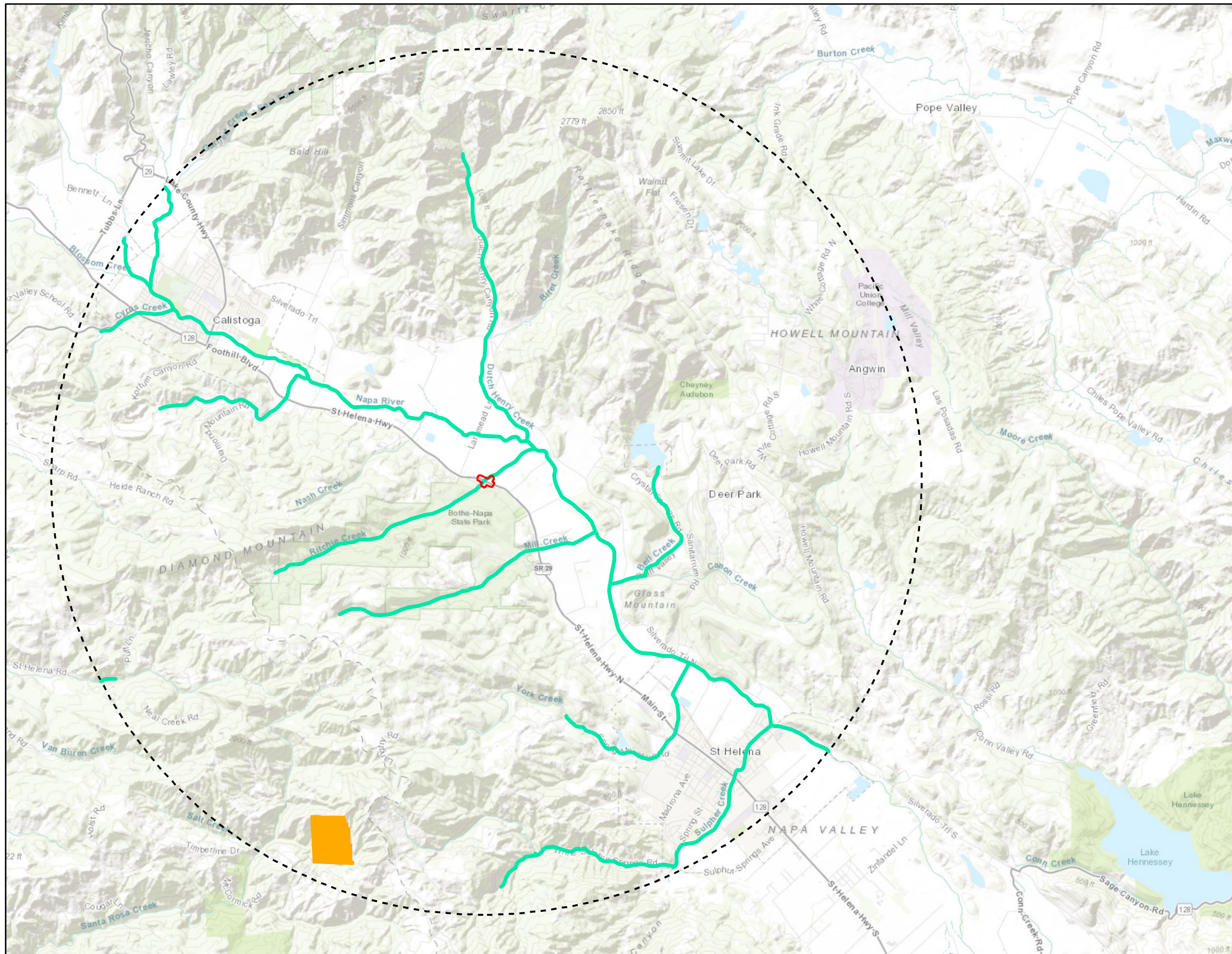
Critical Habitat – Central California Coast Distinct Population Segment Steelhead

Critical habitat for CCC steelhead is found in the BSA. While the project is not expected to adversely modify or destroy critical habitat, AMM BIO-12 would require habitat, such as cover and substrate needs, of migrating and rearing individuals to be incorporated into the creek design. There is no federally designated critical habitat for other listed species within the project area.

Fish Passage

As discussed in Section 2.3.5.2, Fish Passage, SB 857, approved in 2005, requires Caltrans to assess potential barriers to fish passage for any project using state or federal transportation funds. In response, Caltrans has developed a statewide program to address fish passage issues, prioritizing work by need, cost, and overall benefit to fish movement.

Commensurate with SB 857, the remediation of the existing barriers to fish passage within the project limits would be removed as part of the project, and the creek channel would be regraded and designed to enhance fish habitat.



- LEGEND**
- Biological Study Area
 - 5-mile buffer
 - Critical Habitat**
 - Northern spotted owl
 - CCC steelhead

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

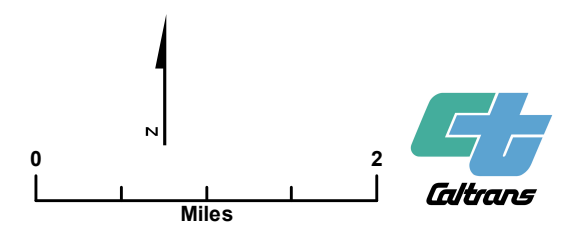
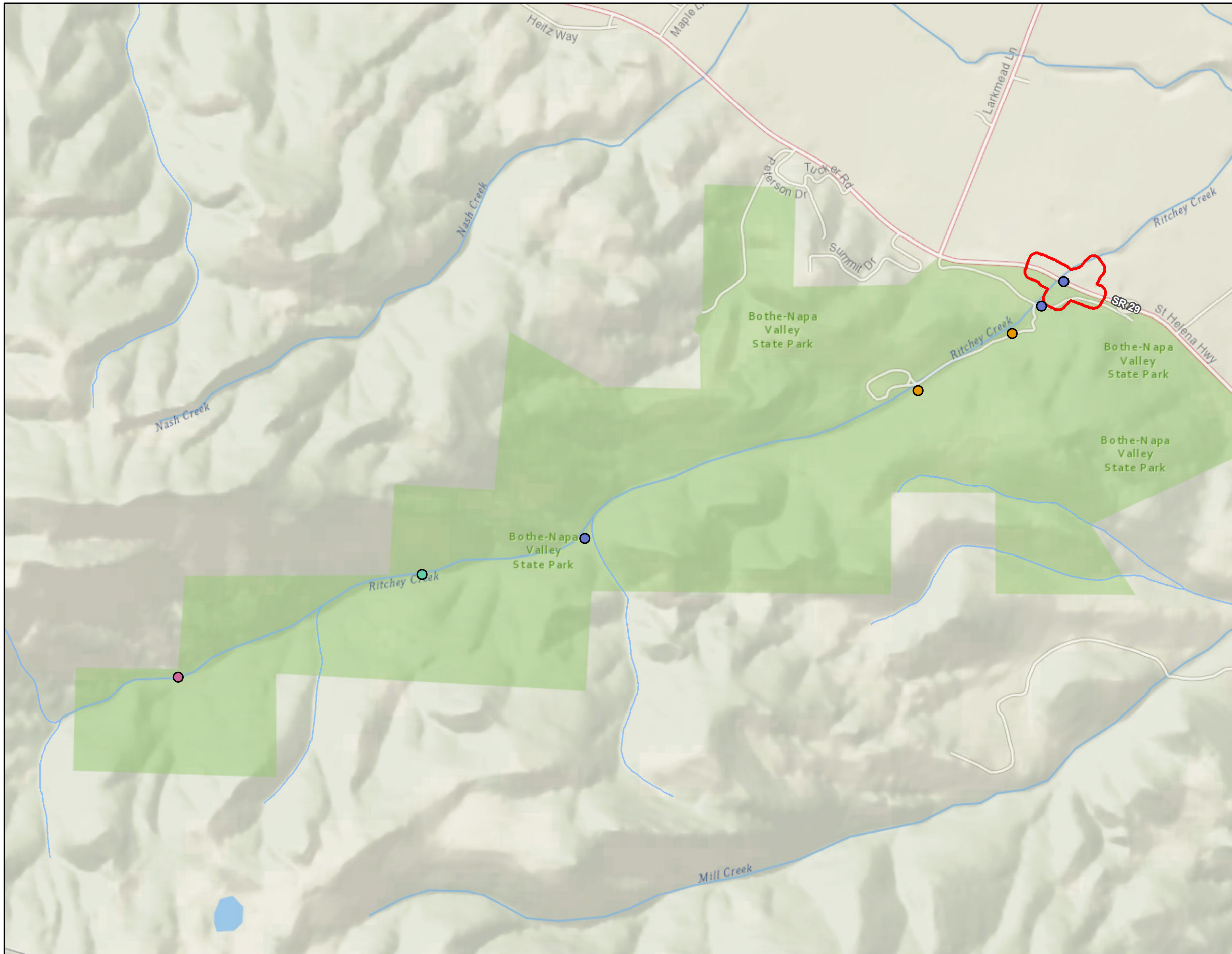


Figure 2.3-2
Federally Designated Critical Habitat
within 5 Miles of the BSA
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California



- LEGEND**
- Biological Study Area
 - ~ Stream
 - Fish Passage Barriers**
 - Natural Partial Barrier
 - Natural Total Barrier
 - Partial Barrier
 - Possible Barrier

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

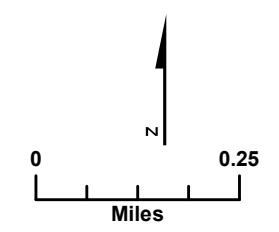


Figure 2.3-3
Fish Passage Barriers
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Essential Fish Habitat

Essential fish habitat (EFH) for coho and Chinook salmon is present within the BSA. The project would result in temporary impacts to EFH resulting from construction activities, such as the creation of a temporary access road to the creek, vegetation removal along the creek, dewatering, bridge demolition and construction, and revegetation. Consultation with NMFS concerning EFH is ongoing, but the project would not result in permanent adverse impacts to EFH as removal of the culvert is considered beneficial because it will improve migration and movement for coho and Chinook salmon. In addition to the Project Features outlined in Appendix D, Caltrans would adhere to additional measures recommended through consultation with NMFS.

Operation

Direct permanent impacts would result from the installation of permanent structures such as the proposed wingwalls and bridge replacement. The Build Alternative proposes a permanent right of way easement (0.01 acre) on Bothe-Napa Valley State Park for access and maintenance of the retaining walls. Once construction is completed, the Build Alternative would carry the same number of travel lanes as existing conditions. In addition, the Build Alternative would improve fish passage and essential fish habitat. Therefore, operation of the Build Alternative would have no impact to threatened or endangered species.

No-Build Alternative

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. Impacts to state- and federally listed species are not anticipated; however, continued fish barriers would occur limiting migration for state- and federally listed salmonids.

2.3.5.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

In addition to the Project Features listed in Appendix D, the project would incorporate the following AMMs:

AMM BIO-12: Creek Design. Habitat requirements, such as cover and substrate needs, of migrating and rearing individuals would be incorporated into creek design by Caltrans during the design phase. Incorporation of habitat requirements would create in-kind or improved creek habitat. Caltrans will coordinate with the USFWS, NMFS and CDFW on final design.

AMM BIO-13: Resident Engineer. At least 30 calendar days prior to ground disturbance, the Resident Engineer's name and telephone number would be provided to the USFWS. The would send a letter to the USFWS verifying that they possess a copy of the BO and understands the Terms and Conditions. The would maintain a copy of the BO and other relevant permits on-site whenever construction is taking place.

AMM BIO-14: California freshwater shrimp surveys and relocation. Caltrans or its contractor would be responsible for the implementation of the following activities before the installation of the temporary creek diversion system is installed.

- a) At least 30 days prior to the onset of activities, the name(s) and credentials of biologists who would conduct California freshwater shrimp surveys and relocation activities would be submitted to the USFWS. No project activities would begin until Caltrans has received written approval from the USFWS that they are approved to conduct the work. A USFWS-Approved California Freshwater Shrimp Monitor would be on-site during the construction of any erosion control fencing or cofferdams, and prior to and during the dewatering of the creek to monitor for the California freshwater shrimp.
- b) A USFWS-Approved California Freshwater Shrimp Monitor would survey for the California freshwater shrimp within 2 weeks before the onset of construction activities within the bed and bank of the subject creek, including any temporary dewatering and/or coffer dam installation. The survey would include investigation of likely habitat 100 feet upstream and 200 feet downstream of the project footprint. If California freshwater shrimp are found, the USFWS-Approved California Freshwater Shrimp Monitor would capture and relocate them to suitable habitat within the creek. Only USFWS-approved California Freshwater Shrimp Monitors would participate in activities associated with the capture, handling, and monitoring of California freshwater shrimp. Following installation of any water diversion structures, and prior to the placement of fill, a USFWS-Approved California Freshwater Shrimp Monitor would perform surveys for California freshwater shrimp in the construction boundaries.

AMM BIO-15: Relocate California freshwater shrimp. Caltrans or its contractor would be responsible for the implementation of the following measures, if California freshwater shrimp are encountered during construction:

- a) The California freshwater shrimp would be captured with hand-held nets (e.g., heavy duty aquatic dip nets [12 inch D-frame net] or small minnow dip nets) and relocated out of the work area in buckets containing creek water and then moved directly to the nearest suitable habitat in the same branch of the creek. Suitable habitat would be identified prior to capturing California freshwater shrimp to minimize holding time. Suitable habitat would be defined as creek sections that would remain wet over the summer and where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris, or overhanging vegetation. California freshwater shrimp would not be placed in buckets containing other aquatic species.
- b) Once the USFWS-Approved California Freshwater Shrimp Monitor has determined that all California freshwater shrimp have been effectively relocated, barrier seines or exclusion fencing would be installed to prevent shrimp from moving back in, as appropriate.

- c) The California freshwater shrimp will be released within suitable habitat acceptable to the USFWS, who will be notified. If suitable habitat cannot be identified, the USFWS will be contacted to determine an acceptable alternative. Transporting California freshwater shrimp to a location other than the location described herein will require written authorization of the USFWS.

The number of California freshwater shrimp captures, releases, injuries, and mortalities will be reported to the USFWS via telephone call and e-mail within one working day.

AMM BIO-16: Preconstruction California red-legged frog surveys. Caltrans or its contractor would engage a USFWS-Approved Biological Monitor to conduct preconstruction surveys for CRLF as needed within the project footprint. For frog surveys, visual encounter surveys would be conducted immediately before ground-disturbing activities. Suitable habitat within the project footprint, including refugia habitat (such as under shrubs, downed logs, small woody debris, burrows, etc.) would be visually inspected. If a CRLF is observed, the individual would be evaluated and relocated. Fossorial mammal burrows would be visually inspected for signs of CRLF use, to the extent practicable. If it is determined that a burrow may be occupied by a CRLF, the USFWS-Approved Biological Monitor would determine the best course of action to avoid harm to the frog.

AMM BIO-17: California red-legged frog and California freshwater shrimp monitoring. The USFWS-Approved Biological Monitor would be present during construction activities where take of a California freshwater shrimp or CRLF could occur. Through communication with the Resident Engineer or their designee, the USFWS-Approved Biological Monitor will stop work if deemed necessary for any reason to protect listed species and will advise the RE or their designee on how to proceed accordingly. During the winter (wet) season, a full-time USFWS-Approved Biological Monitor would be on-site for the increased chance of CRLF movements through the project site (dispersal behavior).

AMM BIO-18: California red-legged frog discovery. If a CRLF is discovered, the Resident Engineer and USFWS-Approved Biological Monitor would be immediately informed.

- a) The RE or their designee will immediately contact the USFWS-Approved Biological Monitor when a CRLF is observed within the construction zone. Construction activities would be suspended within a 50-foot radius of the animal until it leaves the site voluntarily or the animal is relocated by the USFWS-Approved Biological Monitor. The USFWS-Approved Biological Monitor would follow established CRLF protocols for relocation of the frog.
- b) The USFWS would be notified within one working day if a CRLF is discovered within the construction site.
- c) Captured CRLF would be released within appropriate habitat outside of the construction area, as close to the discovery location as possible, and within suitable habitat similar to where it was

discovered. The release habitat would be determined by the USFWS-Approved Biological Monitor.

The USFWS-Approved Biological Monitor would take precautions to prevent introduction of amphibian diseases in accordance with the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (USFWS 2005).

AMM BIO-19: California red-legged frog exclusion fencing. Before starting construction, exclusion fencing would be installed in areas where the CRLF are most likely to occur. This may include areas considered potential frog aquatic non-breeding habitat, such as delineated *Waters of the U.S.* The exclusion fencing would remain in place as long as active construction is anticipated. The final project plans would depict the locations where the exclusion fencing would be installed, and the type of materials to be used.

AMM BIO-20: Rain events. The USFWS-Approved Biological Monitor would determine which construction activities may need to be halted within 24 hours of a 0.1-inch rain event, or when there is a forecast of 40 percent or more chance of precipitation, to ensure protection of CRLF. If, by 2 p.m., rain is forecast for the remainder of the day or subsequent night with a 70 percent or greater probability of rain (based on the nearest National Weather USFWS forecast, available at <http://forecast.weather.gov>), work may be postponed until 24 hours have passed between the last rain event and the start of work.

AMM BIO-21: Dewatering. Dewatering and discharging activities would be conducted according to standard Caltrans requirements.

- a) The dewatering plan would be provided to the USFWS, CDFW, and NMFS for review, comment, and approval in advance of its establishment.
- b) An agency-approved Biological Monitor would be present during dewatering activities to capture and relocate California freshwater shrimp, CCC steelhead and CRLF as needed.
- c) The agency-approved Biological Monitor would be present during the dewatering activities to capture and relocate native species. Captured animals would be relocated up or downstream of the dewatering system as appropriate to its biological requirements.
- d) Equipment used within the dewatered creek channel would be inspected daily for leaks by the agency-approved biological monitor. If any are found, a drip pan would be placed under the leak and it would be repaired immediately by the contractor.
- e) For dewatering systems that require pumping, all intakes would be completely screened with wire mesh not larger than 5 millimeters (0.2 inch) to prevent wildlife from entering the pump system.

Upon completion of construction activities, any barriers to flow would be removed in a manner that would allow flow to resume with the least disturbance to substrate.

In addition to these AMMs, the following Mitigation Measure will also be incorporated into the project:

MM BIO-1: Habitat enhancement for California freshwater shrimp (CFS). Caltrans will incorporate the preferred habitat substrate vegetation such as willows, alders or other vegetation plantings that can create vegetation that overhangs channel banks for CFS into the on-site Habitat Mitigation and Monitoring Plan (HMMP). The HMMP will be developed during the design phase in coordination with the regulatory agencies and in accordance with Caltrans standard specifications. The specifications include requirements for native and non-invasive and noxious plants, quality assurance, installation methods, and documentation. Caltrans will coordinate with the USFWS and CDFW on the development of the HMMP for CFS.

2.3.6 Invasive Species

2.3.6.1 REGULATORY SETTING

On February 3, 1999, President William J. Clinton signed 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.” 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 NEPA analysis for a proposed project.

2.3.6.2 AFFECTED ENVIRONMENT

Vegetation along some portions of the roadway is the result of landscaping with both native and non-native species, while other disturbed portions have been colonized by pioneer species, both native and non-native. Some of these have the potential to be invasive, including tree of heaven (*Ailanthus altissima*), English ivy (*Hedera helix*), and wild oats (*Avena* spp.). A full list of invasive plants observed within the BSA are included in Table 2.3-9.

Table 2.3-9 Invasive Plant Species Present within the BSA

Common Name	Scientific Name	Location Where Observed	Invasive Potential*
Bigleaf periwinkle	<i>Vinca major</i>	BSA	Moderate
English ivy	<i>Hedera helix</i>	BSA	High
Milk thistle	<i>Silybum marianum</i>	BSA	Limited
French broom	<i>Genista monspessulana</i>	BSA	High

Common Name	Scientific Name	Location Where Observed	Invasive Potential*
Common fig	<i>Ficus carica</i>	BSA	Moderate
Wild oat	<i>Avena fatua</i>	BSA	Moderate
Foxtail barley	<i>Hordeum murinum</i>	BSA	Moderate
Himalayan blackberry	<i>Rubus armeniacus</i>	BSA	High
Tree of heaven	<i>Ailanthus altissima</i>	BSA	Moderate

Notes:

*A = severe, B = moderate and C = limited, as derived from the California Invasive Plant Council

Source: Cal-IPC 2020

2.3.6.3 ENVIRONMENTAL CONSEQUENCES

Build Alternative

Construction

The Build Alternative is expected to have minimal effect on the spread of invasive species within the BSA. The area is currently colonized by relatively minor amounts of invasive species of plant and wildlife that may be removed during construction. Overall, the proposed improvements are not expected to result in the colonization of additional species. None of the species on the California list of noxious weeds are currently used by Caltrans for erosion control or landscaping. All equipment and materials would be inspected for the presence of invasive species. Implementation of Project Features BIO-8 through BIO-11 and AMM BIO-4 would reduce the spread of invasive species.

Operation

Once construction is completed, the Build Alternative would carry the same number of travel lanes as existing conditions and would have minimal potential to spread invasive species. Therefore, operation of the Build Alternative would have no impact.

No-Build Alternative

Construction and Operation

The No-Build Alternative would make no physical or operation improvements within the BSA. Therefore, the No-Build Alternative would not affect invasive species.

2.3.6.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

In addition to the Project Features listed in Appendix D, the project would incorporate the following AMMs:

AMM BIO-4: Equipment Inspection. Refer to Section 2.3.1.3 for the description of this measure.

No-Build Alternative

Construction and Operation

No AMMs are proposed under the No-Build Alternative.

2.4 Cumulative Impacts

This section provides information regarding past, present, and reasonably foreseeable development projects, which together with the project, could potentially have a substantial or considerable contribution to cumulative environmental impacts in the respective resource study area. The past is generally represented by the current existing condition; however, this analysis reviews recent changes in the resource history. The reasonably foreseeable future is generally a 20-year timeframe.

Incremental impacts that may result from the project are considered in the context of the cumulative condition that exists from previous human actions and in light of other reasonably foreseeable future actions. The analysis proceeds as follows:

- 1) Determine which resources would be significantly impacted by the project
- 2) Determine whether there is a detrimental condition or deterioration in the health of a resource within the context of impacts from past, present, and other reasonably foreseeable future actions
- 3) Determine whether the proposed project and the foreseeable condition combine to result in a cumulative impact.

2.4.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with potential impacts of this proposed project. A cumulative impact analysis 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 time.

Cumulative impacts to resources in the study 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 National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

2.4.2 Resources Analyzed

The *Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process Guidance for Preparers of Cumulative Impact Analyses* (FHWA 2003) describes how the cumulative impact analysis should focus on resources significantly impacted by the proposed project, or resources currently in poor or declining health or at risk.

The resources that are analyzed in this analysis and meet these criteria are the following:

- Cultural Resources
- Visual/Aesthetics
- Biological Resources

If a proposed project would not result in a direct or indirect adverse effect on a resource, then it would not contribute to a cumulative impact on that resource and does not need to be further evaluated. The following resources were determined not to have a resulting adverse effect from the proposed project: land use, parks and recreational facilities, community character and cohesion, utilities/emergency services, traffic and transportation, geology/soils/seismic/topography, hazardous waste materials, air quality, noise, and hydrology and floodplain; therefore, these resources would not contribute to a cumulative impact. Through the evaluation in the preceding sections of Chapter 2 of this Initial Study/Environmental Assessment (IS/EA), the proposed project was also determined to result in less than significant impacts with the incorporation of Project Features and avoidance, minimization, and/or mitigation measures (AMMs), and therefore, would not result in cumulative impacts on the following resources: farmlands and water quality and stormwater runoff.

Certain resources are not vulnerable to incremental/cumulative impacts. Examples include geologic and seismic hazards related to future developments in the project Resource Study Area. Geologic and seismic hazards are site specific and relate to the type of building or structure proposed and soil composition and slope of a given site. None of the other planned projects in the vicinity would interact with the proposed State Route 29 (SR 29) bridge structure to increase the risk of geologic or seismic hazards; therefore, no further cumulative impact analysis is warranted.

2.4.3 Resource Study Areas

Table 2.4-1 lists all resource areas included in the cumulative analysis, including the resource study area. The resource study areas in the context of the cumulative analysis are different than the “study areas,” which are defined in Chapter 2 of this IS/EA for analyzing the direct and indirect impacts to each resource area. This difference is because a cumulative impact analysis reviews the resources in the project vicinity as a whole, rather than merely the potential range of direct and indirect impacts from the project.

Table 2.4-1 Resource Study Area by Resource Area

Resource Area	Inclusion in Cumulative Analysis	Resource Study Area
Cultural Resources	Yes	Immediate project area (generally 1 mile from the project)
Visual/Aesthetics	Yes	State scenic highway eligible portions of SR 29 (generally viewshed surrounding the project)
Biological Environment	Yes	Local watershed (generally 5 miles from the project)

Note:

SR 29 = State Route 29

Table 2.4-2 lists current and foreseeable project in Napa County (Figure 2.4-1). These projects are considered along with past projects and the Build Alternative and No-Build Alternative in the following cumulative analysis.

Table 2.4-2 Current and Foreseeable Projects

Name	Location	Jurisdiction	Proposed Uses	Status
P19-00100: Madrigal Family Winery Major Modification	APN: 022-010-040-000 3718 St. Helena Highway North, Calistoga	Napa County	Major Modification to Use Permit No 02170-UP to increase employees, visitation and marketing event program.	Application submitted March 17, 2019.
P19-00170: Frank Family Vineyards Winery Major Modification	APN: 020-290-007-000 1091 Larkmead Lane, Calistoga	Napa County	Major Modification to increase visitation (no cap), employees, modify conditions of approval, mitigation measures, and hours of operation	Application submitted March 29, 2019.
P19-00459: Castello di Amorosa Major Modification	APN: 020-390-012-000 4045 North St. Helena Highway	Napa County	Major Modification in response to Status Determination P19-00145. Request change 9,700 square feet of barrel storage to tasting rooms; change 1,900 square feet of office to wine club space; new 19,82 square feet of outdoor patio area for wine club; and new 20,300 square feet of outdoor unconditioned production area.	N/A
04-2Q260 Vine Trail (Caltrans)	Calistoga to St. Helena (PM 33.5-37.4)	NVTA, Caltrans	NVTA and Caltrans plan to construct a bike/pedestrian trail between Calistoga and St. Helena. Most of the work will be off of the highway in the shoulder or on county roads. This project is concurrently in the planning and design phase.	Construction Date: Spring 2021 to Winter 2023

Name	Location	Jurisdiction	Proposed Uses	Status
04-4J300 Pavement Preservation CAPM (Caltrans)	St. Helena to Calistoga (PM 29.3-36.9)	Napa County	CAPM project that would cold-plane the asphalt and replace it, fix any culverts, and make other minor fixes to the roadway such as fixing the striping and the rumble strips.	Construction Date: Spring 2022 to Fall 2024
State Parks – Fish Passage Barrier Improvement	Bothe-Napa Valley State Park	State Parks	Project consists of removal of two 6-foot diameter corrugated steel culverts, each 54 feet long with mitered inlets and outlets. The drainage features of this crossing are compromised and do not properly function during high stream flow events. In its current condition, stream flow overtops the Day Use Road, eroding the road edge and minimizing road integrity, causing downstream scour and erosive conditions. Project proposes grading and restoring the channel and replacing the road crossing with a natural bottom crossing structure that will result in minimal impacts outside of the current disturbance footprint.	In planning phase
Project ID 63	Larkmead Lane from SR 29 to Silverado Trail	NVTA	Class II Bike Lane	In planning phase
Project ID 62	Silverado Trail from Larkmead Lane to Dunaweal	NVTA	Class II Bike Lane	In planning phase
Napa River Bridge Replacement Project (BR# 21-0019)	SR 29 PM 37.0	Caltrans	Project consists of a bridge replacement of the Napa River Bridge in the City of Calistoga	Post-construction monitoring

Notes:

APN = Assessor’s Parcel Number

Caltrans = California Department of Transportation

CAPM = Capital Preventive Maintenance

ID = Identification

NVTA = Napa Valley Transit Authority

State Parks = California Department of Parks and Recreation

Source: Napa County 2020, Caltrans 2020I, NVTA 2019



V:\1857\Active\185704409_CalTransDash_RitchieCreek\03_data\gis\mxd\figures\Ch2\Fig_2.4-1_CumulativeProjects.mxd Revised: 2020-11-04 By: jglendening

Legend
 Project Site

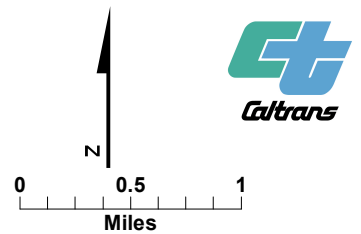


Figure 2.4-1
Cumulative Projects
 Ritchie Creek Bridge Replacement Project for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

2.4.4 Resource Trends/Historical Context

2.4.4.1 VISUAL/AESTHETICS

The landscape along SR 29 is rural, with native and climatically adapted vegetation within the riparian corridor and along both sides of the highway corridor. SR 29 is listed as Eligible for State Scenic Highway designation. Views of the vineyards and open space areas are partially screened by riparian vegetation within Ritchie Creek and trees located along the highway. Beyond the vineyards, SR 29 provides expansive views of the Napa Valley and of the Vaca Mountains, which border the east side of the valley floor. Some development has occurred in the project vicinity over time; however, the area has undergone little visual change. Newer development has mostly occurred in the City of Calistoga and the City of St. Helena, which are located to the north and south of the project site, respectively.

2.4.4.2 CULTURAL RESOURCES

According to the Napa County General Plan, archaeological records show that the Napa Region was inhabited in prehistoric times by the Wappo, Lake Miwok, and Patwin tribal groups. These communities generally lived near creeks and other water sources. Accordingly, the Napa River Watershed has had numerous archaeological investigations that have identified a range of prehistoric sites within the area. While parts of this watershed have been surveyed, there is a chance that construction activities could lead to discovery of unrecorded buried and surface sites and tribal cultural resources.

2.4.4.3 BIOLOGICAL RESOURCES

Historically, this area of Napa County was likely dominated by seasonally flooded wet meadows and marshes supporting riparian forests and bordered by dry grassland and oak savannas. Within the biological study area today, rural residences landscaped with both native and non-native species are located on the southbound side of SR 29 north of Ritchie Creek. The northbound side of SR 29 is lined with cropland and vineyards abutting the riparian edges of the creek. Development within the biological study area include roadways, such as the SR 29 and a roadway within Bothe-Napa Valley State Park, and rural residential development, consisting of driveways, yards, and houses. Other development includes agricultural fields, such as vineyards. The study area also contains water features, including portion of an approximately 1-acre stock pond on private property on the northbound side of SR 29 and Ritchie Creek.

Threatened and Endangered Species

According to the Napa County General Plan, Napa County has a diverse array of habitats and natural biodiversity including many special-status species that are currently protected under federal and state regulations. As a result, the health of the natural environment and these species requires protection of habitat.

As discussed in Chapter 2.3, Biological Environment, 13 plant species are federally and/or state-listed; however, only one species, the Clara Hunt's milk-vetch, has moderate potential to occur within the Biological Study Area (BSA). In addition, four special-status species with moderate or high

potential to occur within the BSA that were considered federally and/or state-threatened or endangered species. These species include northern spotted owl, California red-legged frog (CRLF), Central California Coast (CCC) steelhead, and California freshwater shrimp (CFS).

The northern spotted owl habitat includes dense old growth or mature forests, particularly within the northwest portions of Napa County. The northern spotted owl is sensitive to disturbance, including noise and visual disturbances and therefore is vulnerable to development or construction projects within the county. Construction noise or encroachment of humans into owl habitat can affect reproductive success and survivorship. Suitable habitat is present west of the BSA in the Bothe-Napa Valley State Park; however, the species was not observed during surveys throughout 2019 or early 2020.

The CCC steelhead population has declined within Napa County over the past several decades. According to the Napa County General Plan, that the steelhead population may be less than a few hundred adults. However, there have been ongoing efforts to monitor the population within the Napa River watershed. Although there is one California Natural Diversity Database (CNDDDB) occurrence within 2.5 miles of the BSA, the species was not observed during surveys throughout 2019 or early 2020.

CRLF requires habitat that consists of both aquatic and riparian elements. CRLF are found primarily in wetlands and streams in the coastal drainages of Central California. Within the BSA, the California red-legged frog was not observed during surveys. A targeted survey was not conducted for this species. Potential aquatic non-breeding habitat and associated upland habitat exists within the BSA.

CFS is endemic to Marin, Sonoma, and Napa Counties, inhabiting slow-moving perennial streams with undercut banks and abundant overhanging vegetation. There is one CNDDDB occurrence from 2018 less than 4 miles north of the BSA within a channel with connectivity to Ritchie Creek. However, the CFS or signs of its presence were not observed during surveys.

2.4.5 Cumulative Impact Analysis

2.4.5.1 BUILD ALTERNATIVE

Visual/Aesthetics

As discussed in Section 2.1.7, Visual/Aesthetics, temporary impacts of the Build Alternative would result from vegetation clearing along Ritchie Creek and both sides of the highway, temporary detour bridge work, materials staging, presence of construction equipment, and potential construction light and glare. During construction, Caltrans would implement proposed Project Features and AMMs to reduce impacts associated with the removal of vegetation and the presence of construction equipment along the highway.

Once construction of the new bridge is completed, Caltrans would restore all areas temporarily disturbed by construction activities to near pre-construction conditions in accordance with applicable permits, Caltrans requirements, and AMM AES-1 through AES-4. Revegetation with fast-growing

natives and natural hydraulic evolution of the creek channel is expected to reduce temporary impacts to upland and riparian areas in the first 5 years following completion of the project. Permanent changes to visual resources would result from construction of the new bridge and the removal of vegetation.

The Build Alternative would result in the permanent loss of some vegetation due to utility safety requirements. The 04-2Q260 Vine Trail (Caltrans) project and 04-4J300 Pavement Preservation Capital Preventive Maintenance (CAPM) (Caltrans) infrastructure projects are located along the same segment of SR 29 as the Build Alternative and could result in temporary and permanent impacts to visual resources and aesthetics. Caltrans, Napa Valley Transit Authority (NVRTA), and Napa County would implement similar Project Features and AMMs as the Build Alternative to reduce any temporary visual impacts along SR 29. Any permanent impacts from the 04-2Q260 Vine Trail (Caltrans) project and 04-4J300 Pavement Preservation CAPM, would be the responsibility of the lead agency(ies) to mitigate under a separate environmental review document. Because the new bridge dimensions would be similar to the existing bridge and disturbed areas revegetated, and with AMM AES-2 and AMM AES-3, at project completion the views would be similar in character and quality to existing views within the highway corridor. As a result, the Build Alternative would not have a considerable contribution to a cumulative impact to visual resources.

Cultural Resources

The Build Alternative identification efforts found three previously recorded prehistoric archaeological sites (P-28-000062, P- 28-000369, and P-28-000464) within the Area of Potential Effects (APE). All three archaeological sites would have portions of intact cultural deposits (identified during archaeological testing) removed during proposed construction activities, such as construction of the new bridge, temporary detour bridge, and access roads and other creek activities. Accordingly, it was determined that the Build Alternative would result in an adverse effect to these three archaeological resources. Implementation of MM CUL-1 requires compliance with the MOA between Caltrans and the SHPO (Appendix I) for an Archaeological Treatment Plan (ATP) and data recovery associated with the three archaeological resources, which will reduce the adverse effect. No new archaeological resources were identified as part of this effort. All three sites are recommended eligible for the National Register of Historic Places (NRHP) under Criterion D for their demonstrated and potential contributions to regional research issues and as historical resources under CEQA. In addition, the Cavanaugh-Wright property was found to be eligible for the NRHP under Criterion C and as a historical resource under CEQA because it meets California Register of Historical Resources (CRHR) Criterion 3. Contributing elements to this historic built resource include the circular driveway, a portion of the property's retaining wall along the creek, and decorative landscaping. AMM CUL-1 would require environmentally sensitive area (ESA) fencing to be installed prior to construction to visibly mark the boundaries of avoidance around the circular driveway. Project Feature CUL-1 would require construction work to be diverted in the event that cultural resources are encountered.

Caltrans conducted outreach and informal coordination with Native American tribes requesting information regarding the potential for sensitive Native American resources. Results of the records searches indicate that no Tribal Cultural Resources are known within or in the immediate vicinity of the project area.

Other reasonably foreseeable projects in the nearby area are related to infrastructure and transportation improvements and would involve similar types of construction-related impacts and have the potential to uncover archaeological or other cultural resources. However, like the project, other projects would be required to go through the environmental review process and consult with SHPO as necessary to mitigate potential impacts cultural resources or tribal cultural resources. Therefore, the project would not have a considerable contribution to a cumulative impact on cultural resources.

Biological Resources

Construction activities would involve in-water work within Ritchie Creek and the removal of riparian trees and vegetation. In-water activities would occur before the breeding season of the western pond turtle, California giant salamander, foothill yellow-legged frog, and CRLF, thereby, avoiding impacts to the breeding success of these species. However, the removal of trees and vegetation would result in the temporary loss of nesting and foraging habitat for all special-status species that have the potential to occur within the project footprint.

Additionally, dewatering activities within Ritchie Creek would result in the temporary loss of habitat for CCC steelhead and CFS. Ritchie Creek and other rivers and creeks within the local watershed is critical habitat for CCC steelhead; therefore, other bridge modification projects, such as the Napa River Bridge (04-3G641) project, may also result in potential impacts to these species from construction activities. The 04-2Q260 Vine Trail (NVTA) project, Project ID 63, Project ID 62, 04-4J300 Pavement Preservation CAPM (Caltrans) projects are all proposed transportation infrastructure projects that would likely occur within the existing transportation right of way. While potential impacts would likely occur within previously disturbed areas, they could potentially impact suitable habitat. Furthermore, State Parks proposes a fish passage barrier improvement project that would occur within the Bothe-Napa Valley State Park, approximately 400 feet upstream from the project area that would likely have similar impacts as the Build Alternative.

All construction activities would be completed in accordance with proposed Project Features BIO-1 through BIO-18 to reduce impacts on special-status species and their habitats. The proposed Project Features would require wildlife exclusion fencing, work environmental awareness training, pre-construction bird surveys, special-status species surveys, construction site management practices, restoration of disturbed areas, replanting of vegetation, implementation of water quality erosion control best management practices (BMPs), a water diversion plan, and implementation of bank stabilization methods. The project would also be required to implement AMMs BIO-13, BIO-14, BIO-15, and BIO-21, as well as MM BIO-1, to further reduce impacts related to CFS. As a result, the Build Alternative would not have a considerable contribution to a cumulative impact to biological

resources. Furthermore, the removal of fish passage barriers would promote positive cumulative effects throughout the surrounding environment by restoring the movement of a keystone species (CCC steelhead) through the ecosystem.

2.4.5.2 NO BUILD ALTERNATIVE

Under the No-Build Alternative, the fish passage barrier would not be removed by replacing the bridge at Ritchie Creek. Continued fish barriers would occur limiting migration for state- and federally listed species, which may contribute to a cumulative impact in combination with other fish passage barriers identified within the local watershed.

2.4.6 Conclusion

The Build Alternative would not have a cumulatively significant impact on any of the previously listed resources. All potential impacts would be minimized through the proposed Project Features (Appendix D) and AMMs and MMs (Appendix B).

Chapter 3 California Environmental Quality Act Evaluation

3.1 Determining Significance Under CEQA

The Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (project) is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation has been prepared in accordance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA’s responsibility for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being or have been carried out by Caltrans pursuant to 23 United States Code (USC) Section 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans. Caltrans is the lead agency under CEQA and NEPA.

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

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

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that may be affected by the project. In many cases, background studies performed in connection with the project 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.

Project features, which can include both design elements of the project and standardized measures that are applied to all or most Caltrans projects, such as best management practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below. The annotations to this checklist are summaries of information contained in Chapter 2 that provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 Aesthetics

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) No Impact

The project would have no impact on scenic vistas. There are no scenic vistas within the project limits, and the current views of the Vaca Mountains from State Route 29 (SR 29) would not be degraded.

b-d) Less Than Significant Impact

As discussed in Section 2.1.7, Visual, SR 29 is listed as an eligible state scenic highway. The project would remove existing vegetation along SR 29 and would replace a portion of historic masonry walls located on the north side of the creek. The historic features are not visible from SR 29 and would not result in a substantial visual change. With the implementation of Project Features AES-1 through AES-5, Project Feature BIO-10, and Avoidance, Minimization and/or Mitigation Measure (AMM) AES-1 temporary construction impacts, including vegetation removal, would be less than significant.

The new bridge would appear similar to the existing bridge, and the resulting views would have similar character and quality to views that are present within the corridor. The project would incorporate AMM AES-2 which would install see-through bridge rails to provide views of Ritchie Creek. The implementation of this measure would allow for more natural views of the riparian area. In addition, the project would implement AMM AES-4 to increase context sensitivity and reduce engineering appearances of slopes. Therefore, the project would not substantially degrade the existing visual character or quality, and the impact would be less than significant.

The project would not create a permanent, new source of light or glare. During construction, lighting used by the construction crew would temporarily introduce a new source of light to the project area. However, the construction lighting would be limited to the immediate vicinity of active work to avoid light trespass. In addition, implementation of AMM AES-3 would further reduce any potential temporary impact from light and glare. Therefore, impacts from light and glare would be less than significant.

3.2.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a-b, e) Less Than Significant Impact

As summarized in Section 2.1.3 and shown in Figure 2.1-3, Farmlands, the parcels north of the project within the study area are contracted under the Williamson Act. Construction of the temporary detour bridge would result in temporary impacts to 0.39 acre of land contracted under the Williamson Act. All temporary impact areas in the Temporary Construction Easement (TCE) on private property would be reduced with the implementation of AMM AG-1. Refer to Appendix B for the full text of AMM AG-1. Therefore, the project would result in a less than significant impact.

c, d) No Impact

The project area is not located within areas designated for forest land or timberlands. There would be no impact.

3.2.3 Air Quality

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a-d) Less Than Significant Impact

The project would not conflict with or obstruct the implementation of the Bay Area Air Quality Management District (BAAQMD) Air Quality Plan. Construction would involve minor roadway widening to accommodate the temporary bridge alignment with the existing roadway, channel grading for fish passage improvement, demolition of the existing bridge, building the new bridge, and removing the temporary bridge. Construction of the project would generate temporary air pollutants and odors, including CO, nitrogen oxides (NOx), reactive organic gas (ROG), directly-emitted particulate matter (particulate matter with particles of 10 micrometers or smaller [PM₁₀] and particulate matter with particles of 2.5 micrometers or smaller [PM_{2.5}]), and toxic air contaminants such as diesel exhaust particulate matter. As discussed in Section 2.2.5, construction-related emissions generated during construction would be below the BAAQMD’s thresholds of significance. Furthermore, the project would implement Project Features AIR-1 through AIR-4 to further reduce air quality impacts resulting from construction activities and would not result in a cumulatively considerable impact. Operation of the project would not increase the traffic capacity on SR 29. Therefore, the construction and operation of the project would not expose sensitive receptors to substantial pollutant concentrations or odors, and impacts would be less than significant. No AMMs or MMs are required to reduce impacts to air quality.

3.2.4 Biological Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Less Than Significant Impact with Mitigation

SPECIAL-STATUS ANIMAL SPECIES

During the site surveys conducted throughout 2019 and early 2020, none of the nine special-status animal species that have potential to occur in the project area were observed. However, the project area contains suitable habitat for these species; therefore, there is potential for these special-status animal species to occur within the project footprint. Construction activities would involve in-water work within Ritchie Creek and the removal of riparian trees and vegetation. The project would install a temporary creek diversion system, which would result in the temporary loss of habitat for the western pond turtle, California giant salamander, foothill yellow-legged frog, California red-legged frog, Central California Coast steelhead, and California freshwater shrimp. The in-water work would have a low potential to affect the breeding and nesting success for the western pond turtle, California giant salamander, foothill yellow-legged frog, and California red-legged frog as the construction

phase would occur after the breeding season for these species. If the Central California Coast steelhead, California freshwater shrimp, or other species is found during in-water work, it would be relocated by a Caltrans biologist in accordance with Project Feature BIO-12 and AMM BIO-1. In addition, implementation of AMMs BIO-12 through BIO-21 would further reduce impacts to the CFS and CRLF.

The northern spotted owl is sensitive to disturbance, including noise and visual disturbances. Nighttime construction activities would occur after 9:00 PM for up to 12 nonconsecutive nights. Construction noise or encroachment of humans into owl habitat can affect reproductive success and survivorship. Nests and activity centers are likely to be much more than 330 feet away from construction activities. Furthermore, noise levels would decline to about 54 decibels (dB), close to 'natural ambient,' at distances of 3,200 feet (0.6 mile) from the footprint. The line-of-sight from known nests to the project footprint is at least 1.6 miles. Individual northern spotted owls could potentially forage in the BSA or fly over the project during nighttime hours. Nighttime construction activities would occur after 9:00 PM for up to 12 nonconsecutive nights, including a maximum of six nights within the breeding season. Because nesting in close proximity to the project area is not expected and the construction nighttime work would occur over a small area for a short duration, impacts to the northern spotted owl would be less than significant.

The removal of trees and vegetation within the project footprint would result in the temporary loss of nesting and foraging habitat for bats, western pond turtle, California giant salamander, western bumble bee, and raptors and other migratory birds. The removal of vegetation would also cause indirect impacts by changing certain aquatic characteristics, such as water temperature and dissolved oxygen levels. These changes would impact habitat for the foothill yellow-legged frog, California red-legged frog, Central California Coast steelhead, and the California freshwater shrimp.

As outlined in Appendix D, the project would implement Project Features BIO-1 through BIO-20 to reduce impacts on special-status species and their habitats during construction. The project would also be required to implement AMMs BIO-1 through BIO-13, and MM BIO-1 to further reduce impacts related to tree removal and construction impacts on bats and California freshwater shrimp. Refer to Appendix B for the full text of AMMs for biological resources. Once construction is completed, all disturbed areas would be restored to the maximum extent feasible. Removal of the fish barrier passage and subsequent habitat restoration and enhancement would also lead to permanent beneficial impacts for the foothill yellow-legged frog, Central California Coast steelhead, and the California freshwater shrimp. Therefore, impacts on special-status animal species would be less than significant with mitigation incorporated.

SPECIAL-STATUS PLANT SPECIES

As discussed in Chapter 2.3, Biological Environment, during the site surveys conducted throughout 2019 and early 2020, none of the 12 special-status plant species that have potential to occur in the project area were observed. As required by Project Feature BIO-5, a qualified biologist would conduct surveys for special-status plant species prior to and during construction. During construction,

vegetation would be cleared only where necessary and grubbing would be minimized to the maximum extent possible as required by Project Feature BIO-11. Once construction is completed, disturbed areas would be replanted, reseeded, and restored in accordance with Project Feature BIO-10. As such, impacts on special-status plant species would be less than significant.

b) Less Than Significant Impact

As a tributary to the Napa River, Ritchie Creek is considered waters of the United States. The creek, including the bed, bank, channel, and adjacent riparian area, is also under the jurisdiction of the California Department of Fish and Wildlife (CDFW). Prior to construction, Caltrans would obtain a Section 404 permit from the U.S. Army Corps of Engineers (USACE), a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

As discussed in Section 2.3.2, Wetlands and Other Waters, 0.12 acre of jurisdictional waters is estimated to be temporarily affected, and approximately 0.16 acre is estimated to be permanently affected by this project. The project would incorporate water quality and erosion control BMPs, a water diversion plan, and measures to stabilize the bank and reduce temporary construction impacts (Project Features BIO-15 through BIO-18). The project would also install a temporary creek diversion system to divert creek flow around the work area during construction. Caltrans would conduct stormwater and water quality monitoring and prepare a rain event action plan as required by AMM HYD-1 to reduce impacts from the in-water work.

Removal of the existing culvert would result in a net reduction of fill below the ordinary high-water mark (OHWM). Permanent beneficial impacts would result from the removal of fish passage barriers, the subsequent habitat enhancement, and the increase in aquatic habitat. The project is expected to result permanent beneficial impacts to Ritchie Creek. The project would have long-term beneficial effects to aquatic resources.

c) No Impact

As discussed in Section 2.3.2, Wetlands and Other Waters, there are no wetlands in the project area. Therefore, there would be no temporary or permanent impacts to wetlands.

d) Less Than Significant Impact

Ritchie Creek and its adjacent riparian habitat provide dispersal and migration corridors for regionally occurring plant and wildlife species. The purpose of the project is to improve fish migration and remediate the fish passage barrier in Ritchie Creek by replacing the existing bridge and removing the downstream concrete apron. During project construction, the project would implement Project Features BIO-1 through BIO-20 to reduce impacts on wildlife movement in the project area. Once construction is completed, the project area would be restored and wildlife movement would be improved relative to existing conditions and would benefit from improved fish passage conditions.

Therefore, the project would not interfere substantially with the movement of native fish and wildlife, resulting in a less than significant impact.

e) Less Than Significant Impact

Construction of the project would remove or trim approximately 15 to 25 trees. All trees and vegetation would be cleared only where necessary in accordance with Project Feature BIO-11. During tree removal and trimming activities, a qualified biologist would be on-site (AMM BIO-1), and all woody debris would remain (AMM BIO-2). All disturbed areas would be restored to the maximum extent feasible. AMM BIO-3 would require replacement planting for the loss of oak species, native species, and other species, as designated by permit conditions and local ordinances.

The project is exempt from Napa County Ordinance No. 1438 Water Quality and Tree Protection Ordinance through Section 18.108.050(D) which covers “construction and maintenance of all public roads and any other public facilities, including flood control facilities, required by and completed under the direction of any public agency.” Therefore, the project would not conflict with any local policies or ordinances, and impacts would be less than significant.

f) No Impact

There are no existing Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) within Napa County (Napa County 2007). The project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP. There would be no impact.

3.2.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Caltrans conducted architectural history surveys and research in February 2019 and January 2020. Caltrans Professionally Qualified Staff (PQS) searched for properties listed or determined eligible for National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historical Landmarks, and California Points of Historical Interest through the National Park Service’s online NRHP library, the California Office of Historic Preservation online registry inventory, and the Napa County Assessor's Office records. PQS also sought specific information on the history of the buildings on the Cavanaugh-Wright (Assessor’s Parcel Number [APN] 022-020-004-000) and Mitchell-Wright (APN 022-020-003 000) parcels, and information on the historic context that would not only inform their evaluations of the significance of those properties but would also uncover other properties that were not otherwise apparent.

a) Less Than Significant Impact

Caltrans identified one historic built resource, the Cavanaugh-Wright House, as eligible for listing on the NRHP within the Area of Potential Effects (APE). The Cavanaugh-Wright House at 3701 St. Helena Highway (APN 022-020-004-000) was found eligible for the NRHP under Criterion C. Contributing elements to this historic built resource include the circular driveway, a portion of the property’s retaining wall along the creek, and decorative landscaping.

The Build Alternative would access the project site using an access road adjacent to the Cavanaugh-Wright House, as shown in Figure 1-2 within Chapter 1.0, Proposed Project; however, the access road would be within the Caltrans right of way and would not impact contributing historic features of the property. In addition, the Build Alternative would remove and replace a portion of the retaining wall located along Ritchie Creek to resemble the concrete retaining wall located further upstream. In addition, the project would remove and replace a portion of the retaining wall located near the guardrail north of the bridge on the north bank of the creek to be in-kind¹. However, such removal and replacement would not result in an adverse effect to the Cavanaugh-Wright House or its

¹ In-kind replacement is when a new feature meets the design specification of the item it is replacing.

contributing elements because the portion of the retaining wall is not considered to be historic or would be replaced in-kind. In order to avoid the circular driveway within the Cavanaugh-Wright property, AMM CUL-1 would require an environmentally sensitive area (ESA) fencing to be installed prior to construction to visibly mark the boundaries of avoidance.

Construction could result in temporary visual impacts, increase noise levels, and increase air pollutants, such as dust and particulate matter, and vibration, due to the excavation, grading, hauling, and other construction-related activities. Construction activities would be short-term. Once construction is completed, the proposed bridge would carry the same number of travel lanes as existing conditions and would not impact historic resources. The impact would be less than significant. This determination was documented in a Supplemental Historic Property Survey Report (HPSR) with an attached Finding of Adverse Effect as further described in Section 2.1.8, Cultural Resources. The State Historic Preservation Officer (SHPO) provided concurrence of this finding on November 6, 2020.

b) Less Than Significant Impact with Mitigation

Caltrans PQS conducted archaeological reconnaissance surveys within the archaeological APE on October 26, 2018 and February 20, 2019. Additionally, extended Phase I and Phase II Investigations were conducted from November 6 to November 15, 2019. Identification efforts found three previously recorded prehistoric, dual-component archaeological sites (P-28-000062, P- 28-000369, and P-28-000464) within the APE. No new archaeological resources were identified as part of this effort. All three sites are recommended eligible for the NRHP under Criterion D, for their demonstrated and potential contributions to regional research issues and as historical resources under CEQA. Caltrans received concurrence from the SHPO that P-28-000369/CA-NAP-482, P-28-000464/CA-NAP-582, P-28-000062/CA-NAP-58/H were found eligible for the NRHP.

As described, identification efforts found three previously recorded prehistoric, dual-component archaeological sites (P-28-000062, P- 28-000369, and P-28-000464) within the APE. All three archaeological sites would have portions of intact cultural deposits (identified during archaeological testing) removed during proposed construction activities such as construction of the new bridge, temporary detour bridge, and access roads, and other creek activities. Accordingly, it was determined that the Build Alternative would result an adverse effect to these three archaeological resources. SHPO provided concurrence of this finding on November 6, 2020. The HPSR documented that Caltrans will continue to consult with the SHPO on assessment of effects to P-28-000369/CA-NAP-482, P-28-000464/CA-NAP-582, P-28-000062/CA-NAP-58/H. On March 11, 2021, Caltrans and the SHPO executed the Memorandum of Agreement (MOA) to mitigate for impacts to the three previously recorded prehistoric, dual-component archeological sites (Appendix I). MM CUL-1 will require implementation of the MOA, which includes an Archaeological Treatment Plan (ATP) for the three archaeological resources. The ATP provisions for avoidance and mitigation to the archeological resources in the project area include data recovery, archaeological monitoring of archeological resources outside the area of direct impact, establishment of environmentally sensitive areas, and

continued consultation with Native American tribes. With the implementation of MM CUL-1, impacts on archaeological resources would be less than significant with mitigation.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find as outlined in Project Feature CUL-1.

c) Less Than Significant Impact

There are no known human remains within the project area. However, ground disturbance and subsurface construction activities associated with the project could potentially disturb previously undiscovered human burial sites. If previously undiscovered human burial sites are found on the project site, the project would implement Project Feature CUL-2 and stop all work within 60 feet of the discovery. Caltrans Cultural Resources Studies Office Staff would assess the remains and contact the County Coroner per Public Resources Code (PRC) Sections 5097.98, 5097.99, and 7050.5 of the California Health and Safety Code. If the Coroner determines the remains to be Native American, the Coroner would contact the Native American Heritage Commission (NAHC), who would assign and notify a Most Likely Descendant (MLD). Caltrans would consult with the MLD on respectful treatment and reburial of the remains. Further provisions of PRC 5097.98 would be followed as applicable. Therefore, impact would be less than significant.

3.2.6 Energy

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VI. ENERGY: Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b) No Impact

The construction and operation of the project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Construction activities would result in short-term energy consumption from the use of petroleum fuels by off-road construction equipment, and from on-road vehicles used by construction workers to travel to and from the site during construction and to deliver construction materials. With the implementation of Project Feature GHG-2, Caltrans would use solar energy to reduce the use of nonrenewable energy during construction. The project is not a capacity-increasing transportation project and would not increase use of energy resources. The project would not conflict with state and local plans for renewable energy and energy efficiency. There would be no impact.

3.2.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS: Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a-d) Less Than Significant Impact

The project is not located within an Alquist-Priolo earthquake fault zone. The closest fault zone to the project site is the Maacama Fault zone, which is located about 7.5 miles west of the project area (USGS 2020). Napa County is located in a highly active seismic region, and earthquake-related ground shaking is expected to occur during the design life of the project. Seismic ground shaking could result in liquefaction, landslides, lateral spreading, subsidence, or collapse. The project site is not located in an area subject to seismically induced landslides and does not contain expansive soils or unstable soils (ABAG 2020). However, there is a high potential for liquefaction to occur in the project area (Napa County 2007). All components of the project would be designed in accordance with standard engineering practices, and Caltrans standard specifications and current seismic design

criteria to minimize impacts from ground shaking and liquefaction. During construction, the project would implement erosion control measures and BMPs outlined in the Stormwater Pollution Prevention Plan (SWPPP) (Project Features HYD-1 and HYD-2) to minimize soil erosion or the loss of topsoil. Therefore, impacts would be less than significant.

e) No Impact

The project would not involve a septic system or alternative wastewater system. There would be no impact.

f) No Impact

As discussed in Section 2.2.3, the project area is underlain entirely by Holocene alluvial fan deposits, which have a low potential to contain significant paleontological resources. There would be no impact.

3.2.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Less than Significant Impact

The project would result in greenhouse gas (GHG) emissions during construction; however, it is anticipated that the project would not result in an increase in operational GHG emissions. The project would implement GHG-reduction measures such as Project Feature GH-1 and GH-2 to reduce temporary construction impacts. Therefore, the impact would be less than significant level. Please refer to Section 2.4, Climate Change, for further discussion.

b) Less than Significant Impact

The project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. With implementation of construction GHG reduction strategies, the impact would be less than significant.

3.2.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a, b) Less Than Significant Impact

Prior to construction, a site investigation to handle potential soil contamination levels in the project limits to inform appropriate conditions to minimize impacts during construction. The replacement of the existing bridge would require a survey to assess the potential presence of metals, asbestos-containing material, lead-based paint, aerially deposited lead (ADL), or other contaminants. Additionally, if the design of the project would require excavation of large quantities of soil, a site investigation would be conducted to characterize the soil. The project would incorporate Project Features HAZ-1 through HAZ-3, which would specify the handling, transportation, and disposal requirements for hazardous materials. As such, hazardous waste and materials would be handled in accordance with all local, state, and federal regulations. The project would not create a hazard to the public or environment. The impact would be less than significant.

c-e) No Impact

There are no schools located within 0.25 mile of the project site. As discussed in Section 2.2.4, Hazardous Waste/Materials, the State Water Resources Control Board (SWRCB) GeoTracker database and the California Department of Toxic Substances Control EnviroStor database searches did not come up with any sites containing hazardous materials around the project area. The project is not located within an airport land use plan or within 2 miles of a public airport. The project would not create a significant hazard to the public or the environment. There would be no impact.

f) Less Than Significant Impact

Construction and operation of the project would not interfere with an emergency evacuation or response plan. During construction, a temporary detour bridge would be constructed to maintain traffic flow on SR 29. The project would also implement a Traffic Management Plan (TMP) (Project Feature TRA-1) to coordinate with emergency service providers, notify the public and maintain emergency access during construction. Therefore, the impact would be less than significant.

g) Less Than Significant Impact

As discussed in Section 3.3, Wildfire, there is potential for wildland fire to occur in the project area. The project would implement fire prevention practices as required by AMM WF-1 to reduce the potential for wildland fire to occur during construction. Refer to Appendix B for the description of AMM WF-1. Once construction of the project is completed, the new bridge would serve in the same capacity as the existing bridge and would not increase the potential for wildland fires to occur. Please refer to Section 3.3, Wildfire, for additional discussion.

3.2.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iii) 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; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a, e) Less Than Significant Impact

As discussed in Section 2.2.2, Water Quality and Stormwater Runoff, a timber mat would be constructed to contain any construction debris that would fall outside of the existing concrete apron. Construction in the creek would be limited to the dry season between June 1 and October 31 to reduce the potential for work during high water flows in Ritchie Creek. A temporary creek diversion system would be installed to divert creek flow around the work area during construction.

The project would comply with the National Pollutant Discharge Elimination Service (NPDES) Construction General Permit and the Caltrans MS4 Permit. The project would implement a SWPPP, BMPs, and low-impact development measures (Project Features HYD-1 and HYD-2) to control sediment and reduce water quality impacts during construction and operation. The project would also implement AMM HYD-1, which would require Caltrans to complete stormwater monitoring, water

quality monitoring, and prepare rain event action plans to reduce potential impacts from the proposed in-water work. Refer to Appendix B for the description of AMM HYD-1. The SWPPP and BMPs would be consistent with the policies and objectives of the Water Quality Control Plan for the San Francisco Bay RWQCB. Therefore, impacts on water quality during construction and operation of the project would be less than significant.

b) Less Than Significant Impact

The amount of disturbed soil areas is estimated to be 1 acre and would include construction access routes, bridge demolition and construction areas, excavation areas, and staging areas. Once construction is completed, the Build Alternative would include 0.24 acre of replaced impervious surface; however, the Build Alternative would have no net new impervious surface. Furthermore, the project would implement Project Feature HYD-3 and would incorporate post-construction water quality treatment BMPs. The amount of impervious surface created by the project would be minimal, and therefore, impacts to groundwater supplies and groundwater recharge would be less than significant.

c, d) Less Than Significant Impact

As discussed in Section 2.2.2, Water Quality and Stormwater Runoff, construction of the project would temporarily alter the existing drainage pattern of the site. A temporary creek diversion system would be installed to divert creek flow around the work area during construction. The temporary creek diversion system would use diversion plastic pipes with corrugated inner walls and temporary cofferdams located at the upstream and downstream ends. The cofferdams would be assembled before the beginning of any work in the creek or any water body and removed at the end of construction.

The project is not in an area that could be inundated by seiche, tsunami, or mudflow. A portion of the project site is within Special Flood Hazard Area (SFHA) Zone A, which represents areas subject to flooding by the 100-year flood event. As discussed in Section 2.2.1.1, the water surface elevation during a 100-year flood event would not overtop the bridge crossing. Although the modeling results in the LHS indicates that the Build Alternative would not meet the Caltrans or Federal Emergency Management Agency (FEMA) bridge freeboard criteria, the project would decrease the 100-year water surface elevation upstream and downstream of the bridge because the cross-sectional area beneath the bridge would increase. Furthermore, the project would implement Project Features HYD-1 through HYD-3 to reduce erosion and water pollution. As such, the project would not substantially change the channel such that it would result in increased erosion, surface runoff, flooding on- or off-site, or otherwise degrade water quality. The impact would be less than significant.

3.2.11 Land Use and Planning

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b) No Impact

The project would not physically divide an established community. A temporary detour bridge would be constructed to maintain traffic while the bridge is undergoing demolition and construction. Once construction is completed, the new bridge would serve the same use as the existing bridge and would maintain the same number of travel lanes and shoulders. There would be no impact.

As discussed in Section 2.1, Human Environment, the project would not conflict with the Napa County General Plan, Plan Bay Area: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2013 to 2040, and the Napa Countywide Transportation Plan – Vision 2040: Moving Napa Forward. There would be no impact.

3.2.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b) No Impact

There are no documented mineral resources within the project site, and no mineral extraction activities exist on or the near the site. The project would not conflict with a resource recovery plan and would not result in the loss of availability of a locally important mineral resource recovery site. There would be no impact.

3.2.13 Noise

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIII. NOISE: Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b) Less Than Significant Impact

As discussed in Section 2.2.6, Noise, construction noise levels would exceed the maximum noise limit (86 A-weighted decibels [dBA]) established by Caltrans at 50 feet. However, the nearest receptor is a residence located 119 feet south of the project, and due to distance, maximum construction noise levels would decrease and would not exceed 86 dBA at the nearest receptor. No heavy construction equipment would be used between 9:00 PM and 6:00 AM as required by Section 14-8.02 of the Caltrans 2018 Standard Specifications. While the majority of construction activities would occur outside of nighttime hours of 9:00 PM and 6:00 AM, some construction activities may potentially occur after 9:00 PM for up to 12 nonconsecutive nights between April 2023 to November 2023. The project would incorporate Project Features NOI-1 through NOI-5 to further reduce temporary construction noise levels. The project would not modify the existing number of travel lanes on SR 29, which would increase traffic noise levels on SR 29. As such, the project would not expose people residing or working in the project area to excessive noise levels either during construction or during the operation phase. The impact would be less than significant.

Pile driving installation equipment is not anticipated for construction of the foundation, and therefore the project would not result in excessive vibration. Given the distance of the project to nearby receptors, any vibrations generated by construction equipment would spread through the ground and diminish in magnitude as they travel away from the source. The new bridge would carry the same number of travel lanes as existing conditions and would not increase vibration levels during operation. The project would have a less than significant impact related to vibration.

c) No Impact

The project is not located in the vicinity of a private airstrip or within 2 miles of a public airport. Therefore, the project would not expose people residing or working in the project area to excessive noise levels during construction or during the operation phase. There would be no impact.

3.2.14 Population and Housing

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING: Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a, b) No Impact

The project would replace the existing bridge with a similar bridge. Bridge capacity would not increase. Therefore, the project would not induce unplanned population growth and result in any property acquisition or the displacement of residents or businesses. There would be no impact.

3.2.15 Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) Less Than Significant Impact

The project would not result in a use that would directly or indirectly induce population and employment growth in Napa County. Therefore, the project would have no impact on schools, parks, or other public facilities. During construction, the project would install a temporary detour bridge and implement a TMP (Project Feature TRA-1) to maintain access for police, fire, and medical services. Impacts on fire and police protection services would be less than significant.

3.2.16 Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVI. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) No Impact

The project would not increase the current highway capacity, or induce population and employment growth in Napa County. Therefore, the project would not increase demand or use of Bothe-Napa Valley State Park. There would be no impact.

b) Less Than Significant Impact

The project does not involve the construction or expansion of recreational facilities. However, replacement of the existing bridge would replace the existing wingwalls and provide a permanent right of way easement (0.01 acre) within Bothe-Napa Valley State Park. The construction activities and the permanent right of way easement would not be located near a public access point. Construction activities would not permanently or temporarily impact the use of the recreational facilities available for public enjoyment at Bothe-Napa Valley State Park. The impact would be less than significant.

3.2.17 Transportation

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION: Would the project:				
a) Conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a, c) No Impact

The project would not conflict with the Napa County General Plan or any ordinance, policy, or congestion management program. The new bridge would be similar to the existing bridge and would not incorporate design features that would substantially increase hazards or introduce incompatible uses on SR 29. There would be no impact.

b) Less Than Significant Impact

Operation of the project would not result in any changes to vehicle miles traveled (VMT) as the traffic capacity of SR 29 would not increase. No impact would occur.

During construction, commuting workers and equipment hauling vehicles would be traveling to and from the project site, causing an increase in localized traffic; however, this would be temporary and would cease once construction is complete. Caltrans would divert traffic from the existing bridge to the temporary detour bridge over several days and nights. The majority of construction activities would occur outside of nighttime hours of 9:00 PM and 6:00 AM. Nighttime construction activities would occur after 9:00 PM for up to 12 nonconsecutive nights between April 2023 to November 2023. Construction activities may include a potential lane closure during low peak volume times.

To minimize potential effects to motorists, bicyclist, or pedestrians using local streets or SR 29 during construction, a TMP would be developed by Caltrans using Project Feature TRA-1, as summarized in Appendix D. The TMP would include public information, motorist information, incident management, construction, and impacts to local residents as feasible and would maintain access for police, fire, and medical services in the local area. . In addition, prior to construction, Caltrans would notify adjacent property owners, businesses, and the Napa County Regional Park and Open Space

District regarding construction activities and access changes. Therefore, the impact would be less than significant.

d) Less Than Significant Impact

The project would not result in inadequate emergency access. The project would install a temporary detour bridge and would implement a TMP (Project Feature TRA-1) to maintain emergency access. The impact would be less than significant.

3.2.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVIII. 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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a, b) Less Than Significant Impact

No known tribal cultural resources were identified at the project site or within 0.25 mile of the project site during the archival records search and literature review performed as part of the cultural resources inventory. A search of the NAHC Sacred Lands File was completed on December 12, 2018, and determined that there was no indication of the presence of Native American cultural resources in the project site. Formal notification under Section 106 and Assembly Bill (AB) 52 began with letters sent on December 17, 2018, to the Cortina Indian Rancheria of Wintun Indians, Middletown Rancheria, Mishewal-Wappo Tribe of Alexander Valley, and the Yoche Dehe Wintun Nation.

The Middletown Rancheria responded by letter on December 21, 2018, stating that they had no comments at the time and requested that they be contacted if any new information was found. Leland Kinter from the Yoche Dehe Wintun Nation responded by letter on January 16, 2019, stating that the project was not in their territory and deferred to Scott Gabaldon of the Mishewal – Wappo Tribe of Alexander Valley.

On March 5, 2019, Mr. Wright of the Cortina Indian Rancheria of Wintun Indians was reached by phone, and he stated Napa is usually outside their territory, and he had no comments at the time. An email was sent to Mr. Gabaldon of the Mishewal – Wappo Tribe of Alexander Valley on March 5, 2019. A phone call was placed to Mr. Gabaldon on May 29, 2019, and a message was left. Mr. Gabaldon was reached by phone and was present for the archaeological testing in November 2019. The consultation did not result in the identification of any known resources within the project area that would be impacted by the project.

However, subsurface construction activities associated with the project could potentially damage or destroy previously undiscovered unique tribal cultural resources. If previously undiscovered tribal cultural resources are found in the project area, the project would implement Project Features CUL-1 and CUL-2 and stop all construction activities within and around the immediate discovery area. If human remains are discovered within the project site, Caltrans Cultural Resources Studies Office Staff would assess the remains and contact the County Coroner per PRC Sections 5097.98, 5097.99, and 7050.5 of the California Health and Safety Code. If the Coroner determines the remains to be Native American, the Coroner will contact the NAHC, who will then assign and notify the MLD. Caltrans would consult with the MLD on respectful treatment and reburial of the remains. Further provisions of PRC 5097.98 would be followed as applicable. Therefore, the impacts would be less than significant.

3.2.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Less Than Significant Impact

As discussed in Section 2.1.5, Utilities/Emergency Services, the existing overhead poles, gas line, and telephone conduit would be temporarily relocated during construction. The realignment locations have not been determined, but would remain within the Caltrans right of way or TCEs. Caltrans would notify utility owners of the project construction schedule (Project Feature UTIL-2). The relocation of utilities in the project site would not result in access limitations. The project would not directly increase the number of residents in the area because residential land uses are not proposed; therefore, no new or expanded entitlements would be needed to serve the project. The impact would be less than significant.

b, c) No Impact

The project would not directly increase the number of residents in the area because residential land uses are not proposed. The project would not increase the demand for additional water or wastewater treatment. There would be no impact.

d, e) Less Than Significant Impact

The project would not generate excessive solid waste and would comply with all management and reduction statutes and regulations. The solid waste generated during construction would be collected and transported to an appropriate recycling, disposal, or processing facility that is properly equipped and capable of handling solid waste materials as required by Caltrans' standards (Project Feature UTIL-1). The impact would be less than significant.

3.2.20 Wildfire

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XX. WILDFIRE: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a-d) Less Than Significant Impact

The project footprint is not located within a very high fire hazard severity zone; however, the forested areas north and south of the project are identified as a high fire hazard severity zone (CAL FIRE 2020). As discussed in Section 3.3, Wildfire, the project would incorporate fire prevention practices during construction (AMM WF-1) to reduce wildfire impacts. The project would not expose people or structures to post-fire instability or change drainage patterns. Additionally, the project would implement a TMP (Project Feature TRA-1) to maintain emergency access during construction. Once construction of the project is completed, the new bridge would serve in the same capacity as the existing bridge and would not increase the existing wildfire potential. Therefore, impacts related to wildfire would be less than significant. Please refer to Section 3.3, Wildfire, for further discussion.

3.2.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a) Less Than Significant with Mitigation

As discussed in the preceding sections, the project would have the potential to result in adverse effects on biological resources and cultural resources. The project would incorporate AMMs and Project Features to reduce impacts on biological and cultural resources. Additionally, the project would implement Mitigation Measure (MM) BIO-1: Habitat enhancement for California freshwater shrimp to further reduce impacts on biological resources during construction and operation of the project. In addition, MM CUL-1 would be required to mitigate potential impacts to known cultural resources. Therefore, impacts would be reduced to a less than significant level with mitigation incorporated.

b) Less Than Significant Impact with Mitigation

As discussed in Chapter 2.4, Cumulative Impacts, the project would not have a cumulatively significant impact on any impacted resources. All potential impacts would be minimized through the project features, AMMs, and MMs. Therefore, this impact would be less than significant with mitigation incorporated.

c) Less Than Significant Impact

Construction activities would temporarily increase criteria pollutant emissions and ambient noise levels. These impacts would be temporary and the project incorporates Project Features and AMMs to minimize potentially adverse effects to humans resulting from construction activities. Therefore, the

project would not have a substantial direct or indirect impact on the human environment, and impacts would be less than significant.

3.3 Wildfire

3.3.1 Regulatory Setting

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and California Department of Forestry and Fire Protection (CAL FIRE) to develop amendments to the CEQA Checklist for the inclusion of questions related to fire hazard impacts for projects located on lands classified as very high fire hazard severity zones. The 2018 updates to the CEQA Guidelines expanded this to include projects “near” these very high fire hazard severity zones.

3.3.2 Affected Environment

The project is located on SR 29 in the northern portion of unincorporated Napa County. Napa County has an active wildfire history. The County is characterized by narrow valleys surrounded by steep, hilly terrain. With its long, dry summers and rugged topography, Napa County has a high wildland fire potential. The interface in the County between wildland areas and development exposes residents, businesses, and community facilities to wildland fire risks.

Climate and landscape characteristics are among the most important factors influencing hazard levels. Weather characteristics such as wind, temperature, humidity, and fuel moisture content affect the potential for fire. A fire typically burns faster and with more intensity when the air temperature is high, relative humidity is low, and winds are strong. Of the four weather characteristics, the wind is the dominant factor in spreading fire since burning embers can easily be carried with the wind to adjacent exposed areas, starting additional fires. While the county has a characteristic southerly wind that originates from the San Francisco Bay (which becomes a factor in fire suppression), during the dry season, the County experiences an occasional strong north wind that is recognized as a substantial factor in the spread of wildland fires (Napa County 2014).

Landscape characteristics such as steep slopes also contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fires burn faster as they burn up-slope. Vegetation type influences wildfire hazard levels as well. For example, landscapes dominated by chaparral are more flammable than other vegetation types. The combination of highly flammable vegetation, steep, inaccessible wildlands, and high levels of recreational use can result in wildfire risks and hazards of major proportions. Such wildfire risk and hazards expose residential and other development within the County to an increased danger, threatening life and property protection (Napa County 2014).

The project is located in a rural area and mostly consists of agricultural lands and open space, with a few commercial and residential uses. The project is not located within a very high fire hazard severity zone; however, the forested areas located north and south of the project are identified within a high fire hazard severity zone (CAL FIRE 2020). Therefore, there is potential for wildfire to occur in the project area.

3.3.3 Environmental Consequences

3.3.3.1 BUILD ALTERNATIVE

Construction

Project construction would use heavy construction equipment in and around vegetated areas, which could increase the potential for wildfire ignition. Light equipment would also be used to relocate existing aboveground and underground utilities. During construction, the project would implement fire prevention practices as required by AMM WF-1 to reduce the potential for wildfires to occur in the project area. Caltrans would install a temporary detour bridge adjacent to where the new bridge would be constructed to maintain traffic flow. Additionally, Caltrans would implement a TMP (Project Feature TRA-1) to maintain emergency access during construction. Therefore, project construction activities would not impair an adopted emergency response plan or emergency evacuation plan.

Operation

Caltrans would restore the project area to pre-construction conditions in accordance with applicable permits and Caltrans requirements. As such, the project would not increase the potential for downslope or downstream flooding or landslides to occur. Operation of the new bridge would serve the same use as the existing bridge. The project would relocate the existing aboveground and underground utilities within the project area in accordance with Project Feature UTIL-2. Therefore, operation of the project would not exacerbate wildfire risks or result in temporary or ongoing impacts to the environment.

3.3.3.2 NO-BUILD ALTERNATIVE

Construction and Operation

Under the No-Build Alternative, the fish barrier at the crossing over Ritchie Creek on SR 29 would not be removed. The Ritchie Creek Bridge would not be replaced. Therefore, there would be no effects related to wildfire.

3.3.3.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Caltrans would implement the following AMM to reduce potential wildfire impacts during construction:

AMM WF-1: Implement Fire Prevention Practices During Construction. During the construction, Caltrans would implement the following fire prevention practices to reduce the potential for wildfire.

- Prepare names and emergency telephone numbers of the nearest fire suppression agencies before the start of job site activities and post at a prominent place at the job site.

- Prepare a fire prevention plan required by the California Division of Occupational Safety and Health before the start of job site activities.
- Cooperate with fire prevention authorities in performance of the work.
- Immediately report fires occurring within and near the project limits by dialing 911 and to the nearest fire suppression agency by using the emergency phone numbers retained at the job site.
- Prevent project personnel from setting open fires that are not part of the work.
- Prevent the escape of and extinguish fires caused directly or indirectly by job site activities.

3.4 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to 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 by the United Nations and World Meteorological Organization in 1988 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), and various hydrofluorocarbons (HFCs). CO₂ is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO₂.

Two terms are typically used when discussing how we address the impacts of climate change: “greenhouse gas mitigation” and “adaptation.” GHG mitigation covers the activities and policies aimed at reducing GHG emissions to limit or “mitigate” the impacts of climate change. Adaptation, on the other hand, is concerned with 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). This analysis will include a discussion of both.

3.4.1 Regulatory Setting

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

3.4.1.1 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.

NEPA (42 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.

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 (FHWA 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability” (FHWA n.d.). 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.

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 most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) 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 CAFE program based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

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) the establishment of the Office of Indian Energy Policy and Programs within the Department of 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.

The U.S. Environmental Protection Agency (EPA) in conjunction with the National Highway Traffic Safety Administration is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. Fuel efficiency standards directly influence GHG emissions.

3.4.1.2 STATE

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and EOs including, but not limited to, the following:

- **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 AB 32 in 2006 and Senate Bill 32 in 2016.
- **Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006:** AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (CARB) create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of GHGs." 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 CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

- **Executive Order S-01-07 (January 18, 2007):** This order sets forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least 10 percent by the year 2020. CARB re-adopted the low carbon fuel standard 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 375, Chapter 728, 2008, Sustainable Communities and Climate Protection:** This bill requires CARB 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, Chapter 585, 2009, California Transportation Plan:** This bill requires the state’s long-range transportation plan to identify strategies to address California’s climate change goals under AB 32.
- **Executive Order B-16-12 (March 2012):** This EO orders state entities under the direction of the governor, including CARB, 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).** This EO establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 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 CARB 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: Reducing Climate Risk* (Safeguarding California Plan), every 3 years, and to ensure that its provisions are fully implemented.
- **Senate Bill 32, Chapter 249 (2016).** This SB 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.
- **Senate Bill 1386, Chapter 545 (2016).** This SB declares “it to be the policy of the state that the protection and management of natural and working lands ... is an important strategy in meeting the state’s GHG reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands.”

- **Assembly Bill 134, Chapter 254 (2017).** This AB allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.
- **Senate Bill 743, Chapter 386 (September 2013).** This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state’s goals of reducing GHG emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.
- **Senate Bill 150, Chapter 150, 2017, Regional Transportation Plans.** This bill requires CARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional GHG emission reduction targets.
- **Executive Order B-55-18, (September 2018)** sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.
- **Executive Order N-19-19 (September 2019)** advances California’s climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs CARB to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

3.4.2 Environmental Setting

The project is located on SR 29 in the northern portion of unincorporated Napa County. SR 29 is a major south/north route traversing Napa County and the City of Vallejo in Solano County. It links agricultural areas and the cities of Napa, Yountville, St. Helena, and Calistoga in the northern two-thirds of the county with more suburban and industrial areas in the southern portion. The portion of the route within the project limits is a two-lane conventional highway with no high-occupancy vehicle lanes.

There are no designated bicycle and pedestrian facilities within the project limits. Noncontinuous segments of SR 29 have shoulders that provide adequate widths (minimum 5 feet) for pedestrians and cyclists. In addition, the Silverado Trail, Napa Valley’s only other south/north arterial, is a designated bike route with Class II bike facilities between the cities of Napa and Calistoga, and is less than 1 mile east of SR 29. The Metropolitan Transportation Commission’s Regional Transportation Plan (RTP)/SCS guides transportation development in Napa County and the San Francisco Bay area.

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. EPA is responsible for documenting GHG emissions nationwide, and CARB does so for the state, as required by Health and Safety Code Section 39607.4.

3.4.2.1 NATIONAL GHG INVENTORY

The EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO₂, CH₄, N₂O, HFCs, perfluorocarbons, SF₆, and nitrogen trifluoride. It also accounts for emissions of CO₂ that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store CO₂ (carbon sequestration). The 1990–2016 inventory found that of 6,511 MMTCO₂e GHG emissions in 2016, 81 percent consist of CO₂, 10 percent are CH₄, and 6 percent are N₂O; the balance consists of fluorinated gases (EPA 2018). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5 percent of U.S. GHG emissions. An overview of GHG emissions in 2016 in the U.S. is provided in Figure 3-1.

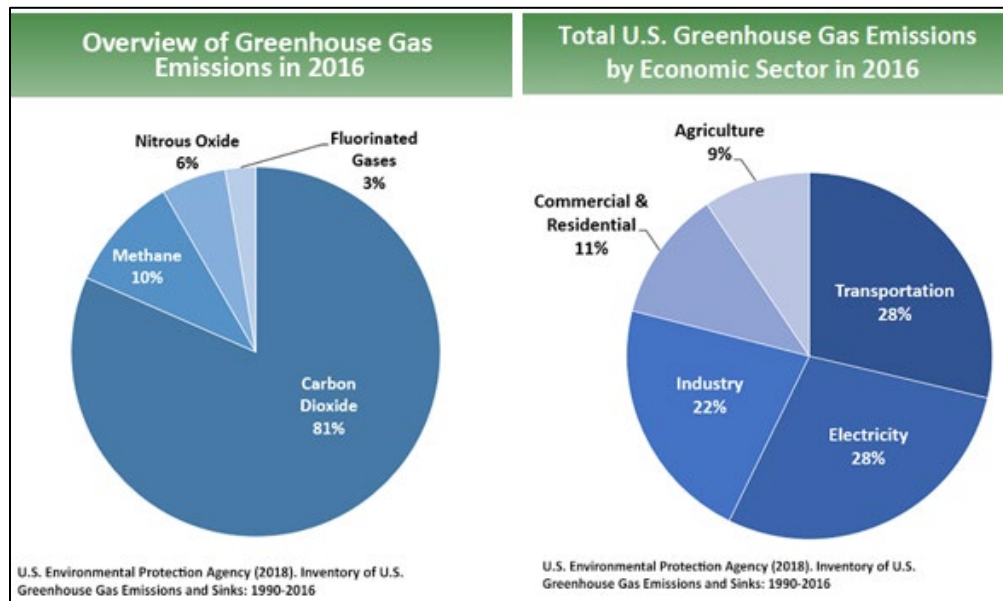


Figure 3-1 U.S. 2016 Greenhouse Gas Emissions

3.4.2.2 STATE GHG INVENTORY

CARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state’s progress in meeting its GHG reduction goals. The 2019 edition of the GHG emissions inventory found total California emissions of 424.1

MMT_{CO₂e} for 2017, with the transportation sector responsible for 41 percent of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (CARB 2019a). An overview of GHG emissions in 2017 in California is provided in Figure 3-2. The change in California gross domestic product, population, and GHG emissions is provided in Figure 3-3.

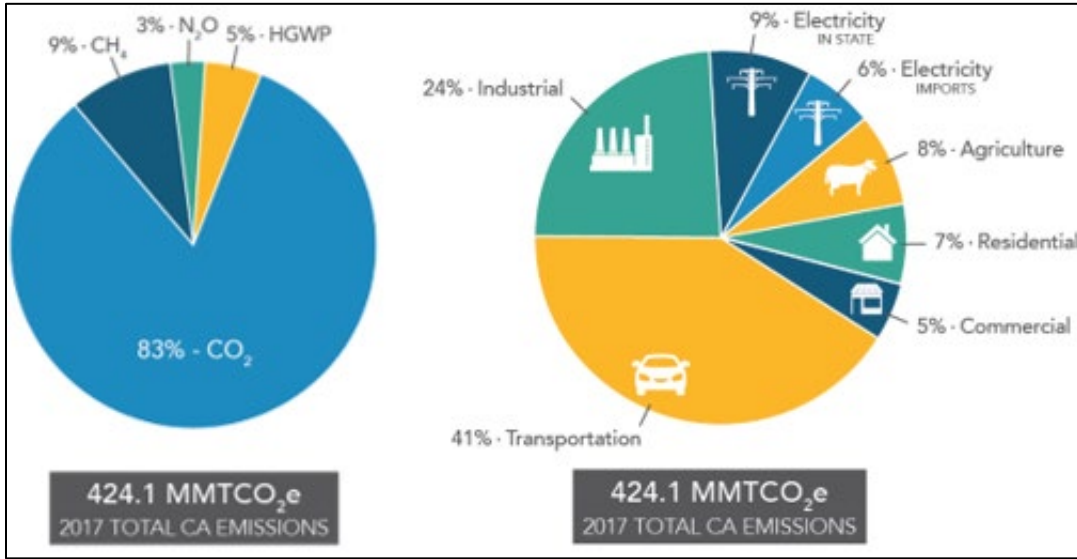
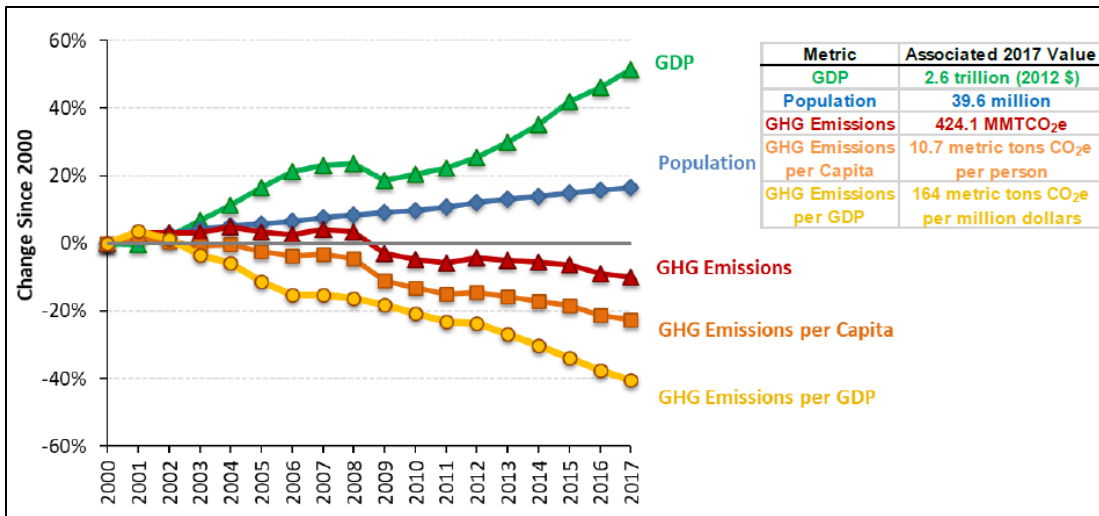


Figure 3-2 California 2017 Greenhouse Gas Emissions



Source: CARB 2019b

Figure 3-3 Change In California Gross Domestic Product, Population, and GHG Emissions Since 2000

AB 32 required CARB 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, and to update it every 5 years. CARB adopted the first scoping plan in 2008. The second updated plan, *California’s 2017 Climate*

Change Scoping Plan, adopted on December 14, 2017, reflects 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.

3.4.2.3 REGIONAL PLANS

CARB sets regional targets for California's 18 MPOs to use in their RTP/SCSs to plan future projects that will cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The project is included in Plan Bay Area, the RTP/SCS for the Metropolitan Transportation Commission and Association of Bay Area Governments (MTC/ABAG). The regional reduction target for MTC/ABAG is 10 percent by 2020 and 19 percent by 2035 (CARB 2019c). The RTP/SCS aims to reduce per-capita delay and CO₂ emissions.

3.4.2.4 PROJECT ANALYSIS

GHG emissions from transportation projects can be divided into those produced during operation of the SHS and those produced during construction. The primary GHGs produced by the transportation sector are CO₂, CH₄, N₂O, and HFCs. CO₂ emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH₄ and N₂O are emitted during fuel combustion. In addition, a small amount of HFC emissions are included in the transportation sector.

The CEQA Guidelines generally address GHG emissions as a cumulative impact due to the global nature of climate change (PRC Section 21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 512.) 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. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.

3.4.2.5 OPERATIONAL EMISSIONS

The purpose of the project is to remove the fish passage barriers at Ritchie Creek by replacing the existing bridge structure located on SR 29. Because the project would not increase the vehicle capacity on SR 29, no increase in VMT would occur as a result of project implementation. Therefore, this project would not increase operational GHG emissions.

3.4.2.6 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 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-related GHG emissions for the project are shown in Table 3-1. Gases are converted to CO₂e (equivalent) by multiplying by their global warming potential (GWP). Specifically, GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO₂. The construction-related GHG emissions were calculated using the Road Construction Emissions Model version 8.1.0, provided by the Sacramento Metropolitan Air Quality Management District. Construction emissions would total approximately 383 metric tons of carbon dioxide equivalent over the construction period.

Table 3-1 Construction-related Greenhouse Gas Emissions (tons)

Alternative	CO ₂ (Tons)	CH ₄ (Tons)	N ₂ O (Tons)	CO ₂ e(MT)
Build Alternative	418.84	0.10	0.00	383.34

Notes:

CH₄ = methane

CO₂ = carbon dioxide

CO₂e(MT) = carbon dioxide equivalent (metric tons)

N₂O = nitrous oxide

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which requires contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all CARB emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, which reduce construction vehicle emissions also help reduce GHG emissions.

3.4.3 CEQA Conclusion

While the project would result in GHG emissions during construction, it is anticipated that the project would not result in an increase in operational GHG emissions. The project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. With the implementation of construction GHG-reduction measures, the impact would less than significant.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

3.4.3.1 GREENHOUSE GAS REDUCTION STRATEGIES

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (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 farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*. See Figure 3-4 for an overview of the California Climate Strategy.

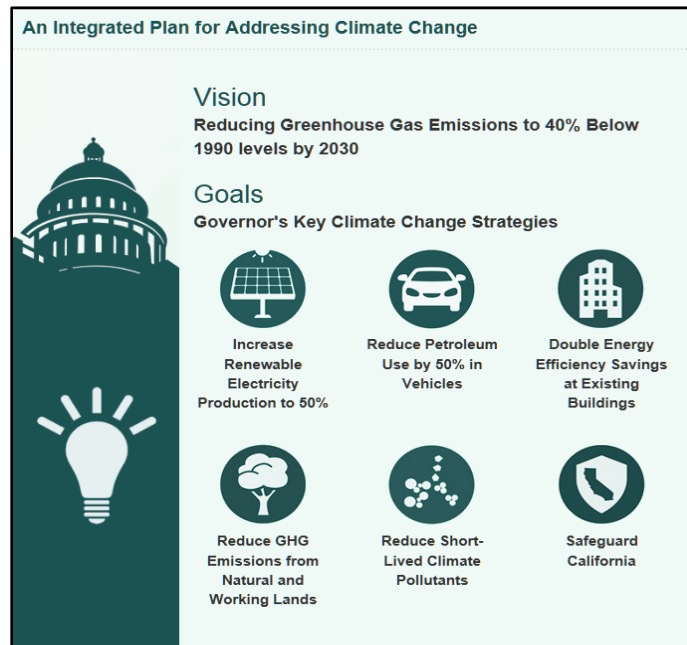


Figure 3-4 California Climate Strategy

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state builds on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of VMT. A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, SB 1386 established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor’s Climate Action Team as CARB works to implement EOs 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 an 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. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with CO₂ reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 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
- 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 sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the state's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., Safeguarding California Plan).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 Climate Change (June 22, 2012) is intended to establish a Caltrans policy that will ensure coordinated efforts to incorporate climate change into Caltrans decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

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

Construction contractors will comply with Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. As outlined in Appendix D, the project would implement Project Features AIR-2 through AIR-4 to reduce construction-related emissions. The project would also incorporate Project Features GHG-1 and GHG-2, which would require nonhazardous waste and excess material to be recycled or disposed of appropriately and the use of solar sign boards, respectively. A temporary detour bridge adjacent to where the new bridge would be constructed would maintain traffic flow and avoid lengthy delays and idling emissions. AMM BIO-3 commits Caltrans or its subcontractor to replace removed oak trees and other native trees as specified in permit conditions and Project Feature BIO-11 requires minimizing vegetation removal; trees and other vegetation absorb and sequester carbon dioxide.

Adaptation

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly,

Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 USC Ch. 56A Section 2921 et seq). The Fourth National Climate Assessment, published in 2018, presents the foundational science and the “human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways.” Chapter 12, “Transportation,” presents a key discussion of vulnerability assessments. It notes that “asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime” (USGCRP 2018).

The U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation 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” (U.S. DOT 2011).

FHWA order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events, December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California’s Fourth Climate Change Assessment* (State of California 2018) is the state’s effort to “translate the state of climate science into useful information for action” in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

- *Adaptive capacity* is the “combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities.”
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- *Resilience* is the “capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience”. Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the “susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.” Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy*, updated in 2014 as the Safeguarding California Plan. The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* in 2010, with instructions for how state agencies could incorporate “sea-level rise (SLR) projections into planning and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise

also threaten California's infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure* – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence* – Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization* – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

3.4.3.2 PROJECT ADAPTATION ANALYSIS

Sea Level Rise Analysis

The project is outside the coastal zone and not in an area subject to sea-level rise. Therefore, direct impacts to the project due to projected sea-level rise are not expected.

Projects in Floodplains

A portion of the project site is within SFHA Zone A, which represents areas subject to flooding by the 100-year flood event. The District 4 Climate Change Vulnerability Assessment indicates the potential for a 5 to 9.9 percent increase in 100-year storm precipitation depth in the project vicinity by 2025 and 7.7 percent by 2085 (Caltrans 2017, 2020). A number of local geomorphic variables affect how a given precipitation event would affect streamflow, making it difficult to assess potential impacts at a particular location. However, as discussed in Section 2.2.1.1, Regulatory Setting, the water surface elevation during a 100-year flood event would not overtop the bridge crossing. The project would decrease the 100-year water surface elevation upstream and downstream of the bridge because the area for water to flow beneath the bridge would increase. The project would add no net new impervious surface that would increase runoff and would incorporate standard drainage features into the project design. The channel opening would be wider under the Build Alternative than existing conditions. Therefore, the new bridge is not likely to be affected by future changes in storm precipitation, and risk of interrupting traffic flow or emergency vehicles or access on SR 29 is low.

Wildfire

The project is not located within a very high fire hazard severity zone; however, the forested areas located north and south of the project site are identified within a high fire hazard severity zone (CAL FIRE 2020). The Caltrans Climate Change Vulnerability Assessment for District 4 evaluated roads at risk for future wildfire. Mapping of wildfire risk shows the project area on SR 29 is not in an area of wildfire concern and was not characterized as exposed roadway through 2085. The project would serve the same use as the existing bridge and would not exacerbate wildfire risks. Bridge construction materials would primarily be fire-resistant concrete. Caltrans would implement AMM WF-1 to reduce the potential wildfire risks during construction. Accordingly, the proposed project is not likely to be subject to effects of wildfire that could occur under climate change.

Chapter 4 Agency Coordination and Public Involvement

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for the proposed Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (project) have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and correspondence with other interested parties. This chapter summarizes the results of the California Department of Transportation’s (Caltrans’) efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

4.1 Consultation with Resource Agencies

4.1.1 Section 106 and Assembly Bill 52 Consultation for Cultural Resources

On January 8, 2019, Caltrans sent letters initiating Section 106 consultation to the City of Napa, City of Calistoga, State Parks, Napa County Historical Society, Napa County Landmarks, and the Sharpsteen Museum of Calistoga History. None of those groups responded to Caltrans’ initial contact. Caltrans sent follow-up emails on March 12, 2019. The County of Napa, Napa County Historical Society, and Napa County Landmarks responded that they had no comments. No other replies were received. Caltrans has continued consultation with California State Parks (State Parks) (the owner of the Cavanaugh-Wright and Mitchell-Wright buildings) and State Historic Preservation Officer (SHPO). On June 15, 2020, SHPO concurred with Caltrans that the Cavanaugh-Wright property and three archeological sites are eligible for the National Register of Historic Places. SHPO provided concurrence of the finding of adverse effect on November 6, 2020. Caltrans and the SHPO executed a Memorandum of Agreement for an Archaeological Treatment Plan (ATP) on March 11, 2021 (Appendix I). Refer to Section 2.1.8 for a discussion of effects to resources subject to Section 106.

4.1.2 Native American Tribal Consultation

Caltrans contacted Native American Heritage Commission (NAHC) on December 6, 2018, requesting a Sacred Lands File search of the proposed project location. NAHC responded on December 12, 2018, with negative results for the Sacred Lands File records search and a list of interested Native American groups and individuals. Formal notification under Section 106

and Assembly Bill (AB) 52 began with letters sent on December 17, 2018, to Charlie Wright of the Cortina Indian Rancheria of Wintun Indians; Jose Simon III, Chairperson of Middletown Rancheria; Scott Gabaldon, Chairperson of Mishewal-Wappo Tribe of Alexander Valley; and Anthony Roberts, Chairperson of Yoche Dehe Wintun Nation.

Sally Peterson, Tribal Vice Chairwoman for Middletown Rancheria, responded by letter on December 21, 2018, stating that they had no comments at the time, and she requested to be contacted if any new information was found. Leland Kinter, Tribal Historic Preservation Officer for the Yoche Dehe Wintun Nation, responded by letter on January 16, 2019. He stated that the project was not in their territory and deferred to Scott Gabaldon of the Mishewal-Wappo Tribe of Alexander Valley. On March 5, 2019, Mr. Wright was reached by phone, and he stated that Napa is usually outside their territory, and he had no comments at the time. An email was sent to Mr. Gabaldon on March 5, 2019. A phone call was placed to Mr. Gabaldon on May 29, 2019, and a message was left. Mr. Gabaldon was reached by phone and was present for the archaeological testing in November 2019. Consultation is ongoing.

4.1.3 Information Consultation with Biological Regulatory Agencies

4.1.3.1 CALIFORNIA STATE PARKS

Caltrans is engaged in ongoing coordination with State Parks. Caltrans and State Parks held a virtual meeting on September 2, 2020, to discuss the project components, project features, and Caltrans' Section 4(f) determination. The permits, agreements, and certifications that would be required for project construction are provided in Chapter 1.0, Proposed Project.

4.1.3.2 U.S. FISH AND WILDLIFE SERVICE

Kara Gonzales, Caltrans Biologist, requested technical assistance from U.S. Fish and Wildlife Service (USFWS) liaison John Cleckler on February 27, 2019, and has continued coordinating by email. Kara Gonzales sent photos of the Biological Study Area (BSA) to Mr. Cleckler on July 3, 2019, and Mr. Cleckler replied on July 11, 2019, that a site visit was not necessary at that time. On May 28, 2020, Kara Gonzales emailed John Cleckler with a project update and requested more information about species under USFWS' jurisdiction, and Mr. Cleckler has since provided technical assistance.

Caltrans submitted a Biological Assessment (BA) to USFWS on November 5, 2020. A Biological Opinion (BO) was issued on February 5, 2021 (Appendix J)

4.1.3.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Robert Stanley, California Department of Fish and Wildlife (CDFW) liaison, was contacted on February 27, 2019, for technical assistance. Kara Gonzales and Robert Blizzard met with

Mr. Stanley at the project site on June 5, 2019, to discuss the proposed project, effects to protected species under the California Endangered Species Act (CESA), and impacts to the bed, bank, and channel of Ritchie Creek.

4.1.3.4 NATIONAL MARINE FISHERIES SERVICE

On February 27, 2019, Kara Gonzales emailed National Marine Fisheries Service (NMFS) liaison Elena Meza to request technical assistance. Ms. Meza responded on March 5, 2019, and followed up on March 21, 2019. Kara Gonzales and Robert Blizard discussed the project in the field with Ms. Meza on March 29, 2019. Kara Gonzales emailed Ms. Meza and NMFS hydraulic engineer John Wooster on June 7, 2019, to provide additional project information and to set up another field meeting. Kara Gonzales also asked Ms. Meza for BA guidance on June 21, 2019.

On August 26, 2019, an interagency field meeting was held at the project site and attended by Elena Meza (NMFS), John Wooster (NMFS), Robert Stanley (CDFW), Chris Sewell (WRECO), Kathleen Reilly (Caltrans), Jessica Thaggard (Caltrans), and Kara Gonzales (Caltrans).

On June 4, 2020, Caltrans had a phone call with NMFS to discuss BA requirements. Present for the call were Kara Gonzales and Robert Blizard from Caltrans and Elena Meza and John Wooster from NMFS. Formal Section 7 consultation for threatened and endangered species is ongoing. Caltrans submitted a BA to NMFS on November 5, 2020.

On January 15, 2021, Caltrans, in coordination with NMFS, closed out consultation due to extended amount of time needed to update plans and project description. On February 16, 2021, Caltrans submitted the revised BA to NMFS. On April 22, 2021, NMFS requested additional information on the February 16, 2021 BA. Caltrans provided the requested information by email on May 10, 2021.

Consultation with NMFS is ongoing. Caltrans will obtain a BO from NMFS during the design phase.

4.2 Public Involvement Process for the Draft Environmental Document

Prior to initiating the public review period, Caltrans published a notice of the draft environmental document's availability in three local newspapers and on Caltrans' website (<https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>). In addition, the notice was distributed to the local community and businesses within the immediate project area on December 1, 2020. The public circulation of the environmental

document occurred for 39 days, between December 1, 2020 and January 8, 2021. A virtual public meeting was held on December 15, 2020; slides from the meeting are available at the following website: https://dot.ca.gov/-/media/dot-media/district-4/documents/d4-environmental-docs/ritchie-creek-bridge/4j990_public-meeting-ada-compliant-slides.pdf. Three members of the public participated in the virtual public meeting. No public comments were made during the public meeting.

A Notice of Completion was received by the State Clearinghouse on December 1, 2020. The project was assigned State Clearinghouse # 2020120007. The State Clearinghouse subsequently distributed copies of the Draft IS/EA to agencies for comments.

4.3 Public Comments

Caltrans received a comment letter from CDFW during the public comment period, dated December 28, 2020. The delineated comment letter and Caltrans' responses to the comments are found in Appendix K.

Chapter 5 Preparers

The primary persons responsible for contributing to, preparing, and reviewing this report are listed in Table 5-1.

Table 5-1 List of Preparers and Reviewers

Company	Name	Role
Caltrans	Adel Abdelrahman	Transportation Engineer
Caltrans	Wesley Bexton	Landscape Architecture
Caltrans	Helen Blackmore	Branch Chief, Architectural History
Caltrans	Robert Blizard	Branch Chief, Biological Sciences and Permits
Caltrans	Bryan Chew	Utilities Engineer
Caltrans	Evelyn Gestuvo	Senior Transportation Engineer
Caltrans	Kara Gonzales	Associate Environmental Planner, Biological Sciences and Permits
Caltrans	Lindsay Busse	Associate Environmental Planner (Archaeology)
Caltrans	Kelly Hirschberg	Regional Project Manager, Napa County
Caltrans	Christopher Katrak	Transportation Engineer, Air and Noise
Caltrans	Kevin Krewson	Branch Chief, Air and Noise
Caltrans	Maxwell Lammert	Branch Chief, Solano and Napa, Environmental Analysis
Caltrans	Susan Lindsay	Branch Chief, Landscape Architecture
Caltrans	Amani Meligy	Project Manager, Project Management
Caltrans	Ben Nguyen	Transportation Engineer, Headquarters Structures Design
Caltrans	Skylar Nguyen	Associate Environmental Planner, Environmental Analysis
Caltrans	Kimberley Overton	Transportation Planner
Caltrans	Charles Palmer	Associate Environmental Planner (Architectural History)
Caltrans	Kathleen Reilly	Senior Engineer, Hydraulics
Caltrans	Chris Risdén	Senior Engineering Geologist, Geotechnical Design
Caltrans	Nathan Roberts	Associate Environmental Planner, Environmental Analysis
Caltrans	Kathryn Rose	Branch Chief, Archaeology
Caltrans	Tom Rosevear	NEPA Reviewers
Caltrans	Sergio Ruiz	Pedestrian & Bicycle Coordinator
Caltrans	Anna Sojourner	Engineering Geologist
Caltrans	Jessica Thaggard	Associate Environmental Planner, Biological Sciences and Permits

Company	Name	Role
Caltrans	Ping Tsai	R/W Project Coordination
Caltrans	Lindsay Vivian	Office Chief, Environmental Analysis
Caltrans	Chris Wilson	Senior Transportation Engineer, Hazardous Waste
Caltrans	Patrick Yip	Project Engineer, Design North, SHOPP
Jacobs	Kevin Fisher	Senior Biologist
Jacobs	Lynne Hosley	Program Manager/Wetland Scientist
Jacobs	Jasmin Mejia	Project Manager
Jacobs	Yassaman Sarvian	Environmental Planner
Jacobs	Sam Schoevaars	Environmental Planner
Stantec	Danielle Althaus	Environmental Planner
Stantec	Chris Broderick	Technical Editor
Stantec	Jared Elia	Senior Biologist
Stantec	Paul Glendening	GIS Analyst
Stantec	Kaela Johnson	Environmental Planner
Stantec	Wirt Lanning	Principal, Senior Project Manager
Stantec	Alisa Reynolds, MA, RPA	Principal, Cultural Resources
Stantec	Caitlin Schroeder	Senior Environmental Planner
WRECO	Jennifer Abrams	Senior Engineer
WRECO	Travis Baggett	Associate Engineer
WRECO	Chris Sewell	Senior Civil Engineer
Far Western Anthropological Research Group	Brian F. Byrd, Ph.D.	Principal Investigator

Chapter 6 Distribution List

The following agencies and government officials were notified with a letter of the environmental document's availability for public review from December 1, 2020, to January 8, 2021. The businesses received a Notice of Availability for public review of the environmental document. Agencies marked with an asterisk (*) received an electronic copy through the State Clearinghouse.

Federal Agencies

U.S. Fish and Wildlife Service*

2800 Cottage Way W-2605

Sacramento, CA 95825

U.S. Army Corps of Engineers*

Sacramento District

ATTN: Regulatory Branch

1325 J Street, Room 1480

Sacramento, CA 95825

National Marine Fisheries Services*

777 Sonoma Avenue Room 325

Santa Rosa, CA 95404

Environmental Protection Agency, Region IX Federal Activities Office, CMD-2

75 Hawthorne Street

San Francisco, CA 94105

State Agencies

Bale Grist Mill State Historic Park

3369 St Helena Highway

St Helena, CA 94574

State Clearinghouse, Executive Officer

1400 Tenth Street, Room 156

P.O. Box 3044

Sacramento, CA 95812

California Department of Fish & Wildlife*
Region 3
2825 Cordelia Road, Suite 100
Fairfield, CA 94534

California Native American Heritage Commission*
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400
Oakland, CA 94612

Bay Area Air Quality Management District
Chief Executive Officer
375 Beale Street, Suite 600
San Francisco, CA 94105

California Air Resources Board*
1001 I Street, Suite 2828
P.O. Box 2815
Sacramento, CA 95814

Bothe-Napa Valley State Park
3801 St Helena Highway
Calistoga, CA 94515

Regional and Local Agencies

Association of Bay Area Governments
375 Beale Street
San Francisco, CA 94105

Metropolitan Transportation Commission
375 Beale Street
San Francisco, CA 94105

Napa County Fire Department
3535 St. Helena Highway
Calistoga, CA 94515

Napa Valley Transportation Authority
625 Burnell Street
Napa, CA 94559

Tribe

Mishewal-Wappo Tribe of Alexander Valley
350 E St Ste 250
Santa Rosa, CA, 95404-4438

Federal and Statewide Elected Officials

The Honorable Dianne Feinstein
United States Senate
One Post Street, Suite 2450
San Francisco, CA 94104

The Honorable Alex Padilla
United States Senate
333 Bush Street, Suite 3225
San Francisco, CA 94101

The Honorable Mike Thompson
United States House of Representatives (CA-5)
2721 Napa Valley Corporate Drive
Napa, CA 94558

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

The Honorable Cecilia Aguiar-Curry
California State Assembly, District 4
2721 Napa Valley Corporate Drive
Napa, CA 94558

Napa County

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

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

The Honorable Diane Dillon
Vice Chair of the Board
Napa County Board of Supervisors, District 3
County Administration Building
1195 Third Street
Napa, CA 94559

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

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

City of Calistoga

Mayor Chris Canning
City of Calistoga
City Hall
1232 Washington Street
Calistoga, CA 94515

City of St. Helena

Mayor Geoff Ellsworth
City of St. Helena
1572 Railroad Avenue
St. Helena, CA 94574

Businesses

Wolleson Vineyard
1200 Tucker Road
Calistoga, CA 94515

Zinfandel House
1253 Summit Drive
Calistoga, CA 94515

Madrigal Family Winery
3718 St Helena Highway
Calistoga, CA 94515

Appendix A Section 4(f) *de minimis* Determination

Memorandum

a California Way of Life.

Making Conservation

To: LINDSAY VIVIAN
Caltrans District 4
Office of Environmental Analysis
Office Chief

Date: January 28, 2021

EA: 4J990

From: MAXWELL LAMMERT
Branch Chief (Acting)
Office of Environmental Analysis

Subject: **SECTION 4(F) DE MINIMIS DETERMINATION FOR THE RITCHIE CREEK BRIDGE REPLACEMENT PROJECT FOR FISH PASSAGE IMPROVEMENT**

INTRODUCTION

This Section 4(f) *de minimis* memorandum has been prepared for the Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (project).

This section of the document discusses *de minimis* impact determinations under Section 4(f). Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 United States Code (USC) 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This amendment provides that once the U.S. Department of Transportation (USDOT) determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. FHWA's final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to the Department pursuant to 23 USC 326 and 327, including *de minimis* impact determinations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

SECTION 4(F) OVERVIEW

Section 4(f), codified in federal law in 49 USC 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Section 4(f) protected resources include publicly owned parks; recreational areas of national, state or local significance; publicly-owned school playgrounds, wildlife, or waterfowl refuges; or lands from a historic site of national, state, or local significance. One of the first steps in the Section 4(f) consultation process is identifying the entities and individuals who are considered the officials with jurisdiction for various types of property under Section 4(f). In the case of historic sites, the officials with jurisdiction is the State Historic Preservation Officer (SHPO). For publicly owned refuges, recreation areas and parks, the public agency that owns the park is the official with jurisdiction.

Section 4(f) specifies that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned park land; recreation area; or wildlife and waterfowl refuge of national, state, or local significance; or land of a historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if the following applies:

- there is no prudent and feasible alternative to using that land; and
- the program or project would include all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

If historic sites are involved, then coordination with the SHPO is also needed.

SECTION 4(F) USE DEFINITIONS

When a proposed project is adjacent to or on a property protected under Section 4(f), the impacts of the proposed project on that property must be evaluated. Section 4(f) defines the impact level by types of “use.” These “uses” occur when any of the conditions discussed in the following subsections are met.

PERMANENT/DIRECT USE

A permanent use of a Section 4(f) resource occurs when property is permanently incorporated into a transportation facility. Permanent use may occur as a result of partial or full acquisition or a permanent easement that allows permanent access onto the property for maintenance or other transportation-related purposes.

CONSTRUCTIVE USE

A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate land from the resource, but the project’s proximity results in impacts so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only if the protected activities, features, or attributes of the resource are substantially diminished.

TEMPORARY OCCUPANCY

A temporary occupancy of a Section 4(f) resource results when a Section 4(f) property is required for project construction-related activities, the property is not permanently incorporated into a transportation facility, and the activity is not considered adverse by the agency with jurisdiction in terms of the preservation purpose of Section 4(f).

Temporary impacts to a Section 4(f) property may trigger the application of Section 4(f). 23 Code of Federal Regulations (CFR) 774.13(d) defines the following five temporary occupation exception criteria that must be met to determine that a temporary occupancy does not rise to the level of permanent/direct or constructive use for the purposes of Section 4(f):

- Duration is temporary (i.e., the occupancy is shorter than the time needed for construction of the project, and there is no change in ownership of the property).
- Scope of work is minor (i.e., the nature and magnitude of the changes to the Section 4(f) properties are minimal).

- There are no anticipated permanent adverse physical impacts or permanent interference with the protected activities, features, or attributes of the property.
- The property is restored to the same or better condition that existed prior to the project.
- There is documented agreement from the appropriate federal, state, or local officials having jurisdiction over the property regarding the previously listed conditions.

***DE MINIMIS* IMPACT DETERMINATIONS**

When impacts to a Section 4(f) property are minor, as agreed to by the agency with jurisdiction over that property, Section 4(f) regulations can be satisfied through a *de minimis* determination.

De minimis impact is defined in 23 CFR 774.17 as follows:

For parks, recreational areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that would not adversely affect the activities, features, or attributes qualifying the property for protection under Section 4(f).

For historical sites, a *de minimis* impact means that the California Department of Transportation (Caltrans) has determined that, in accordance with 36 CFR 800, no historical property is affected by the project or the project would have “no adverse effect” on the property in question. The SHPO and Advisory Council on Historic Preservation, if involved, must be notified that Caltrans intends to enter a *de minimis* finding for properties where the project results in “no adverse effect.”

The officials with jurisdiction must concur in writing with a *de minimis* determination. For recreational or refuge properties, concurrence from the officials having jurisdiction over the properties is required. For historical sites, concurrence from the SHPO is required.

PROJECT DESCRIPTION

Caltrans proposes to replace the existing Ritchie Creek Bridge (Bridge No. 21-0057) with a new bridge at post mile (PM) 33.13, located on State Route 29 (SR 29) southeast of the city of Calistoga in Napa County. The new bridge dimensions would be similar to the existing bridge and would include a 12-foot travel lane and an 8-foot shoulder in each direction.

Caltrans proposes to remove the fish passage barriers by replacing the existing bridge because the bridge is classified as a depth barrier and jump barrier to adult and juvenile salmonids. As a result, the State Water Resources Control Board (SWRCB) would grant 42 Total Maximum Daily Load (TMDL) compliance unit credits in addressing requirements of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) for the project (Caltrans 2017).

The project also furthers the goals of California Streets and Highways Code Section 156.1, Fish Passage, which requires Caltrans to remediate fish passage barriers posed by state highways and related structures when there is a transportation nexus. The NPDES permit has provided Caltrans with an opportunity to remove an existing fish passage barrier which may not have happened otherwise as the bridge itself is in good condition. Overall, this project would improve fish migration and contribute to recovering declining fish populations.

Figure 1 shows the location of the project, which is approximately 4 miles southeast of the City of Calistoga and approximately 3.5 miles to the north of the City of St. Helena, in the northwestern region of Napa County. SR 29 is a major north-south route that traverses Napa

County; the highway starts in Vallejo in Solano County and links agricultural areas and the cities of Napa, Yountville, St. Helena, and Calistoga. SR 29 also serves Vallejo and East Bay cities to the south, with connections to Solano County to the east. The portion of SR 29 within the project limits is a two-lane conventional highway. The project footprint includes the realignment of two lanes to divert traffic from the existing bridge to a temporary detour bridge, temporary access roads to the creek, and staging areas (Figure 2).



V:\1857\active\185704409_CalTrans\Disk1_RitchieCreek\03_data\gis_config\gis\mxd\figures\fig_1_RegionalLocation.mxd - Revised: 2020-05-08 By: jplendering

Legend
 Project Site

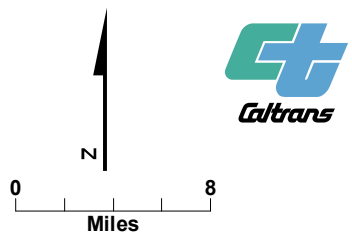
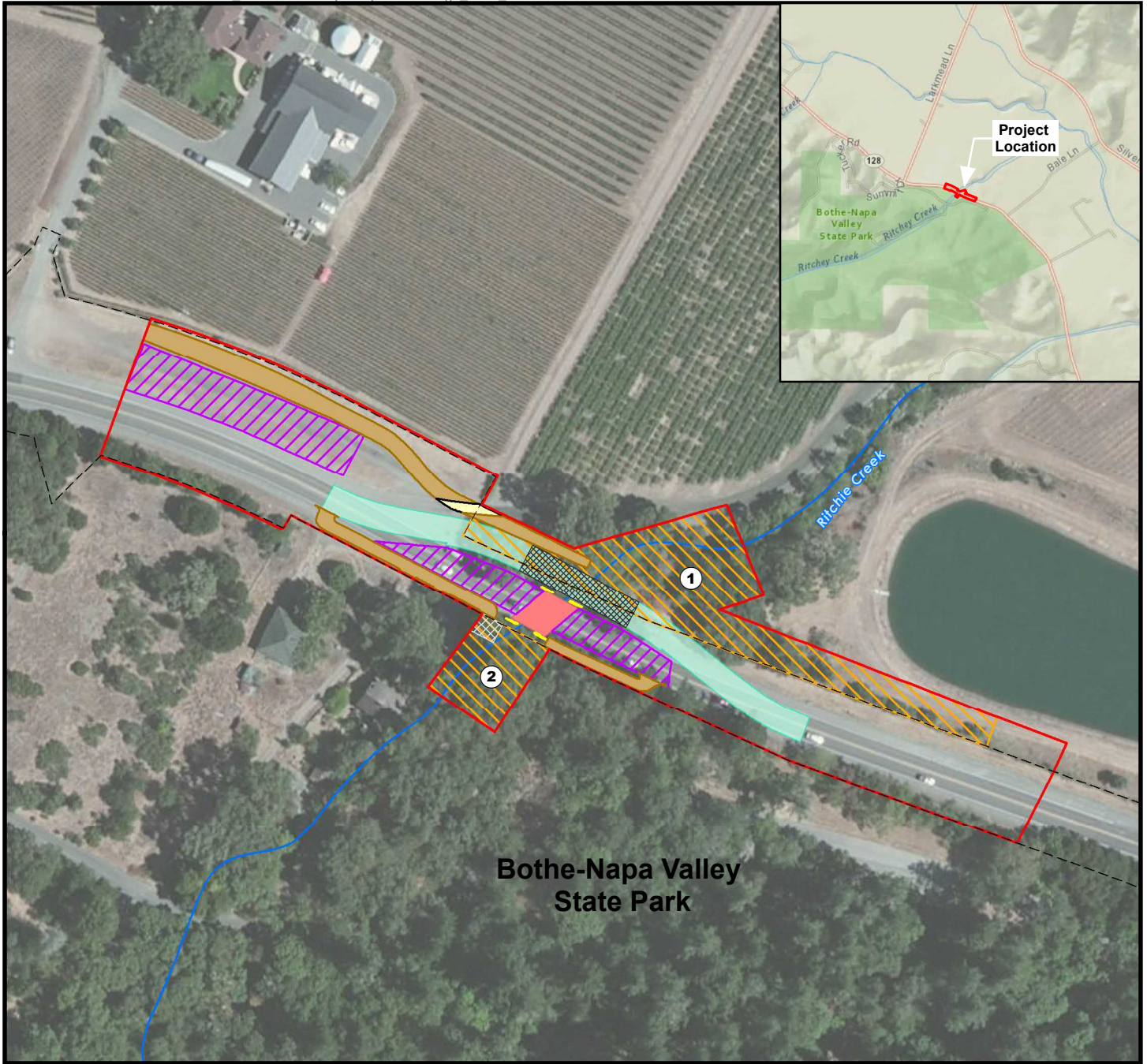





Figure 1
Project Location and Vicinity
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye



Legend

-  Project Limits
-  Caltrans Right-of-Way
-  Permanent Right of Way Easement

Project Components

-  New Bridge
-  Wing Wall
-  Temporary Construction Easement
-  Staging Area
-  Access
-  Access to Private Property
-  Temporary Modular Steel Bridge
-  Temporary Roadway Detour

- ① Private Property
- ② Bothe-Napa State Park Property

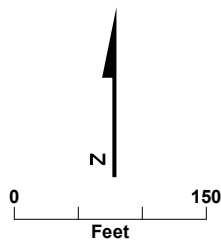


Figure 2
Build Alternative

Ritchie Creek Bridge Replacement Project
for Fish Passage Improvement
EA 04-4J990, NAPA-29 PM 33.13
Napa County, California

Pre-Construction

Site Preparation

Site preparation would include delineating construction work areas, installing Environmental Sensitive Area (ESA) fencing (or similar materials) around sensitive habitats and cultural resource areas, installing wildlife exclusion fencing around staging areas, installing best management practices (BMPs) in accordance with the project's Stormwater Pollution Prevention Plan (SWPPP), and removing vegetation.

Vegetation clearing would be required and would be confined to the area within the project footprint, including construction access routes. Vegetation removal and clearing would be completed with hand tools where possible. Chainsaws, grinders, and excavators would be used for vegetation that cannot be removed by hand.

Staging Areas and Temporary Construction Access Roads

Staging areas for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants would be located within the Caltrans right of way on the north side of SR 29 (0.24 acre) and on SR 29 (0.17 acre). ESA fencing would be used to delineate avoidance areas during construction. The total area of temporary disturbance of construction staging areas would be 0.41 acre.

The existing bridge would continue to be used to carry traffic during the installation of the temporary detour bridge. Traffic would be diverted to the two-lane temporary detour bridge while the existing bridge is removed and the new bridge is constructed. Minor roadway widening would be required to allow for alignment of the temporary detour bridge with the existing roadway. The existing pavement would be conformed to match the elevation of the new temporary detour bridge structure.

A temporary 16-foot wide access road would be created on the north side of SR 29 to provide access to the creek during construction. While the access road would intersect with an existing driveway, access to the private property would be maintained during construction. On the south side of SR 29, two temporary 12-foot wide access roads would be created. The temporary access road southwest of the bridge would allow for continued access to a residential driveway and the work area within the creek, and the temporary access road on the southeast side would also allow for access to the creek.

Right of Way and Temporary Construction Easements

The project would be located within the existing Caltrans right of way and would not result in the acquisition of property or the displacement of residents or businesses. Two temporary construction easements (TCEs), totaling 0.83 acre, would be required on both sides of the existing bridge and would extend outside of the right of way. The TCE on the north side of SR 29 would be 0.66 acre and located on private property, and the TCE on the south side of SR 29 would be 0.17 acre on State Parks property. Caltrans would coordinate with State Parks to obtain a permanent right of way easement on State Park property within the southern TCE to access and maintain the retaining walls. The permanent right of way easement within the southern TCE is estimated at 0.01 acre.

Utility Relocation

Pacific Gas and Electric (PG&E) and Comcast overhead facilities are located within the Caltrans right of way. Two overhead poles are located on either side of Ritchie Creek on the north side of SR 29. These poles convey an overhead PG&E 12 kV distribution line and Comcast cable to the local community. There is a 6-inch PG&E gas pipeline on the north side

of the existing bridge. The gas line is supported on either end of the creek by a cylindrical metal structure. The gas line is not attached to the existing bridge. A 4-inch telephone conduit is also located on the north side of the existing bridge.

Prior to construction, the existing overhead poles, Comcast cable, gas line, and telephone conduit would be temporarily within the project footprint.

Construction

Temporary Creek Diversion System

A temporary creek diversion system would be installed to divert creek flow around the work area during the dry season. The temporary creek diversion system would use diversion plastic pipes with temporary cofferdams located at the upstream and downstream ends. The cofferdams would be assembled before the beginning of any work in the creek and removed at the end of construction. Timber mat systems are often used to create a flat working surface for construction activities. Construction activities within the creek would be limited to the dry season between June 1 and October 31 to reduce the potential for work during high water flows in Ritchie Creek.

Channel Widening

Grading in the creek would be necessary to accommodate the new wider crossing, both upstream and downstream, of the proposed bridge. The embankment toe along both sides of the channel, both upstream and downstream of the new bridge, would be lined with rock slope protection (RSP) and appropriate filter material. The RSP would extend up the embankment slopes 3 feet above the toe of the slope and 5 feet below the toe of slope. Rocks from the existing channel would be removed and replaced after the channel is realigned. A total of 0.24 acre of the creek would be graded and temporarily impacted. The creek bed and surrounding vegetation temporarily affected during construction would be restored after construction.

Construct Temporary Detour Bridge

A two-lane temporary detour bridge would be installed on the north side of the existing bridge about 6 feet (edge-to-edge) from the existing bridge to maintain traffic flow and construction clearance. The temporary detour bridge would be a prefabricated modular-steel bridge measuring approximately 30 feet wide and 120 feet long and would include two 10-foot wide lanes with two 5-foot wide footpaths on both sides for pedestrian and bicyclist access. The temporary detour bridge would be assembled on-site at a temporary staging area located just northeast of the northbound approach to the existing bridge. A temporary concrete abutment would be installed at the approaches of the temporary detour bridge. It would take 1 to 3 months to construct the temporary detour bridge.

Traffic Management

Traffic would be diverted to the two-lane, temporary detour bridge during bridge construction. Various transportation management plan elements such as portable changeable message signs and California Highway Patrol Construction Zone Enhanced Enforcement Program would be used to minimize delays to the traveling public. After the permanent bridge is constructed, traffic would be shifted back from the temporary detour bridge to the new permanent bridge, and the temporary detour bridge would be removed. Flaggers would be used to divert traffic during low peak times.

Construct Abutment and Bridge

The foundations for the abutments would be constructed first. Caltrans would install a seating-type abutment on spread footings at the SR 29 crossing over Ritchie Creek. After excavating 15 feet below existing channel grade, placing formworks at the perimeters, and setting the steel reinforcements, concrete would be poured to form the spread footing.

The seat-type abutments would be built with reinforced concrete to provide support to the bridge deck and would extend 5 to 10 feet beyond the edge of the bridge on each side. The main components of a seat-type abutment are back wall, stem, wing-walls, and foundation. Wing-walls would be constructed from reinforced concrete on each side of the abutment to act as retaining walls to the dirt embankment around the abutment. Once the abutments are constructed, the new cast-in-place slab bridge deck would be installed. Construction of the new bridge abutment and bridge would occur over 2 to 6 months.

Fish Passage Improvements

Removing the barriers would require elimination of the bottom concrete portions of the existing culvert. The proposed design is a roughened channel with rock ramps to simulate a natural stream and a pool for fish to rest. The channel bed would be graded to accommodate the new wider crossing, both upstream and downstream of the proposed bridge. A pool would be created approximately 75 feet downstream of the upstream face of the existing bridge along with buried weirs on the upstream and downstream end of the pool to maintain channel stability. Then, a grid of 15 feet by 7 feet rock bands would be placed along the rock ramp portions of the proposed terrain. Rock bands allow for energy dissipation and increase the channel roughness, creating more favorable conditions for fish passage. A V-shape notch would be created along the centerline of the rock ramp portions to increase depths for fish passage during low flows. Rock slope protection (RSP) along the channel banks would be installed for erosion protection.

Demolish Existing Bridge

Bridge demolition would begin in the middle of the bridge and work backwards toward the abutments. Breakers or hoe rams would be used to break the deck into smaller pieces. A timber mat would be constructed to contain any construction debris that would fall outside of the existing concrete apron. Access to the creek bed for bridge demolition would be via the temporary construction access roads within the Caltrans right of way along southbound SR 29. The remaining portions of the bridge abutments would be removed to 10 feet below the existing channel grade and hauled away.

Remove Temporary Bridge

The temporary detour bridge, including the two 5-foot wide footpaths, would be disassembled and removed after the existing bridge is operating. Additional roadway pavement would be removed, and the terrain would be regraded prior to construction completion.

Construction Equipment

Equipment used for utility relocation and drainage adjustments would include light equipment such as backhoes, hand-operated augers, and trenchers. Dozers would be used for grading temporary roads to access to the creek bed. A backhoe or excavator with a fitted ram would be used to break up the roadway deck and abutments. Then a loader would be used to collect the debris to be hauled away by trucks. Bridge demolition would be completed using concrete saws, jackhammers, and excavators to break up the roadway deck, bents, and abutments. Cranes, excavators, and loaders would be used to collect debris. Dust control would be implemented as required. Other equipment may include concrete mixer trucks, pump trucks,

manlifts, paver, hoe ram, jackhammers, and compaction equipment. Pile driving installation equipment is not anticipated for construction of the foundation. Equipment would be staged at the staging area located to the north of the bridge and on SR 29 during construction. After construction, these areas would be restored to pre-construction conditions in accordance with applicable permits and Caltrans requirements. Construction would require up to 55 construction workers at any given time.

Post-Construction

Site Cleanup and Post-Construction Activities

All construction materials and debris would be removed from the construction work areas and recycled or properly disposed of offsite. Caltrans would restore all areas temporarily disturbed by project activities, such as staging areas and access roads, to near or better than pre-construction conditions in accordance with applicable permits and Caltrans requirements. Caltrans would revegetate all previously disturbed areas with appropriate native species and in accordance with State Parks requirements, as applicable.

Construction Schedule

Construction would occur from November 2022 to December 2023. Construction activities within the creek would be limited to the dry season between June 1 and October 31 to avoid working during high water flows in Ritchie Creek.

Caltrans would divert traffic from SR 29 to the temporary detour bridge and back over several days, which would include a potential lane closure during low peak volume times. The majority of construction activities would occur outside of nighttime hours of 9:00 PM to 6:00 AM. Nighttime construction activities would occur after 9:00 PM for up to 12 nonconsecutive nights between April 2023 and November 2023. Table 1 shows the nighttime activities that would occur during construction.

Table 1 Nighttime Construction Activities

Months	Duration	Activity
April to June	2 Days	Place temporary K-rails.
April to June	2 Days	Install the temporary detour bridge.
April to June	2 Days	Stripe and divert traffic to the temporary bridge.
October to November	2 Days	Pave, stripe, and divert traffic to the new bridge.
October to November	2 Days	Remove temporary K-rails.
October to November	2 Days	Remove the temporary detour bridge.

Vegetation removal would be scheduled to avoid impacts to nesting birds; however, if clearing and grubbing occur during the nesting bird season (between February 1 and September 30), a qualified biologist would survey for nesting birds within the areas to be disturbed no more than 72 hours prior to construction.

DESCRIPTION OF SECTION 4(F) RESOURCES

Section 4(f) resources in the project area include a publicly-owned recreational resource and historic property. The Bothe-Napa Valley State Park is immediately south of the project site.

The Cavanaugh-Wright House and Property is also located immediately south of the project site. There are no wildlife and waterfowl refuges within 0.25 mile of the project area. There are no wildlife and waterfowl refuges within the project area.

Caltrans conducted studies that evaluated archaeological resources in the vicinity of the project area in 2018 and 2019. The results of these studies identified three previously recorded archaeological resources within the study area (P-28-000369/CA-NAP-482, P-28-000464/CA-NAP-582, and P-28-000062/CA-NAP-58/H,) as eligible for listing on the NRHP and that may be affected by the project. All archaeological resources were found to be eligible for the NRHP under Criterion D for their demonstrated and potential contributions to regional research issues. Because they are found eligible under Criterion D and their value lies in the data that they may contain rather than in preserving in-place, the archaeological resources are not considered 4(f) resources and are not discussed further in this report.

Bothe-Napa Valley State Park

Bothe-Napa Valley State Park is located immediately south of the project area. Bothe-Napa Valley State Park is a State Parks public park and is operated by the Napa County Regional Park and Open Space District. The park is approximately 1,900 acres in size and has more than 10 miles of hiking trails. The park is the farthest inland of the coast redwood state parks and supports a range of coast redwoods, Douglas fir, and madrone trees because of the weather conditions (State Parks 2010). The project would be located near Redwood Trail, Ritchie Creek Canyon Trail, History Trail, Native American Garden Trail, the visitor center, the day use area, a seasonal horse concession, and a public pool. Ritchie Creek Group Campground is the only campground within the park and has 45 tent and recreational vehicle family campsites and 10 furnished yurts for rent. Vehicular access to the park is north of the project area. Local and regional visitors have access to the visitor center, trails, and campground year-round (Figure 3).

The Cavanaugh-Wright House and Property

The Caltrans Office of Cultural Resources Studies conducted research, architectural history surveys, and evaluations of built resources within the Area of Potential Effects (APE) in February 2019 and January 2020. The Caltrans Section 106 Summary Memo for the project summarizes the research methods, consultation, evaluation and determination for eligibility of the evaluated historic resources in the vicinity of the project area (Caltrans 2020). The results of this evaluation identified one historic built resource within the APE, the Cavanaugh-Wright House, as eligible for listing on the National Register of Historic Places (NRHP). The Cavanaugh-Wright House at 3701 St. Helena Highway (Assessor's Parcel Number 022-020-004-000) was found eligible for the NRHP under Criterion C. This resource is shown in Figure 3.

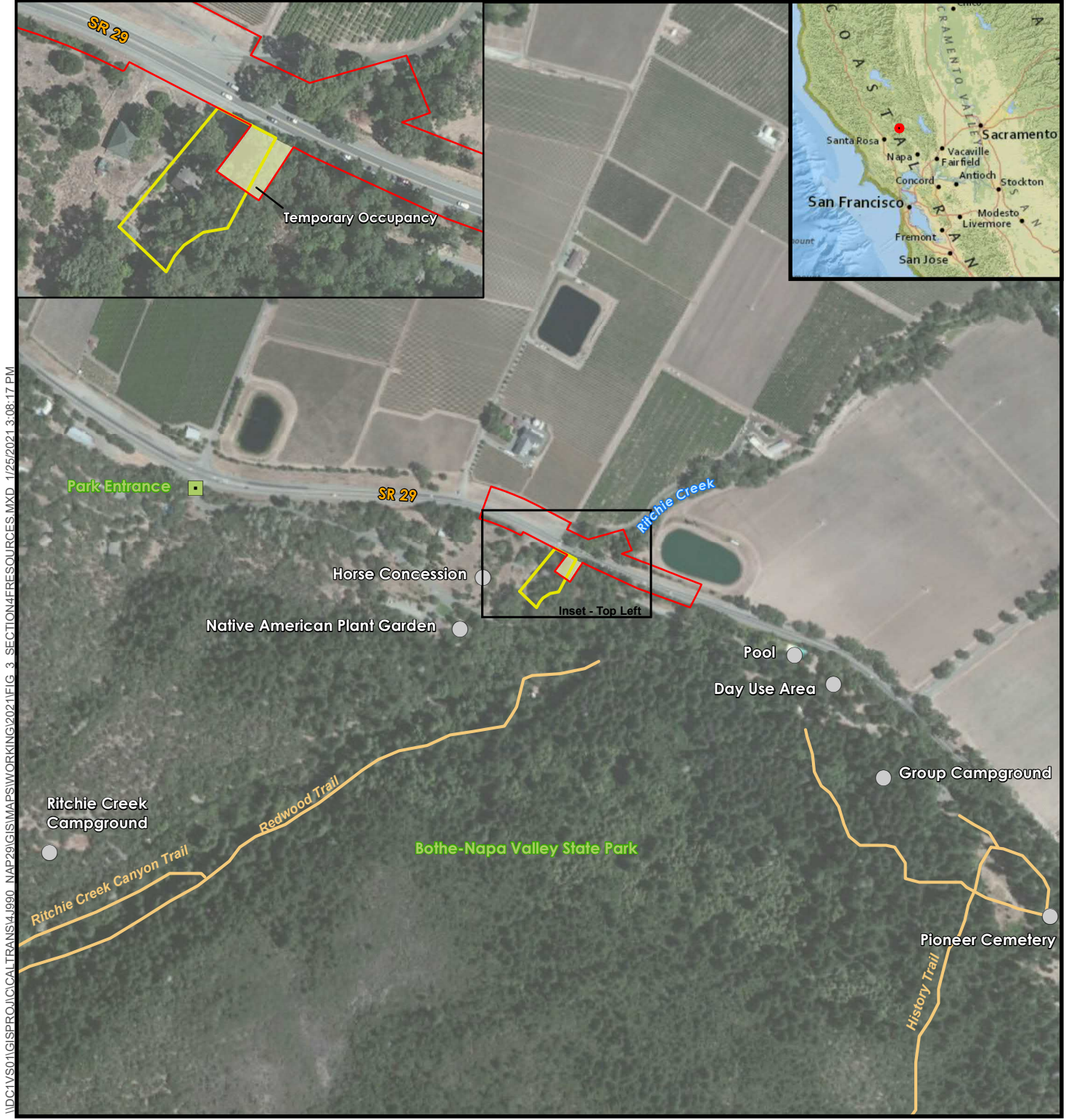
POTENTIAL IMPACT TO SECTION 4(F) RESOURCES

Bothe-Napa Valley State Park

Replacement of the existing bridge would involve replacing wing-walls, requiring a permanent right of way easement onto State Parks property to access and maintain the retaining walls (0.01 acre). This permanent use of the park would not permanently or temporarily affect the use of the recreational facilities available for public enjoyment at the park. Therefore, the proposed project would have a *de minimis* impact to this Section 4(f) resource. The work would not generate any constructive use, impair the features, or affect activities within the park in any way. There may be minimal disruption related to construction activities inside the

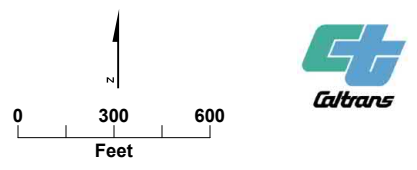
park, such as noise or dust, but construction activities would not be near an area with public access, and these impacts would be temporary and would cease upon project completion. Access to park facilities would not be disrupted, and park users would not be impacted. None of the temporary construction-related impacts would adversely affect the activities, features, or attributes of the state park.

As Figure 3 shows, there would be minimal potential direct use; however, there would not be a conversion of recreational use to transportation use because this area is located in an area of the park that has no recreational function nor provides access to the park. Although the park includes campgrounds, a Native American garden, a swimming pool, and hiking trails, these sites would be unaffected by the project, and project activities would have no effect on the recreational function of the park. As such, Caltrans has made a *de minimis* finding.



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- Legend**
- Project Site
 - Cavanaugh-Wright House and Property
 - Trail
 - Recreational Facility
 - Temporary Use



Service Layer Credits:
 ESRI, National Geographic, DigitalGlobe, GeoEye

Figure 3
Section 4(f) Resources
 Ritchie Creek Bridge Replacement Project
 for Fish Passage Improvement
 EA 04-4J990, NAPA-29 PM 33.13
 Napa County, California

The TCE that would extend into the Bothe-Napa Valley State Park would accommodate construction of new wing-walls and a fish step-pool system or a roughened channel of the creek that would be approximately 0.17 acre. These construction activities would occur within portions of the park not accessed by the public. This would include work in the creek channel and to the edges of SR 29 but would not include areas that contain recreational facilities. Because recreational activities would be unaffected by construction of the proposed project, and the land being used would be returned to a condition as that which existed prior to the project, the temporary occupancy supports the de minimis finding under Section 4(f).

The Cavanaugh-Wright House and Property

No permanent use of the Cavanaugh-Wright House and Property is proposed. However, temporary access may be required within the historic parcel boundary. Construction could result in temporary visual impacts, increase noise levels, and increase air pollutants such as dust and particulate matter due to excavation, grading, hauling, and other construction-related activities. During construction, activities such as grading and paving would generate vibration; however, no pile driving would occur and vibration-related effects would not be excessive. Caltrans would revegetate all previously disturbed areas to the maximum extent feasible in coordination with State Parks requirements. The project would remove and replace a portion of the retaining wall located along Ritchie Creek to resemble the concrete retaining wall located further upstream. In addition, the project would remove and replace a portion of the retaining wall located near the guardrail north of the bridge on the north bank of the creek to be in-kind. As a result, the removal and replacement of these features would not result in an adverse effect to the Cavanaugh-Wright House or other portions of the historic site. Once construction is complete, the proposed bridge would carry the same number of travel lanes as existing conditions and would not result in potential impacts to the Cavanaugh-Wright House and Property.

Caltrans would implement the project features and avoidance and minimization measures listed in Attachment A to minimize harm on the Bothe-Napa State Park and the Cavanaugh-Wright House and Property. (See Attachment A, Project Features and Avoidance and Minimization Measures).

COORDINATION

Caltrans has coordinated with State Parks regarding the project's overlap with Bothe-Napa Valley State Park as well as other fish passage improvement projects upstream of the project area.

On January 8, 2019, Caltrans sent letters initiating Section 106 consultation to the City of Napa, City of Calistoga, State Parks, Napa County Historical Society, Napa County Landmarks, and the Sharpsteen Museum of Calistoga History. None of those groups responded to Caltrans' initial contact. Caltrans sent follow-up emails on March 12, 2019. The County of Napa, Napa County Historical Society, and Napa County Landmarks responded that they had no comments. No other replies were received. Caltrans has continued consultation with State Parks (the owner of the Cavanaugh-Wright and Mitchell-Wright buildings). State Parks has shared previous studies of the project area and has given Caltrans access to the property for surveys.

Caltrans and State Parks held a virtual meeting on September 2, 2020 to discuss the project components, project features, avoidance and minimization measures, and Caltrans' Section 4(f) determination (See Attachment B, State Parks Meeting Minutes). During this meeting,

State Parks and Caltrans agreed to continue coordinating on the biological resources features and measures that would be implemented within the State Parks property. On January 14, 2021, Caltrans and State Parks met virtually to discuss project status and the letter of concurrence.

The public review period for the Initial Study/Environmental Assessment was held from December 1, 2020 to January 8, 2021. A virtual public meeting was held on December, 15, 2020. Upon completion of the public review period, the Section 4(f) *de minimis* was updated to reflect public input. Caltrans provided State Parks, the official with jurisdiction, a letter for written concurrence on January 2021.

For the historic property, concurrence on the Section 106 Finding of Effect from SHPO will also constitute concurrence with the Section 4(f) *de minimis* approach.

OFFICIALS WITH JURISDICTION OVER SECTION 4(F) RESOURCES

State Parks is the official with jurisdiction over Bothe-Napa Valley State Park, and SHPO is the official with jurisdiction over the historic property. The *de minimis* determination is still considered appropriate for the affected Section 4(f) resources. Caltrans received SHPO's concurrence on the Finding of Effect and *de minimis* determination on November 6, 2020. State Parks signed the letter of concurrence on January 29, 2021 (Attachment C).

DE MINIMIS IMPACT DETERMINATION

1. Based on the information presented above, there would only be minor use with no impacts to the public and no constructive use in Bothe-Napa Valley State Park.
2. Based on the information presented above, coordination with other organizations, and the attached documents, the effects of the proposed project on Bothe-Napa Valley State Park constitute a *de minimis* impact, and the requirements of 23 USC 138 and 149 USC 303 have been satisfied.
3. Based on the information presented above, coordination with other organizations, and the attached documents, the effects of the proposed project on the Cavanaugh-Wright House as a historic property constitute a *de minimis* impact, and the requirements of 23 USC 138 and 149 USC 303 have been satisfied.

REFERENCES

- American Association of Highway and Transportation Officials (AASHTO). 2016. Manual for Assessing Safety Hardware. Online:
https://www.fhwa.dot.gov/exit.cfm?link=https://bookstore.transportation.org/item_details.aspx?ID=2707
- California Department of Transportation (Caltrans). 2017. Project Initiation Report to Request Programming in the 2018 SHOPP. NAP-029-PM 33.13. EA 4J990K – Project ID 0416000037-PPNO 1464K. SHOPP 201.335 – Storm Water Mitigation.
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California State Parks (State Parks). 2010. Both-Napa Valley State Park. Online:
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FHWA. 2012. FHWA Section 4(f) Policy Paper. Accessed May 26, 2020
<https://www.environment.fhwa.dot.gov/legislation/section4f/4fpolicy.aspx>

Attachments

Attachment A	Project Features and Avoidance and Minimization Measures
Attachment B	State Parks Meeting Minutes
<u>Attachment C</u>	<u>State Parks Signed Letter of Concurrence</u>

Attachment A Project Features and Avoidance and Minimization Measures

Resource Area	Reference	Project Features/Avoidance and Minimization Measures
Aesthetics	Project Feature AES-1	Vegetation Protection. Existing trees and vegetation would be preserved to the extent feasible. Trees and vegetation outside of the clearing and grubbing limits would be protected from the contractor’s operations, equipment, and materials storage. Tree trimming and pruning, where required, would be under the direction of a qualified biologist.
Aesthetics	Project Feature AES-4	Construction Waste. During construction operations unsightly material and equipment in staging areas would be placed where they are less visible and/or covered where possible.
Aesthetics	AMM AES-1	Minimize Construction Appearance. During construction, Caltrans would minimize the appearance of construction equipment and staging areas on SR 29, and would locate construction equipment below or clear of the highway users’ line of sight of the panoramic view of the Napa Valley to the maximum extent feasible.
Air Quality	Project Feature AIR-1	Dust Control. Dust control measures would be included in the Storm Water Pollution Prevention Plan (SWPPP) and implemented to minimize construction impacts to existing communities. The plan would incorporate measures such as sprinkling, speed limits, transport of materials, and timely revegetation of disturbed areas as needed, as well as posting a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints and at the Bay Area Air Quality Management District (BAAQMD) regarding compliance with applicable regulations. Water or dust palliative would be applied to the site and equipment as often as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a “no visible dust” criterion either at the point of emissions or at the ROW line, depending on air pollution control district and air quality management district regulations and local ordinances.
Air Quality	Project Feature AIR-2	Idling and Access Points. Idling times would be minimized either by shutting off equipment when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage would be provided for construction workers at all access points. Construction activities involving the extended idling of diesel equipment or vehicles would be prohibited, to the extent feasible.
Air Quality	Project Feature AIR-3	Maintaining Construction Equipment and Vehicles. All construction equipment and vehicles would be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment would be checked by a certified mechanic and determined to be running in proper condition prior to operation.
Air Quality	Project Feature AIR-4	Contractor Air Quality Compliance. The construction contractor must comply with the Caltrans Standard Specifications in Section 14-9, which require contractor compliance with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
Biological Resources	Project Feature BIO-10	Replant, Reseed, and Restore Disturbed Areas. Caltrans would restore temporarily disturbed areas to the maximum extent practicable. Exposed slopes and bare ground would be reseeded with native and appropriate non-invasive grasses and native shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species would be replanted at a ratio to be determined in a later project phase, based on the local species composition.

Resource Area	Reference	Project Features/Avoidance and Minimization Measures
Biological Resources	Project Feature BIO-11	<p>Vegetation Removal. <u>Vegetation that is within the cut-and-fill line or growing in locations where permanent structures would be placed (e.g., road alignment, shoulder widening) would be cleared. Vegetation would be cleared only where necessary and would be cut above soil level, except in areas that would be excavated. This would allow plants that reproduce to resprout after construction. Clearing and grubbing of woody vegetation would occur by hand or using construction equipment such as mowers, backhoes, and excavators. If clearing and grubbing occur between February 1 and September 30, a qualified biologist would survey for nesting birds within the areas to be disturbed, including a perimeter buffer of 50 feet for passerines and 300 feet for raptors, before clearing activities begin. All nest avoidance requirements of the MBTA and California Fish and Game Code would be observed, such as establishing appropriate protection buffers around active nests until young have fledged. Cleared vegetation would be removed from the project footprint to prevent attracting animals to the project site.</u></p>
Biological Resources	Project Feature BIO-12	<p>Reduce Spread of Invasive Species. To reduce the spread of invasive, nonnative plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans would comply with Executive Order (EO) 13112. This order is provided to prevent the introduction of invasive species and provide for their control in order to minimize the economic, ecological, and human health effects. If noxious weeds are disturbed or removed during construction-related activities, the contractor would be required to contain the plant material associated with these noxious weeds and dispose of them in a manner that would not promote the spread of the species. The contractor would be responsible for obtaining all permits, licenses and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance would be replanted with fast-growing native and appropriate non-invasive grasses or a native erosion-control seed mixture. Where seeding is not practical, the target areas within the project area would be covered to the extent practicable with heavy black plastic solarization material until <u>the end of the project.</u></p>
Biological Resources	AMM BIO-3	<p>Tree Replacement. After construction, Caltrans or its subcontractor would conduct onsite tree replanting where feasible and/or offsite as necessary. Replacement planting would be performed for oak species for all other native species as designated by local or state permit conditions. Replanting plans would be developed during the project's design phase and in coordination with regulatory agencies. Replanting ratios are contingent upon availability of right of way.</p>
Cultural Resources	AMM CUL-1:	<p>Environmentally Sensitive Area Fencing. Prior to construction, a qualified cultural professional would install environmentally sensitive area fencing around the contributing historic elements, such as the circular driveway, of the Cavanaugh-Wright Property to visibly mark the boundaries of avoidance.</p>
Noise	Project Feature NOI-1	<p>Idling of Internal Combustion Engines. Unnecessary idling of internal combustion engines would be avoided within 100 feet of sensitive receptors.</p>
Noise	Project Feature NOI-2	<p>Maintaining Internal Combustion Engines. All internal combustion engines would be maintained properly to minimize noise generation. Equip all internal combustion engine driven equipment with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment.</p>

Resource Area	Reference	Project Features/Avoidance and Minimization Measures
Noise	Project Feature NOI-3	Sensitive Receptors. Locate all staging equipment at grade or lower than adjacent residences. Stationary noise generating construction equipment would be located as far as practical from noise-sensitive receptors. Construct noise barriers (e.g., temporary enclosures or stockpiles of excavated material) between noisy activities and noise sensitive receptors or around activities with high noise levels or group of noisy equipment.
Noise	Project Feature NOI-4	Quiet Air Compressors. The project would utilize “quiet” air compressors and other “quiet” equipment where such technology exists.
Noise	Project Feature NOI-5	Construction Schedule. Construction activities would occur during the day, between 6:00 AM to 9:00 PM wherever feasible. Noisy operations would be scheduled to occur within the same time period to the greatest extent possible. The total noise level would not be significantly greater than the level produced if operations are performed separately.

Attachment B State Parks Meeting Minutes

4J990 Ritchie Creek Bridge Replacement Project for Fish Passage Improvement – Section 4(f) Discussion

Date/Time: September 2, 2020 / 10:30 AM
Attendees: Caltrans: Lindsay Vivian, Nathan Roberts, Helen Blackmore, Charles Palmer, Lindsay Busse, Amani Meligy, Reena Gohil
California Department of Parks and Recreation (State Parks): Noah Stewart, Christina Freeman
Consultants: Jasmin Mejia (Jacobs), Caitlin Schroeder (Stantec)

Agenda:

1. Introductions
2. Project Purpose and Need
3. Alternatives
4. Section 4(f) Resources
5. Use of Section 4(f) Resources
6. Project Features
7. Summary

Meeting Notes:

- Purpose of meeting is to receive State Parks input on Caltrans Section 4(f) *de minimis* determination for the project and project features:
 - Bothe Napa Valley State Park: temporary access for construction activities (creek access, retaining wall, wing-wall). Access areas do not support recreational facilities and are not accessed by public.
 - Cavanaugh-Wright House and Property: no adverse effect
- State Parks asked for more details about the existing retaining wall. Nathan clarified that the portion of the retaining wall that will be replaced is not associated with the historical elements of the Cavanaugh property.
- State Parks clarified that tree removal and revegetation within the Bothe Napa Valley State Park must match their genetic policy for replanting (e.g., seed collection within the park). Standard hydroseed will not be appropriate, especially within riparian area. State Parks will need to be involved with discussions about replanting, herbicide use, future monitoring, access agreements, etc.
- Caltrans will invite State Parks to Caltrans Biology focus meeting regarding the NES next week.
- Christina asked whether the design of the fish passage improvement has been determined. Caltrans design is still preliminary, but will either be a step-pool system or roughened channel graded at a 2.5% slope. Design will be determined during PS&E.
- State Parks mentioned another recently completed fish passage improvement along Ritchie Creek. The step-pool system was not feasible based on the hydrology of the area. She can share design information if that would be helpful for this project.
- Caltrans clarified that coordination with NMFS and CDFW on design will be important and Caltrans will keep State Parks in the loop.
- State Parks requested to review the Finding of Effect (FOE) prior to providing concurrence on the Section 4(f) determination.
- Caltrans said they are planning to share the FOE to SHPO next week and will share with State Parks in advance. The Cavanaugh driveway will require exclusion fencing to keep the no adverse effect. Construction/design will need to keep vehicles away from the decorative landscaping as well.
- State Parks supports this project as long as there are no impacts to historic resources. Will likely concur with Caltrans *de minimis* finding, but will need to understand the permanent easement a little more.
- Caltrans confirmed the temporary planting easement is included in the NES.

Attachment C State Parks Signed Letter of Concurrence

DEPARTMENT OF TRANSPORTATION

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Making Conservation
a California Way of Life.

January 28, 2021

Ms. Michelle P. Squyer
Planner and Project Manager
California Department of Parks and Recreation – Bay Area District
845 Casa Grande RD
Petaluma CA 94954-5804

Dear Ms. Squyer,

The California Department of Transportation (Caltrans) hereby notifies you of our intent to make a *de minimis* impact determination pursuant to Section 4(f) of the United States (U.S.) Department of Transportation (USDOT) Act of 1966 (49 U.S. Code [USC] 303[c]) for a highway improvement project anticipated to occur on the Bothe-Napa Valley State Park, land owned by the California Department of Parks and Recreation.

Caltrans requests your concurrence on this *de minimis* impact determination. Caltrans has determined that a Section 4(f) *de minimis* impact is appropriate for the permanent easement for maintenance of the wing wall and the temporary construction easement for construction of the new wing-walls and creek restoration. This work is associated with the Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (04-4J990) (Project). Pursuant to the California Environmental Quality Act and the National Environmental Policy Act, an Initial Study (IS) with Proposed Mitigated Negative Declaration (MND) and Environmental Assessment was prepared for the Project and circulated for public review from December 1, 2020 to January 8, 2021. Caltrans circulated the Section 4(f) *de minimis* impact determination along with the IS/MND-EA. Public involvement methods involved a newspaper advertisement and a virtual public meeting held on December 15, 2020.

Background

The existing bridge over Ritchie Creek¹ is a modified stone-arched structure built in the early 1900s and expanded in the 1940s. Ritchie Creek at SR 29 drains approximately 1,600 acres of land largely from Bothe-Napa Valley State Park into the Napa River. Southwest of SR 29, Ritchie Creek travels through Bothe-Napa Valley State Park; northeast of SR 29, Ritchie Creek traverses privately owned property until it flows into the Napa River. Anadromous fish have historically used the tributaries to the Napa

¹ Ritchie Creek may also be spelled as "Ritchey Creek"; however, the bridge is spelled "Ritchie Creek Bridge" and the creek will be referred to as "Ritchie Creek" throughout this document.

River, including Ritchie Creek, to reach upstream habitat. Several barriers to anadromous fish passage have been created over the years, blocking fish movement in historically occupied streams.

Project Location

The Project is located at PM 33.13 on State Route 29 southeast of the City of Calistoga in Napa County, California. The Project is located approximately 4 miles southeast of the City of Calistoga and approximately 3.5 miles to the north of the City of St. Helena, in the northwestern region of Napa County. State Route 29 is a major north-south route that traverses Napa County; the highway starts in Vallejo in Solano County and links agricultural areas and the cities of Napa, Yountville, St. Helena, and Calistoga. The portion of State Route 29 within the project limits is a two-lane conventional highway. The project footprint includes the realignment of two lanes to divert traffic from the existing bridge to a temporary detour bridge, temporary access roads to the creek, and staging areas.

Project Description

The existing bridge on SR 29 is classified as a depth and jump barrier to adult and juvenile salmonids. Caltrans is proposing to remove the fish passage barriers by replacing the existing bridge, grading the creek bed and constructing a roughened channel or a step-pool system to allow for fish passage. In exchange, the State Water Resources Control Board (SWRCB) would grant 42 Total Maximum Daily Load (TMDL) compliance unit credits pursuant to requirements of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) permit (Caltrans 2017).

The Project's proposed new bridge whose dimensions would be similar to the existing bridge and would include a 12-foot travel lane and an 8-foot shoulder in each direction. The Project would require temporary easements that extend beyond Caltrans right-of-way (ROW) and onto land from Bothe-Napa Valley State Park. Permanent easement on Bothe-Napa Valley State Park would be required to access wing wall for maintenance.

Use of Section 4(f) Park Resources

The majority of the work for the Project is located within Caltrans ROW. However, a temporary construction easement and a permanent easement would be required within the Bothe-Napa Valley State Park. The temporary construction easement would be 0.18 acre and the permanent easement would be 0.01 acre. In the two locations, Project elements constructed on the 4(f) resource would include the replacement of wing-walls, construction of a fish step-pool system or a roughened channel of the creek, and maintenance of the retaining walls.

De Minimis Impact

De minimis impact is defined in 23 Code of Federal Regulation (CFR) 774.17 as follows:

“For parks, recreational areas, and wildlife and waterfowl refuges, a de minimis impact is one that would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).”

There may be minimal disruption related to construction activities inside the park, such as noise or dust, but construction activities would not be near an area with public access, and these impacts would be temporary and would cease upon project completion. Access to park facilities would not be disrupted, and park users would not be impacted.

Caltrans will incorporate the Project Features (PFs) and Avoidance and Minimization Measures (AMMs) listed in the Section 4(f) De Minimis Determination Memorandum (Attachment A) to minimize harm to State Parks. Caltrans will continue to collaborate with Bothe-Napa Valley State Park as the PFs and AMMs are finalized.

Section 4(f) De Minimis Impact Determination

Although the proposed Project requires permanent easement and temporary construction easement on Bothe-Napa Valley State Park, the attributes and features of State Parks land that qualify it for Section 4(f) protection would not be adversely impacted by the Project. The Project will incorporate all feasible PFs and AMMs to reduce harm to Bothe-Napa Valley State Park. The permanent easement associated with the Project would not result in an adverse impact on the primary functions of Bothe-Napa Valley State Park.

Therefore, based on the analysis in the Section 4(f) De Minimis Determination Memorandum, and consistent with the coordination requirements of 23 CFR 774.5(b)(2), Caltrans has made a de minimis impact determination for the Project.

Caltrans requests concurrence with the de minimis impact determination pursuant to Section 4(f) of the USDOT Act of 1966 (49 USC 303[d]). For convenience, enclosed is an example of language that may be included in your response letter on California Department of Parks and Recreation letterhead. If you have any further questions regarding this request, please contact Skylar Nguyen, Environmental Planner, at Skylar.Nguyen@dot.ca.gov. We look forward to your prompt reply.


Sincerely,

Maxwell Lammert

Maxwell Lammert
Senior Environmental Planner

Enclosures:
Concurrence Language, Section 4(f) Evaluation, and Layout Sheets

The California Department of Parks and Recreation, as the agency with jurisdiction over Bothe-Napa Valley State Park, concurs with the California Department of Transportation Section 4(f) impact determination that the Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (04-4J990) will result in a *de minimis* impact on the Bothe-Napa Valley State Park. This letter demonstrates compliance with 23 Code of Federal Regulations 774.17

Signature:  Date: 1/29/2021
Name: Maria Mowrey Title: District Superintendent

Appendix B Avoidance, Minimization, and/or Mitigation Measures Summary

Appendix B Avoidance, Minimization, and/or Mitigation Measures Summary

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
Aesthetics	AMM AES-1: Minimize Construction Appearance	During construction, Caltrans would minimize the appearance of construction equipment and staging areas on SR 29, and would locate construction equipment below or clear of the highway users' line of sight of the panoramic view of the Napa Valley to the maximum extent feasible.
Aesthetics	AMM AES-2: Bridge Rail Design	During the design phase, Caltrans would design the bridge to incorporate see-through bridge rails that allow views of the creek and adjacent vegetation as directed by Caltrans Landscape Architecture staff.
Aesthetics	AMM AES-3: Glare Effects	During the design phase, Caltrans would design the concrete portions of the bridge including the concrete anchor blocks, wing walls, and abutments. The design would be treated with a combination of roughening surface texture and coloring concrete to reduce glare, as directed by Caltrans Landscape Architecture staff.
Aesthetics	AMM AES-4: Post-Construction Site Grading and Contours	Prior to completion of construction activities, Caltrans would use contour grading and slope rounding to produce smooth, flowing contours consistent with site topography, to increase context sensitivity and reduce engineered appearance of slopes.
Agricultural Resources	AMM AG-1: Minimize Impacts on Active Agricultural Areas	Prior to construction, Caltrans would provide written notice to landowners outlining construction activities, preliminary schedule, and timing of restoration efforts, and would coordinate with landowners to minimize construction-related disruptions to seasonal farming operations. After construction, Caltrans or its contractor would revegetate temporarily impacted agricultural areas in the TCE.
Biological Resources	AMM BIO-1: Approved Biologist	<p>Approved Biologist. The names and qualifications of the proposed biomonitor(s) would be submitted to permitting agencies for approval at least 30 calendar days prior to the start of construction. Prospective credentials may be accepted and approved separately for the California freshwater shrimp (CFS) and California red-legged frog (CRLF). Project activities would not begin before agency approval of the biomonitor(s).</p> <ul style="list-style-type: none"> a) The biomonitor(s) would keep a copy of the Biological Opinions (BOs), Lake and Streambed Alteration Agreement, and other relevant permit materials in their possession when on-site. b) The biomonitor(s) would be on-site during all work that could reasonably result in take of the CFS or CRLF or other special-status wildlife, including vegetation clearing and grubbing, installation of fencing, and dewatering activities.

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
		<p>The biomonitor(s) would have the authority to stop work that may result in the unauthorized take of special-status species through communication with the Caltrans Resident Engineer (RE). If the biomonitor(s) exercises this authority, the applicable agencies would be notified by telephone and email within one working day.</p> <p>Prior to construction, an approved biologist would coordinate with the RE to ensure that trees are removed only where necessary. Caltrans would mark trees that would be removed, and the approved biologist would be on-site during tree removal, trimming, and installation of the temporary creek diversion system. Caltrans would comply with work windows and specific removal methods to protect certain species, including birds and bats.</p> <p>During construction activities, an approved biologist would be on-site to relocate California giant salamanders, western pond turtles, and foothill yellow-legged frogs to suitable habitat downstream if they are found within the project footprint. An approved biologist would be on-site to investigate burrows before grubbing or grading occur.</p>
Biological Resources	AMM BIO-2: Woody Debris	<p>During construction, efforts will be made to minimize impacts to well-established vegetation, particularly within riparian areas. Snags, stumps, and woody debris will remain in place or relocated within the riparian area if determined to be a beneficial habitat feature by the approved biologist.</p> <p>After construction is complete, Caltrans would leave or return downed woody debris and snags on-site where necessary to enhance habitat complexity, provide cover, and minimize impacts to understory habitat communities.</p>
Biological Resources	AMM BIO-3: Tree Replacement	<p>After construction, Caltrans or its subcontractor would conduct on-site tree replanting where feasible and/or off-site as necessary. Replacement planting would be performed for oak species for all other native species as designated by local or state permit conditions. Replanting plans would be developed during the project's design phase and in coordination with regulatory agencies, including Bothe-Napa Valley State Park. Replanting ratios are contingent upon availability of right of way.</p>
Biological Resources	AMM BIO-4: Equipment Inspection	<p>During construction, to prevent the introduction of non-native vegetation to the project area, all construction-related equipment would be inspected prior to commencing work. If any such materials are present, equipment would be cleaned before commencing work.</p>

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
Biological Resources	AMM BIO-5: Tree Removal Monitoring	Regardless of bird or bat occupancy, all tree removal would be monitored by an approved biologist and conducted using a two-phase approach over two consecutive days. In the afternoon of the first day, limbs and branches would be removed using chainsaws or other hand tools, avoiding limbs with cavities, crevices, or deep bark fissures. Each tree would be shaken gently, and several minutes would be allowed to pass before trimming to allow birds and bats time to arouse and leave the tree. On the second day, the remainder of the tree would be removed.
Biological Resources	AMM BIO-6: Special-Status Plant Species Survey	An approved biologist would conduct surveys for special-status plant species in suitable habitat at least 48 hours and no more than one week prior to the start of construction activities at off-pavement work locations. If a special-status plant is discovered, an approved biologist would establish an appropriate exclusion buffer and coordinate with the resource agencies.
Biological Resources	AMM BIO-7: Preconstruction Bat Surveys	At least 48 hours prior to the start of construction, an approved biologist would conduct surveys for bats and bat habitat in the project footprint. If there is a lapse in construction activities of 2 weeks or more, the area shall be resurveyed within 24 hours prior to recommencement of work.
Biological Resources	AMM BIO-8: No Disturbance Buffer for Special-Status Bats	If during construction a pallid bat or roost is discovered within the BSA, an approved biologist would establish a no-disturbance buffer (typically 100 feet) and coordinate with CDFW. This buffer would be maintained to the extent needed as determined by the biologist.
Biological Resources	AMM BIO-9: Bat Exclusionary Measures	Prior to construction, Caltrans or its contractor would implement bat exclusionary measures, such as filling crevices with expandable foam, on the existing bridge structure if deemed necessary by an approved biologist. In addition, these measures must be put in place either between March 1 and April 15 or between August 31 and October 15.

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
Biological Resources	AMM BIO-10: Bat Presence/Absence Surveys	<p>Prior to construction, presence/absence surveys would be conducted to assess bat occupancy no more than 72 hours prior to tree removal or trimming. If surveys are negative, then tree removal may be conducted by following a two-phased tree removal system. The two-phase system would be conducted over 2 consecutive days. On the first day, (in the afternoon) limbs and branches are removed by a tree cutter using chainsaws or other hand tools. Limbs with cavities, crevices, or deep bark fissures are avoided and only branches or limbs without those features are removed. On the second day the entire tree shall be removed.</p> <p>If surveys indicate bat presence, the occupied trees may only be removed outside of maternity season (April 15 to August 31) and outside of winter hibernation (October 15 to March 1); therefore, tree removal may only be conducted between March 1 and April 15 or between August 31 and October 15 if trees are occupied. Potential avoidance may include exclusionary blocking or filling potential cavities with foam, visual monitoring, and staging project work to avoid bats. If bats are known to use the bridge structure, exclusion netting would not be used. Bats would not be disturbed without specific notice to and consultation with CDFW.</p>
Biological Resources	AMM BIO-11: Roosting Bat Survey	<p>During the design phase, Caltrans would resurvey for bat occupancy on the existing bridge to determine the presence of bats and the potential for day or night roosting habitat.</p>
Biological Resources	AMM BIO-12: Creek Design	<p>Habitat requirements, such as cover and substrate needs, of migrating and rearing individuals would be incorporated into creek design by Caltrans during the design phase, Incorporation of habitat requirements would create in-kind or improved creek habitat. Caltrans will coordinate with the USFWS, NMFS and CDFW on final design.</p>
Biological Resources	AMM BIO-13: Resident Engineer	<p>At least 30 calendar days prior to ground disturbance, the RE's name and telephone number would be provided to the USFWS. The RE would send a letter to the USFS verifying that they possess a copy of the BO and understands the <i>Terms and Conditions</i>. The RE would maintain a copy of the BO and other relevant permits on-site whenever construction is taking place.</p>

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
Biological Resources	AMM BIO-14: California Freshwater Shrimp Surveys and Relocation	<p>Caltrans or its contractor would be responsible for the implementation of the following activities before the installation of the temporary creek diversion system is installed.</p> <p>a) At least 30 days prior to the onset of activities, the name(s) and credentials of biologists who would conduct CFS surveys and relocation activities would be submitted to the USFWS. No project activities would begin until Caltrans has received written approval from the USFWS that they are approved to conduct the work. A USFWS-Approved California Freshwater Shrimp Monitor would be on-site during the construction of any erosion control fencing or cofferdams, and prior to and during the dewatering of the creek to monitor for the CFS.</p> <p>b) A USFWS-Approved California Freshwater Shrimp Monitor would survey for the CFS within 2 weeks before the onset of construction activities within the bed and bank of the subject creek, including any temporary dewatering and/or coffer dam installation. The survey would include investigation of likely habitat 100 feet upstream and 200 feet downstream of the project footprint. If CFS are found, the USFWS-Approved California Freshwater Shrimp Monitor would capture and relocate them to suitable habitat within the creek. Only USFWS-approved California Freshwater Shrimp Monitors would participate in activities associated with the capture, handling, and monitoring of CFS. Following installation of any water diversion structures, and prior to the placement of fill, a USFWS-Approved CFS Monitor would perform surveys for CFS in the construction boundaries.</p>

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
Biological Resources	AMM BIO-15: Relocate California Freshwater Shrimp	<p>Caltrans or its contractor would be responsible for the implementation of the following measures, if CFS are encountered during construction.</p> <ul style="list-style-type: none"> a) CFS would be captured with hand-held nets (e.g., heavyduty aquatic dip nets [12 inch D-frame net] or small minnow dip nets) and relocated out of the work area in buckets containing creek water and then moved directly to the nearest suitable habitat in the same branch of the creek. Suitable habitat would be identified prior to capturing CFS to minimize holding time. Suitable habitat would be defined as creek sections that would remain wet over the summer and where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris, or overhanging vegetation. CFS would not be placed in buckets containing other aquatic species. b) Once the USFWS-Approved California Freshwater Shrimp Monitor has determined that all CFS have been effectively relocated, barrier seines or exclusion fencing would be installed to prevent shrimp from moving back in, as appropriate. c) The CFS will be released within suitable habitat acceptable to the USFWS, who will be notified. If suitable habitat cannot be identified, the USFWS will be contacted to determine an acceptable alternative. Transporting CFS to a location other than the location described herein will require written authorization of the USFWS. d) The number of CFS captures, releases, injuries, and mortalities will be reported to the USFWS via telephone call and e-mail within one (1) working day.
Biological Resources	AMM BIO-16: Preconstruction California Red-Legged Frog (CRLF) Surveys	<p>Caltrans or its contractor would engage a USFWS-approved biological monitor to conduct preconstruction surveys for CRLF as needed within the project footprint. For frog surveys, visual encounter surveys would be conducted immediately before ground-disturbing activities. Suitable habitat within the project footprint, including refugia habitat (such as under shrubs, downed logs, small woody debris, burrows, and similar) would be visually inspected. If a CRLF is observed, the individual would be evaluated and relocated. Fossorial mammal burrows would be visually inspected for signs of CRLF use, to the extent practicable. If it is determined that a burrow may be occupied by a CRLF, the USFWS-Approved Biological Monitor would determine the best course of action to avoid harm to the frog.</p>
Biological Resources	AMM BIO-17: California Red-Legged Frog and California Freshwater Shrimp Monitoring	<p>The USFWS-Approved Biological Monitor would be present during construction activities where take of a CRLF or CFS could occur. Through communication with the Resident Engineer or their designee, the USFWS-Approved Biological Monitor will stop work if deemed necessary for any reason to protect listed species and will advise the Resident Engineer or their designee on how to proceed accordingly. During the winter (wet) season, a full-time USFWS-Approved Biological Monitor would be on-site for the increased chance of CRLF movements through the project site (dispersal behavior).</p>

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
Biological Resources	AMM BIO-18: California Red-Legged Frog Discovery	<p>If a CRLF is discovered, the Resident Engineer and USFWS-Approved Biological Monitor would be immediately informed.</p> <ul style="list-style-type: none"> a) The Resident Engineer or their designee will immediately contact the USFWS-Approved Biological Monitor when a CRLF is observed within the construction zone. Construction activities would be suspended within a 50 feet radius of the animal until it leaves the site voluntarily or the animal is relocated by the USFWS-Approved Biological Monitor. The USFWS-Approved Biological Monitor would follow established CRLF protocols for relocation of the frog. b) The USFWS would be notified within one (1) working day if a CRLF is discovered within the construction site. c) Captured CRLF would be released within appropriate habitat outside of the construction area, as close to the discover location as possible, and within suitable habitat similar to where it was discovered. The release habitat would be determined by the USFWS-Approved Biological Monitor. d) The USFWS-Approved Biological Monitor would take precautions to prevent introduction of amphibian diseases in accordance with the <i>Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog</i> (USFWS 2005).
Biological Resources	AMM BIO-19: California Red-Legged Frog Exclusion Fencing	<p>Before starting construction, exclusion fencing would be installed in areas where the CRLF are most likely to occur. This may include areas considered potential frog aquatic non-breeding habitat, such as delineated <i>Waters of the U.S.</i> The exclusion fencing would remain in place as long as active construction is anticipated. The final project plans would depict the locations where the exclusion fencing would be installed, and the type of materials to be used.</p>
Biological Resources	AMM BIO-20: Rain Events	<p>The USFS-Approved Biological Monitor would determine which construction activities may need to be halted within 24 hours of a 0.1-inch rain event, or when there is a forecast of 40 percent or more chance of precipitation, to ensure protection of CRLF. If, by 2 p.m., rain is forecast for the remainder of the day or subsequent night with a 70 percent or greater probability of rain (based on the nearest National Weather USFWS forecast, available at http://forecast.weather.gov), work may be postponed until 24 hours have passed between the last rain event and the start of work.</p>

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
Biological Resources	AMM BIO-21: Dewatering	<p>Dewatering and discharging activities would be conducted according to standard Caltrans requirements.</p> <ul style="list-style-type: none"> a) The dewatering plan would be provided to the USFWS, CDFW and NMFS for review, comment, and approval in advance of its establishment. b) An agency-approved Biological Monitor would be present during dewatering activities to capture and relocate CFS, CCC steelhead and CRLF as needed. c) An agency-approved Biological Monitor would be present during the dewatering activities to capture and relocate native species. Captured animals would be relocated up or downstream of the dewatering system as appropriate to its biological requirements. d) Equipment used within the dewatered creek channel would be inspected daily for leaks by the USFS-approved biological monitor. If any are found, a drip pan would be placed under the leak and it would be repaired immediately by the contractor. e) For dewatering systems that require pumping, all intakes would be completely screened with wire mesh not larger than 5 millimeters (0.2 inch) to prevent wildlife from entering the pump system. f) Upon completion of construction activities, any barriers to flow would be removed in a manner that would allow flow to resume with the least disturbance to substrate.
Biological Resources	Mitigation Measure BIO-1: Habitat enhancement for California freshwater shrimp	<p>Caltrans will incorporate the preferred habitat substrate vegetation such as willows or other vegetation plantings that can create vegetation that overhangs channel banks for CFS into the on-site Habitat Mitigation and Monitoring Plan (HMMP). The HMMP will be developed, during the design phase, in coordination with the regulatory agencies and in accordance with Caltrans standard specifications. The specifications include requirements for native and non-invasive and noxious plants, quality assurance, installation methods, and documentation. Caltrans will coordinate with the USFWS and CDFW on the development of the HMMP for CFS.</p>
Cultural Resources	AMM CUL-1: Environmentally Sensitive Area Fencing	<p>Prior to construction, a qualified cultural professional would install environmentally sensitive area fencing around the contributing historic elements, such as the circular driveway, of the Cavanaugh-Wright Property to visibly mark the boundaries of avoidance.</p>

Resource Area	Measure Reference	Avoidance, Minimization, and/or Mitigation Measure
Cultural Resources	Mitigation Measure CUL-1: Memorandum of Agreement	In accordance, with the executed Memorandum of Agreement (MOA) Caltrans will implement Stipulation II, Treatment of the Historic Properties during construction. Caltrans will implement the 2020 Archeological Treatment Plan (ATP) (attachment C of the MOA). The ATP provisions for avoidance and mitigation to the historic resources in the project area include data recovery, archaeological monitoring of archeological resources outside the area of direct impact, establishment of environmentally sensitive areas, and continued consultation with Native American tribes. In addition, Caltrans will collaborate with other MOA parties to finalize the technical reports that document the results of implementing and completing the ATP. The MOA is found in Appendix I.
Water Quality	AMM WQ-1: Turbidity and Water Quality Monitoring	During construction, Caltrans or its contractor would monitor for turbidity and pH during and after installation and removal of the cofferdam, as well as during dewatering activities, according to Standard Specification 13-1.01D(5)(b) Water Quality Sampling and Analysis. Water quality monitoring would be performed to document changes in turbidity and pH in compliance with water quality standards, permits, and approvals from NMFS and/or CDFW. If the water quality monitor observes excursions of turbidity beyond 50 nephelometric turbidity units, or as otherwise specified in regulatory agency permits and approvals, then the water quality monitor would notify the Resident Engineer. The Resident Engineer has the authority to stop all construction work in the area until the appropriate corrective measures have been conducted. Work would resume once it is determined that water quality standards would not be violated.
Wildfire	AMM WF-1: Implement Fire Prevention Practices During Construction	<p>During construction, Caltrans would implement the following fire prevention practices to reduce the potential for wildfire.</p> <ul style="list-style-type: none"> • Prepare names and emergency telephone numbers of the nearest fire suppression agencies before the start of job site activities and post at a prominent place at the job site. • Prepare a fire prevention plan required by Cal/OSHA before the start of job site activities. • Cooperate with fire prevention authorities in performance of the work. • Immediately report fires occurring within and near the project limits by dialing 911 and to the nearest fire suppression agency by using the emergency phone numbers retained at the job site. • Prevent project personnel from setting open fires that are not part of the work. • Prevent the escape of and extinguish fires caused directly or indirectly by job site activities.

Appendix C List of Abbreviations

Appendix C List of Abbreviations

AADT	annual average daily traffic
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ADL	aerially deposited lead
ADT	average daily traffic
AMM	avoidance, minimization and/or mitigation measure
AP	Agricultural Preserve
APE	Area of Potential Effects
APN	Assessor's Parcel Number
ATP	Archaeological Treatment Plan
AW	Agriculture Watershed
BA	Biological Assessment
BAAQMD	Bay Area Air Quality Management District
Basin Plan	San Francisco Water Quality Control Plan
BMP	best management practice
BO	Biological Opinion
BSA	Biological Study Area
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation

CARB	California Air Resources Board
CAPM	Capital Preventive Maintenance
CCC	Central California Coast
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CFS	California freshwater shrimp
CGP	Construction General Permit
CH ₄	methane
CIA	Community Impact Assessment
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CRHR	California Register of Historical Resources
CRLF	California red-legged frog
CTP	California Transportation Plan
CWA	Clean Water Act

dB	decibel
dBA	A-weighted decibel
dbh	diameter at breast height
DPS	distinct population segment
DSA	Disturbed Soil Area
EFH	essential fish habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Environmentally Sensitive Area
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FONSI	Finding of No Significant Impact
FP	Fully Protected
FPPA	Farmland Protection Policy Act
FTIP	Federal Transportation Improvement Program
GHG	greenhouse gas

Guidelines	Section 404(b)(1) Guidelines
H ₂ S	hydrogen sulfide
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HMMP	Habitat Mitigation and Monitoring Plan
HPSR	Historic Property Survey Report
IS/EA	Initial Study/Environmental Assessment
LEDPA	least environmentally damaging practicable alternative
L _{eq}	average hourly noise level
L _{max}	maximum noise level
LOS	level of service
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MM	mitigation measure
MMTCO _{2e}	million metric tons of carbon dioxide equivalent
MOA	Memorandum of Agreement
MPO	Metropolitan Planning Organization
MS4	municipal separate storm sewer system
MTC/ABAG	Metropolitan Transportation Commission/Association of Bay Area Governments
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards

NAC	noise abatement criteria
NAHC	Native American Heritage Commission
NAVD 88	North American Vertical Datum of 1988
NCCP	Natural Communities Conservation Plan
NCFD	Napa County Fire Department
NCRCD	Napa County Resource Conservation District
NEPA	National Environmental Policy Act of 1969
NES	Natural Environment Study
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NVTA	Napa Valley Transportation Authority
OHWM	ordinary high-water mark
PA	Programmatic Agreement
Pb	lead
PG&E	Pacific Gas and Electric
PM	post mile
PM _{2.5}	particulate matter with particles of 2.5 micrometers or smaller

PM ₁₀	particulate matter with particles of 10 micrometers or smaller
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PQS	Professionally Qualified Staff
PRC	Public Resources Code
project	Ritchie Creek Bridge Replacement Project for Fish Passage Improvement
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
RE	Resident Engineer
ROG	reactive organic gas
ROW	right-of-way
RSP	rock slope protection
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board
Safeguarding California Plan	<i>Safeguarding California: Reducing Climate Risk</i>
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF ₆	sulfur hexafluoride
SF Air Basin	San Francisco Bay Area Air Basin
SFHA	Special Flood Hazard Area
SHOPP	State Highway Operation and Protection Program

SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLR	sea-level rise
SO ₂	sulfur dioxide
SR 29	State Route 29
SSC	Species of Special Concern
State Parks	California Department of Parks and Recreation
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	temporary construction easement
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TMP	Traffic Management Plan
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
VIA	Visual Impact Assessment
VINE	Valley Intercity Neighborhood Express
VOC	volatile organic compound
VMT	vehicle miles traveled

WDR	Waste Discharge Requirement
Williamson Act	California Land Conservation Act of 1965

Appendix D Project Features

Appendix D Project Features

Resource Area	Project Feature Reference	Project Feature Title and Description
Aesthetics	Project Feature AES-1	Vegetation Protection. Existing trees and vegetation would be preserved to the extent feasible. Trees and vegetation outside of the clearing and grubbing limits would be protected from the contractor's operations, equipment, and materials storage. Tree trimming and pruning, where required, would be under the direction of a qualified biologist.
Aesthetics	Project Feature AES-2	Erosion Control. After construction, all areas cleared within the project limits for uses such as contractor access, staging, and trenching operations would be treated with appropriate erosion control measures where required.
Aesthetics	Project Feature AES-3	Construction Staging. Except as detailed in the Contract Plans, staging areas would not affect existing landscaped areas resulting in death and/or removal of trees and shrubs, or disruption and destruction of existing irrigation facilities.
Aesthetics	Project Feature AES-4	Construction Waste. During construction operations, unsightly material and equipment in staging areas would be placed where they are less visible and/or covered where possible.
Aesthetics	Project Feature AES-5	Construction Lighting. Construction lighting would be directed toward the immediate vicinity of active work to avoid light trespass through directional lighting, shielding, and other measures as needed. Construction personnel would turn portable tower lights on no more than 30 minutes before the beginning of civil twilight, and off no more than 30 minutes after the end of civil sunrise. Portable tower lights would have directional shields attached to them, and personnel would only direct lights downward and toward active construction and staging areas. Lighting per portable tower light would not exceed 2,000 lumens. To the extent practicable, personnel would only use enough coverage to light the travel way, median, and staging areas. If onsite staging areas require security lighting, that lighting installation would be in accordance with this measure to the extent practicable.
Air Quality	Project Feature AIR-1	Dust Control. Dust control measures would be included in the Storm Water Pollution Prevention Plan (SWPPP) and implemented to minimize construction impacts to existing communities. The plan would incorporate measures such as sprinkling, speed limits, transport of materials, and timely revegetation of disturbed areas as needed, as well as posting a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints and at the Bay Area Air Quality Management District (BAAQMD) regarding compliance with applicable regulations. Water trucks or dust palliative would be applied to the site, including unvegetated areas, and equipment as often as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emissions or at the ROW line, depending on air pollution control district and air quality management district regulations and local ordinances.
Air Quality	Project Feature AIR-2	Idling and Access Points. Idling times would be minimized either by shutting off equipment when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage would be provided for construction workers at all access points. Construction activities involving the extended idling of diesel equipment or vehicles would be prohibited, to the extent feasible.

Resource Area	Project Feature Reference	Project Feature Title and Description
Air Quality	Project Feature AIR-3	Maintaining Construction Equipment and Vehicles. All construction equipment and vehicles would be maintained and properly tuned in accordance with manufacturer's specifications. All equipment would be checked by a certified mechanic and determined to be running in proper condition prior to operation.
Air Quality	Project Feature AIR-4	Contractor Air Quality Compliance. The construction contractor must comply with the Caltrans Standard Specifications in Section 14-9, which require contractor compliance with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
Biological Resources	Project Feature BIO-1	Environmentally Sensitive Area Fencing. Before starting construction, the boundaries of the described construction footprint would be clearly delineated using high-visibility orange fencing. The fencing would remain in place throughout the project duration and would prevent construction equipment or personnel from entering areas that were not analyzed for ground disturbing actions. The final project plans would depict the locations where fencing would be installed and how it would be assembled or constructed. The special provisions in the bid solicitation package would clearly describe acceptable fencing material, prohibited construction related activities, vehicle operation, material and equipment storage, and other surface disturbing activities.
Biological Resources	Project Feature BIO-2	Construction Work Windows. Construction below top of bank and within the wetted portions of the channel would be restricted to the dry season, during low creek flows, starting June 1 and ending October 31. Any construction or staging work in the creek would be limited to when the creek is dry or when the TCDS is installed. Advance tree removal is anticipated to occur outside of the bird nesting season (February 1 through September 30) and California Red-Legged Frog breeding season.
Biological Resources	Project Feature BIO-3	<p>Worker Environmental Awareness Training. Prior to ground-disturbing activities, a permitting agency-approved biologist would facilitate a mandatory environmental education program for all construction personnel. Training sessions would be repeated for all new personnel before they are allowed access to the job site. The training would include a minimum of the following:</p> <ul style="list-style-type: none"> a) A description of any special-status species, such as the California freshwater shrimp and CRLF, migratory birds, habitat needs, and habitats with the potential to occur in the BSA. b) How the species might be encountered within the project area; and an explanation of the status of these species and protection under federal and state regulations. c) A review of the measures to be implemented to conserve listed species and their habitats as they relate to the work site and how the measures reduce effects on the species. d) Boundaries within which construction would occur; and how to best avoid the incidental take of listed species. e) The program would include an explanation of applicable federal and state laws protecting endangered species as well as the importance of compliance with Caltrans and various resource agency conditions. The program would also include a discussion of the consequences of noncompliance. f) Upon completion of the training program, personnel would sign a form stating that they attended the program and understand all the AMMs, including consequence of noncompliance. Sign-in sheets would be kept on file and would be available to regulatory agencies

Resource Area	Project Feature Reference	Project Feature Title and Description
		<p>upon request. The training and associated material would be available in languages other than English as needed.</p> <p>g) A pamphlet containing photos of the California freshwater shrimp and CRLF, compliance reminders, relevant contact information, including the approved biologist's contact information. The pamphlet would be prepared and distributed to all construction personnel entering the project area.</p>
Biological Resources	Project Feature BIO-4	Special-Status Species Surveys. A qualified biologist would conduct surveys for plant and wildlife special-status species during construction on workdays. The biologist would be on-site to conduct surveys and monitor during construction, such as during ground-disturbing activities, tree removal, and work in the creek. If a wildlife special-status species is found, then work would stop within a reasonable buffer and allow the animal to leave the project area or the appropriate state and/or federal agency would be contacted as how to proceed should a plant or wildlife special-status species be found.
Biological Resources	Project Feature BIO-5	Preconstruction Bird Surveys. During the nesting season (February 1 through September 30), pre-construction surveys for nesting birds would be conducted by a qualified biologist no more than 72 hours prior to the start of construction activities. If an active nest is discovered, biologists would establish an appropriate exclusion buffer around the nest (at least 300 feet for raptors and 100 feet for all other species). The area within the buffer would be avoided until the young are no longer dependent on the adults or the nest is no longer active. If a nesting special-status bird species is discovered, the biologist would notify the USFWS and/or CDFW for further guidance. Partially constructed and inactive nests may be removed to prevent occupation. Nesting birds near the project footprint would be regularly monitored for signs of disturbance. To the extent feasible, tree removal would not occur during the nesting season.
Biological Resources	Project Feature BIO-6	Night Work. Nightwork is anticipated to occur for 12 nonconsecutive nights. If there is a substantial increase in the nighttime work proposed, then Caltrans would reassess impacts on sensitive resources.
Biological Resources	Project Feature BIO-7	<p>Avoidance of Entrapment. To prevent inadvertent entrapment of CRLF and other wildlife during construction:</p> <p>a) Excavated, steep-walled holes or trenches more than 1 ft. deep would be covered at the close of each working day using plywood or similar materials, or provided with at least one escape ramp constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. Replacement pipes, culverts, or similar structures stored in the Project area overnight would be inspected before they are subsequently moved, capped or buried.</p> <p>b) Plastic monofilament netting or similar material would not be used to avoid entrapment of CRLF and other wildlife. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.</p>

Resource Area	Project Feature Reference	Project Feature Title and Description
Biological Resources	Project Feature BIO-8	<p>Construction Site Management Practices. The following site restrictions would be implemented to avoid or minimize potential effects on listed species and their habitats:</p> <ul style="list-style-type: none"> a) Project-related vehicle traffic would be restricted to established roads and construction areas. The speed limit of 15 miles per hour in the project footprint and in unpaved and paved areas would be enforced to reduce dust and excessive soil disturbance. b) Project personnel would be required to comply with current guidance governing vehicle use, speed limits, fire prevention, and other hazards. c) Construction access, staging, storage, and parking areas would utilize existing Maintenance Vehicle Pullouts, existing paved areas, gravel shoulder backing, and disturbed areas within the project limits. Staging and storage areas would be located at least 50 feet from wetlands, the ordinary high-water mark (OHWM) of jurisdictional waters, a concentrated flow of stormwater, a drainage course, or an inlet, unless additional containment efforts are utilized. Access routes and boundaries of the footprint would be clearly marked prior to initiating construction activities and would be limited to the extent necessary to construct the proposed project. Only approved areas clearly delineated in the plans may be used for staging and storage. d) Any borrow material must be certified non-toxic and free of weeds to the maximum extent possible. e) All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed at least once daily from the project footprint. f) All pets would be prohibited from entering the project area during construction to prevent harassment of, injury to, or mortality of sensitive species. g) Firearms would be prohibited within the project site, except for those carried by authorized security personnel or local, state, or federal law enforcement officials.
Biological Resources	Project Feature BIO-9	<p>Replant, Reseed, and Restore Disturbed Areas. Caltrans would restore temporarily disturbed areas to the maximum extent practicable. Exposed slopes and bare ground would be reseeded with native and appropriate non-invasive grasses and native shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species would be replanted at a ratio to be determined in a later project phase, based on the local species composition.</p>
Biological Resources	Project Feature BIO-10	<p>Vegetation Removal. Vegetation that is within the cut-and-fill line or growing in locations where permanent structures would be placed would be cleared. Vegetation would be cleared only where necessary and would be cut above soil level, except in areas that would be excavated. This would allow plants that reproduce to resprout after construction. Clearing and grubbing of woody vegetation would occur by hand or using construction equipment such as mowers, backhoes, and excavators. If clearing and grubbing occur between February 1 and September 30, a qualified biologist would survey for nesting birds within the areas to be disturbed. If an active nest is found, nest buffers will be established as stated in Project Feature BIO-5.</p>

Resource Area	Project Feature Reference	Project Feature Title and Description
Biological Resources	Project Feature BIO-11	Reduce Spread of Invasive Species. To reduce the spread of invasive, nonnative plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans would comply with Executive Order (EO) 13112. This order is provided to prevent the introduction of invasive species and provide for their control in order to minimize the economic, ecological, and human health effects. In the event that noxious weeds are disturbed or removed during construction-related activities, the contractor would be required to contain the plant material associated with these noxious weeds and dispose of them in a manner that would not promote the spread of the species. The contractor would be responsible for obtaining all permits, licenses and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance would be replanted with fast-growing native and appropriate non-invasive grasses or a native erosion control seed mixture. Where seeding is not practical, the target areas within the project area would be covered to the extent practicable with heavy black plastic solarization material until disturbed areas are restored to preconstruction conditions.
Biological Resources	Project Feature BIO-12	Handling of Listed Species. If, at any time, a listed species is discovered in the project area, the Resident Engineer and the agency-approved biologist would be immediately informed. All construction activities within 50 feet of the individual may be suspended. The project biologist would determine if relocating the species is necessary and would work with the corresponding agency prior to handling or relocating unless otherwise authorized.
Biological Resources	Project Feature BIO-13	Permits. A copy of any relevant regulatory permits would be included with the construction bid package. The Resident Engineer or his/her designee would be responsible for implementing the terms and conditions of the permits.
Biological Resources	Project Feature BIO-14	Implementation of Erosion Control Best Management Practices. Best management practices (BMPs) would be implemented to minimize wind- or water-related erosion per RWQCB guidance.
Biological Resources	Project Feature BIO-15	Water Diversion Plan. Caltrans would submit a water diversion plan to the appropriate agencies for review prior to construction. The approved TCDS would be used during construction to prevent flowing water in the riverbed during in-stream construction activity. If pumps are used to remove water from within the TCDS or if needed to divert stream flow, the pump would be screened and maintained throughout the construction period in accordance with NMFS guidelines. The diversion structure would also act as an exclusion barrier within the bed and bank of the creek. A qualified biologist would be on site during installation of the TCDS.
Biological Resources	Project Feature BIO-16	Bank Stabilization. Bank stabilization would incorporate bioengineering solutions consistent with site-specific engineering requirements.
Biological Resources	Project Feature BIO-17	Ground Disturbance. Ground disturbance would be minimized to the extent feasible.
Biological Resources	Project Feature BIO-18	Agency Site Access. If requested, before, during, or upon completion of groundbreaking and any construction activities, Caltrans would allow access by agency personnel into the project footprint to inspect the project and its activities.
Cultural Resources	Project Feature CUL-1	Discovery of Cultural Resources. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a Caltrans qualified archaeologist can assess the nature and significance of the find.

Resource Area	Project Feature Reference	Project Feature Title and Description
Cultural Resources	Project Feature CUL-2	Discovery of Human Remains. If remains are discovered during excavation, all work within 60 feet of the discovery would halt and Caltrans' Cultural Resource Studies office would be called. Caltrans' Cultural Resources Studies Office Staff would assess the remains and, if determined human, would contact the County Coroner as per Public Resources Code (PRC) Sections 5097.98, 5097.99, and 7050.5 of the California Health and Safety Code. If the Coroner determines the remains to be Native American, the Coroner would contact the Native American Heritage Commission who would then assign and notify a Most Likely Descendant. Caltrans would consult with the Most Likely Descendant on respectful treatment and reburial of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.
Greenhouse gas emissions	Project Feature GHG-1	Waste Reduction. If practicable, nonhazardous waste and excess material would be recycled. If recycling is not practicable, the material would be disposed of appropriately.
Greenhouse gas emissions	Project Feature GHG-2	Energy Reduction. Solar sign boards would be used.
Hazards and Hazardous Materials	Project Feature HAZ-1	Asbestos and Lead-Based Paint Survey. Existing bridge structures that would be removed by the project would be tested for asbestos and lead-based paint by a qualified and licensed inspector prior to demolition. All asbestos-containing material or lead-based paint, if found, would be removed by a certified contractor in accordance with local, state, and federal requirements.
Hazards and Hazardous Materials	Project Feature HAZ-2	Aerially Deposited Lead Work Plan. Caltrans would prepare a work plan for aerially deposited lead if required during the design (Plans, Specifications and Estimate [PS&E]) phase. Soil samples collected to evaluate aerially-deposited lead would be analyzed for total lead and soluble lead in accordance with Department of Toxic Substances Control's requirements to determine appropriate actions that would ensure the protection of construction workers, future site users, and the environment.
Hazards and Hazardous Materials	Project Feature HAZ-3	Hazardous Materials Incident Contingency Plan. Prior to construction, a hazardous materials incident contingency plan would be prepared to report, contain, and mitigate roadway spills. The plan would designate a chain of command for notification, evacuation, response, and cleanup of roadway spills.
Hydrology and Water Quality	Project Feature HYD-1	Stormwater Pollution Prevention Plan. Stormwater Pollution Prevention Plan. A SWPPP would be developed and temporary construction BMPs would be implemented in compliance with the requirements of the State Water Resources Control Board (SWRCB) as outlined in the Construction General Permit (GCP). The SWPPP must be prepared by the Contractor and approved by Caltrans, pursuant to Caltrans 2018 Standard Specification 13-3 and Special Provisions. Protective measures would include, at a minimum: <ul style="list-style-type: none"> a) Disallowing any discharging of pollutants from vehicle and equipment cleaning into any storm drains or watercourses. b) All grindings, asphalt waste, and concrete waste would be hauled offsite by the end of shift, or if stored in upslope areas, would be a minimum of 150 feet, if feasible, from any aquatic resources, would be stored within previously disturbed areas absent of habitat, and would be protected by secondary containment measures consistent with proposed Caltrans BMPs designed specifically to contain spills or discharges of deleterious materials. c) Dedicated fueling and refueling practices would be designated as part of the approved SWPPP. Dedicated fueling areas would be

Resource Area	Project Feature Reference	Project Feature Title and Description
		<p>protected from stormwater runoff and would be located at a minimum of 50 feet from downslope drainage facilities and water courses.</p> <p>d) Fueling must be performed on level-grade areas. Onsite fueling would only be used when and where it is impractical to send vehicles and equipment offsite for fueling. When fueling must occur onsite, the contractor would designate an area to be used subject to the approval of the Caltrans Resident Engineer. Drip pans or absorbent pads would be used during onsite vehicle and equipment fueling.</p> <p>e) Spill containment kits would be maintained onsite at all times during construction operations and/or staging or fueling of equipment.</p> <p>f) Dust control measures consistent with Air Quality Project Features would be implemented. Dust control would be addressed during the environmental education session.</p> <p>g) Coir logs or straw wattles would be installed in accordance with the Caltrans BMP Guidance Handbook, to capture sediment.</p> <p>h) Graded areas would be protected from erosion using a combination of silt fences, erosion control netting (such as jute or coir), and fiber rolls in accordance with the Caltrans BMP Guidance Handbook.</p>
Hydrology and Water Quality	Project Feature HYD-2	Water Quality Best Management Practices. To address the temporary water quality impacts resulting from the construction activities in the project limits, Best Management Practices (BMPs) would include the measures of sediment control, pH control, material and job site management, and erosion control.
Hydrology and Water Quality	Project Feature HYD-3	Low-Impact Development Controls. Potential water quality impacts would be reduced to the Maximum Extent Practicable through proper implementation of stormwater treatment measures such as bioretention swales. The proposed stormwater treatment BMPs would be required to treat runoff from new impervious surface. All proposed stormwater treatment control measures would be compliant with local requirements, such as the San Francisco Bay Municipal Regional Permit Provision C.3.
Noise	Project Feature NOI-1	Idling of Internal Combustion Engines. Unnecessary idling of internal combustion engines would be avoided within 100 feet of sensitive receptors.
Noise	Project Feature NOI-2	Maintaining Internal Combustion Engines. All internal combustion engines would be maintained properly to minimize noise generation. Equip all internal combustion engine driven equipment with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment.
Noise	Project Feature NOI-3	Sensitive Receptors. To the extent that is feasible, locate all staging equipment at grade or lower than adjacent residences. Stationary noise generating construction equipment would be located as far as feasible from noise-sensitive receptors. To the maximum extent feasible, construct noise barriers (e.g., temporary enclosures or stockpiles of excavated material) between noisy activities and noise sensitive receptors or around activities with high noise levels or group of noisy equipment.
Noise	Project Feature NOI-4	Quiet Air Compressors. The project would utilize “quiet” air compressors and other “quiet” equipment where such technology exists as feasible.
Noise	Project Feature NOI-5	Construction Schedule. Construction activities would occur during the day, between 6:00 AM to 9:00 PM wherever feasible. Noisy operations would be scheduled to occur within the same time period to the greatest extent possible. The total noise level would not be significantly greater than the level produced if operations are performed separately.

Resource Area	Project Feature Reference	Project Feature Title and Description
Transportation and Traffic	Project Feature TRA-1	<p>Traffic Management Plan. A Traffic Management Plan (TMP) would be developed by Caltrans during the design phase. The TMP would include elements such as haul routes, one-way traffic controls to minimize speeds and congestion, flag workers, and phasing, to reduce impacts to local residents as feasible and maintain access for police, fire, and medical services in the local area.</p> <p>Temporary pedestrian and bicyclist access would be provided during construction. Prior to construction, Caltrans would notify adjacent property owners, businesses, Napa County Regional Park and Open Space District, and local bicycle organizations regarding construction activities and access changes. In addition, Caltrans would coordinate with the local Fire Department and emergency response services prior to construction to minimize potential disruption to emergency services.</p>
Utilities and Service Systems	Project Feature UTIL-1	<p>Trash Management. All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed at least once daily from the project limits.</p>
Utilities and Service Systems	Project Feature UTIL-2	<p>Notify Utility Owners of Construction Schedule to Protect Utilities. Caltrans would notify all affected utility companies, such as PG&E and Comcast of construction schedules for proposed project work so that they can relocate the gas line, telephone, cable, and overhead distribution lines prior to construction, and minimize disruption of utility service.</p>

Appendix E List of Technical Studies

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- California Department of Transportation (Caltrans). 2020. *Paleontological Identification Report*. April 30, 2020.
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Chapter 3 California Environmental Quality Act Evaluation

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Appendix G Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov



*Making Conservation a
California Way of Life.*

November 2019

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page:

<https://dot.ca.gov/programs/business-and-economic-opportunity/title-vi>.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

A handwritten signature in blue ink, appearing to read "Toks Omishakin".

Toks Omishakin
Director

Appendix H 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:

June 10, 2021

Consultation Code: 08ESMF00-2020-SLI-0963

Event Code: 08ESMF00-2021-E-05940

Project Name: 4J990 Ritchie Creek

Subject: Updated list of threatened and endangered species that may occur in your proposed project location 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:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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(e) 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

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

<http://>

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
-

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: 08ESMF00-2020-SLI-0963

Event Code: 08ESMF00-2021-E-05940

Project Name: 4J990 Ritchie Creek

Project Type: TRANSPORTATION

Project Description: Bridge replacement

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.55262711513517,-122.51987394493193,14z>



Counties: Napa County, California

Endangered Species Act Species

There is a total of 10 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
California Freshwater Shrimp <i>Syncaris pacifica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7903	Endangered

Flowering Plants

NAME	STATUS
Burke's Goldfields <i>Lasthenia burkei</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4338	Endangered
Calistoga Allocarya <i>Plagiobothrys strictus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6161	Endangered
Clara Hunt's Milk-vetch <i>Astragalus clarianus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3300	Endangered
Loch Lomond Coyote Thistle <i>Eryngium constancei</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5106	Endangered
Napa Bluegrass <i>Poa napensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2266	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

From: [NMFS SpeciesList - NOAA Service Account](#)
To: Thaggard, Jessica@DOT
Subject: Federal ESA - - NOAA Fisheries Species List Re: California Department of Transportation: Fish Passage Barrier Removal and Ritchie Creek Bridge Replacement
Date: Tuesday, June 15, 2021 11:34:51 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Please retain a copy of each email request that you send to NOAA at nmfs.wcra.specieslist@noaa.gov as proof of your official Endangered Species Act SPECIES LIST. The email you send to NOAA should include the following information: your first and last name; email address; phone number; federal agency name (or delegated state agency such as Caltrans); mailing address; project title; brief description of the project; and a copy of a list of threatened or endangered species identified within specified geographic areas derived from the NOAA Fisheries, West Coast Region, California Species List Tool. You may only receive this instruction once per week. If you have questions, contact your local NOAA Fisheries liaison.

From: Thaggard, Jessica@DOT
To: [NMFS SpeciesList - NOAA Service Account](#)
Subject: California Department of Transportation: Fish Passage Barrier Removal and Ritchie Creek Bridge Replacement
Date: Tuesday, June 15, 2021 11:34:00 AM

Quad Name **Aetna Springs**

Quad Number **38122-F4**

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

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 -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

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 -
- Groundfish EFH -
- Coastal Pelagics EFH -
- 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 -

Quad Name **Calistoga**
 Quad Number **38122-E5**

ESA Anadromous Fish

- SONCC Coho ESU (T) -
- CCC Coho ESU (E) - **X**
- CC Chinook Salmon ESU (T) - **X**
- CVSR Chinook Salmon ESU (T) -
- SRWR Chinook Salmon ESU (E) -

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) -

Eulachon (T) -

sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat - **X**

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 -

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 - **X**

Chinook Salmon EFH - **X**

Groundfish EFH -

Coastal Pelagics EFH -

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 -

Quad Name **Detert Reservoir**

Quad Number **38122-F5**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) - **X**

CC Chinook Salmon ESU (T) - **X**

CVSR Chinook Salmon ESU (T) -

SRWR Chinook Salmon ESU (E) -

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) -

Eulachon (T) -

sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat - **X**

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 -

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 - X

Chinook Salmon EFH - X

Groundfish EFH -

Coastal Pelagics EFH -

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 -

Quad Name **Kenwood**

Quad Number **38122-D5**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) - **X**

CC Chinook Salmon ESU (T) - **X**

CVSR Chinook Salmon ESU (T) -

SRWR Chinook Salmon ESU (E) -

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) -

Eulachon (T) -

sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat - **X**

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 -

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 - **X**
- Chinook Salmon EFH - **X**
- Groundfish EFH -
- Coastal Pelagics EFH -
- 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 -

Quad Name **Mark West Springs**

Quad Number **38122-E6**

ESA Anadromous Fish

- SONCC Coho ESU (T) -
- CCC Coho ESU (E) - **X**
- CC Chinook Salmon ESU (T) - **X**
- CVSR Chinook Salmon ESU (T) -

SRWR Chinook Salmon ESU (E) -

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) -

Eulachon (T) -

sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat - **X**

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 -

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 - **X**
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
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 -

Quad Name **Mount Saint Helena**

Quad Number **38122-F6**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - **X**
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - **X**
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 -

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 - X
Chinook Salmon EFH - X
Groundfish EFH -
Coastal Pelagics EFH -
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 -

Quad Name **Rutherford**

Quad Number **38122-D4**

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) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) -

Eulachon (T) -

sDPS Green Sturgeon (T) -

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 -

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 - **X**
- Chinook Salmon EFH - **X**
- Groundfish EFH -
- Coastal Pelagics EFH -
- 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 -

Quad Name **Saint Helena**

Quad Number **38122-E4**

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) - **X**

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) -

Eulachon (T) -

sDPS Green Sturgeon (T) -

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 -

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 - **X**
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
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 -

Quad Name **Santa Rosa**

Quad Number **38122-D6**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - **X**
CC Chinook Salmon ESU (T) - **X**
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - **X**
CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

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 - **X**
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
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 -

Jessica Thaggard, Biologist

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Division of Environmental Planning and Engineering

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Aetna Springs (3812264) OR Calistoga (3812255) OR Detert Reservoir (3812265) OR Kenwood (3812245) OR Mark West Springs (3812256) OR Mount St. Helena (3812266) OR St. Helena (3812254) OR Rutherford (3812244) OR Santa Rosa (3812246)) AND County IS (Napa)

Table with 7 columns: Species, Element Code, Federal Status, State Status, Global Rank, State Rank, Rare Plant Rank/CDFW SSC or FP. Rows include species like Accipiter striatus, Agelaius tricolor, Amorpha californica var. napensis, Amsinckia lunaris, Antrozous pallidus, Arctostaphylos manzanita ssp. elegans, Arctostaphylos stanfordiana ssp. decumbens, Astragalus claranus, Astragalus rattanii var. jepsonianus, Bombus caliginosus, Bombus occidentalis, Brodiaea leptandra, Buteo swainsoni, Calystegia collina ssp. oxyphylla, Ceanothus confusus, Ceanothus divergens, Ceanothus purpureus, and Ceanothus sonomensis.



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Centromadia parryi</i> ssp. <i>parryi</i> pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
<i>Coastal and Valley Freshwater Marsh</i> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
<i>Cypseloides niger</i> black swift	ABNUA01010	None	None	G4	S2	SSC
<i>Dicamptodon ensatus</i> California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G3	S3	1B.2
<i>Eryngium jepsonii</i> Jepson's coyote-thistle	PDAP10Z130	None	None	G2	S2	1B.2
<i>Falco mexicanus</i> prairie falcon	ABNKD06090	None	None	G5	S4	WL
<i>Falco peregrinus anatum</i> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<i>Fritillaria pluriflora</i> adobe-lily	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
<i>Gonidea angulata</i> western ridged mussel	IMBIV19010	None	None	G3	S1S2	
<i>Haliaeetus leucocephalus</i> bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
<i>Harmonia hallii</i> Hall's harmonia	PDAST650A0	None	None	G2?	S2?	1B.2
<i>Hesperolinon bicarpellatum</i> two-carpellate western flax	PDLIN01020	None	None	G2	S2	1B.2
<i>Hesperolinon sharsmithiae</i> Sharsmith's western flax	PDLIN010E0	None	None	G2Q	S2	1B.2
<i>Juncus luciensis</i> Santa Lucia dwarf rush	PMJUN013J0	None	None	G3	S3	1B.2
<i>Lasthenia burkei</i> Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
<i>Layia septentrionalis</i> Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Limnanthes floccosa ssp. floccosa</i> woolly meadowfoam	PDLIM02043	None	None	G4T4	S3	4.2
<i>Limnanthes vincularis</i> Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
<i>Lupinus sericatus</i> Cobb Mountain lupine	PDFAB2B3J0	None	None	G2?	S2?	1B.2
<i>Myotis thysanodes</i> fringed myotis	AMACC01090	None	None	G4	S3	
<i>Myotis yumanensis</i> Yuma myotis	AMACC01020	None	None	G5	S4	
<i>Navarretia leucocephala ssp. bakeri</i> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<i>Navarretia paradoxinota</i> Porter's navarretia	PDPLM0C160	None	None	G2	S2	1B.3
<i>Navarretia rosulata</i> Marin County navarretia	PDPLM0C0Z0	None	None	G2	S2	1B.2
<i>Northern Vernal Pool</i> Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
<i>Oncorhynchus mykiss irideus pop. 8</i> steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
<i>Penstemon newberryi var. sonomensis</i> Sonoma beardtongue	PDSCR1L483	None	None	G4T3	S3	1B.3
<i>Plagiobothrys strictus</i> Calistoga popcornflower	PDBOR0V120	Endangered	Threatened	G1	S1	1B.1
<i>Poa napensis</i> Napa blue grass	PMPOA4Z1R0	Endangered	Endangered	G1	S1	1B.1
<i>Progne subis</i> purple martin	ABPAU01010	None	None	G5	S3	SSC
<i>Puccinellia simplex</i> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<i>Serpentine Bunchgrass</i> Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
<i>Sidalcea hickmanii ssp. napensis</i> Napa checkerbloom	PDMAL110A6	None	None	G3T1	S1	1B.1
<i>Sidalcea oregana ssp. hydrophila</i> marsh checkerbloom	PDMAL110K2	None	None	G5T2	S2	1B.2
<i>Spergularia macrotheca var. longistyla</i> long-styled sand-spurrey	PDCAR0W062	None	None	G5T2	S2	1B.2



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Streptanthus brachiatus ssp. brachiatus</i> Socrates Mine jewelflower	PDBRA2G072	None	None	G2T1	S1	1B.2
<i>Streptanthus hesperidis</i> green jewelflower	PDBRA2G510	None	None	G2G3	S2S3	1B.2
<i>Streptanthus morrisonii ssp. elatus</i> Three Peaks jewelflower	PDBRA2G0S1	None	None	G2T1	S1	1B.2
<i>Syncaris pacifica</i> California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
<i>Trachusa gummifera</i> San Francisco Bay Area leaf-cutter bee	IIHYM80010	None	None	G1	S1	
<i>Trachykele hartmani</i> serpentine cypress wood-boring beetle	IICOLX6010	None	None	G1	S1	
<i>Trichostema ruygtii</i> Napa bluecurls	PDLAM220H0	None	None	G1G2	S1S2	1B.2
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<i>Vandykea tuberculata</i> serpentine cypress long-horned beetle	IICOLX7010	None	None	G1	S1	
Wildflower Field Wildflower Field	CTT42300CA	None	None	G2	S2.2	

Record Count: 70

Inventory of Rare and Endangered Plants of California


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Search Criteria: County is one of [NAP], Quad is one of [3812264,3812255,3812265,3812245,3812256,3812266,3812244,3812254,3812246]

[Scientific Name](#) [Common Name](#) [Family](#) [Lifeform](#) [Blooming Period](#) [Fed List](#) [State List](#) [Global Rank](#) [State Rank](#)
[CA Rare Plant Rank](#) [General Habitats](#) [Micro Habitats](#) [Lowest Elevation](#) [Highest Elevation](#) [CA Endemic](#) [Date Added](#) [Photo](#)

Search:

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Allium peninsulare var. franciscanum	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G5T2	S2	1B.2
Amorpha californica var. napensis	Napa false indigo	Fabaceae	perennial deciduous shrub	Apr-Jul	None	None	G4T2	S2	1B.2
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	None	None	G3	S3	1B.2
Antirrhinum virga	twig-like snapdragon	Plantaginaceae	perennial herb	Jun-Jul	None	None	G3?	S3?	4.3
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	Ericaceae	perennial evergreen shrub	(Jan)Mar-May(Jul)	None	None	G5T3	S3	1B.3
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr(May)	None	None	G3T1	S1	1B.1
Asclepias solanoana	serpentine milkweed	Apocynaceae	perennial herb	May-Jul(Aug)	None	None	G3	S3	4.2
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	Apr-Jun	None	None	G3	S3	4.2
Astragalus claranus	Clara Hunt's milk-vetch	Fabaceae	annual herb	Mar-May	FE	CT	G1	S1	1B.1
Astragalus clevelandii	Cleveland's milk-vetch	Fabaceae	perennial herb	Jun-Sep	None	None	G4	S4	4.3
Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	May-Jul	None	None	G3?	S3?	1B.2

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
<u><i>Calamagrostis ophitidis</i></u>	serpentine reed grass	Poaceae	perennial herb	Apr-Jun	None	None	G3	S3	4.3
<u><i>Calandrinia breweri</i></u>	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2
<u><i>Calochortus uniflorus</i></u>	pink star-tulip	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4	S4	4.2
<u><i>Calyptridium quadripetalum</i></u>	four-petaled pussypaws	Montiaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3
<u><i>Calystegia collina ssp. oxyphylla</i></u>	Mt. Saint Helena morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	None	None	G4T3	S3	4.2
<u><i>Castilleja ambigua var. ambigua</i></u>	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	None	None	G4T4	S3S4	4.2
<u><i>Ceanothus confusus</i></u>	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G1	S1	1B.1
<u><i>Ceanothus divergens</i></u>	Calistoga ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	1B.2
<u><i>Ceanothus pinetorum</i></u>	Kern ceanothus	Rhamnaceae	perennial evergreen shrub	May-Jul	None	None	G3	S3	4.3
<u><i>Ceanothus purpureus</i></u>	holly-leaved ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G2	S2	1B.2
<u><i>Ceanothus sonomensis</i></u>	Sonoma ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	1B.2
<u><i>Centromadia parryi ssp. parryi</i></u>	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2
<u><i>Clarkia breweri</i></u>	Brewer's clarkia	Onagraceae	annual herb	Apr-Jun	None	None	G4	S4	4.2
<u><i>Clarkia gracilis ssp. tracyi</i></u>	Tracy's clarkia	Onagraceae	annual herb	Apr-Jul	None	None	G5T3	S3	4.2
<u><i>Collomia diversifolia</i></u>	serpentine collomia	Polemoniaceae	annual herb	May-Jun	None	None	G4	S4	4.3
<u><i>Cordylanthus tenuis ssp. brunneus</i></u>	serpentine bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jul-Aug	None	None	G4G5T3	S3	4.3
<u><i>Delphinium uliginosum</i></u>	swamp larkspur	Ranunculaceae	perennial herb	May-Jun	None	None	G3	S3	4.2
<u><i>Downingia pusilla</i></u>	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2
<u><i>Erigeron biolettii</i></u>	streamside daisy	Asteraceae	perennial herb	Jun-Oct	None	None	G3?	S3?	3
<u><i>Erigeron greenei</i></u>	Greene's narrow-leaved daisy	Asteraceae	perennial herb	May-Sep	None	None	G3	S3	1B.2
<u><i>Eriogonum nervulosum</i></u>	Snow Mountain buckwheat	Polygonaceae	perennial rhizomatous herb	Jun-Sep	None	None	G2	S2	1B.2
<u><i>Eriogonum umbellatum var. bahiiforme</i></u>	bay buckwheat	Polygonaceae	perennial herb	Jul-Sep	None	None	G5T3	S3	4.2
<u><i>Eryngium jepsonii</i></u>	Jepson's coyote-thistle	Apiaceae	perennial herb	Apr-Aug	None	None	G2	S2	1B.2

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
<i>Erythranthe nudata</i>	bare monkeyflower	Phrymaceae	annual herb	May-Jun	None	None	G4	S4	4.3
<i>Erythronium helenae</i>	St. Helena fawn lily	Liliaceae	perennial bulbiferous herb	Mar-May	None	None	G3	S3	4.2
<i>Fritillaria pluriflora</i>	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2G3	S2S3	1B.2
<i>Fritillaria purdyi</i>	Purdy's fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G4	S4	4.3
<i>Harmonia hallii</i>	Hall's harmonia	Asteraceae	annual herb	(Mar)Apr-Jun	None	None	G2?	S2?	1B.2
<i>Harmonia nutans</i>	nodding harmonia	Asteraceae	annual herb	Mar-May	None	None	G3	S3	4.3
<i>Helianthus exilis</i>	serpentine sunflower	Asteraceae	annual herb	Jun-Nov	None	None	G3	S3	4.2
<i>Hesperolinon bicarpellatum</i>	two-carpellate western flax	Linaceae	annual herb	(Apr)May-Jul	None	None	G2	S2	1B.2
<i>Hesperolinon sharsmithiae</i>	Sharsmith's western flax	Linaceae	annual herb	May-Jul	None	None	G2Q	S2	1B.2
<i>Juncus luciensis</i>	Santa Lucia dwarf rush	Juncaceae	annual herb	Apr-Jul	None	None	G3	S3	1B.2
<i>Lasthenia burkei</i>	Burke's goldfields	Asteraceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1
<i>Layia septentrionalis</i>	Colusa layia	Asteraceae	annual herb	Apr-May	None	None	G2	S2	1B.2
<i>Leptosiphon acicularis</i>	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G4?	S4?	4.2
<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	Polemoniaceae	annual herb	Mar-May	None	None	G2G3	S2S3	1B.2
<i>Leptosiphon latisectus</i>	broad-lobed leptosiphon	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3
<i>Lessingia hololeuca</i>	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3
<i>Lilium bolanderi</i>	Bolander's lily	Liliaceae	perennial bulbiferous herb	Jun-Jul	None	None	G4	S3S4	4.2
<i>Lilium rubescens</i>	redwood lily	Liliaceae	perennial bulbiferous herb	Apr-Aug(Sep)	None	None	G3	S3	4.2
<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>	woolly meadowfoam	Limnanthaceae	annual herb	Mar-May(Jun)	None	None	G4T4	S3	4.2
<i>Limnanthes vinculans</i>	Sebastopol meadowfoam	Limnanthaceae	annual herb	Apr-May	FE	CE	G1	S1	1B.1
<i>Lomatium hooveri</i>	Hoover's lomatium	Apiaceae	perennial herb	Apr-Jul	None	None	G3	S3	4.3
<i>Lomatium repostum</i>	Napa lomatium	Apiaceae	perennial herb	Mar-Jun	None	None	G3	S3	1B.2
<i>Lupinus sericatus</i>	Cobb Mountain lupine	Fabaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2
<i>Monardella viridis</i>	green monardella	Lamiaceae	perennial rhizomatous herb	Jun-Sep	None	None	G3	S3	4.3
<i>Navarretia cotulifolia</i>	cotula navarretia	Polemoniaceae	annual herb	May-Jun	None	None	G4	S4	4.2

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
<u><i>Navarretia heteranda</i></u>	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3
<u><i>Navarretia jepsonii</i></u>	Jepson's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4	S4	4.3
<u><i>Navarretia leucocephala</i> ssp. <i>bakeri</i></u>	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1
<u><i>Navarretia paradoxinota</i></u>	Porter's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	None	None	G2	S2	1B.3
<u><i>Navarretia rosulata</i></u>	Marin County navarretia	Polemoniaceae	annual herb	May-Jul	None	None	G2	S2	1B.2
<u><i>Penstemon newberryi</i> var. <i>sonomensis</i></u>	Sonoma beardtongue	Plantaginaceae	perennial herb	Apr-Aug	None	None	G4T3	S3	1B.3
<u><i>Plagiobothrys strictus</i></u>	Calistoga popcornflower	Boraginaceae	annual herb	Mar-Jun	FE	CT	G1	S1	1B.1
<u><i>Poa napensis</i></u>	Napa blue grass	Poaceae	perennial herb	May-Aug	FE	CE	G1	S1	1B.1
<u><i>Puccinellia simplex</i></u>	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G3	S2	1B.2
<u><i>Ranunculus lobbii</i></u>	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2
<u><i>Ribes victoris</i></u>	Victor's gooseberry	Grossulariaceae	perennial deciduous shrub	Mar-Apr	None	None	G3G4	S3S4	4.3
<u><i>Sagittaria sanfordii</i></u>	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2
<u><i>Sidalcea hickmanii</i> ssp. <i>napensis</i></u>	Napa checkerbloom	Malvaceae	perennial herb	Apr-Jun	None	None	G3T1	S1	1B.1
<u><i>Sidalcea oregana</i> ssp. <i>hydrophila</i></u>	marsh checkerbloom	Malvaceae	perennial herb	(Jun)Jul-Aug	None	None	G5T2	S2	1B.2
<u><i>Spergularia macrotheca</i> var. <i>longistyla</i></u>	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	None	None	G5T2	S2	1B.2
<u><i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i></u>	Socrates Mine jewelflower	Brassicaceae	perennial herb	May-Jun	None	None	G2T1	S1	1B.2
<u><i>Streptanthus hesperidis</i></u>	green jewelflower	Brassicaceae	annual herb	May-Jul	None	None	G2G3	S2S3	1B.2
<u><i>Streptanthus morrisonii</i> ssp. <i>elatus</i></u>	Three Peaks jewelflower	Brassicaceae	perennial herb	Jun-Sep	None	None	G2T1	S1	1B.2
<u><i>Toxicoscordion fontanum</i></u>	marsh zigadenus	Melanthiaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3	S3	4.2
<u><i>Trichostema ruygtii</i></u>	Napa bluecurls	Lamiaceae	annual herb	Jun-Oct	None	None	G1G2	S1S2	1B.2
<u><i>Trifolium amoenum</i></u>	two-fork clover	Fabaceae	annual herb	Apr-Jun	FE	None	G1	S1	1B.1
<u><i>Trifolium hydrophilum</i></u>	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2
<u><i>Triteleia lugens</i></u>	dark-mouthed triteleia	Themidaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4?	S4?	4.3

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
<u><i>Viburnum ellipticum</i></u>	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	None	None	G4G%	S37	28.3

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Appendix I SHPO Memorandum of Agreement

MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE RITCHIE CREEK BRIDGE REPLACEMENT FOR STORM WATER
MITIGATION PROJECT
STATE ROUTE 29, NAPA COUNTY, CALIFORNIA

WHEREAS, pursuant to §23 U.S.C. 327 the Federal Highway Administration (FHWA) has assigned and the California Department of Transportation (Caltrans, including all subordinate divisions defined below) has assumed FHWA responsibility for environmental review, consultation and coordination under the provisions of the *Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation's Participation in the Project Delivery Program Pursuant to 23 U.S.C. 327*, which became effective on October 1, 2012, and was renewed on December 23, 2016, and applies to this undertaking; and

WHEREAS, pursuant to the January 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* (Section 106 PA), Caltrans is deemed to be a federal agency for all highway-aid projects it has assumed, and in that capacity Caltrans has assigned the role of "agency official" to the Caltrans Division of Environmental Analysis (DEA) Chief for the purpose of compliance with 36 CFR Part 800 and is responsible for oversight, day-to-day responsibilities and coordination of the Section 106 process are further delegated to the DEA Cultural Studies Office (CSO) Chief; and

WHEREAS, Caltrans proposes to implement the federally funded Ritchie Creek Bridge Replacement for Stormwater Mitigation Project (Undertaking), which will remove and replace the state-owned Ritchie Creek Bridge on Highway 29 in Napa Count, as described in Attachment A to this Memorandum of Agreement (MOA); and

WHEREAS, the Undertaking's Area of Potential Effects (APE), included in Attachment B, includes all areas where work is proposed and the known or reasonably anticipated boundaries of any built environment or archaeological

resources, which may experience direct or indirect effects as a result of the Undertaking; and

WHEREAS, Caltrans has determined that the Undertaking will have an adverse effect on archaeological sites P-28- 000369/CA-NAP-482, P-28-000464/CA-NAP-582, and P-28-000062/CA-NAP-58/H; three properties determined to be eligible for inclusion in the National Register of Historic Places (National Register) with concurrence from the California State Historic Preservation Officer (SHPO), under Criterion D, and therefore, are historic properties as defined at 36 CFR Part 800.16(l)(1); and

WHEREAS, Caltrans has thoroughly considered alternatives to the Undertaking, has determined, in consultation with the SHPO, that the statutory and regulatory constraints on the design of the Undertaking preclude the possibility of avoiding adverse effects to P-28- 000369/CA-NAP-482, P-28-000464/CA-NAP-582, and P-28-000062/CA-NAP-58/H during the Undertaking's implementation, and has further determined that the execution and implementation of this MOA will take into account the adverse effects of the Undertaking; and

WHEREAS, Caltrans has consulted with the SHPO pursuant to Stipulation X.C and XI of the Section 106 PA, and where the Section 106 PA so directs, in accordance with 36 CFR Part 800, the regulation that implements Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended regarding the Undertaking's effect on historic properties, and will file a copy of this MOA with the Advisory Council on Historic Preservation (ACHP) in accordance with Stipulation X.C.3.b of the Section 106 PA; and

WHEREAS, Caltrans continues on-going consultation with the Mishewal Wappo Tribe of Alexander Valley, regarding the Undertaking and its effects on historic properties, and has invited them to concur on this MOA;

WHEREAS, Caltrans continues on-going consultation with the California State Parks, regarding the Undertaking and its effects on historic properties, and has invited them to concur on this MOA;

WHEREAS, Caltrans District 4 (District 4) has participated in the consultation and is an invited signatory on this MOA; and

NOW, THEREFORE, Caltrans and the SHPO agree that if the Undertaking proceeds, the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic

properties, and further agree that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

Caltrans shall ensure that the following stipulations are carried out:

I. AREA OF POTENTIAL EFFECTS

- A.** The Area of Potential Effects (APE) was established in accordance with Stipulation VIII.A of the Section 106 PA and is depicted in Attachment B of this MOA. The APE was delineated to include all areas where work is proposed, including the known or reasonably anticipated boundaries of archaeological and cultural properties and any locations where construction activities will take place.
- B.** If Caltrans determines that additional APE revisions are necessary, Caltrans shall inform the consulting parties of the revisions and consult for no more than 15 days to reach agreement on the proposed revisions. If Caltrans, the SHPO, and other appropriate signatories cannot reach such agreement, then the parties to this MOA shall resolve the dispute in accordance with Stipulation VI.C below. If all parties reach mutual agreement on the proposed revisions, Caltrans will submit a new APE map reflecting the revisions, consistent with Stipulation VIII.A and Attachment 3 of the Section 106 PA, no later than 30 days following such agreement. Any further investigation or document necessitated by the revised APE will follow the procedures for the identification and evaluation of potential Historic Properties as specified in Stipulation VIII of the Section 106 PA and in accordance with 36 CFR §800.4(a)(2-4) and 88.4(b). Amendment of the APE will not require an amendment to the MOA. The revised APE and supporting documentation shall be incorporated into Attachment A to this MOA.

II. TREATMENT OF THE HISTORIC PROPERTIES

A. Historic Property Treatment Plan

1. Caltrans shall ensure that the adverse effects of the Undertaking on archaeological sites P-28-000369/CA-NAP-482, P-28-000464/CA-NAP-582, and P-28-000062/CA-NAP-58/H are resolved by implementing the December 2020 *Archaeological Treatment Plan for the Ritchie Creek Bridge Replacement for Storm Water Mitigation Project (Treatment Plan)* that is Attachment C of this MOA. Data recovery is

prescribed for archaeological deposits contributing to the National Register eligibility of the historic properties adversely affected by construction activities.

2. Caltrans shall include provisions to ensure against incidental damage to those portions of P-28-000369/CA-NAP-482, P-28-000464/CA-NAP-582, and P-28-000062/CA-NAP-58/H outside the Area of Direct Impact (ADI); such provisions will specify the establishment of an Environmentally Sensitive Area (ESA) and an archaeological monitoring area (AMA) around these areas. The ESAs and AMAs shall conform Archaeological Monitoring Plan and Environmentally Sensitive Area Action Plan, which is part of the Treatment Plan.
3. Any party to this MOA may propose to amend the Treatment Plan. Such amendment will not require amendment of this MOA. Consultation on Treatment Plan amendments will be no longer than thirty (30) days in duration beginning upon receipt of proposed amendments by consulting parties.
4. In the event that disputes regarding amendments proposed hereunder arise, they shall be addressed through further consultation among the MOA parties, and a reasonable time frame for such consultation shall be established by Caltrans of not less than fifteen days unless agreed upon by the signatories. If the dispute is not resolved within this time frame, Caltrans shall render a final decision regarding the dispute and the MOA parties shall proceed in accordance with the terms of that decision.
5. Caltrans will not authorize the execution of any Undertaking activity that may adversely affect historic properties in the Undertaking's APE prior to the implementation and completion of the fieldwork that the Treatment Plan prescribes.

B. Reporting Requirements and Related Reviews

1. Within 18 months after District 4 has determined that all fieldwork required by Stipulation II is complete, Caltrans will ensure preparation and subsequent concurrent distribution to the other MOA parties, for review and comment, a draft technical report that documents the results of implementing and completing the Treatment Plan. The other MOA parties will be afforded 30 days following receipt of the draft technical report to submit any written

comments to Caltrans. Failure of these parties to respond within this time frame shall not preclude Caltrans from authorizing revisions to the draft technical report, as Caltrans may deem appropriate.

2. District 4 will provide the other MOA parties with written documentation indicating whether and how the draft technical report will be modified in accordance with any comments received from the other MOA parties. Unless an MOA party objects to this documentation in writing to Caltrans within 30 days following receipt, Caltrans may modify the draft technical report, as Caltrans deems appropriate. Thereafter, Caltrans may issue the technical report in final form and distribute this document in accordance with paragraph 3 of this stipulation.
3. Digital copies of the final technical report documenting the results of the Treatment Plan implementation will be distributed by District 4 to the SHPO, participating Native American representatives, California State Parks, and the South Central Coastal Information Center of the California Historical Resources Information System.

III. NATIVE AMERICAN CONSULTATION

Caltrans has consulted with the Mishewal Wappo Tribe of Alexander Valley regarding the proposed Undertaking and its effects on historic properties, will continue to consult with them, and will afford them, should they so desire, the opportunity to participate in the implementation of this MOA and the Undertaking. If other tribes or Native American groups who attach religious or cultural significance to historic properties that may be affected by the Undertaking are identified, Caltrans will invite them to participate as consulting parties as the Section 106 process moves forward.

IV. CALIFORNIA STATE PARKS CONSULTATION

Caltrans has consulted with the California State Parks regarding the proposed Undertaking and its effects on State Parks State-Owned Historical Resource (P-28-000062/CA-NAP-58/H), will continue to consult with them, and will afford them,

should they so desire, the opportunity to participate in the implementation of this MOA and the Undertaking.

V. TREATMENT OF HUMAN REMAINS OF NATIVE AMERICAN ORIGIN

As legally mandated, human remains and related items discovered on privately-owned land during the implementation of the terms of this MOA and the Undertaking will be treated in accordance with the requirements of Health and Safety Code Section 7050.5(b). If pursuant to of Health and Safety Code Section 7050.5(c) the coroner determines that the human remains are or may be those of a Native American, then the discovery shall be treated in accordance with the provisions of Public Resources Code Sections 5097.98 (a)-(d). The County Coroner shall be contacted if human remains are discovered. The County Coroner shall have two working days to inspect the remains after receiving notification. During this time, all remains, associated soils, and artifacts shall remain in situ and/or on site, and shall be protected from public viewing. This may include restricting access to the discovery site and the need to hire 24 hour security.

The County Coroner has twenty-four (24) hours to notify the NAHC. The NAHC shall then notify a Most Likely Descendant (MLD), who has forty-eight (48) hours to make recommendations to Caltrans, the landowner. Caltrans, as the landowner, shall contact the California SHPO and the Most Likely Descendent(s) within twenty-four (24) hours of the County Coroner's determination that the remains are Native American in origin. Caltrans shall ensure that, to the extent permitted by applicable law and regulation, the view of the Most Likely Descendent(s), as determined by the California Native American Heritage Commission, is taken into consideration when decisions are made about the disposition of Native American human remains and associated objects. Caltrans shall take appropriate measures to protect the discovery site from disturbance during any negotiations. Information concerning the discovery shall not be disclosed to the public pursuant to the specific exemption set forth in California Government Code Section 6254.5(e).

VI. DISCOVERIES AND UNANTICIPATED EFFECTS

If Caltrans determines after construction of the Undertaking has commenced, that either the Undertaking will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, Caltrans will address the discovery or unanticipated effect in accordance with Stipulation XV.B of the Section 106 PA. Caltrans at its

discretion may hereunder and pursuant to 36 CFR § 800.13 (c) assume any discovered property to be eligible for inclusion in the National Register.

VII. ADMINISTRATIVE PROVISIONS

A. Standards

1. **Definitions.** The definitions provided at 36 CFR § 800.16 are applicable throughout this MOA.
2. Parties to this agreement are defined as follows:
 - i. **Signatory parties** have the sole authority to execute, amend, or terminate this MOA.
 - ii. **Invited signatory parties** have the same rights to terminate or amend this MOA as the other signatories.
 - iii. **Concurring parties** signing this MOA do so to acknowledge their agreement or concurrence with the MOA, but have no legal authority under the MOA to terminate or amend this MOA. Concurring with the terms of this MOA does not constitute their agreement with the Undertaking.
3. **Professional Qualifications.** Caltrans will ensure that only individuals meeting the *Secretary of the Interior's Professional Qualification Standards* (48 FR 44738-39) as defined in Attachment 1 of the PA, in the relevant field of study carry out or review appropriateness and quality of the actions and products required by Stipulations I through V in this MOA. However, nothing in this Stipulation may be interpreted to preclude Caltrans or any agent or contractor thereof from using the properly supervised services of persons who do not meet the PQS.
4. **Documentation Standards.** Written documentation of activities prescribed by Stipulations II, III, V, and VI of this MOA shall conform to *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740) as well as to applicable standards and guidelines established by the SHPO.
5. **Curation and Curation Standards.** If legal owner(s) of materials resulting from the activities presented by this MOA choose to curate those materials, Caltrans shall ensure that, to the extent permitted under § 5097.98 and § 5097.991 of the California Public Resources Code and the Native American Graves Protection and Repatriation Act

(NAGPRA) [25 USC 3001-3013] and its implementing regulations (43 CFR Part 10), the materials and records resulting from the activities prescribed by this MOA are curated in accordance with 36 CFR Part 79. Caltrans shall ensure that the views of the consulting parties are taken into consideration prior to decisions being made about the final disposition of archaeological materials resulting from activities prescribed by this MOA.

B. Confidentiality

The MOA parties acknowledge that the historic properties covered by this MOA are subject to the provisions of § 304 of the NHPA and § 6254.10 of the California Government Code (Public Records Act), relating to the disclosure of archaeological site information and, having so acknowledged, will ensure that all actions and documentation prescribed by this MOA are consistent with said sections.

C. Resolving Objections

1. Should any party to this MOA object at any time in writing to the manner in which the terms of this MOA are implemented, to any action carried out or proposed with respect to implementation of the MOA (other than the Undertaking itself), or to any documentation prepared in accordance with and subject to the terms of this MOA, Caltrans shall immediately notify the other MOA parties of the objection, request their comments on the objection within fifteen (15) days following receipt of Caltrans' notification, and proceed to consult with the objecting party for no more than thirty (30) days to resolve the objection. Caltrans will honor the request of the other parties to participate in the consultation and will take any comments provided by those parties into account.
2. If the objection is resolved during the thirty-day consultation period, Caltrans may proceed with the disputed action in accordance with the terms of such resolution. If at the end of the thirty-day consultation period, Caltrans determines that the objection cannot be resolved through such consultation, then Caltrans shall forward all documentation relevant to the objection to the ACHP, including Caltrans' proposed response to the objection, with the expectation that the ACHP will, within thirty (30) days after receipt of such documentation:
 - i. Advise Caltrans that the ACHP concurs in Caltrans' proposed response to objection, whereupon Caltrans will respond to the

objection accordingly. The objection shall thereby be resolved; or

- ii. Provide Caltrans with recommendations, which Caltrans will take into account in reaching a final decision regarding its response to the objection. The objection shall thereby be resolved; or
- iii. Notify Caltrans that the objection will be referred for comment pursuant to 36 CFR §800.7(c) and proceed to refer the objection and comment. Caltrans shall take the resulting comments into account in accordance with 36 CFR § 800.7(c) (4) and Section 110(1) of the NHPA. The objection shall thereby be resolved.

3. Should the ACHP not exercise one of the above options within 30 days after receipt of all pertinent documentation, Caltrans may proceed to implement its proposed response. The objection shall thereby be resolved.
4. Caltrans shall take into account any of the ACHP's recommendations or comments provided in accordance with this stipulation with reference only to the subject of the objection. Caltrans's responsibility to carry out all actions under this MOA that are not the subjects of the objection shall remain unchanged.
5. At any time during implementation of the measures stipulated in this MOA, should a member of the public raise an objection in writing pertaining to such implementation to any signatory party to this MOA, that signatory party shall immediately notify Caltrans. Caltrans shall immediately notify the other signatory parties in writing of the objection. Any signatory party may choose to comment in writing on the objection to Caltrans. Caltrans shall establish a reasonable time frame for this comment period. Caltrans shall consider the objection, and in reaching its decision, Caltrans will take all comments from the other signatory parties into account. Within fifteen (15) days following closure of the comment period, Caltrans will render a decision regarding the objection and respond to the objecting party. Caltrans will promptly notify the other signatory parties of its decision in writing, including a copy of the response to the objecting party. Caltrans' decision regarding resolution of the objection will be final. Following issuance of its final decision, Caltrans may authorize the

action subject to dispute hereunder to proceed in accordance with the terms of that decision.

6. Caltrans shall provide all parties to this MOA, and the ACHP, if the ACHP has commented, and any parties that have objected pursuant to sections C.3 and C.4 of this Stipulation, with a copy of its final written decision regarding any objection addressed pursuant to this stipulation.
7. Caltrans may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

D. Amendments

1. Any signatory party to this MOA may propose that this MOA be amended, whereupon all signatory parties shall consult for no more than thirty (30) days to consider such amendment. The amendment will be effective on the date a copy signed by all of the original signatories is filed with the ACHP. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation VII.E, below.
2. Attachments to this MOA may be amended through consultation as prescribed in Stipulation I or Stipulation II, as appropriate, without amending the MOA proper.

E. Termination

1. If this MOA is not amended as provided for in section D of this Stipulation, or if either signatory proposes termination of this MOA for other reasons, the signatory party proposing termination shall, in writing, notify the other MOA parties, explain the reasons for proposing termination, and consult with the other parties for at least thirty (30) days to seek alternatives to termination because the Undertaking no longer meets the definition set forth in 36 CFR § 800.16(y).
2. Should such consultation result in an agreement on an alternative to termination, the signatory parties shall proceed in accordance with the terms of that agreement.
3. Should such consultation fail, the signatory party proposing termination may terminate this MOA by promptly notifying the other

MOA parties in writing. Termination hereunder shall render this MOA without further force or effect.

4. If this MOA is terminated hereunder, and if Caltrans determines that the Undertaking will nonetheless proceed, then Caltrans shall comply with the requirements of 36 CFR § 800.3-800.6 or request the comments of the ACHP pursuant to 36 CFR Part 800.

F. Annual Reporting

1. Caltrans shall prepare an Annual Report documenting actions carried out pursuant to this MOA. The reporting period shall commence one year from the date of execution. The Annual Report shall be distributed to all MOA parties .
2. The Annual Report shall address the following: any scheduling changes proposed, historic property surveys and results, status of treatment and mitigation activities, ongoing and completed public education activities, any uses that are affecting or may affect the ability of the federal agency to continue to meet the terms of this MOA, any disputes and objections received, and how they were resolved, and any additional parties who have become signatory or concurring parties to this MOA in the past year.
3. Caltrans shall coordinate a meeting of the Signatories and Consulting Parties to be scheduled within ninety (90) business days of distribution of the Annual Report, or another mutually agreed upon date, to discuss activities carried out pursuant to this MOA during the preceding year and activities scheduled for the upcoming year. This meeting, should it be deemed unnecessary, may be cancelled by mutual consent of the Signatory Parties.

G. Duration of the MOA

The duration of the MOA will be five (5) years following the date of execution by the signatory parties. If Caltrans determines that this requirement cannot be met, the MOA parties will consult to reconsider its terms. Reconsideration may include continuation of the MOA as originally executed, amendment of the MOA, or termination. In the event of termination, Caltrans will comply with Section E of this Stipulation if it determines that the Undertaking will proceed notwithstanding termination of this MOA.

H. Effective Date

This MOA will take effect on the date that it has been executed by Caltrans and the SHPO.

EXECUTION of this MOA by Caltrans and the SHPO, its filing with the ACHP in accordance with 36 CFR § 800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR § 800.6(c), that this MOA is an agreement with the ACHP for purposes of Section 110(1) of the NHPA, and shall further evidence that Caltrans has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties, and that Caltrans has taken into account the effects of the Undertaking on historic properties.

MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE RITCHIE CREEK BRIDGE REPLACEMENT
STORM WATER MITIGATION PROJECT
STATE ROUTE 29, NAPA COUNTY, CALIFORNIA

SIGNATORY PARTY:

California Department of Transportation

By *Philip J. Stolarski* Date 3/3/21

Philip J. Stolarski

Chief, Division of Environmental Analysis

MEMORANDUM OF AGREEMENT

**BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE RITCHIE CREEK BRIDGE REPLACEMENT
STORM WATER MITIGATION PROJECT
STATE ROUTE 29, NAPA COUNTY, CALIFORNIA**

SIGNATORY PARTY:

California Office of Historic Preservation

By  _____ Date 3/4/2021
Julianne Polanco
State Historic Preservation Officer

MEMORANDUM OF AGREEMENT

**BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE RITCHIE CREEK BRIDGE REPLACEMENT
STORM WATER MITIGATION PROJECT
STATE ROUTE 29, NAPA COUNTY, CALIFORNIA**

INVITED SIGNATORY:

California Department of Transportation District 4

By  Date 3/11/2021

Dina El-Tawansy
District Director
District 4, Oakland

MEMORANDUM OF AGREEMENT
BETWEEN THE CALIFORNIA DEPARTMENT OF TRANSPORTATION AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE RITCHIE CREEK BRIDGE REPLACEMENT
STORM WATER MITIGATION PROJECT
STATE ROUTE 29, NAPA COUNTY, CALIFORNIA

CONCURRING PARTIES:

Mishewal Wappo Tribe of Alexander Valley

By _____ Date _____

Scott Gabaldon

Chairperson

California State Parks

By _____ Date _____

Leslie Hartzell, Ph.D

Cultural Resources Division, Division Chief

Appendix J USFWS Biological Opinion



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
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In Reply Refer to:
08ESMF00-2021-F-0356-1

February 5, 2021

Cristin Hallissy
California Department of Transportation
Environmental Division, MS-8E
111 Grand Avenue
Oakland, California
cristin.hallissy@dot.ca.gov

Subject: Formal Consultation on the State Route 29 Fish Passage Barrier Removal and Ritchie Creek Bridge Replacement Project, Napa County, California (EA 04-4J990)

Dear Cristin Hallissy:

This letter is in response to the California Department of Transportation's (Caltrans) November 5, 2020, request for initiation of consultation with the U.S. Fish and Wildlife Service (Service) on the proposed State Route (SR) 29 Fish Passage Barrier Removal and Ritchie Creek Bridge Replacement Project (proposed project) in Napa County, California. Your request was received by the Service on November 5, 2020. The Service received a modification to the request on November 17, 2020 and revised project information on December 16, 2020. At issue are the proposed project's effects on the federally endangered Clara Hunt's milk-vetch (*Astragalus clarianus*), endangered California freshwater shrimp (*Syncaris pacifica*), threatened California red-legged frog (*Rana draytonii*), and threatened northern spotted owl (*Strix occidentalis caurina*). The Service has not designated critical habitat for Clara Hunt's milk-vetch or California freshwater shrimp. Critical habitat has been designated for the California red-legged frog and northern spotted owl but does not occur within the action area for the proposed project. This response is provided under the authority of the *Endangered Species Act of 1973*, as amended (16 U.S.C. 1531 et seq.)(Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

Fixing America's Surface Transportation Act (FAST Act) was signed into law on December 4, 2015. Providing funding from 2016 to 2020, the FAST Act includes provisions to promote streamlined and accelerated project delivery. Caltrans is approved to participate in the FAST Act project delivery program through the National Environmental Policy Act (NEPA) Assignment Memorandum of Understanding (MOU). The MOU allows Caltrans to assume the Federal Highway Administration's (FHWA) responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under federal environmental laws for most highway projects in California. Caltrans is exercising this authority as the federal nexus for section 7 consultation on the proposed project.

The federal action we are consulting on includes the replacement of the existing SR 29 Ritchie Creek Bridge and removal of associated fish passage barriers in Napa County to comply with Total Maximum Daily Load (TMDL) requirements from the Regional Water Quality Control Board. Pursuant to 50 CFR 402.12(j), you submitted a Biological Assessment (BA) for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, and is likely to adversely affect the California freshwater shrimp and California red-legged frog. Caltrans also concluded that the proposed project is not likely to adversely affect Clara Hunt's milk-vetch or northern spotted owl.

The Service concurs that the proposed project may affect, but is not likely to adversely affect the Clara Hunt's milk-vetch. The proposed action area is within the range of the species (<https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=Q05J#rangeInfo>), and the closest available recorded observation of the species in the California Natural Diversity Database (CNDDDB) is approximately 0.75 mile south of the proposed project footprint within Bothe-Napa State Park (SP) (CNDDDB Clara Hunt's milk vetch occurrence #7, CDFW 2020). Although Caltrans did not observe the listed milk vetch during 2019 and 2020 floristic surveys, they did determine that appropriate volcanically-derived, clay soils were present in the action area (Caltrans 2020). The Service concurs with Caltrans' determination that the species could be present within the action area seedbank. As a precaution, Caltrans has committed to conducting for Clara Hunt's milk vetch surveys during its blooming period in the year prior to the start of construction. If discovered and feasible, a construction activity exclusion area will be established around the plants. Caltrans will reinitiate consultation on Clara Hunt's milk vetch if avoidance of discovered plants is not feasible. Given the current information concerning the plant's presence within the action area and the referenced commitments, the Service has determined that the effects to Clara Hunt's milk-vetch will be insignificant and discountable.

The Service concurs that the proposed project may affect, but is not likely to adversely affect the northern spotted owl. The proposed action area is within the range of the listed owl, and adjacent to dense forest stands, and occupied habitat. According to the available CNDDDB records, individual northern spotted owls, pairs, active nests, and young have been observed within throughout Bothe-Napa SP (CDFW 2020). These records include a Bothe-Napa SP observation approximately 1 mile from the proposed project footprint and nest sites approximately 1.5 miles from the proposed project footprint. Several of the records within the State Park are located upstream of the proposed project footprint, along the Ritchie Creek riparian corridor (CDFW 2020). However, Caltrans has committed to conducting all associated tree removal and pruning outside the typical northern spotted owl nesting season (February 1 to September 30). According to Caltrans, the loudest proposed activities are associated with saw cutting for bridge demolition, which is estimated to have a noise level of 90 decibels at 50 feet. The proposed work will not involve intense noise such as those produced by explosives or pile driving. Based on known activity centers and the available nesting habitat in relation to the project footprint, it is unlikely that an active nest site would be located within 40 meters of active construction. This 40-meter distance of disturbance relates to a condition provided in the Service's 2006 guidance relative to the northern spotted owl (Service 2006b). Additionally, the trees that will be removed as part of the proposed project are located immediately adjacent to the roadway and are not of sufficient size and structure to provide potential nesting structure for the species. It is anticipated that night time work will be limited to two consecutive evenings. Caltrans will contact the Service as to how to proceed should any modifications need to be made to these plans and commitments that may otherwise affect the northern spotted owl. Therefore, effects to the northern spotted owl will be insignificant and discountable.

In their project description, Caltrans states that construction activities could disturb nearby nesting efforts for a variety of species protected under the *Migratory Bird Treaty Act* (MBTA). Caltrans has proposed conservation measures to identify active nests and create appropriate disturbance buffers around them. Breeding birds are often secretive near their nests, and nest sites are often inconspicuous and difficult to find. Effective discovery and avoidance is difficult to assure even under the direction of an experienced and skilled field biologist. The Service notes that “take” is not being issued for migratory birds for this proposed project, and we recommend Caltrans consult with the *California-Great Basin Region Migratory Bird Program*.

In considering your request, we based our evaluation on the following:

- 1) Caltrans’ November 2020 BA (Caltrans 2020);
- 2) Additional information provided by Caltrans on November 17 and December 16, 2020.
- 3) Literature review; and
- 4) The Service’s accumulative knowledge regarding the Clara Hunt’s milk-vetch, California freshwater shrimp, California red-legged frog, and northern spotted owl relative to the baseline conditions of the action area.

The remainder of this document provides our biological opinion on the effects of the proposed project on the California freshwater shrimp and California red-legged frog.

Consultation History

- February 27, 2019 Caltrans provided the Service with introductory information concerning the proposed project. The Service and Caltrans corresponded concerning similar consultations completed in the area that would provide examples for the proposed consultation.
- July 3, 2019 Caltrans provided the Service with recent photographs of the proposed project footprint.
- May 28, 2020 The Service provided Caltrans requested technical assistance via electronic mail (e-mail) message.
- November 5, 2020 The Service received copies of Caltrans' November 5, 2020 request to initiate consultation along with a November 2020 BA.
- November 16, 2020 The Service sent Caltrans an e-mail message in response to our review of the November 2020 BA. The message was the functional equivalent of a 30-day letter and included comments and requests for additional information needed to complete the consultation.
- November 17, 2020 The Service received Caltrans’ response to our November 16, 2020 e-mail message. In their response, Caltrans requested formal consultation on the California red-legged frog.
- December 7, 2020 Caltrans provided the Service with additional information concerning the land cover types within the proposed project footprint.

December 11, 2020 Caltrans provided the Service with additional information concerning the projected acreage of effects relative to land cover type.

December 16, 2020 Caltrans provided the Service with revised project footprint acreage and effects relative to land cover type.

January 6, 2020 Caltrans provided the Service with confirmation of the Service's accounting of the proposed project effects to habitat acreage.

BIOLOGICAL OPINION

Description of the Proposed Action

According to their November 2020 BA, Caltrans is proposing replacement of the Ritchie Creek Bridge on SR 29 at post mile (PM) 33.1 in Napa County. The proposed bridge replacement will also include the removal of associated barriers to fish passage as well as restoration and enhancement of the creek bed for the benefit of fish. Other than the standard necessity of replacing aged bridge structures, Caltrans plans to acquire TMDL compliance unit credits needed to address the requirements of their statewide National Pollution Discharge Elimination System (NPDES) permit.

The primary components of the project include and the approximate order of occurrence include the following:

1. Advance trees and shrub removal.
2. Vegetation grubbing and general project footprint preparation.
3. Installation of stormwater sediment and erosion control barriers.
4. Establishment of staging areas and temporary access roads.
5. Utility relocation.
6. Construction of temporary detour bridge.
7. Construction of temporary creek diversion system (TCDS) and dewatering along with installation of other creek protection measures.
8. Construction of abutments for temporary detour bridge and installation of the temporary detour bridge by cantilever.
9. Construction of new bridge abutments.
10. Demolish and removal of existing bridge.
11. Construction of new bridge.
12. Removal of temporary bridge.
13. Streambed modification/enhancement within Ritchie Creek.

14. Removal of TCDS.

15. Revegetation and restoration.

Temporary Construction Access Roads and Staging

Two unpaved temporary construction access roads will be established to provide access to the creek bed for construction, demolition, enhancement, and restoration activities. The roads will be approximately 12 feet wide and will be located on the southbound side of SR 29. Construction of access roads will begin with clearing and grubbing vegetation. The access roads will then be graded for equipment access.

Staging areas for equipment storage and maintenance, construction materials, fuels, lubricants, solvents, and other possible contaminants will be located solely within the construction ROW. The primary staging area will be established within a large pullout north of the bridge and adjacent to the northbound travel lane. Portions of the SR 29 roadway closed to traffic during the detour phase will also be used for access and staging.

Temporary access and staging areas will be revegetated and/or restored to preconstruction condition following overall project construction.

Schedule.

Caltrans anticipates primary construction to occur between November 2022 and December 2023.

Work within the tops of the banks of the creek will be restricted to the typical dry season of June 1 to October 31. Work beyond the bank, such as establishing staging areas and installing the temporary detour bridge, will occur outside of this window, depending on weather and permit conditions.

Night work may be required to move traffic from the main roadway to the temporary modular bridge. This would take a maximum of six nights (two in each April, May, and late May/early June) and would involve installation of the temporary railing, paving, and striping. Heavy construction equipment would not be used between 9:00 PM and 6:00 AM. All other construction work will occur during daytime hours only.

Site Preparation.

Before the start of project construction activities, the site preparation will include vegetation clearing, the installation of *Environmentally Sensitive Area* fencing to identify the project footprint boundaries and the installation of wildlife exclusion fencing (WEF), where needed. The WEF installation will be at the discretion of the Service-Approved Biological Monitor. All fencing will be maintained to meet design specifications throughout construction and removed at the end of construction. The final project bid solicitation plans will show where and how the fencing is to be installed. The bid solicitation package special provisions will provide further instructions to the contractor about acceptable fencing material. *Stormwater Pollution Prevention Plan* (SWPPP) *best management practices* (BMPs) will also be installed.

Vegetation Clearing. Vegetation clearing will include trimming and removal of woody vegetation as well as the grubbing of ground cover vegetation in the area needed for construction and workspace. Woody vegetation that interferes with project construction, but does not need to be removed, will be cut to allow future sprouting from the trunk. Vegetation will be permanently removed within areas of where permanent features will be constructed.

Vegetation removal will be completed with hand tools wherever possible. Chainsaws, grinders, excavators, or other equipment will be used for vegetation that cannot be removed by hand. Tree stumps may be ground down and left in place or may be removed completely if they obstruct construction activities. Cleared vegetation will be removed from the work site; large woody debris may be returned to the Project footprint once construction is complete to enhance habitat complexity where appropriate.

Clearing will be scheduled to occur outside the February 1 to September 30 bird-nesting season. If this schedule cannot be met, surveys for nesting migratory birds will be conducted before clearing begins. Nest avoidance requirements of the MBTA and *California Fish and Game Code* will be observed. The Service-Approved Biological Monitor will survey the action area before clearing starts and be present onsite during vegetation removal to inspect for federally listed species and migratory birds, and will verify that clearing is done according to the contract special provisions and permits.

Installation and Use of Detour Bridge

Caltrans will install a prefabricated, single-span, two-lane temporary steel modular bridge downstream of the existing bridge to provide a through traffic detour during the demolition of the existing bridge structure and subsequent construction of the new bridge. The approximately 28-foot wide and 120-foot long temporary bridge will be assembled onsite at a temporary staging area northeast of the northbound approach to the existing bridge and installed approximately six feet east of the existing bridge on concrete abutments constructed at each approach. Minor roadway modifications will be required to conform the temporary traveled way to the existing roadway. A private driveway north of the existing bridge will be temporarily realigned to accommodate the temporary widening.

Construction of the temporary detour bridge is expected to take up to three months. Once in place, traffic will be diverted to the temporary detour bridge for the duration of demolition of the existing bridge and construction of the new structure.

After construction of the new bridge is complete, traffic will be shifted back from the temporary detour bridge and the temporary bridge will be disassembled and removed. Any pavement added for the temporary bridge will be removed and the area will be regraded and revegetated as appropriate.

Utility Relocation

There are multiple overhead and underground utilities (communications, electric, and gas) that will require relocation in order to complete the proposed project. The methods of relocation will be finalized prior to construction, in coordination with the utility companies. It is anticipated that the required work and final alignment will be within the footprint described in the November 2020 BA. Modifications to the described footprint could trigger a reinitiation.

Dewatering/TCDS

A TCDS will be installed in Ritchie Creek to divert creek flow and protect sensitive resources during construction activities in or near the creek channel. The TCDS will consist of plastic diversion pipes with temporary cofferdams at the up- and downstream ends of the work area. The cofferdams will be assembled and removed as needed during construction. The final plans for the TCDS will be presented to the Service for review and approval a minimum of 30 days prior to construction.

Existing Bridge Demolition

Demolition of the existing Ritchie Creek Bridge will begin in the middle of the bridge and proceed outwards to the abutments. The bridge concrete deck will be saw-cut into individual pieces, lifted from their supports using a crane, and hauled away. The remaining portions of the bridge abutments will be removed to up to ten feet below the existing channel grade and hauled away. A falsework platform will be suspended beneath the existing bridge to capture any construction debris. In addition, ground cover will be provided to protect the creek from falling debris. Alternatively, a timber mat system may be installed in the creek bed, over the TCDS, to create a flat working surface and to prevent construction debris from reaching the creek channel. Dust control will be implemented as needed.

New Bridge Construction

The abutments for the new bridge will be built during the first phase of construction. Pile driving will not be used. The size and location of each abutment will be determined by Structures Design and Structures Hydraulics, but will likely be approximately five feet behind the existing abutments. Although the precise location of the excavation is not known at this time, the disturbance is captured in the described footprint and area of permanent effects. After excavating approximately 10 feet below the existing channel grade, formworks will be placed at the perimeters and steel reinforcement will be set.

Next, concrete will be poured to form the spread footing. The seat abutments will then be built with reinforced concrete and will extend 5-10 feet beyond the edge of the bridge on each end. The wingwalls will be constructed from reinforced concrete on each side of the abutment to act as retaining walls to the dirt embankment around the abutment. Once the abutments are constructed, the new cast-in-place slab bridge deck will be installed. The new bridge will be constructed within the same alignment as the location of the existing bridge. The new bridge will be approximately 44 feet wide and 35 feet long. The roadbed will be 40 feet wide and will provide standard 12-foot wide lanes and 8-foot wide shoulders with a reinforced concrete bridge deck and standard concrete barriers with railings constructed on the outside shoulders. Construction of the new bridge and abutments will occur over approximately six months.

Fish Passage

Caltrans intends to remove two identified fish passage barriers within the project footprint. One is a depth barrier within the bridge structure/culvert due to the smooth, wide, flat surface of the crossing. The other is a jump barrier located at the concrete apron just downstream of the crossing. To address these barriers, the bridge's existing concrete apron will be removed and the underlying creekbed restored, along with an approximately 100 foot length of the creek channel downstream of the bridge. Restoration efforts will include recontouring to a longitudinal 2.5% slope, and a roughened channel will be constructed by incorporating half-ton rocks in a mix of natural or engineered creek bed material. A step pool system with a low flow channel may also be used if the desired slope cannot be achieved. The side slopes of the proposed channel bottom will be contoured to match the existing bank slopes. The final plan will be submitted to the Service for review within 60 days prior to the start of construction.

The Napa River is listed pursuant to federal Clean Water Act requirements as an impaired waterbody due to fine sediment deposition. Sediment TMDL targets and habitat restoration goals were established as part of the Napa River Sediment Reduction and Habitat Enhancement Plan in 2009. Caltrans, as an implementing party of the plan, receives a load allocation for sediment associated with runoff from State roadways, a point source of sediment regulated by the State NPDES Permit (Order No. 2012-0011-DWQ).

With the proposed removal of fish barriers in Ritchie Creek, Caltrans anticipates the credit of 42 TMDL compliance units from the California Water Resources Control Board. The proposed project also enables compliance with Senate Bill (SB) 857, which compels Caltrans to remediate fish passage barriers posed by State highways and related structures. Replacing the bridge will remove the barriers and improve fish migration, allowing Caltrans to meet its obligations under both the National Pollutant Discharge Elimination System permit and SB 857.

Channel Widening and Habitat Enhancement

Recontouring of Ritchie Creek will accommodate the wider distance between the new abutments and backfill areas excavated for the bridge footing. The embankment toe along both sides of the channel, both upstream and downstream of the bridge, will be lined with Rock Slope Protection (RSP) and appropriate filler material. The RSP will extend up the embankment slopes three feet vertically above the toe of the slope and five feet below the toe of slope. Rocks from the existing channel will be removed and then replaced after the channel is realigned. Both banks will be revegetated with a mix of native riparian species.

This restoration work will be consistent with the *California Salmonid Stream Habitat Restoration Manual* (CDFW 2010). Caltrans will investigate the use of more natural bank stabilization methods as a suitable replacement for or addition to RSP, such as installation of a log and root wad revetment reinforced with anchor stones. All restoration work will be detailed in a *Habitat Mitigation and Monitoring Plan* and will be implemented within one year of completion of construction. Caltrans will provide the Service with their final *Habitat Mitigation and Monitoring Plan* for review prior to the start of construction.

Site Clean-Up and Restoration

All construction-related materials (including fencing) will be removed after construction has been completed. The temporarily disturbed areas will be recontoured and revegetated with appropriate native species, to the extent practicable. Permanent erosion control, including soil stabilization measures such as hydroseeding, coir netting and non-filament mesh fiber rolls, will be applied to affected areas to minimize erosion after construction has been completed.

Temporarily affected areas will be protected with erosion control measures. Disturbed areas will be restored using a combination of compost application and native plantings and hydroseeded mix. Invasive, non-native plants, duff, and excavated material containing invasive plant material will be cleared from the proposed project footprint. Tree and shrub planting will occur onsite as a separate revegetation project following construction. Trees removed with a diameter at breast height greater than two inches will be replaced at 3:1 for native trees and 1:1 for non-native trees. All tree replanting will occur within the proposed project footprint.

Proposed revegetation work will likely include incorporating amendment into the soil; planting native trees, shrubs, and ground cover such as grasses and forbs species; caring for the planting to ensure a healthy, growing condition for the three-year plant establishment period; providing in-kind replacement of suitable plants; weeding; rodent and other pest control; mowing; removing trash and debris; plant pruning and fertilizer application; plant basin mulching; and installing foliage protectors as needed or as determined necessary during the three-year plant establishment period. Hand or truck watering will be used to establish plant materials. Hand or truck watering will be used to establish plantings. A temporary surface mounted or buried irrigation system may be installed where needed.

Equipment

The construction contractor will be responsible for providing the required construction equipment. Caltrans estimates the proposed work will likely include the following: (1) clearing and grubbing will likely be completed by backhoes, excavators, or by hand using small mechanical tools; (2) light equipment, such as backhoes, hand-operated augers, and trenchers, for utility relocation and drainage adjustment; (3) dozers to grade temporary roads for access to the creek bed; (4) concrete saws, jackhammers, and an excavator or backhoe with a fitted ram to break up the roadway deck, bents, and abutments for bridge demolition; (5) cranes, excavators, and loaders will likely be used to collect the debris to be hauled away by trucks; (6) construction of the new bridge will likely include the use of cranes for various tasks such as delivery of material to setting of precast bridge components; (7) excavation at the abutments will likely be completed by excavators; (8) concrete mixer trucks and pump trucks will likely be used to pump concrete for all cast-in-place structures; and (9) other standard equipment may include dump trucks, lifts, pavers, hoe rams, street sweeper trucks, and compaction equipment. Caltrans does not expect the use of pile driving installation equipment as part of the project.

Conservation Measures

Caltrans proposes to reduce adverse effects to the California freshwater shrimp, California red-legged frog, migratory birds, other wildlife, and associated ecosystem processes by implementing the following measures:

1. Service-Approved Biological Monitor. The names and qualifications of the proposed biological monitor(s) will be submitted to the Service for approval at least 30 calendar days prior to the start of construction. Prospective credentials may be accepted and approved separately for the California freshwater shrimp and California red-legged frog. The Service-Approved Biological Monitor will keep a copy of this Biological Opinion in their possession when onsite. The Service-Approved Biological Monitor will be onsite during all work that could reasonably result in take of the California freshwater shrimp or California red-legged frog. The Service-Approved Biological Monitor will have the authority to stop work that may result in the unauthorized take of special-status species through communication with the Resident Engineer. If the Service-Approved Biological Monitor exercises this authority, the Service will be notified by telephone and e-mail message within one (1) working day.
2. Resident Engineer. At least 30 calendar days prior to ground disturbance, the Resident Engineer's name and telephone number will be provided to the Service. The Resident Engineer will send a letter to the Service verifying that they possess a copy of the BO and understands the *Terms and Conditions*. The Resident Engineer will maintain a copy of the BO and other relevant permits onsite whenever construction is taking place.
3. Worker Environmental Awareness Training. Before beginning construction activities, all construction personnel will attend a mandatory environmental education program facilitated by the Service-Approved Biological Monitor. Training sessions will be repeated for all new personnel before they are allowed access to the job site. All personnel will complete the training and sign a form stating that they have done so and understand all applicable agency regulations and consequences of noncompliance. Caltrans will keep the forms on file and make them available to the Service upon request. The training will include a minimum of the following:

- a. A description of the California freshwater shrimp and California red-legged frog and their habitat needs.
 - b. A discussion of applicable agency regulations and consequences of noncompliance.
 - c. A review of the project's conservation measures and how the measures reduce effects on the species.
 - d. A pamphlet containing photos of the California freshwater shrimp and California red-legged frog, compliance reminders, and relevant contact information (including the Service-Approved Biological Monitors' contact information).
 - e. Training and associated material in foreign languages as needed.
4. If there is sufficient water within Ritchie Creek to necessitate the implementation of a TCDS, the following will be implemented for the California freshwater shrimp.
- a. At least 30 days prior to the onset of activities, the name(s) and credentials of biologists who will conduct California freshwater shrimp surveys and relocation activities will be submitted to the Service. No project activities will begin until Caltrans has received written approval from the Service that they are approved to conduct the work. A Service-Approved California Freshwater Shrimp Monitor will be onsite during the construction of any erosion control fencing or cofferdams, and prior to and during the dewatering of either creek to monitor for the California freshwater shrimp.
 - b. A Service-Approved California Freshwater Shrimp Monitor will survey for the California freshwater shrimp within 2 weeks before the onset of construction activities within the bed and bank of the subject creek, including any temporary dewatering and/or coffer dam installation. The survey will include investigation of likely habitat 100 feet upstream and 200 feet downstream of the project footprint. If California freshwater shrimp are found, the Service-Approved California Freshwater Shrimp Monitor will capture and relocate them to suitable habitat within the creek. Only Service-Approved California Freshwater Shrimp Monitors will participate in activities associated with the capture, handling, and monitoring of California freshwater shrimp. Following installation of any water diversion structures, and prior to the placement of fill, a Service-Approved California Freshwater Shrimp Monitor will perform surveys for California freshwater shrimp in the construction boundaries.
 - c. Caltrans will implement the following procedures if California freshwater shrimp are encountered in the work area:
 - i. California freshwater shrimp will be captured with hand-held nets (e.g., heavy-duty aquatic dip nets [12 inch D-frame net] or small minnow dip nets) and relocated out of the work area in buckets containing creek water and then moved directly to the nearest suitable habitat in the same branch of the creek. Suitable habitat will be identified prior to capturing California freshwater shrimp to minimize holding time. Suitable habitat will be defined as creek sections that will remain wet over the summer and where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris, or

overhanging vegetation. California freshwater shrimp will not be placed in buckets containing other aquatic species.

- ii. Once the Service-Approved California Freshwater Shrimp Monitor has determined that all California freshwater shrimp have been effectively relocated, barrier seines or exclusion fencing will be installed to prevent shrimp from moving back in, as appropriate.
 - iii. The California freshwater shrimp will be released within suitable habitat acceptable to the Service, who will be notified. If suitable habitat cannot be identified, the Service will be contacted to determine an acceptable alternative. Transporting California freshwater shrimp to a location other than the location described herein will require written authorization of the Service.
 - iv. The number of California freshwater shrimp captures, releases, injuries, and mortalities will be reported to the Service via telephone call and e-mail within one (1) working day.
5. Preconstruction California Red-Legged Frog Surveys. Service-Approved Biological Monitors will conduct preconstruction surveys for the California red-legged frog as needed within the project footprint. For frog surveys, visual encounter surveys will be conducted immediately before ground-disturbing activities. Suitable habitat within the project footprint, including refugia habitat (such as under shrubs, downed logs, small woody debris, burrows, and similar) will be visually inspected. If a California red-legged frog is observed, the individual will be evaluated and relocated. Fossorial mammal burrows will be visually inspected for signs of California red-legged frog use, to the extent practicable. If it is determined that a burrow may be occupied by a California red-legged frog, the Service-Approved Biological Monitor will determine the best course of action to avoid harm to the frog.
 6. Biological Monitoring. The Service-Approved Biological Monitor will be present during construction activities where take of a California freshwater shrimp or California red-legged frog could occur. Through communication with the Resident Engineer or their designee, the Service-Approved Biological Monitor will stop work if deemed necessary for any reason to protect listed species and will advise the Resident Engineer or their designee on how to proceed accordingly. During the winter (wet) season, a full-time Service-Approved Biological Monitor will be onsite for the increased chance of California red-legged frog movements through the project site (dispersal behavior).
 7. California Red-Legged Frog Discovery. If a California red-legged frog is discovered, the Resident Engineer and Service-Approved Biological Monitor will be immediately informed.
 - a. The Resident Engineer or their designee will immediately contact the Service-Approved Biological Monitor when a California red-legged frog is observed within the construction zone. Construction activities will be suspended within a 50 feet radius of the animal until it leaves the site voluntarily or the animal is relocated by the Service-Approved Biological Monitor. The Service-Approved Biological Monitor will follow established California red-legged frog protocols for relocation of the frog.

- b. The Service will be notified within one (1) working day if a California red-legged frog is discovered within the construction site.
 - c. Captured California red-legged frogs will be released within appropriate habitat outside of the construction area, as close to the discover location as possible, and within suitable habitat similar to where it was discovered. The release habitat will be determined by the Service-Approved Biological Monitor.
 - d. The Service-Approved Biological Monitor will take precautions to prevent introduction of amphibian diseases in accordance with the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (Service 2005).
8. Construction Footprint Fencing. Before starting construction, the boundaries of the described construction footprint will be clearly delineated using high-visibility orange fencing. The fencing will remain in place throughout the project duration and will prevent construction equipment or personnel from entering areas that were not analyzed for ground disturbing actions. The final project plans will depict the locations where fencing will be installed and how it will be assembled or constructed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material, prohibited construction related activities, vehicle operation, material and equipment storage, and other surface disturbing activities.
 9. California Red-Legged Frog Exclusion Fencing. Before starting construction, exclusion fencing will be installed in areas where the California red-legged frog is most likely to occur. This may include areas considered potential frog aquatic non-breeding habitat, such as delineated *Waters of the U.S.* The exclusion fencing will remain in place as long as active construction is anticipated. The final project plans will depict the locations where the exclusion fencing will be installed, and the type of materials to be used.
 10. Avoidance of Entrapment. To prevent inadvertent entrapment of California red-legged frogs and other wildlife during construction, excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day using plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. Replacement pipes, culverts, or similar structures stored in the project area overnight will be inspected before they are subsequently moved, capped, or buried.
 11. Vegetation Removal. Vegetation that is within the cut-and-fill line or growing in locations where permanent structures will be placed (e.g., road alignment, shoulder widening) will be cleared. Vegetation will be cleared only where necessary and will be cut above soil level, except in areas that will be excavated. This will allow plants that reproduce to resprout after construction. Clearing and grubbing of woody vegetation will occur by hand or using construction equipment such as mowers, backhoes, and excavators. If clearing and grubbing occur between February 1 and September 30, a qualified biologist will survey for nesting birds within the areas to be disturbed, including a perimeter buffer of 50 feet for passerines and 300 feet for raptors, before clearing activities begin. All nest avoidance requirements of the MBTA and *California Fish and Game Code* will be observed, such as establishing appropriate protection buffers around

active nests until young have fledged. Cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site.

12. Seasonal Avoidance. Construction below top of bank and within the wetted portions of the channel will be constrained to occur during the summer season, during creek low flows (starting June 1 and ending October 31). Work in the creek will be limited to when the creek is dry or mostly dry, as much as practicable, or when the temporary water diversion system has been installed. Caltrans will complete advanced tree removal activities outside of the bird nesting season (February 1 through September 30).
13. Light Restrictions. Construction personnel will turn portable tower lights on no more than 30 minutes before the beginning of civil twilight, and off no more than 30 minutes after the end of civil sunrise. Portable tower lights will have directional shields attached to them, and personnel will only direct lights downward and toward active construction and staging areas. Lighting per portable tower light will not exceed 2,000 lumens. To the extent practicable, personnel will only use enough coverage to light the travel way, median, and staging areas. If onsite staging areas require security lighting, that lighting installation will be in accordance with this measure to the extent practicable.
14. Rain Events. The Service-Approved Biological Monitor will determine which construction activities may need to be halted within 24 hours of a 0.1-inch rain event, or when there is a forecast of 40 percent or more chance of precipitation, to ensure protection of California red-legged frog. If, by 2 p.m., rain is forecast for the remainder of the day or subsequent night with a 70 percent or greater probability of rain (based on the nearest National Weather Service forecast, available at <http://forecast.weather.gov>), work may be postponed until 24 hours have passed between the last rain event and the start of work.
15. Dewatering. Dewatering and discharging activities will be conducted according to standard Caltrans requirements.
 - a. The dewatering plan will be provided to the Service for review, comment, and approval in advance of its establishment.
 - b. A Service-Approved Biological Monitor will be present during dewatering activities to capture and relocate California freshwater shrimp and California red-legged frogs as needed.
 - c. The Service-Approved Biological Monitor will be present during the dewatering activities to capture and relocate native species. Captured animals will be relocated up or downstream of the dewatering system as appropriate to its biological requirements.
 - d. For dewatering systems that require pumping, all intakes will be completely screened with wire mesh not larger than 5 millimeters (0.2 inch) to prevent wildlife from entering the pump system.
 - e. Upon completion of construction activities, any barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to substrate.

16. Leak Monitoring. Equipment used within the dewatered creek channel will be inspected daily for leaks by the Service-Approved Biological Monitor. If any are found, a drip pan will be placed under the leak and it will be repaired immediately by the contractor.
17. Removal of Dewatering System. Upon completion of construction activities, the dewatering system will be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
18. Fish Barriers. The project will be in compliance with *Fish and Game Code section 5901* and shall not install or maintain any device or contrivance that prevents, impedes, or tends to prevent or impede the passing of fish up and down stream.
19. Implementation of Best Management Practices. In accordance with *Regional Water Quality Control Board* requirements, a SWPPP will be developed and erosion control BMPs implemented to minimize wind and water related erosion. The *Caltrans BMP Guidance Handbook* provides guidance for inclusion of provisions all construction contracts to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include the following:
 - a. Disallowing the discharge of pollutants from vehicle and equipment cleaning into storm drains or watercourses.
 - b. Keeping vehicle and equipment fueling and maintenance operations at least 50 feet away from watercourses, except at established commercial gas stations or an established vehicle maintenance facility.
 - c. Collecting and disposing of concrete wastes and water from curing operations in appropriate washouts, located at least 50 feet from watercourses.
 - d. Maintaining spill containment kits onsite at all times during construction operations and/ or staging or fueling of equipment.
 - e. Using water trucks and dust palliatives to control dust in unvegetated areas and covering temporary stockpiles when weather conditions require.
 - f. Installing coir rolls or straw wattles along or at the base of slopes during construction to capture sediment.
 - g. Protecting graded areas from erosion using a combination of silt fences, fiber rolls along toes-of-slopes or along edges of designated staging areas, and erosion control netting (jute or coir) as appropriate on sloped areas. To avoid wildlife entrapment, plastic monofilament netting or similar material will not be used. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
 - h. Establishing permanent erosion control measures such as bio-filtration strips and swales to receive stormwater discharges from the highway or other impervious surfaces to the maximum extent practicable.
 - i. Dust control measures will be implemented consisting of regular truck watering of construction access areas and disturbed soil areas, including the use of organic soil stabilizers, if required, to minimize airborne dust and soil particles generated from

- graded areas. For disturbed soil areas, the use of an organic tackifier to control dust emissions blowing off of the ROW or out of the construction area during construction will be included in the construction contract. Watering guidelines will be established to avoid any excessive run-off that may flow into contiguous areas. Any material stockpiles will be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion. All these efforts will be consistent with the Regional Water Quality Control Board or approved *Storm Water Pollution Prevention Plan*. Dust control will be addressed during the environmental education session.
20. Construction Site Management Practices. The following general site restrictions will be implemented, as follows:
- a. Enforcing a speed limit of 15 miles per hour in the project footprint in unpaved and paved areas to reduce dust and excessive soil disturbance.
 - b. Locating construction access, staging, storage, and parking areas within the described project footprint that have been environmentally cleared. The following areas will be limited to the minimum size necessary to construct the proposed project: access routes, staging and storage areas, and contractor parking. Routes and boundaries of roadwork will be clearly marked before initiating construction or grading.
 - c. Certifying, to the maximum extent practicable, that borrow material is non-toxic and weed-free.
 - d. Enclosing food and food-related trash items in sealed trash containers and removing them from the site at the end of each day.
 - e. Prohibiting pets from entering the project footprint area during construction.
 - f. Prohibiting firearms within the project site, except for those carried by authorized security personnel or local, state, or federal law enforcement officials.
 - g. Maintaining equipment to prevent the leakage of vehicle fluids, such as gasoline, oils, or solvents, and developing a *Spill Response Plan*. Hazardous materials such as fuels, oils, and solvents will be stored in sealable containers in a designated location that is at least 50 feet from aquatic habitats.
 - h. Servicing vehicles and construction equipment, including fueling, cleaning, and maintenance, at least 50 feet from aquatic habitat unless separated by a topographic or drainage barrier.
21. Replant, Reseed, and Restore Disturbed Areas. Caltrans will restore temporarily disturbed areas to the maximum extent practicable. Exposed slopes and bare ground will be reseeded with native grasses and shrubs to stabilize them and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species will be replanted, based on the local species composition.
22. Proper Use of Erosion Control Devices. To prevent California red-legged frogs and other wildlife from becoming entangled or trapped in erosion control materials, plastic monofilament netting (i.e., erosion control matting) or similar material will not be used

within the project area. Acceptable substitutes would include coconut coir matting or tackifier hydroseeding compounds.

23. Reduce Spread of Invasive Species. To reduce the spread of invasive, nonnative plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans will comply with *Executive Order 13112*. This order is provided to prevent the introduction of invasive species and provide their control to minimize the economic, ecological, and human health effects. If noxious weeds are disturbed or removed during construction-related activities, the contractor will be required to contain the plant material associated with these noxious weeds and dispose of them in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion-control seed mixture. Where seeding is not practical, the target areas within the project area will be covered to the extent practicable with heavy black plastic solarization material until the end of the project.
24. Service Access. If requested, before, during, or upon completion of groundbreaking and construction activities, Caltrans will allow access by Service personnel into the project footprint to inspect the project and its activities.

Action Area

The action area is defined in 50 CFR § 402.02, as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” For the proposed project, the action area encompasses a 3.09-acre construction footprint (3.057 acres temporary + 0.033 acre permanent) plus a 350-foot habitat buffer to account for noise, vibration, and visual disturbance.

Analytical Framework for the Jeopardy Determination

Section 7(a)(2) of the Act requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed federal action, and any cumulative effects, on the range wide survival and recovery of the listed species. It relies on four components: (1) the *Status of the Species*, which describes the current range wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the current condition of the species in the action area without the consequences to the listed species caused by the proposed project, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the *Effects of the Action*, which determines all consequences to listed species that are caused by the proposed federal action; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-federal activities in the action area on the species. The *Effects of the Action* and *Cumulative Effects* are added to the *Environmental*

Baseline and in light of the status of the species, the Service formulates its opinion as to whether the proposed project is likely to jeopardize the continued existence of the listed species.

Status of the Species

California Freshwater Shrimp

Please refer to the California Freshwater Shrimp (*Syncaris pacifica*) 5-year Review: Summary and Evaluation (Service 2011) (available at http://ecos.fws.gov/docs/five_year_review/doc3890.pdf) for the latest published status of the species. The referenced 5-Year Review does not include the threat, recovery, survey data, and other relevant updates for the species since its September 2011 issuance. Since that time, actions have been implemented that have resulted in additional adverse effects to the species. In association with those actions, conservation measures have been implemented for the purpose of minimizing those adverse effects and in some cases, restoring or enhancing California freshwater shrimp habitat. Environmental factors such as the recent cycle of below average annual rainfall may have influenced the distribution and quality of suitable habitat throughout its range. While the threats posed by habitat loss, degradation, non-native predators, and fragmentation are ongoing, to date no project has proposed a level of effects for which the Service has issued a biological opinion of jeopardy for the species.

California Red-Legged Frog

Listing Status: The California red-legged frog was listed as a threatened species on May 23, 1996 (Service 1996). Critical habitat was designated for this species on April 13, 2006 (Service 2006a), with revisions to the critical habitat designation published on March 17, 2010 (Service 2010). At that time, the Service recognized the taxonomic change from *Rana aurora draytonii* to *Rana draytonii* (Shaffer et al. 2010). A recovery plan was published for the California red-legged frog on September 12, 2002 (Service 2002).

Description: The California red-legged frog is the largest native frog in the western United States (Wright and Wright 1949), ranging from 1.5 to 5.1 inches in length (Stebbins 2003). The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers (Stebbins 2003); dorsolateral folds are prominent on the back. The California red-legged frog is sexually dimorphic; the females are larger than the males (Dodd 2013a, b). California red-legged frog tadpoles range from 0.6 inch to 3.1 inches in length and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

Current Status and Distribution: The historical range of the California red-legged frog extended from central Mendocino County and western Tehama County south in the California Coast Range to northern Baja California, Mexico, and in the Sierra Nevada/Cascade Ranges from Shasta County south to Madera County (Jennings and Hayes 1994). The species historically occurred from sea level to elevations of about 5,200 feet in 46 counties; however, currently the taxon is extant in 238 streams or drainages within only 22 counties, representing a loss of 70 percent of its former range (Service 2002). Isolated populations persist in several Sierra Nevada foothill locales and in Riverside County (Barry and Fellers 2013; Backlin et al. 2017; California Department of Fish and Wildlife (CDFW) 2019; Gordon, R. and J. Bennett, pers. comm., 2017). The species is no longer considered extant in California's Central Valley due to significant declines caused by habitat modifications and exotic species (Fisher and Shaffer 1996). Currently, the California red-legged frog is widespread in the San Francisco Bay nine-county area (CDFW 2019). They are still locally abundant within the California coastal counties

from Mendocino County to Los Angeles County and presumed extirpated in Orange and San Diego counties (CDFW 2019; Yang, D. and J. Martin, pers. comm., 2017; Gordon, R. and J. Bennett, pers. comm., 2017). Baja California represents the southernmost edge of the species' current range (Peralta-García et al. 2016).

Barry and Fellers (2013) conducted a comprehensive study to determine the current range of the California red-legged frog in the Sierra Nevada, concluding that it differs little from its historical range; however, the current Sierra Nevada populations appear to be small and tend to fluctuate. Since 1991, eleven California red-legged frog populations have been discovered or confirmed, including eight probable breeding populations (Barry and Fellers 2013; Mabe, J., pers. comm., 2017). Microsatellite and mitochondrial DNA analysis by Richmond et al. (2014) confirmed the Sierra Nevada populations of the California red-legged frog are genetically distinct from each other, as well as from other populations throughout the range of this species. The research concluded that the Sierra Nevada populations are persisting at low levels of genetic diversity and no contemporary gene flow across populations exist. On a larger geographic scale, range contraction has left a substantial gap between Sierra Nevada and Coast Range populations, similar to the gap separating the Southern California and Baja California populations (Richmond et al. 2014).

Habitat and Life History:

Habitat

The California red-legged frog generally breeds in still or slow-moving water associated with emergent vegetation, such as cattails, tules (hardstem bulrush), or overhanging willows (Storer 1925; Fellers 2005). Aquatic breeding habitat predominantly includes permanent water sources such as streams, marshes, and natural and manmade ponds in valley bottoms and foothills (Jennings and Hayes 1994; Bulger et al. 2003; Stebbins 2003). Since the 1850's, manmade ponds may actually supplement stream pool breeding habit and can be capable of supporting large populations of this species. Breeding sites may hold water only seasonally, but sufficient water must persist at the beginning of the breeding season and into late summer or early fall for tadpoles to successfully complete metamorphosis. Breeding habitat does not include deep lacustrine water habitat (e.g., deep lakes and reservoirs 50 acres or larger)(Service 2010). Within the coastal lagoon habitats, salinity is a significant factor on embryonic mortality or abnormalities (Jennings and Hayes 1990). Jennings and Hayes (1990) conducted laboratory studies and field observations concluding salinity levels above 4.5 parts per thousand detrimentally affected the California red-legged frog embryos. Aquatic breeding habitat does not need to be available every year, but it must be available at least once within the frog's lifespan for breeding to occur (Service 2010).

Non-breeding aquatic habitat consists of shallow (non-lacustrine) freshwater features not suitable as breeding habitat, such as seasonal streams, small seeps, springs, and ponds that dry too quickly to support breeding. Non-breeding aquatic and riparian habitat is essential for providing the space, food, and cover necessary to sustain the California red-legged frog. Riparian habitat consists of vegetation growing nearby, but not typically in, a body of water on which it depends, and usually extends from the bank of a pond or stream to the margins of the associated floodplain (Service 2010). Adult California red-legged frogs may avoid coastal habitat with salinity levels greater than 6.5 parts per thousand (Jennings and Hayes 1990).

Cover and refugia are important habitat characteristic preferences for the species (Halstead and Kleeman 2017). Refugia may include vegetation, organic debris, animal burrows, boulders,

rocks, logjams, industrial debris, or any other object that provides cover. Agricultural features such as watering troughs, spring boxes, abandoned sheds, or haystacks may also be utilized by the species. Incised stream channels with portions narrower and depths greater than 18 inches may also provide important summer sheltering habitat. During periods of high water flow, California red-legged frogs are rarely observed; individuals may seek refuge from high flows in pockets or small mammal burrows beneath banks stabilized by shrubby riparian growth (Jennings and Hayes 1994). Accessibility to cover habitat is essential for the survival of California red-legged frogs within a watershed and can be a factor limiting frog population numbers and survival.

Breeding

The California red-legged frog typically breeds between November and April; however, breeding may occur later in the Sierra Nevada Range (Barry 2002). Females deposit their egg masses on emergent vegetation, floating on or near the surface of the water. The California red-legged frog is often a prolific breeder, laying eggs during or shortly after large rainfall events in late winter and early spring. Egg masses containing 300-4,000 eggs hatch after six to fourteen days (Storer 1925; Jennings and Hayes 1994; Fellers 2005). Historically, the California red-legged frog in the Sierra Nevada likely bred within stream pools, which tend to be small with limited forage, constraining the size and number of populations (Barry and Fellers 2013).

California red-legged frog tadpoles undergo metamorphosis three to seven months following hatching. Most males reach sexual maturity in two years, while it takes approximately three years for females (Jennings and Hayes 1985; Fellers 2005). Under favorable conditions, California red-legged frogs may live eight to ten years (Jennings et al. 1992). Of the various life stages, tadpoles likely experience the highest mortality rates; only one percent of each egg mass completes metamorphosis (Jennings et al. 1992).

Diet

The California red-legged frog has a variable diet that changes with each of its life history stages. The feeding habits of the early stages are likely similar to other ranids, whose tadpoles feed on algae, diatoms, and detritus by grazing on the surface of rocks and vegetation (Fellers 2005). Hayes and Tennant (1985) found invertebrates to be the most common food items of adult California red-legged frogs collected in southern California; however, they speculated that this was opportunistic and varied based on prey availability. Vertebrates, such as Pacific tree frogs and California mice, represented over half of the prey mass eaten by larger frogs, although invertebrates were the most numerous food items. Feeding typically occurs along the shoreline and on the surface of the water; juveniles appear to forage during both daytime and nighttime, whereas adults appear to feed at night (Hayes and Tennant 1985).

Movement

California red-legged frogs do not have a distinct breeding migration (Fellers 2005), rather they may move seasonally from non-breeding pools or refugia to breeding pools. Some individuals remain at breeding sites year-round while others disperse to neighboring water features or moist upland sites when breeding is complete and/or when breeding pools dry (Service 2002; Bulger et al. 2003; Fellers and Kleeman 2007; Tatarian and Tatarian 2008; Tatarian 2008). Studies in the several San Francisco Bay counties showed movements are typically along riparian corridors (Fellers and Kleeman 2007; Tatarian 2008). Although, some individuals, especially on rainy nights and in more mesic areas, travel without apparent regard to topography, vegetation type, or riparian corridors, and can move directly from one site to another through normally inhospitable habitats such as heavily grazed pastures or oak-grassland savannas (Bulger et al. 2003).

California red-legged frogs show high site fidelity (Tatarian and Tatarian 2008) and typically do not move significant distances from breeding sites (Bulger et al. 2003; Fellers and Kleeman 2007; Tatarian and Tatarian 2008; Tatarian 2008). When traveling between aquatic sites, California red-legged frogs typically travel less than 0.31 mile (Fellers and Kleeman 2007; Tatarian and Tatarian 2008), although they have been documented to move more than two miles in Santa Cruz County (Bulger et al. 2003). Various studies have found that the frogs typically do not make terrestrial forays further than 200 feet from aquatic habitat (Bulger et al. 2003; Fellers and Kleeman 2007; Tatarian and Tatarian 2008; Tatarian 2008). Upland movements are typically associated with precipitation events and usually last for one to four days (Tatarian 2008).

Threats: Factors associated with declining populations of the California red-legged frog throughout its range include degradation and loss of habitat through agriculture, urbanization, mining, overgrazing, recreation, timber harvesting, non-native species, impoundments, water diversions, erosion and siltation altering upland and aquatic habitat, degraded water quality, use of pesticides, and introduced predators (Service 2002, 2010). Urbanization often leaves isolated habitat fragments and creates barriers to frog dispersal.

Non-native species pose a major threat to the recovery of California red-legged frogs. Several researchers have noted the decline and eventual local disappearance of California and northern red-legged frogs in systems supporting bullfrogs (Jennings and Hayes 1990; Twedt 1993), red swamp crayfish, signal crayfish, and several species of warm water fish including sunfish, goldfish, common carp, and mosquitofish (Moyle 1976; Barry 1992; Hunt 1993; Fisher and Shaffer 1996). The decline of the California red-legged frog due to these non-native species has been attributed to predation, competition, and reproduction interference (Twedt 1993; Bury and Whelan 1984; Storer 1933; Emlen 1977; Kruse and Francis 1977; Jennings and Hays 1990; Jennings 1993).

Chytridiomycosis, an infectious disease caused by the chytrid fungus, *Batrachochytrium dendrobatidis* (Bd), has been found to adversely affect amphibians globally (Davidson et al. 2003; Lips et al. 2006). While Bd prevalence in wild amphibian populations in California is unknown (Fellers et al. 2011), chytrid is expected to be widespread throughout much of the California red-legged frog's range. The chytrid fungus has been documented within the California red-legged frog populations at Point Reyes National Seashore, two properties in Santa Clara County, Yosemite National Park, Hughes Pond, Sailor Flat, Big Gun Diggings, and Spivey Pond (Padgett-Flohr and Hopkins 2010; Tatarian and Tatarian 2010; Fellers et al. 2011; Barry and Fellers 2013). However, no chytrid-related mortality has been reported in these populations, suggesting that California red-legged frogs are less vulnerable to the pathogenic effects of chytrid infection than other amphibian species (Tatarian and Tatarian 2010; Barry and Fellers 2013; Fellers et al. 2017). While chytrid infection may not directly lead to mortality in California red-legged frogs, Padgett-Flohr (2008) states that this infection may reduce overall fitness and could lead to long-term effects. Therefore, it is difficult to estimate the full extent and risk of chytridiomycosis to the California red-legged frog populations.

Negative effects to wildlife populations from roads and pavement may extend some distance from the actual road. The phenomenon can result from any of the effects described in this Biological Opinion, such as vehicle-related mortality, habitat degradation, and invasive exotic species. Forman and Deblinger (1998, 2000) described the area affected as the "road effect" zone. Along a four-lane road in Massachusetts, they determined that this zone extend for an average of approximately 980 feet to either side of the road for an average total zone width of approximately 1,970 feet. They describe the boundaries of this zone as asymmetric and in some

areas diminished wildlife use attributed to road effects was detected greater than 0.6 mile from Massachusetts Route 2. The “road-zone” effect can also be subtle. Van der Zande et al. (1980) reported that lapwings and black-tailed godwits feeding at 1,575-6,560 feet from roads were disturbed by passing vehicles. The heart rate, metabolic rate and energy expenditure of female bighorn sheep increase near roads (MacArthur et al. 1979). Trombulak and Frissell (2000) described another type of “road-zone” effect due to contaminants. Heavy metal concentrations from vehicle exhaust were greatest within 66 feet of roads, but elevated levels of metals in both soil and plants were detected at 660 feet of roads. The “road-zone” apparently varies with habitat type and traffic volume. Based on responses by birds, Forman and Deblinger (2000) estimated the effect zone along primary roads of 1,000 feet in woodlands, 1,197 feet in grasslands, and 2,657 feet in natural lands near urban areas. Along secondary roads with lower traffic volumes, the effect zone was 656 feet. The “road-zone” effect with regard to California red-legged frogs has not been adequately investigated.

The necessity of moving between multiple habitats and breeding ponds means that many amphibian species, such as the California red-legged frog, are especially vulnerable to roads and well-used large paved areas in the landscape. Van Gelder (1973) and Cooke (1995) have examined the effect of roads on amphibians and found that because of their activity patterns, population structure, and preferred habitats, aquatic breeding amphibians are more vulnerable to traffic mortality than some other species. Large, high-volume highways pose a nearly impenetrable barrier to amphibians and result in mortality to individual animals as well as significantly fragmenting habitat. Hels and Buchwald (2001) found that mortality rates for anurans on high traffic roads are higher than on low traffic roads. Vos and Chardon (1998) found a significant negative effect of road density on the occupation probability of ponds by the moor frog in the Netherlands. In addition, incidents of very large numbers of road-killed frogs are well documented (e.g., Ashley and Robinson 1996), and studies have shown strong population level effects of traffic density (Carr and Fahrig 2001) and high traffic roads on these amphibians (Van Gelder 1973; Vos and Chardon 1998). Most studies regularly count road kills from slow moving vehicles (Hansen 1982; Rosen and Lowe 1994; Drews 1995; Mallick et al. 1998) or by foot (Munguira and Thomas 1992). These studies assume that every victim is observed, which may be true for large conspicuous mammals, but it certainly is not true for small animals, such as the California red-legged frog. Amphibians appear especially vulnerable to traffic mortality because they readily attempt to cross roads, are slow moving and small, and thus cannot easily be avoided by drivers (Carr and Fahrig 2001).

Recovery Plan: The *Recovery Plan* for the California red-legged frog identifies eight recovery units (Service 2002). The goal of the recovery plan is to protect the long-term viability of all extant populations within each recovery unit. Within each recovery unit, delineated core areas, designed to protect metapopulations, represent contiguous areas of moderate to high California red-legged frog densities. The management strategy identified within this *Recovery Plan* will allow for the recolonization of habitats within and adjacent to core areas naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of California red-legged frogs.

Environmental Baseline

Environmental baseline refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed project. The environmental baseline includes the past and present impacts of all federal, State, or private actions and other human activities in the action area, the

anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.

The action area is within a region characterized by a mix of oak woodlands, dense forest, rural communities, and vineyard development typical of the Napa River Valley. Within the action area, agricultural development is primarily located on the east side of SR 29, while the west side of SR 29 and the majority of the project footprint is within wooded vegetation types. The proposed project is centered on Ritchie Creek as it exits Bothe-Napa State Park, south of SR 29, to enter a confined riparian corridor cutting through extensive vineyards, north of SR 29 (Figure 1). Caltrans characterized the vegetation land cover types in the action area as: agriculture, buckeye-dominated montane mixed hardwood, Douglas-fir dominated montane mixed hardwood, ponderosa-dominated montane mixed hardwood, and riparian dominated mixed hardwoods (Caltrans 2020). The proposed project footprint also includes areas of roadway and ruderal disturbance.

At the time of this letter, portions of the action area, including Bothe-Napa State Park, had been recently subjected to the 2020 Glass Fire. The effects of the burn are unknown at this time, though fires are considered an integral part of California ecosystems (Van Wagendonk et al, 2018). California's oak woodlands have been described as particularly adapted to hot summer fires (Harper et al, 1994), including the natural landscape of the Sonoma and Napa valleys. Cook and Hayes (2020) recently observed that amphibian species, such as the California red-legged frog, observed prior to fire, remained resilient post-fire at a long-term study site in Sonoma County.

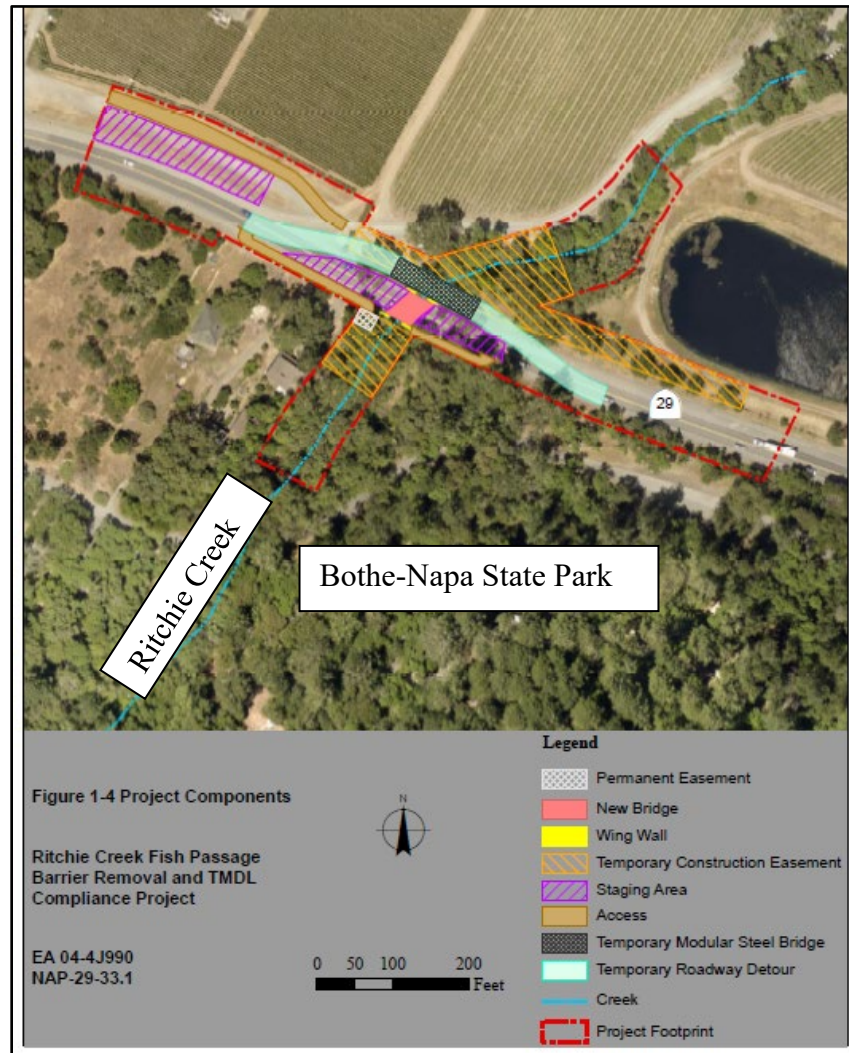
Within the proposed project area, SR 29 is a two-lane, undivided, conventional rural highway. Shoulders are narrow with gravel backing on the outside perimeter. On the bridge, the existing roadbed is 40 feet wide, with 12-foot wide lanes and 8-foot wide shoulders with no bicycle lanes nor sidewalks. The existing Ritchie Creek Bridge is 16.4 feet long and 43.3 feet wide. A standard barbed wire fence runs along the Caltrans ROW boundary. Vegetation within the ROW is maintained with mowing and herbicide.

According to Caltrans, the existing SR 29 Ritchie Creek Bridge is a modified stone arch structure built in the early 1900s and later expanded in the 1940s (Caltrans 2020). The existing structure has a concrete bottom and the downstream concrete apron of the culvert is classified as a depth and jump barriers to adult and juvenile salmonids during low flows. The structure has also modified the hydrologic actions up and downstream, altering habitat factors such as sediment transport streambed elevation.

Additional fish passage barriers have been identified upstream of the SR 29 bridge, within Bothe-Napa SP. Remediation of another fish barrier on Ritchie Creek at the Spring Road culvert, approximately 1.4 miles upstream, was completed in 2019 (Service file #08ESMF00-2018-I-1120, C. Freeman, pers. comm., 2020). According to the completed consultation, Ritchie Creek is considered "nearly pristine", and the completed removal of obstructive debris upstream of an existing culvert, replacement of the culvert, and restoring hydrologic grade through a scour downstream of the culvert was also likely to enhance aquatic habitat for the California red-legged frog (Service file #08ESMF00-2018-I-1120). In their efforts to gain additional TMDL

compliance unit credits, Caltrans intends to provide future funding for State Parks to remove additional fish passage barriers upstream of the proposed project (Caltrans 2020).

Figure 1. Map of the proposed project location depicting proximity of features such as the SR 29, Bothe-Napa SP, Ritchie Creek, vineyards, and an agricultural basin (source Caltrans 2020 with additional tags from the Service).



Ritchie Creek originates approximately 3 miles southwest of the proposed project footprint on a forested ridge. To our knowledge, within the action area, the creek is a perennial drainage with strong flows following winter rain events and retraction to shallow flows and/or isolated pools within the creek bed by late summer/early fall. The hydrologic conditions of this non-regulated drainage are expected to fluctuate annually based on annual rain fall. Photographs provided by Caltrans indicate that water was present throughout the year in 2019 (Caltrans 2020). Based on the photographs, the creek bed has a medium-sized cobble substrate with scattered boulders of various sizes. Root wads extend into the creek bed, as do blackberry and other ground cover along the bank. Undercut banks are visible in the low flow photographs (Caltrans 2020). The continual water presence, canopy coverage, and mild climate result in relatively moist conditions within and extending beyond the riparian zone. These conditions are evident with ferns along the water edges and observations of banana slugs, California slender salamander, Pacific giant salamanders, sculpin, and young-of-the-year steelhead within the action area and nearby

(www.inaturalist.org, C. Freeman, pers. comm., 2020). Caltrans observed fish, crayfish, and treefrogs in and around the water's edge (Caltrans 2020).

The riparian corridor for this blue line feature extends well beyond the action area, from its headwaters upstream within Bothe-Napa SP and its confluence with the Napa River, approximately 0.7 mile east of the existing bridge. As evident from aerial photography and photographs provided by Caltrans, the corridor within the proposed project area includes heavy canopy coverage, particularly within Bothe-Napa SP (Caltrans 2020). The passage under the bridge and the entirety of the riparian corridor provide a means of linkage amongst a matrix of land types. As part of their site investigations, Caltrans captured images of a great blue heron, common raccoon, and bobcat under the bridge (Caltrans 2020). They also observed black bear scat in the area (Caltrans 2020). The riparian corridor is likely of particular importance to wildlife downstream of the bridge, representing a narrow band of native vegetative cover and aquatic resources constricting through extensive agricultural development.

Typical of agricultural regions of northern California, various basins within and adjacent to action area are a likely source of aquatic habitat for a variety of local wildlife that now depend on such engineered features to support their life history. As seen in Figure 1, there is a large agricultural basin within the action area and within approximately 30 feet of the proposed project footprint, on the north side of SR 29. There are also two other large agricultural basins within 0.25 mile of the proposed project footprint.

The land adjacent to the proposed project is influenced by the use of the SR 29 transportation corridor. The SR 29 ROW includes several associated features such as vehicle pullouts, overhead utilities, road shoulders and landscape that is subject to regular maintenance. ROW maintenance along with modest traffic volume, traffic noise, exhaust, fluid leaks, invasive vegetation, herbicide drift, and the threat of animal-vehicle collision have an adverse effect on the function of the neighboring habitat for both common and listed wildlife. This parallel band of disturbance is commonly referred to as the "road effects zone." The outward extent of this zone can vary with factors such as topography and the sensitivity of a given species to those effects.

California Freshwater Shrimp

The action area is located within the range of the California freshwater shrimp. A map depicting the species' range is included in the Service's online profile for the species at <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=K01W#rangeInfo>. As stated in the species' recovery plan, the Service describes the Napa River, approximately 0.7 mile downstream of the proposed project footprint as being occupied by the California freshwater shrimp (Service 1998).

As described in the species' recovery plan, the upper Napa River includes an abundance of good habitat for the California freshwater shrimp but the species' distribution within the system is likely limited due to predation from non-native fishes (Service 1998). Development and agricultural practices have resulted in habitat loss and the associated discharge of pesticides and other pollutants into the Napa River are a baseline threat to the subject California freshwater shrimp population. However, the confined Napa River riparian corridor continues to provide adequate habitat for a host of native species, including rare species such as the California freshwater shrimp.

Baseline road effects for the California freshwater shrimp likely include hydrologic changes created by the in-creek bed components of the SR 29 bridge structure. One of the primary

purposes of the proposed project is to remove barriers to fish movement posed by the existing bridge structure. Less agile than salmonids, it is reasonable to conclude these barriers also present issues for California freshwater shrimp movement. Movement is important for the species to access resources, including areas of adequate inundation during times of fluctuating hydrologic conditions. As noted in the species' recovery plan, barriers to shrimp movement may result in the future extirpation of shrimp in streams and also may preclude expansion of shrimp into areas with suitable habitat (Service 1998). Removal of such movement barriers is one of the outlined recovery actions for the species (Service 1998).

Baseline road effects for the California freshwater shrimp also likely include water quality issues associated with SR 29. Structures such as the Ritchie Creek Bridge impede natural sediment and materials transport within streams. Another primary purpose of the proposed project is to ameliorate existing water quality by implementing modifications to the bridge structure and surrounding creek bed (Caltrans 2020). Other than sediment, the introduction of materials sourced from the SR 29 roadway and delivered to the creek via runoff or airborne means can negatively influence aquatic organisms within Ritchie Creek and the ecosystem processes they depend on. In a flowing system, toxins sourced from SR 29 can be transported long distances downstream, leading to the Napa River and out into the San Francisco Bay. Emphasizing the impact of roads on aquatic species, Tian et al. (2020) noted the contribution of toxins associated with road-derived tire rubber residues with salmon acute mortality. It is unlikely that such influences are limited to salmonids. Ingestion of toxins can be of particular concern for animals, such as the California freshwater shrimp, who are gill breathers that feed on particulate matter. Due to their sensitivity to pollutants, freshwater shrimp are considered valuable candidates for biomonitoring programs (De Bisthoven et al. 2006). Although not well studied specific to the California freshwater shrimp, other freshwater shrimp species have been shown to be susceptible to a variety of introduced toxins (Correa 1987, Shuhaimi-Othman et al. 2011, and De Bisthoven et al. 2006). Addressing water quality issues is included in recovery actions outlined for the California freshwater shrimp (Service 1998).

The Ritchie Creek system includes California freshwater shrimp predators, such as newts, salamanders, steelhead, and sculpin. These predators are not uncommon in occupied California freshwater shrimp habitat. The existing fish barrier may hinder native and non-native fish species that could prey upon the listed shrimp from moving upstream.

The California freshwater shrimp has been observed and collected in the Napa River, approximately 5 river miles upstream of the proposed project, within the limits of the City of Calistoga (CNDDDB California freshwater shrimp occurrence #11, CDFW 2020). Being within Calistoga, this segment of the Napa River is less than pristine, with significant channelization, runoff from city streets, and the accumulation of refuse. Yet a population of the species persists. Caltrans captured and moved the listed shrimp when completing work on the SR 29 Napa River Bridge Scour Replacement Project (Service file #:08ESMF00-2014-F-0555-2) in 2018 and found the species within the action area for that project as recently as October 2020, as part of Caltrans' ten year post-construction monitoring plan (Caltrans 2021). As a tributary to the Napa River, habitat within Ritchie Creek has connectivity with the confirmed occupancy within Calistoga.

Caltrans determined the action area includes habitat features commonly associated with the species occupancy and life history. These include in-stream pools and areas of slow-moving water with undercut banks, overhanging vegetation, submerged rocks, roots, tree limbs, and other debris. Based on provided photography, the Service concurred with Caltrans' assessment of

the habitat's potential to provide occupancy for the California freshwater shrimp. The proposed project will include dewatering of areas with these habitat features.

The Service believes that it is reasonable to conclude that the California freshwater shrimp may occur within the action area because: (1) the project is located within the species' range and current distribution; (2) Ritchie Creek has connectivity with recorded occupied habitat within the Napa River; (3) there are habitat features within the construction footprint and the action area that provide the unique microhabitat associated with the species' life history; and (4) the biology and ecology of the animal.

California Red-Legged Frog

The action area is located within the range of the California red-legged frog. A map depicting the species' range is included in the Service's online profile for the species at <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=D02D#rangeInfo>. The proposed project is also within California Red-Legged Frog Recovery Unit 3 (North San Francisco Bay/North Coast) (Service 2002).

Much of Napa County is rural with limited development. Commonly, the non-developed areas of rolling hills, grasslands, and forest lands of the Napa Valley are either grazed by livestock, in vineyard production, or designated open space/parklands. There is an abundance of California red-legged frog habitat in Napa County but few recorded observations. This is understandable, given the high quantity of suitable habitat, including potential breeding ponds, being located on private property.

Caltrans did not complete standardized or protocol surveys for the California red-legged frog as part of their assessment. However, the California Natural Diversity Database (CNDDDB) includes a historic record of the listed frog, approximately 3 miles northwest of the proposed project footprint, within the City of Calistoga [CNDDDB California red-legged frog occurrence #1601, California Department of Fish and Wildlife (CDFW) 2020]. The Napa County Resource Conservation District (NCRCD) also informed the Service of the observation of California red-legged frogs in a vineyard pond in 2010, approximately 3 miles south of the proposed project footprint (NCRCD 2010). Given the high habitat qualities, primarily along the Mill Creek and Ritchie Creek riparian corridors, California SP has assumed presence of the California red-legged frog within Bothe-Napa State Park when consulting on past projects (Freeman, C., pers. comm., 2020a).

The action area includes aquatic/riverine, riparian, and upland habitat features that provide the life history needs of the species. The slow-moving stream, undercut banks, dense riparian vegetation, and debris for California red-legged frog cover and escape. Both the riverine and riparian upland areas are suitable foraging and dispersal habitat for the species. There is potential breeding habitat in nearby agricultural basins. Given the proximity of these resources, the California red-legged frog has the potential to be encountered throughout the proposed project footprint throughout the proposed construction schedule.

SR 29 is likely a fragmenting feature for upland connectivity, not due to physical barriers but from road mortality. Although most crossing attempts are likely successful, over time the compounded mortality can have a significant effect on population viability as the integrity of the larger population is disrupted and the recovery goals for the species in the North San Francisco Bay/North Coast Recovery Unit are compromised (Service 2002; Fahrig et al. 1995, Van Gelder 1973; Cooke 1995; Vos and Chardon 1998; and Carr and Fahrig 2001).

A spectrum of typical road effects are likely to negatively influence the suitability of the California red-legged frog habitat in and adjacent to the proposed project footprint as well as the behavior of the species within their respective road effects zone. The road effects zone applies to the California red-legged frog and in this case, road mortality is a risk for frogs that attempt to cross or otherwise enter the ROW. Based on our review of mapping and drainage crossings identified with aerial photography, we assume there are few suitable road undercrossings for frogs within the action area. Paired with the risk of mortality associated with over-pavement movements, SR 29 is likely a semi-permeable barrier to California red-legged frog movement. These baseline conditions likely create a risk and an influence for the California red-legged frog that diminishes with distance from these roadways.

As discussed relative to the California freshwater shrimp, the California red-legged frog is also likely affected by the baseline water quality within the action area. Like many other species with aquatic life stages and life histories, frog species are susceptible to introduced toxins. As noted by Bridges (1997 and 2000), toxins can affect their growth, development, and behavior.

Evening head lighting from passing vehicles likely elicit a response from California red-legged frogs approaching SR 29. As documented for other amphibian species, vehicle lights likely result in a “freeze” response and/or disorientation that greatly increases the risk of California red-legged frogs encountering collision with passing vehicles (Mazerolee et al. 2005). Paved surfaces absorb and reflect heat, creating elevated heat “islands”. It is also likely that noxious weeds are introduced or spread to the SR 29 ROW and surrounding environment through deposition from passing vehicles.

Adult California red-legged frogs are highly mobile and have been documented to move more than two miles over upland habitat (Bulger et al. 2003). The frog habitat within the action area has direct connectivity with suitable habitat adjacent to the project site and is well within the feasible movement distance to potential breeding locations. Vertical barriers can limit or prevent passage, but California red-legged frogs are not adverse to steep topography and could move back and forth between the action area and nearby ponds in the vicinity by way of vineyards, woodland, and riparian habitat.

With potential breeding habitat on the north side of the roadway and high quality riparian and upland habitat on the south side, California red-legged frogs would be expected to be moving across SR 29 to access these resources. The existing bridge likely provides suitable safe passage for the California red-legged frog under SR 29. Frogs may be unintentionally washed downstream through the culvert during high flows and otherwise make more determined movements to either side of SR 29. Despite the availability of safe passage, a wide variety of animals, including amphibians, have been shown to move overland across roads unless barriers are created to limit this pathway and direct them towards the safer route. Therefore, there is potential that much of the local California red-legged frog movements across SR 29 would most likely take place over the road surface, exposing them to risk. Without a road mortality study or movement analysis it is difficult to determine the “hot spots” for red-legged frog movement across SR 29, and hence where increased road mortality risk would occur. Little roadkill data is available for this section of SR 29 on the University of California at Davis Road Ecology Center’s online *California Roadkill Observation System* (<http://www.wildlifecrossing.net/california/>).

The Ritchie Creek system includes California red-legged frog predators, such as raccoon, bobcat, grey fox, egrets, herons, and various fishes. These predators are not uncommon in occupied

California red-legged frog habitat. The existing fish barrier may hinder native and non-native fish species that could prey upon the listed frog from moving upstream. The Service believes that the California red-legged frog is reasonably certain to occur within the action area due to: (1) the project being located within the species' range; (2) suitable upland habitat for refuge, foraging, and movement within the action area; (3) suitable aquatic habitat for refuge, foraging, movement, and breeding within the action area; (4) the ability of the animal to move long distances; and (5) the biology and ecology of the animal.

Effects of the Action

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A *consequence* is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

The effects of the proposed project include those effects occurring within the action area during and following construction of the proposed project. For this proposed project, effects will be primarily associated with vegetation clearing needed to create temporary access, the construction of the temporary bridge, and the habitat improvement activities within creek bed associated with fish passage issues. The effects of habitat loss/degradation were analyzed based on the term of the loss, restoration potential, and the associated changes to functional value. As a result, project effects were characterized as permanent or temporary. *Permanent habitat loss/degradation* was defined as those areas where baseline ecological function for the California freshwater shrimp and California red-legged frog, and the ecological processes that they depend on, have been lost or significantly reduced. According to Caltrans, permanent effects will be limited to the in-kind replacement of the existing hardscape associated with the Ritchie Creek Bridge (approximately 0.033 acre) (Jessica Thaggard, pers. comm., 2020).

Temporary habitat loss was considered for any landscape cover that will be restored to baseline habitat values for the California freshwater shrimp and California red-legged frog within one year following the initial disturbance. Based on the link to the successful restoration timeline, the temporary habitat loss category typically applies to habitat types such as creek beds or those dominated by annual plant species or other situations that can become quickly established. Caltrans estimated that the proposed activities will result in the temporary habitat loss of 0.14 acre of aquatic/riverine habitat associated with in-creek work needed for bridge replacement, fish passage barrier removal activities and associated creek bed improvements, and final restoration activities (Jessica Thaggard, pers. comm., 2020). Caltrans also estimates that 0.74 acre of riparian habitat will be affected as a result of establishment and use of temporary access and workspace, construction and dismantling of the temporary bridge, and creek bed improvements. These described activities will require the pruning and removal of trees, shrubs, and other woody and herbaceous vegetation that provide habitat values for the California freshwater shrimp and California red-legged frog. Caltrans plans to complete activities in these areas and have replacement plantings in place within less than one year following the initial disturbance.

Effects to woody vegetation components of the riparian habitat may be better described as being subjected to *prolonged temporary habitat loss*. Due to the presence of shrubs, trees, vines, and other perennial vegetation within the temporary work area, restoration efforts will take greater than one year to be successfully restored to baseline ecological values. The majority of the

replaced woody vegetation cover will not reach baseline ecological values for five or more years into the restoration effort. Despite the length of time needed to reach baseline, in many cases, areas subject to restoration can provide functional habitat for subject species in less than one year. For instance, the lower canopy and forest floor may be occupied by young plantings and annual vegetation growth during the initial phase of restoration. This condition will likely provide some functional ecological value in terms of refugia for the California freshwater shrimp and California red-legged frog, as well as forage, and moisture regulation for the California red-legged frog and its prey. The adverse effects due to noise, vibration, and visual disturbance will also be limited to the project construction phase.

Caltrans proposes to minimize construction related effects by implementing the *Conservation Measures* included in the *Description of the Proposed Action* section of this consultation. Effective implementation of *Conservation Measures* will likely minimize effects to the California freshwater shrimp and California red-legged frog during construction, but incidental take is still likely to occur. Therefore, the proposed project has the potential to result in a variety of adverse effects to this listed species.

Construction-Related Effects

Ground-disturbing construction activities, as well as equipment staging and the preparation, use, and restoration of workspace could result in killing, injuring, and disrupting adult and juvenile California red-legged frogs in the action area. Similar risks to the California freshwater shrimp will likely be limited to in creek work activities.

Vegetation clearing will daylight previously shaded and vegetated areas, likely changing the microclimate below by increasing exposure and decreasing moisture retention in the soil and on vegetation. Removal of vegetation extending into the creek channel would affect the available cover sites for the California freshwater shrimp. For the California red-legged frog, vegetation removal could affect movement, prey availability, and available cover sites. Removal of understory vegetation will result in the loss of foraging habitat and cover from predators and the elements. The ground disturbance associated with vegetation removal may result in exposure, stranding, crushing, maiming, or otherwise disturbing the California red-legged frog. The noise and vibration associated with the vegetation removal will be disruptive and may result in California red-legged frogs avoiding the action area, therefore modifying their behavior and creating a barrier to resource areas. Noise and vibration may also result in California red-legged frogs taking cover in inconspicuous areas rather than fleeing potential harm. This will make them more difficult to find, avoid, and rescue from harm's way.

Educating project personnel will encourage compliance with the conservation measures and increase the possibility that California freshwater shrimp and California red-legged frogs in the work area will be identified and addressed appropriately for avoidance, if encountered. Worker education is limited by the effectiveness of the presentation and the willingness of the construction personnel to participate in compliance.

Pre-construction surveys by a Service-Approved Biological Monitor will assist in clearing California freshwater shrimp and California red-legged frogs from the work areas prior to the introduction of a potential construction-related threat. Biological clearance of work areas prior to the start of each day's work and during construction will increase the chances of identifying frogs in the work area that will be susceptible to injury. Biological clearance of work areas is limited by the experience of the biologist, the complexity and abundance of potential cover sites,

the small size and inconspicuous nature of the species, and the challenges of completing a thorough clearance given the construction schedule.

Despite being “cleared” prior to construction, California red-legged frogs can continue to move into the work site undetected. Frogs could routinely move through as well as back and forth from the adjacent upland. Animals may be actively moving around, through, or within the work area before as well as when work is taking place. This places greater emphasis on thorough biological clearance of work areas and under staged equipment and materials prior to the start of each day’s activities.

Covering steep-walled excavations should minimize the potential for the California red-legged frog to be affected by predation, desiccation, entombment, or starvation. Proper trash disposal is often difficult to enforce and is a common non-compliance issue. Improperly disposed edible trash could attract predators, such as raccoons, crows, and ravens, to the site, which could subsequently prey on the listed frog.

Discovery, capture, and relocation of individual California freshwater shrimp and California red-legged frogs may avoid injury or mortality due to construction activities; however, capturing and handling animals may result in stress and/or inadvertent injury during handling, containment, and transport.

California freshwater shrimp and California red-legged frogs, and their prey could also be affected by contamination due to chemical or sediment discharge. For the frog, exposure pathways could include inhalation, dermal contact, direct ingestion, or secondary ingestion of contaminated soil, plants or prey species. For both species, exposure to contaminants could cause short- or long-term effects, possibly resulting in reduced productivity or mortality. However, Caltrans proposes to reduce these risks by implementing BMPs and the SWPPP that consist of refueling, oiling, or cleaning of vehicles and equipment a minimum of 50 feet from riparian and aquatic areas; installing coir rolls, straw wattles and/or silt fencing to capture sediment and prevent runoff or other harmful chemicals from entering the aquatic habitat; and locating staging, storage and parking areas away from aquatic habitat. Caltrans’ commitment to use erosion control devices other than monofilament should be effective in avoiding the associated risk of frog entrapment that can result in death by predation, starvation, or desiccation (Stuart et al. 2001).

The completed project is unlikely to increase the local risk of California red-legged frog mortality from vehicle collision. The removal of the fish barrier and associated creek restoration may improve habitat conditions for both the California freshwater shrimp and California red-legged frog. Without the addition of barriers to keep frogs from entering the roadway, the completed project is unlikely to enhance wildlife use of safe passage under SR 29.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-federal actions that are reasonably certain to occur in the action area of the proposed project.

Conclusion

After reviewing the current status of the California freshwater shrimp and California red-legged frog, the environmental baseline for the action area, the effects of the proposed SR 29 Fish Passage Barrier Removal and Ritchie Creek Bridge Replacement Project, and the cumulative effects, it is the Service's biological opinion that the SR 29 Fish Passage Barrier Removal and Ritchie Creek Bridge Replacement Project, as proposed, is not likely to jeopardize the continued existence of the California freshwater shrimp and California red-legged frog. The Service reached this conclusion because the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of all potential cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species based on the following:

- 1) Adverse effects to the California freshwater shrimp and California red-legged frog will be reduced by implementation of the described *Conservation Measures*.
- 2) Permanent effects will be limited to the in-kind replacement of the Ritchie Creek and will not result in additional hardscape. Temporary disturbance to approximately 0.14 acre of riverine and 0.74 acre of riparian habitat will be completed within less than one year and restoration of habitat will be implemented in less than one year following the initial disturbance. This degree of loss of available habitat is not expected to result in an appreciable affect to the species' overall recovery potential or to the necessary life history components needed to support the local population.
- 3) The primary purpose of the temporary disturbance is to complete habitat modifications intended to improve the long-term quality of riverine system, which is expected to benefit the California freshwater shrimp and California red-legged frog.
- 4) The habitat loss/degradation is located within a corridor subject to baseline degradation associated with the use and maintenance of SR 29.
- 5) The handling and relocation of all the California freshwater shrimp and California red-legged frogs as a conservation measure is not anticipated to substantially increase their risk of mortality or substantially interfere with their foraging, sheltering, and breeding activities.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by Service regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations as an act which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to

and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this *Incidental Take Statement*.

The measures described below are non-discretionary, and must be undertaken by Caltrans so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

Amount or Extent of Take

California Freshwater Shrimp

The Service anticipates that incidental take of the California freshwater shrimp will be difficult to detect because of its cryptic appearance and behavior, and the finding of an injured or dead individual is unlikely because of its relatively small body size. Losses of this species also may be difficult to quantify due to seasonal fluctuations in numbers, random environmental events, or additional environmental disturbances. There is a reasonable likelihood of harm, injury and mortality as a result of the proposed construction activities, and capture and relocation efforts.

The Service is authorizing take incidental to the proposed action as the non-lethal harm of all California freshwater shrimp within the action area, and the capture of all California freshwater shrimp within the approximately 0.14 acre of riverine habitat within the project footprint.

Since the Service cannot estimate the number of individual California freshwater shrimp that will be incidentally taken for the reasons listed above, the Service is providing a mechanism to quantify when take would be considered to be exceeded as a result of implementing the proposed project. The Service will use detection of one (1) dead or injured California freshwater shrimp to determine when take is exceeded due to injury or mortality. By setting a threshold of one (1) individual detected, the Service has set an incidental take limit that is measurable, irrefutable, and indicates that the species are being affected at a level where conservation measures and project implementation need to be evaluated and possibly modified. The Service concludes that incidental take of the California freshwater shrimp will be considered exceeded if one (1) dead or injured individual California freshwater shrimp is detected by biological monitors or other project personnel. The Service is also authorizing incidental take relative to the non-lethal harm of all California freshwater shrimp within the 0.14 acre of riverine habitat within the project footprint, associated with capture and relocation.

California Red-Legged Frog

The Service anticipates that incidental take of the California red-legged frog will be difficult to detect due to their small size, wariness, and cryptic nature. The project footprint includes vegetative cover, cobble and boulder piles, undercut banks, root wads, and debris which provide cover for the California red-legged frog. Furthermore, finding an injured or dead California red-legged frog is unlikely due to their relatively small body size, rapid carcass deterioration, and likelihood that the remains will be removed by a scavenger or indistinguishable amongst the disturbed soil and debris. Losses of the California red-legged frog may also be difficult to

quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. There is a reasonable likelihood of harm, injury and mortality as a result of the proposed construction activities, and capture and relocation efforts.

The Service is authorizing take incidental to the proposed action as the non-lethal harm of all California red-legged frogs within the action area, and the capture of all California red-legged frogs within the project footprint.

Since the Service cannot estimate the number of individual California red-legged frogs that will be incidentally taken for the reasons listed, the Service is providing a mechanism to quantify when take would be considered to be exceeded as a result of implementing the proposed project. The Service will use detection of more than one (1) dead or injured juvenile or adult California red-legged frog to determine when take is exceeded due to injury or mortality. By setting a threshold of more than one (1) individual detected, the Service has set an incidental take limit that is measurable, irrefutable, and indicates that the species is being affected at a level where conservation measures and project implementation need to be evaluated and possibly modified. The Service concludes that incidental take of the California red-legged frog will be considered exceeded if more than one (1) dead or injured individual juvenile or adult California red-legged frog is detected by the Service-Approved Biological Monitor or other proposed project personnel. The Service is also authorizing incidental take relative to the non-lethal harm and capture of all juvenile or adult California red-legged frogs within the 3.09 acres of suitable habitat disturbed within the action area.

Upon implementation of the following reasonable and prudent measures, incidental take of the California freshwater shrimp and California red-legged frog associated with the SR 29 Fish Passage Barrier Removal and Ritchie Creek Bridge Replacement Project will become exempt from the prohibitions described in section 9 of the Act. No other forms of take are exempted under this opinion.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

Reasonable and Prudent Measure

All necessary and appropriate measures to avoid or minimize effects on the California freshwater shrimp and California red-legged frog resulting from implementation of the proposed project have been incorporated into the project's proposed conservation measures. Therefore, the Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the California freshwater shrimp and California red-legged frog:

- 1) All conservation measures, as described in the *Description of the Proposed Action* section of this biological opinion, shall be fully implemented and adhered to. Further, this reasonable and prudent measure shall be supplemented by the *Terms and Conditions* below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. Caltrans shall include full implementation and adherence to the conservation measures as a condition of any permit or contract issued for the proposed project.
2. Caltrans shall include a copy of all relevant permits and this Biological Opinion within the construction bid package of the proposed project. The Resident Engineer or their designee shall be responsible for implementing the *Conservation Measures and Terms and Conditions* of this document.
3. Approval requests for Service-Approved Biological Monitors shall include, at a minimum: (1) relevant education; (2) relevant training concerning California freshwater shrimp and California red-legged frog identification, survey techniques, handling individuals of different age classes, and handling of different life stages by a permitted biologist or recognized species expert authorized for such activities by the Service; (3) a summary of field experience conducting requested activities (to include project/research information); (4) a summary of Biological Opinions under which they were authorized to work with the California freshwater shrimp and California red-legged frog and at what level (such as construction monitoring versus handling), this will also include the names and qualifications of persons under which the work was supervised as well as the amount of work experience on the actual project; (5) a list of *Federal Recovery Permits [10(a)1(A)]* held or under which they are authorized to work with the California red-legged frog (to include permit number, authorized activities, and name of permit holder); and (6) any relevant professional references with contact information. No project construction will begin until Caltrans has received written Service approval for biologists to conduct specified activities.
4. Each California red-legged frog encounter shall be treated on a case-by-case basis in coordination with the Service but the general guidance is as follows: (1) leave the non-injured animal if it is not in danger or (2) move the animal to a nearby location if it is in danger.

These two options are further described as follows:

When a California red-legged frog is encountered in the action area, the first priority is to stop all activities in the surrounding area that have the potential to result in the harm, harassment, injury, or death of the individual. Then the monitor needs to assess the situation in order to select a course of action that will minimize adverse effects to the individual. Contact the Service once the site is secure. The contacts for this situation are Ryan Olah (ryan_olah@fws.gov) or John Cleckler (john_cleckler@fws.gov). They can also be reached at (916) 414-6623 and (916) 414-6639, respectively. Contact the Service prior to the start of construction to confirm the status of this contact information.

The first priority is to avoid contact with the animal and allow it to move out of the proposed project footprint and hazardous situation on its own to a safe location. The

animal should not be picked up and moved because it is not moving fast enough or it is inconvenient for the construction schedule. This guidance only applies to situations where an animal is encountered on the move during conditions that make their upland travel feasible. This does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the life history of the California red-legged frog should they move outside the construction footprint.

Avoidance is the preferred option if the animal is not moving and is using aquatic habitat or is within some sort of burrow or other refugia. The area should be well marked for avoidance by construction, and a Service-Approved Biological Monitor should be assigned to the area when work is taking place nearby.

The animal should be captured and moved when it is the only option to prevent its death or injury.

If appropriate habitat is located immediately adjacent to the capture location, then the preferred option is short distance relocation to that habitat. This must be coordinated with the Service but the general guidance is the California red-legged frog should not be moved outside of the area it would have traveled on its own. Captured frogs should be released as close to their capture location as feasible for their continued safety. Under no circumstances should a frog be relocated to another property without the owner's written permission. It is Caltrans' responsibility to arrange for that permission.

The release must be coordinated with the Service and will depend on where the individual was found and the opportunities for nearby release. In most situations the release location is likely to be into the mouth of a small burrow or other suitable refugia and in certain circumstances pools without non-native predators may be suitable.

Only Service-Approved Biological Monitors for the proposed project can capture California red-legged frogs. Nets or bare hands may be used to capture California red-legged frogs. Soaps, oils, creams, lotions, repellents, or solvents of any sort cannot be used on hands within two hours before and during periods when they are capturing and relocating California red-legged frogs. To avoid transferring disease or pathogens between sites during the course of surveys or handling of amphibians, Service-approved biologists must use the following guidance for disinfecting equipment and clothing. These recommendations are adapted from the *Declining Amphibian Population Task Force's Code* (<http://www.open.ac.uk/daptf/>)

- i. All dirt and debris, including mud, snails, plant material (including fruits and seeds), and algae, must be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water and/or an amphibian. Cleaned items shall be rinsed with fresh water before leaving each site.
- ii. Boots, nets, traps, etc., must then be scrubbed with either a 70 percent ethanol solution, a bleach solution (0.5 to 1.0 cup of bleach to 1.0 gallon of water), QUAT 128 (quaternary ammonium, use 1:60 dilution), or a 6 percent sodium hypochlorite 3 solution and rinsed clean with water between sites. Avoid

cleaning equipment in the immediate vicinity of a pond or wetland. All traces of the disinfectant must be removed before entering the next aquatic habitat.

- iii. Used cleaning materials (liquids, etc.) must be disposed of safely, and if necessary, taken back to the lab for proper disposal.
 - iv. Service-Approved Biological Monitors must limit the duration of handling and captivity. While in captivity, California red-legged frogs shall be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting should not contain any standing water.
5. Caltrans shall provide a final TCDS plan, Ritchie Creek restoration plan, and post-construction restoration and revegetation plan for the proposed project to be reviewed and approved by the Service no later than sixty (60) calendar days prior to the initial groundbreaking at the proposed project site. The plan will include, but will not be limited to: schedule, methodology, a list of the seed mixes and container plants, plant material source, irrigation, maintenance schedule, monitoring program, success criteria, control of invasive, noxious weeds, and remediation and adaptive management.

Monitoring:

- a. For those components of the action that will result in habitat degradation or modification whereby incidental take in the form of harm is anticipated, Caltrans shall provide a precise accounting of the total acreage of habitat impacted to the Service after completion of construction.
- b. Caltrans shall immediately contact the Service's Sacramento Fish and Wildlife Office (SFWO) at (916) 414-6623 to report direct encounters between listed species and project workers and their equipment whereby incidental take in the form of harm, injury, or death occurs. If the encounter occurs after normal working hours, Caltrans shall contact the SFWO at the earliest possible opportunity the next working day. When injured or killed individuals of the listed species are found, Caltrans shall follow the steps outlined in the *Salvage and Disposition of Individuals* section below.
- c. For those components of the action that will require the capture and relocation of any listed species, Caltrans shall immediately contact the SFWO at (916) 414-6623 to report the action. If capture and relocation need to occur after normal working hours, Caltrans shall contact the SFWO at the earliest possible opportunity the next working day.
- d. Sightings of any listed or sensitive animal species shall be reported to the *California Natural Diversity Database* (<https://wildlife.ca.gov/Data/CNDDDB>).
- e. Construction compliance reports shall be addressed to the Coast Bay Division Chief of the Endangered Species Program at the SFWO.
- f. Caltrans shall submit post-construction compliance reports prepared by the Service-Approved Biological Monitor to the Service within 60 calendar days following completion of each construction season or within 60 calendar days of any break in construction activity lasting more than 60 calendar days. This report shall detail (1)

dates that relevant project activities occurred; (2) pertinent information concerning the success of the proposed project in implementing avoidance and minimization measures; (3) an explanation of failure to meet such measures, if any; (4) known project effects on the California freshwater shrimp and California red-legged frog; (5) occurrences of incidental take of any listed species; (6) documentation of employee environmental education; and (7) other pertinent information.

Salvage and Disposition of Individuals:

Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-Approved Biological Monitor. Dead individuals must be sealed in a resealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it, and the bag containing the specimen frozen in a freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact person is the Coast Bay Division Chief of the Endangered Species Program at the SFWO at (916) 414-6623.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends the following actions:

- 1) Caltrans conducted camera trap surveys under the Ritchie Creek Bridge as part of their baseline studies. The Service recommends that a similar camera trap survey be conducted following construction.
- 2) Caltrans District 4 should work with the Service to develop a conservation strategy that would identify the current safe passage potential along San Francisco Bay Area highways and the areas where safe passage for wildlife could be enhanced or established.
- 3) Caltrans should assist the Service in implementing recovery actions identified in the *California Freshwater Shrimp Recovery Plan* (Service 1998) and the *Recovery Plan for the California Red-legged Frog* (Service 2002).
- 4) Caltrans should consider participating in the planning for a regional habitat conservation plan for the California freshwater shrimp and California red-legged frog, other listed species, and special-status species.
- 5) Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the California freshwater shrimp and California red-legged frog, and other appropriate species. Such banking systems also could possibly be utilized for other required mitigation (i.e., seasonal wetlands, riparian habitats, etc.) where appropriate. Efforts should be made to preserve habitat along roadways in association with wildlife crossings.
- 6) Roadways can constitute a major barrier to critical wildlife movement. Therefore, Caltrans should incorporate culverts, tunnels, or bridges on highways and other roadways

that allow safe passage by the California freshwater shrimp, California red-legged frog, other listed animals, and wildlife. Photographs, plans, and other information should be incorporated into the BAs if “wildlife friendly” crossings are incorporated into projects. Barriers to movement to aquatic species, such as the California freshwater shrimp should be removed when possible. For terrestrial species, such as the California red-legged frog, efforts should be made to establish upland culverts designed specifically for wildlife movement rather than accommodations for hydrology. Transportation agencies should also acknowledge the value of enhancing human safety by providing safe passage for wildlife in their early project design.

- 7) Adequate wildlife road mortality data is a critical factor in assessing where wildlife and the travelling public are most at risk due to animal-vehicle collision along California’s highways. Caltrans should make its wildlife road mortality data available or provide it to a database service such as the *California Roadkill Observation System* (<https://www.wildlifecrossing.net/california/>) to enhance road ecology-based planning, add to our resources of “best available science”, and increase public safety.
- 8) Caltrans should ensure that their container plants used for restoration are sourced from nurseries utilizing the Working Group for Phytophthoras in Native Habitats’ *Guidelines to Minimize Phytophthora Pathogens in Restoration Nurseries* (available at http://www.suddenoakdeath.org/wp-content/uploads/2016/04/Restoration.Nsy_Guidelines.final_.092216.pdf).
- 9) As a member of the Monarch Joint Venture, the Service encourages Caltrans to implement conservation measures and other actions outlined in the 2020 Nationwide Candidate Conservation Agreement for Monarch Butterfly on Energy and Transportation Lands (https://www.fws.gov/savethemonarch/pdfs/Final_CCAA_040720_Fully%20Executed.pdf). In December 2020, the Service determined that the monarch was warranted for listing under the Act (<https://www.federalregister.gov/documents/2020/12/17/2020-27523/endangered-and-threatened-wildlife-and-plants-12-month-finding-for-the-monarch-butterfly>). However, it will remain a candidate species for future listing due to previous listing priorities. Caltrans is encouraged to analyze the effects of future proposed actions on the monarch and request a conference opinion when appropriate. This is particularly advisable for proposed projects projected to begin construction by 2023.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the SR 29 Fish Passage Barrier Removal and Ritchie Creek Bridge Replacement Project. As provided in 50 CFR §402.16(a), reinitiation of consultation is required and shall be requested by the federal agency or by the Service where discretionary federal involvement or control over the action has been retained or is authorized by law, and:

- 1) If the amount or extent of taking specified in the incidental take statement is exceeded;

- 2) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
- 3) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or written concurrence, or
- 4) If a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this biological opinion, please contact John Cleckler, Caltrans Liaison, john_cleckler@fws.gov, (916) 414-6639 or Ryan Olah, Coast Bay Division Chief, ryan_olah@fws.gov, (916) 414-6623, at the letterhead address, by telephone, or by e-mail.

Sincerely,

A handwritten signature in blue ink that reads "Michael Fris". The signature is written in a cursive, flowing style.

Michael Fris
Field Supervisor

cc:

Robert Stanley, California Department of Fish and Wildlife, Fairfield, California
Robert Blizard and Jessica Thaggard, Caltrans District 4, Oakland, California

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PERSONAL COMMUNICATIONS

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- Freeman, C. 2020b. California State Parks. Phone conversation with John Cleckler, U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office. November 30, 2020.
- Gordon, R. and J. Bennett. E-mail communication from Rebecca Gordon and Jesse Bennett, Service, Carlsbad FWO, to Valerie Hentges, Service, Sacramento FWO, dated October 12, 2017.
- Mabe, J. 2017. Phone conversation from Jeff Mabe, U.S. Forest Service, Eldorado National Forest, to Ian Vogel, Service, Sacramento FWO, dated June 6, 2017.
- Jessica Thaggard. 2020. E-mail communication with John Cleckler, U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office. December 16, 2020
- Yang, D. and J. Martin. 2017. Electronic mail communication from Dou-Shuan Yang and Jacob Martin, Service, Ventura FWO, to Valerie Hentges, Service, Sacramento FWO, dated July 5, 2017.

Appendix K Response to Comment Letter

Responses to Comments: Agency

COMMENT: California Department of Fish and Wildlife-Bay Delta Region

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State of California
Department of Fish and Wildlife



Memorandum

Date: December 28, 2020

To: Mr. Nathan Roberts
California Department of Transportation
District 4
111 Grand Street, MS-8B
Oakland, CA 94612
Nathan.Roberts@dot.ca.gov

Governor's Office of Planning & Research

Dec 29 2020

STATE CLEARINGHOUSE

DocuSigned by:

Handwritten signature of Greg Erickson in black ink.

From: Mr. Gregg Erickson, Regional Manager
California Department of Fish and Wildlife-Bay Delta Region, 2825 Cordelia Road, Suite 100, Fairfield, CA 94534

Subject: Ritchie Creek Bridge Replacement Project for Fish Passage Improvement, Initial Study/Mitigated Negative Declaration, SCH No. 2020120007, Napa County

The California Department of Fish and Wildlife (CDFW) has reviewed the proposed draft Initial Study/Mitigated Negative Declaration (IS/MND) for the Ritchie Creek Bridge Replacement Project for Fish Passage Improvement (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹ CDFW is submitting comments on the IS/MND as a means to inform the California Department of Transportation (Caltrans) as the Lead Agency, of our concerns regarding potentially significant impacts to sensitive resources associated with the proposed Project.

CDFW is a Trustee Agency with responsibility under CEQA §15386 for commenting on projects that could impact fish, plant and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as the California Endangered Species Act (CESA) Permit, the Native Plant Protection Act, the Lake and Streambed Alteration (LSA) Agreement and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources. Pursuant to our jurisdiction, CDFW has the following concerns, comments, and recommendations regarding the Project.

Project Location and Description

Caltrans, as the lead agency, proposes to replace the existing Ritchie Creek Bridge (Bridge No. 21-0057) with a new bridge at post mile (PM) 33.13 on State Route 29 (SR-29) southeast of the City of Calistoga, in Napa County, California.

The existing Ritchie Creek Bridge is 16.4 feet long and 43.3 feet wide with two 12-foot travel lanes and 8-foot shoulders in each direction with concrete barrier rails. The new bridge would be 35 feet long and 44 feet wide with a 12-foot travel lane and 8-foot

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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shoulder in each direction. A two-lane temporary detour bridge will be constructed parallel to the northbound lane of the existing bridge to detour traffic during construction. The temporary detour bridge will be constructed outside the Caltrans right of way and would include Type K rails. The Project would also involve temporary relocation of existing aboveground and underground utilities. The Project also proposes to improve fish passage. The existing bridge and the downstream concrete apron associated with a downstream culvert are classified as depth and jump barriers to adult and juvenile salmonids. During low flows, the water depth within Ritchie Creek can become impassable. The depth barrier within the culvert is due to the smooth, wide, and flat surface crossing; the jump barrier is the result of ongoing erosion and scouring over time at the concrete apron just downstream of the bridge crossing.

LAKE AND STREAMBED ALTERATION AGREEMENT

The Project has the potential to impact resources including mainstems, tributaries and floodplains associated with Ritchie Creek known to occur within the identified limits of the Project. If work is proposed that will impact the bed, bank, channel or riparian habitat, including the trimming or removal of trees and riparian vegetation please be advised that the proposed Project may be subject to LSA Notification. This includes impacts to drainage systems that connect to tributaries of main stem creeks and tributaries that occur within the Project Biological Study Area (BSA). CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et. seq., for or any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, bank or channel or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are generally subject to notification requirements.

CALIFORNIA ENDANGERED SPECIES ACT

Please be advised that a CESA Incidental Take Permit (ITP) must be obtained if the Project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the Project. Under CESA, take is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill." Issuance of an ITP is subject to CEQA documentation. If the Project will impact CESA-listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand the Project, and its alternative's (if applicable), significant impacts on the environment (CEQA Guidelines, §§15125 and 15360). CDFW recommends that the CEQA document prepared for the Project provide baseline habitat assessments for special-status plant, fish, and wildlife species located and potentially located within the Project area and

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surrounding lands, including all rare, threatened, or endangered species (CEQA Guidelines, §15380). Threatened, endangered, and other special-status species that are known to occur, or have the potential to occur in or near the Project site, include, but are not limited to:

- California freshwater shrimp (*Syncaris pacifica*), SE, FE
- Foothill yellow-legged frog (*Rana boylei*, northwest clade), SSC
- California red-legged frog (*Rana draytonii*), SSC, FT
- Townsend's big-eared bat (*Corynorhinus townsendii*), SSC
- Nesting birds

FE = Federally Endangered; FT = Federally Threatened; FC = Federal Candidate Species; SE = State Endangered; SFP = State Fully Protected; SSC = State Species of Special Concern

Habitat descriptions and species profiles should include information from multiple sources: aerial imagery, historical and recent survey data, field reconnaissance, scientific literature and reports, and findings from "positive occurrence" databases such as California Natural Diversity Database (CNDDDB). Based on the data and information from the habitat assessment, the CEQA document can then adequately assess which special-status species are likely to occur in the Project vicinity.

CDFW recommends that prior to Project implementation surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: <https://www.wildlife.ca.gov/Conservation/Survey-Protocols>.

COMMENTS AND RECOMMENDATIONS

CDFW acting as a Responsible Agency, has discretionary approval under CESA through issuance of a CESA ITP and LSA Agreement, as well as other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife resources. CDFW would like to thank you for preparing the IS/MND and CDFW recommends the following updates, avoidance and minimization measures be imposed as conditions of Project approval by the lead agency, Caltrans, to ensure all Project-related impacts are mitigated to below a level of significance under CEQA:

COMMENT 1: California Freshwater Shrimp (*Syncaris pacifica*)

Issue: Table 1-2 on page 1-17 of the IS/MND does not include in the list of potential authorizations an application for an ITP from CDFW for California freshwater shrimp, a species listed as endangered under CESA. Table 2.3-7; notes that the species has a moderate potential for presence and the Project may affect California freshwater shrimp habitat or is likely to adversely affect. Page 2-112 of the IS/MND, states California freshwater shrimp presence is likely due to on-site habitat conditions.

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A-1

Recommendation: CDFW recommends an application for an ITP for California freshwater shrimp is included on Table 1-2 on page 1-17 of the IS/MND in order to authorize take coverage for California freshwater shrimp, a species listed as endangered under CESA. All the species information noted in the IS/MND reinforces the concept that suitable habitat for the species is present on-site and the species may also be present at the Project location. CDFW also recommends incorporating freshwater shrimp habitat structures into the design of the restored channel in the form of willows or other vegetation plantings that can create vegetation that overhangs channel banks as suitable freshwater shrimp habitat.

A-2

COMMENT 2: Fish Passage Design Coordination

Issue: Page 1-12 of the IS/MND notes the elements of the fish passage design improvements includes grading 100 feet of the stream channel to a 2.5 percent slope that incorporates a roughened channel. It is unclear if design of the fish passage restoration elements, bridge placement and bridge construction are being developed in coordination with engineers from CDFW Conservation Engineering Branch and the National Marine Fisheries Service (NMFS) in order to ensure the best fish passage design is achieved.

Recommendation: CDFW recommends incorporation of a condition of approval in the IS/MND to engage in early coordination with the CDFW Conservation Engineering Branch and NMFS personnel to provide the proper review and analysis of the proposed bridge placement, bridge design and channel restoration design to accommodate fish passage at Ritchie Creek.

A-3

COMMENT 3: Temporary Creek Diversion System Pipe Material

Issue: Page 1-10 of the IS/MND notes the use of a temporary diversion system that incorporates a plastic diversion pipe into the design. Due to the location of this Project in Fire Hazard Severity Zones designated as high to very high by the California Department of Forestry and Fire Protection, there is a potential for fire to reach this site in upcoming seasons. There is a high to very high potential for the plastic diversion pipe noted in the diversion system to melt or burn. The melting or burning of the plastic diversion pipe could create unforeseen additional significant impacts through toxins being released into the creek system or from the inability to properly remove all the melted material from the creek. This could over time create unnecessary micro-plastic pollution in the system.

Recommendation: CDFW recommends the temporary creek diversion system is designed to utilize a corrugated metal pipe-based material that is not plastic or any derivative of such a material. Any permanent drainage system utilizing plastic-based material pipes must also be replaced with corrugated metal pipe or concrete reinforced metal pipe to avoid melting during extreme fire conditions.

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COMMENT 4: Light Impact Analysis and Discussion

Issue: The Project could increase artificial lighting through the replacement or installation of new artificial light sources. Artificial lighting often results in light pollution, which has the potential to significantly and adversely affect biological resources. Unlike the natural brightness created by the monthly cycle of the moon, the permanent and continuously powered lighting fixtures create an unnatural light regime that produces a constant light output. Continuous light output for 365 days a year can have a cumulatively significant impact on fish and wildlife populations.

Evidence the impact would be significant: Night lighting can disrupt the circadian rhythms of many species. Many wildlife species use photoperiod cues for communication (e.g., bird song; Miller 2006), determining when to begin foraging (Stone et al. 2009), behavior thermoregulation (Beiswenger 1977), and migration (Longcore and Rich 2004). Artificial night lighting has also been found to impact juvenile salmonid overwintering success by delaying the emergence of salmonids from benthic refugia and reducing their ability to feed during the winter (Contor and Griffith 1995).

Recommendation: The IS/MND should describe the type, quantity, location and specification outputs (in kelvin-scale and/or nanometers) of all proposed new and replacement artificial lighting installations for all proposed build alternatives. A comparison analysis amongst potential alternatives as it pertains to light pollution should be included in the draft IS/MND. To accomplish this, the draft IS/MND should provide an analysis of the current lighting regime known to be present on site as well as an analysis of the proposed changes in the lighting regime that will occur as a result of new or replacement lighting installations through the development and comparison of Isolux diagrams. The Isolux diagrams should illustrate the area and intensity over which artificial lighting will create additional light impacts over the natural landscape or aquatic habitat along the Project corridor. The draft IS/MND should also include a discussion in the Biological Resources section of the potentially significant impacts that could be created by increased permanent light installations or replacements or new installations to determine the extent of the impacts to rare, threatened, endangered, nocturnal and migratory species known to occur within the Project vicinity. CDFW recommends incorporating the following avoidance and minimization measures as conditions of approval to reduce potentially significant impacts:

Recommended Mitigation Measure 1: Light Impact Assessment and Avoidance

The lead agency shall be required to submit to natural resource agencies, 30 days prior to the initiation of construction Isolux Diagrams that note current light levels present during Pre-Project conditions and the predicted Project light levels that will be created upon completion of the Project. Within 60 days of Project completion the lead agency shall conduct a ground survey that compares predicated light levels with actual light levels achieved upon completion of the Project through comparison of Isolux diagrams. If an increase from the projected levels to the actual levels is discovered, additional

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avoidance, minimization or mitigation measures may be required in coordination with the natural resource agencies.

Recommended Mitigation Measure 2: Light Output Limits

All LED's or bulbs installed as a result of the Project shall be rated to emit or produce light at or under 2700 kelvin that results in the output of a warm white color spectrum.

Recommended Mitigation Measure 3: Vehicle Light Barriers

Solid concrete barriers at a minimum height of 3.5 feet should be installed in areas where they have the potential to reduce illumination from overhead lights and from vehicle lights into areas outside of the roadway. Barriers should only be utilized as a light pollution minimization measure if they do not create a significant barrier to wildlife movement. Additional barrier types should be employed when feasible, such as privacy slats into the spacing of cyclone fencing to create light barriers into areas outside the roadway.

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Recommended Mitigation Measure 4: Reflective Signs and Road Striping

Retro-reflectivity of signs and road striping should be implemented throughout the Project to increase visibility of roads to drivers and reduce the need for electrical lighting. Reflective highway markers have also been proven effective to reduce raptor collisions on highways in California's central valley if installed along highway verges and medians.

Recommended Mitigation Measure 5: Light Pole Modifications and Shielding

All light poles or sources of illumination that shall be new or replacement installations should be installed with the appropriate shielding to avoid excessive light pollution into natural landscapes or aquatic habitat with the Project corridor in coordination with the wildlife agencies. In addition, the light pole arm length and mast heights should be modified to site specific conditions to reduce excessive light spillage into natural landscapes or aquatic habitat within the Project corridor. In areas with sensitive natural landscapes or aquatic habitat the lead agency should also analyze and determine in the updated IS/MND if placing the light poles at non-standard intervals has the potential to further reduce the potential for excessive light pollution caused by decreasing the number of light output sources in sensitive areas.

CONCLUSION

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California's fish and wildlife resources. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

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Questions regarding this letter or further coordination should be directed to Mr. Robert Stanley, Senior Environmental Scientist (Specialist), at (707) 428-2093 or Robert.Stanley@wildlife.ca.gov; or Mr. Wesley Stokes, Senior Environmental Scientist (Supervisory), at (707) 339-6066 or Wesley.Stokes@wildlife.ca.gov.

cc: State Clearinghouse #2020120007

REFERENCES

- Beiswenger, R. E. 1977. Diet patterns of aggregative behavior in tadpoles of *Bufo americanus*, in relation to light and temperature. *Ecology* 58:98–108.
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- Longcore, T., and C. Rich. 2004. Ecological light pollution - Review. *Frontiers in Ecology and the Environment* 2:191–198.
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Response to California Department of Fish and Wildlife-Bay Delta Region

Response to Comment 1: California Freshwater Shrimp (*Syncaris pacifica*)

The California Department of Transportation (Caltrans) understands the commenter's recommendation to capture the need for an Incidental Take Permit under the California Endangered Species Act and incorporate freshwater shrimp habitat structures into the design of the restored channel. The Project will need an Incidental Take Permit for the California freshwater shrimp. Caltrans will submit a permit application to California Department of Fish and Wildlife (CDFW) after approval of the IS-MND/EA/FONSI. In response to this comment, Table 1-2, Permit or Approval Document and Approving Agency, was revised to indicate the need for an Incidental Take Permit after this IS-MND/EA/FONSI is approved.

Mitigation Measure BIO-1, Habitat enhancement for California freshwater shrimp, proposes to recreate beneficial habitat for the freshwater shrimp. In response to CDFW's comments, Mitigation Measure, BIO-1 was revised. The following underlined text is new and the strikeout text was deleted text from the revised mitigation measure:

MM BIO-1: Habitat enhancement for California freshwater shrimp (CFS). Caltrans ~~or its contractor~~ will incorporate the preferred habitat substrate vegetation such as willows, alders, or other vegetation plantings that can create vegetation that overhangs channel banks for CFS into the on-site Habitat Mitigation and Monitoring Plan (HMMP). ~~to recreate beneficial habitat for this species and compensate for temporary habitat impacts.~~ The HMMP will be developed, during the design phase, in coordination with the regulatory agencies and in accordance with Caltrans standard specifications. The specifications include requirements for native and non-invasive and noxious plants, quality assurance, installation methods, and documentation. Caltrans will coordinate with the U.S. Fish and Wildlife Service (USFWS) and CDFW on the development of the HMMP for CFS.

Response to Comment 2: Fish Passage Design Coordination

Caltrans understands the commenter recommends engaging in early coordination with the CDFW Conservation Engineering Branch and National Marine Fisheries Service (NMFS) personnel to review and analyze the proposed bridge replacement, bridge design and channel restoration design to accommodate fish passage.

As the lead agency, Caltrans is responsible for managing California's highway and freeway lanes. Therefore, aspects of the bridge design and bridge replacement are within Caltrans' jurisdiction as the state transportation agency.

Caltrans will coordinate with NMFS and CDFW as it continues to refine fish passage design and channel restoration. As shown in Response to Comment 1, MM BIO-1, Caltrans is committed to coordinating with both agencies.

Response to Comment 3: Temporary Creek Diversion System Pipe Material

Caltrans acknowledges CDFW's recommendation for using a corrugated metal pipe-based material instead of plastic or any such derivate material as part of the temporary creek diversion system and using corrugated metal pipe or concrete--reinforced metal pipe to replace any permanent drainage system to avoid melting during extreme fire conditions. Using a corrugated metal pipe-based material for the temporary creek diversion system would require the use of heavier equipment to move the metal-based pipe down to the creek bed, increase the period of construction and construction costs. The need for more time to place the metal pipes into the creek would increase the construction period. A longer construction period and the use of heavier equipment would directly increase construction costs. The use of a metal pipe-based material would create additional settlement in the creek bed, affecting water quality. No revision is necessary.

Response to Comment 4: Light Impact Analysis and Discussion

Caltrans acknowledges CDFW's concern with increasing artificial lighting by replacing or installing new artificial light sources. No permanent lighting fixtures are within the Project area, and the Project does not propose introducing new sources of permanent lighting; thus, no revision is necessary.