Bear Creek Culvert Rehabilitation Project

Santa Barbara County, California
District 05-SB-154 (PM 21.3)
EA 05-1H630/0516000113

Initial Study with Proposed Mitigated Negative Declaration

Prepared by the
California Department of Transportation
(Caltrans)

February 2019

General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project in Santa Barbara County, California. The document explains why the project is being proposed, the alternatives being considered for the project, the existing environment that could be affected by the project, potential impacts of each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document. Additional copies of this document and the related technical studies are available for review at the following locations:
  - Caltrans district office at 50 Higuera Street, San Luis Obispo, CA 93401
  - Santa Ynez Branch Library, 3598 Sagunto Street, Santa Ynez, CA 93460
  - Goleta Branch Library, 500 N. Fairview Avenue, Goleta, CA 93117
  - Santa Barbara Public Library, 40 E. Anapamu St., Santa Barbara, CA 93101
- This document may be downloaded at the following website: http://www.dot.ca.gov/d5/.
- No public hearing is scheduled for this project. Please contact Caltrans using the contact below if you would like a public hearing.
- Tell us what you think. If you have any comments regarding the proposed project, please send your written comments to Caltrans. Submit comments to:

  Jason Wilkinson, Senior Environmental Planner
  California Department of Transportation, Environmental Planning
  50 Higuera Street, San Luis Obispo, CA 93401
- Submit meeting request or comments by email to: jason.wilkinson@dot.ca.gov.
- Submit comments by the deadline: **March 15, 2019**.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans may move to:

1) give environmental approval to the proposed project,
2) conduct additional environmental studies, or
3) abandon the project.

If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attn: Jason Wilkinson, Division of Environmental Planning, California Department of Transportation, District 5, 50 Higuera St, San Luis Obispo, CA 93401; call (805) 542-4663 (voice) or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (voice), or 711.

District 05-SB-154 (PM 21.3)
EA 05-1H630/0516000113

Repair the existing Bear Creek culvert on State Route 154 at post mile 21.3 in Santa Barbara County

INITIAL STUDY
with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation

1/8/19
Date

Jason Wilkinson,
Senior Environmental Planner
California Department of Transportation,
District 5
CEQA Lead Agency

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Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to repair a failing structural steel plate pipe culvert in Santa Barbara County on State Route (SR) 154 at post mile 21.3, 0.31 mile west of Paradise Road. The 9-foot-wide by 10-foot-tall structural steel plate pipe was installed during construction of SR 154 in 1962 approximately 100 feet below the highway. The proposed project involves paving the culvert invert (i.e., the lowest part, or floor, of the culvert) with a 6-inch slab of Portland cement concrete and constructing a fish passage structure to remediate the barrier to fish passage created by stream scour at the culvert outlet. A temporary construction easement would be needed from the adjacent property owner in order to provide access to the culvert for equipment and personnel. Construction of an access road and creation of an equipment staging area will require tree and vegetation removal. Temporary stream diversion and dewatering operations would be necessary within Bear Creek as needed to conduct the required work in a dry streambed.

The fish passage structure would be composed of a series of forty weirs (each 26-inches high with a 1-foot-wide by 4-inch-deep low-flow notch). A fish weir is a structure that helps direct the passage of fish upstream. At the culvert outlet, eight pools will be created, each approximately 3-foot by 4-foot in area and will replace the existing concrete apron. An 18-inch walkway will also be constructed along the south culvert wing wall at the inlet and outlet to provide access for maintenance personnel.

The project is expected to take approximately two to three months to complete.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision on the project is final. This proposed Mitigated Negative Declaration is subject to change, based on comments received from interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project will not have a significant effect on the environment for the reasons provided below.

The proposed project will have no effect on agriculture and forest resources, air quality, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, tribal cultural resources, and utilities and service systems.

With the implementation of the avoidance and minimization measures outlined in this document, the proposed project will have less-than-significant effects on aesthetics and threatened and endangered species.

In addition, with the following avoidance, minimization, and mitigation measures incorporated, the proposed project would have less-than-significant effects on natural communities, wetlands and other waters, and animal species:

Natural Communities

1. High-visibility fencing will be installed to minimize disturbance in natural areas and habitats of concern (i.e., environmentally sensitive areas [ESAs]). Special provisions for the installation of high-visibility fencing and silt fencing shall be included in the construction contract, and fencing will be identified on the project plans. Prior to the start of construction, ESAs will be delineated in the field and approved by Caltrans' environmental division.
2. Avoidance, minimization, and mitigation measures listed under Wetlands and Other Waters will also protect the natural communities discussed in this document.

Wetlands and Other Waters

Avoidance and Minimization Measures

1. Prior to construction, Caltrans will prepare a mitigation and monitoring plan (MMP) as a requirement of the California Department of Fish and Wildlife (CDFW) 1602 Permit. The MMP will outline action measures to be implemented during construction to reduce impacts to jurisdictional waters. The MMP will also outline monitoring requirements to ensure that the re-vegetation efforts are successful and that the fish weirs are functioning properly. The MMP will be consistent with federal and state regulatory requirements and amended with any regulatory permit conditions, as required. Caltrans will implement the MMP as necessary during construction and immediately following project completion.
2. The temporary stream diversion will be timed to occur between June 1 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to be dry or at seasonal minimum. Deviations from this work window will be made only with permission from the relevant regulatory agencies.
3. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.
4. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional waters and riparian habitat.
5. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area. This area will be a minimum of 100 feet from aquatic areas; if the area is less than 100 feet from aquatic areas, the area must be surrounded by barriers (e.g., fiber rolls or equivalent). The staging areas will conform to Caltrans Construction Site Best Management Practices (BMPs; Caltrans 2017) to attain zero discharge of stormwater runoff.
6. Caltrans will use only clean gravel and/or cellular confinement system blocks for the temporary access road on the streambed and banks.
7. After construction, materials used to build the temporary access road on the streambed and banks (some clean gravel may remain, as approved by regulatory agencies) will be removed, and stream contours, substrate, and habitat elements will be restored as close as possible to their original condition.
8. Installation of the high-visibility ESA fence described above under Natural Communities will also minimize impacts to other waters.

Compensatory Mitigation Measure

1. To create access for construction equipment, the proposed action may remove approximately eight white alder trees, three coast live oak trees and two California sycamores. To mitigate for this impact, all trees removed will be replaced in-kind at a ratio of at least 3:1.

   Caltrans anticipates that all compensatory mitigation will occur on-site. Replacement plantings will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan, which will be included in the final MMP prepared by Caltrans' biologist. The MMP will include planting specifications and grading plans to ensure survival of planted vegetation and re-establishment of functions and values. The final MMP will be consistent with standards and mitigation requirements from the applicable regulatory agencies.

   To ensure success, monitoring and a one-year contractor's plant establishment period will be required, which will include semi-annual (twice a year) inspections, weeding, and replacement planting. Irrigation is not proposed. Additional monitoring is likely to be required by the regulatory authorities after the construction contract has closed.

Animal Species

Arroyo Chub

1. The avoidance and minimization measures listed under Natural Communities and the avoidance, minimization, and mitigation measures under Wetlands and Other Waters will also serve to avoid and minimize potential impacts to arroyo chub.

Coast Range Newt

1. Implementation of minimization and avoidance measures for the protection of California red-legged frog will also avoid minimize potential impacts to coast range newt.

Southern California Rufous-crowned Sparrow, Yellow Warbler, California Spotted Owl, and Other Nesting Birds

1. The avoidance and minimization measures under Wetlands and Other Waters are also applicable to nesting bird habitat.
2. The typical nesting season for birds is February 15 through August 31. If feasible and regulatory approvals allow, all vegetation removal for this project will be scheduled to occur outside of the typical nesting bird season (i.e., a work window of September 1 to February 14) to avoid potential impacts on nesting birds.
3. If vegetation removal or other construction activities are proposed to occur during the nesting season (February 15 to August 31) and within 100 feet of potential nesting habitat, a nesting bird survey will be conducted by a biologist determined qualified by Caltrans no more than three days prior to construction.
4. During construction, active bird nests shall not be disturbed and eggs or young of native migratory birds shall not be killed, destroyed, injured, or harassed at any time. Readily visible exclusion zones where nests must be avoided will be established by a qualified biologist using high-visibility fencing. Work in exclusion zones shall be avoided until young birds have fledged (permanently left the nest) or the qualified biologist has determined that nesting activity has otherwise ceased.

5. Trees to be removed will be noted on design plans. Prior to any ground-disturbing activities, high-visibility fencing will be installed around the dripline of trees to be protected within project limits.
6. All clearing/grubbing and vegetation removal will be monitored and documented by a biological monitor, regardless of time of year.
7. If an active nest for California spotted owl or another special-status bird is observed within 100 feet of the area of potential impact (API), all project activities shall immediately cease while Caltrans coordinates with applicable regulatory agencies and determines if additional measures are necessary.

_____ _____

Jason Wilkinson
Senior Environmental Planner
Department of Environmental Planning
California Department of Transportation, District 5

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to repair a failing structural steel plate pipe culvert in Santa Barbara County on State Route (SR) 154 at post mile 21.3, which is 0.31 mile west of Paradise Road. Figure 1-1 shows the location and Figure 1-2 shows the vicinity of the proposed project. The 9-foot-wide and 10-foot-tall structural steel plate pipe was installed during construction of SR 154 in 1962 and is situated approximately 100 feet below the highway. The project would involve paving the culvert invert (i.e., the lowest part, or floor, of the culvert) with a 6-inch slab of Portland cement concrete and constructing a series of weirs to remediate the barrier to fish passage created by stream scour at the culvert outlet. The project is expected to take approximately two to three months to complete.

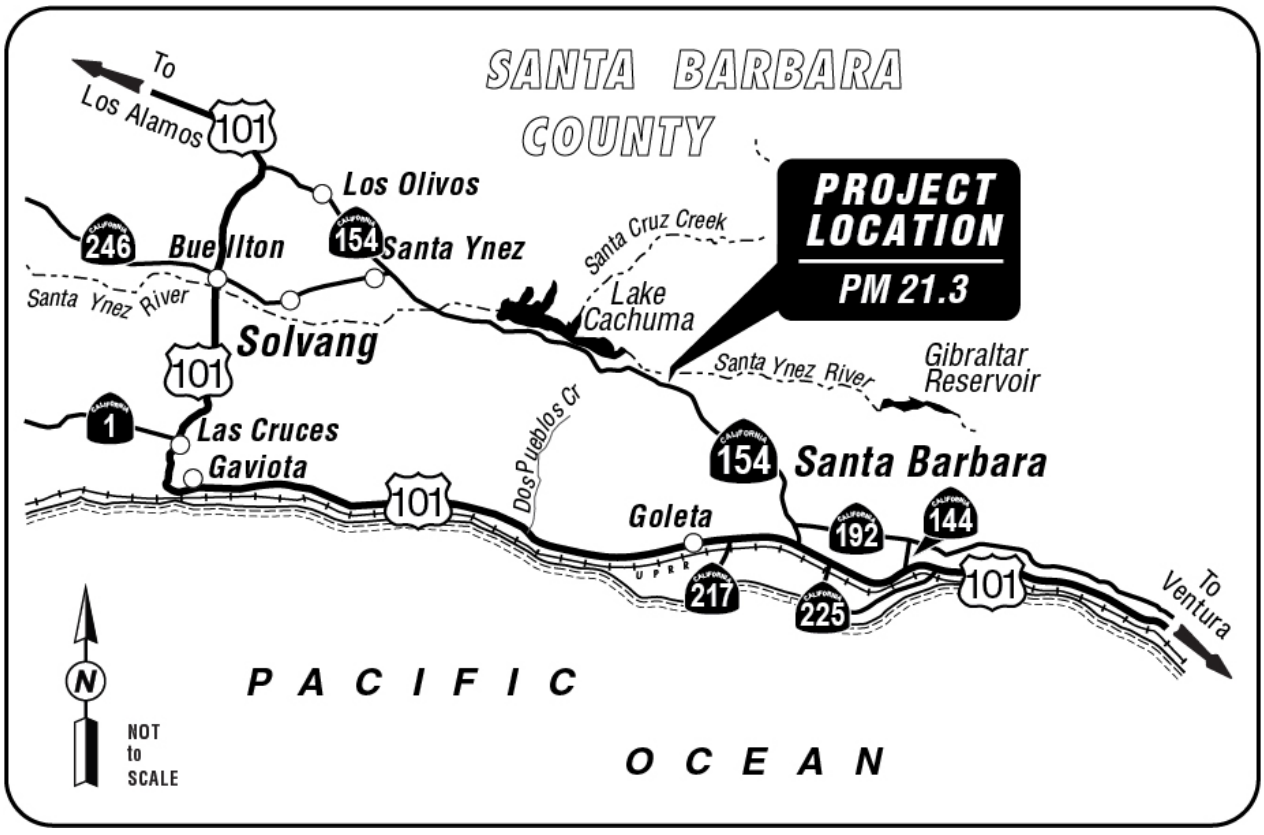

Figure 1-1 Project Location Map

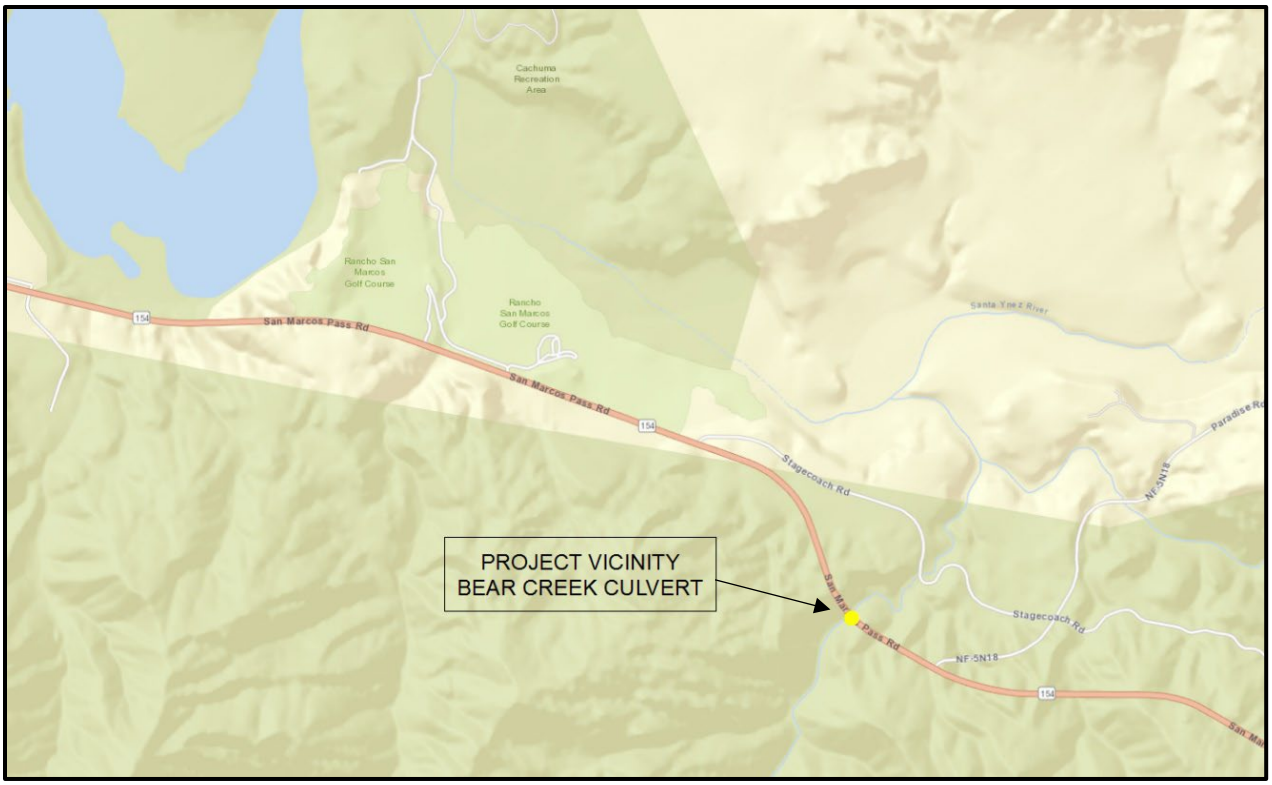

Figure 1-2 Project Vicinity Map

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to rehabilitate the culvert and prevent highway embankment failure, maintain highway continuity, and restore fish passage, per California Streets and Highways Code Section 156-156.4.

1.2.2 Need

Recent culvert inspections identified severe deterioration at the culvert invert. If left unaddressed, the culvert will eventually fail, causing erosion of the highway embankment and potential highway failure (Figure 1-3). The culvert is an impediment to fish passage because it has become perched over time due to stream scour. The California Department of Fish and Wildlife (CDFW) has determined that this culvert is a complete barrier to fish passage. California Fish and Game Code Section 15901 and 15931 make it unlawful to impede fish passage and Article 3.5 of the California Streets and Highways Code Section 156 requires that Caltrans remediate barriers to salmon and steelhead habitat when conducting work on the State Highway System where a barrier exists.

Figure 1-3 Severe Deterioration of Existing Culvert Invert

1.3 Project Description

The project would involve paving the culvert invert (i.e., the lowest part, or floor, of the culvert) with a 6-inch slab of Portland cement concrete and constructing a fish passage structure to remediate the barrier to fish passage created by scour below the culvert outlet. A temporary construction easement would be needed from the adjacent property owner in order to provide access to the culvert for equipment and personnel. Construction of an access road and creation of an equipment staging area would require tree and vegetation removal. Temporary stream diversion and dewatering operations would be necessary within Bear Creek in order to conduct the required work in a dry streambed.

The fish passage structure would consist of constructing a series of forty weirs (each 26-inches high with a 1-foot-wide by 4-inch-deep low-flow notch) inside the culvert. The weirs will be regularly spaced at 8-feet 8-inches apart. Within each weir the minimum pool depth will be 16 inches. The existing concrete apron at the outlet of the culvert will be replaced by a series of concrete weirs for a transition between the culvert and the natural streambed. Eight pools will be created, each approximately 3-ft by 4-ft in area, with pool depth, jump height, and low flow notch similar to the interior pipe weirs. An 18-inch walkway would be added to one side of the weirs for terrestrial animal passage, set approximately 4 inches above the top of each weir. Full diversion of the stream will be required to allow the work area to remain dry during construction of concrete features. Diversion and dewatering will occur between June 1 and October 31 in any given year (or as otherwise directed by applicable regulatory agencies) to capture the lowest naturally occurring flows.

It is expected that culvert work areas will be accessed via an existing private road located downstream of the culvert. Caltrans has created a preliminary design for an additional temporary access road to be constructed between the end of this private road and the culvert work area to

provide complete vehicle access. To build the temporary access road, vegetation clearing will be required. This could include tree removal from the riparian zone and adjacent uplands, as needed for vehicle and equipment access. Caltrans will perform vegetation clearing prior to other construction activities and outside of the standard migratory bird nesting season, which is between February 15 and August 31.

The project is expected to take approximately two to three months to complete.

1.4 Project Alternatives

1.4.1 Build Alternative

The Build Alternative for the proposed project consists of repairing the invert at the Bear Creek culvert, which is located approximately 100 feet below the highway. The project would also include construction of a series of fish weirs to remediate the barrier to fish passage created by stream scour at the culvert outlet.

1.4.2 No Build (No-Action) Alternative

Under the No-Build Alternative, the Bear Creek culvert would not be repaired, and the fish weirs would not be constructed to fix the existing barrier. Highway embankment failure would not be addressed, highway continuity would continue to be at risk, and fish passage, per Streets and Highways Code Section 156-156.4, would not be restored. No other improvements would be constructed at the Bear Creek culvert under the No-Build Alternative for this project.

1.5 Permits and Approvals Needed

The permits and/or approvals summarized in Table 1-1 are expected to be required for this project.

Table 1-1. Permits and Approvals

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	Section 404 Permit for work in Waters of the United Sates	To be obtained prior to beginning construction
Central Coast Regional Water Quality Control Board	401 Water Quality Certification for work in Waters of the United States	To be obtained prior to beginning construction
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement for work in the streambed	To be obtained prior to beginning construction
U.S. Fish and Wildlife Service	Programmatic Biological Opinion for California red-legged frog	Letter of approval pending
California Transportation Commission	Approve Construction Capital	Approved when project is ready to go out to bid

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

As part of the scoping and environmental analysis for the project, the environmental resources listed below were considered, but no adverse impacts were identified. There is no further discussion of these resources in this document.

Agriculture and Forest Resources: The proposed project would have no impact on agriculture or forest resources within the project area. Agricultural resources are not present within the project footprint. The project is within the Los Padres National Forest however, the project would not Result in the loss of forestland or conversion of forestland to non-forest use. (Mapping and Project Description)

Air Quality: The project would not add capacity or change the alignment of the existing highway. Thus, there will be no long-term effects to local air quality resulting from the project. Temporary increases in air emissions during construction are anticipated. The primary source of air pollutants would be from windblown dust generated during excavation. There are no nearby sensitive receptors that would be adversely affected by construction emission. (Air Quality and Noise Technical Memo, September 2017)

Cultural Resources: The proposed project would have no impact on cultural resources. Current and previous field surveys did not identify cultural resources within the area of potential effect. (Cultural Resources Technical Memo, December 2017). The proposed project would not impact paleontological resources. Construction will take place within areas that have been previously disturbed, therefore encountering paleontological resources is unlikely. (Paleontology Review Memo, October 2017).

Geology and Soils: The proposed project would not result in impacts related to geology and soils. The proposed project would make improvements to existing highway infrastructure and would not construct any new structures that would require a foundation.

Hazards and Hazardous Materials: The proposed project would not result in any impacts related to hazards and hazardous materials. Hazardous materials have not been identified within the footprint of the proposed project, and there are no sources of hazardous waste nearby. In addition, aerially deposited lead, naturally occurring asbestos, asbestos-containing materials, lead-containing paint, treated wood waste, and hazardous traffic stripe materials would not be an issue for the proposed project. (Initial Site Assessment, Hazardous Waste, April 2017)

Hydrology and Water Quality: The proposed project would have no impact to hydrology and floodplains. The proposed project is not within a "Special Flood Hazard Area," as designated by the Federal Emergency Management Agency (FEMA), and would not impact natural and beneficial floodplain values. (Location Hydraulic Study, September 2018). The proposed project

would not have any impacts on water quality within or adjacent to the project area since best management practices will be applied during planning, design, and construction. In addition, once the project is complete, all temporarily disturbed areas will be restored back to pre-construction conditions and the creek system will return to its natural function. (Water Quality Memo, October 2018).

Land Use and Planning: The proposed project would not conflict with existing or proposed land use designations. The culvert will function in the same manner and at the same location as the existing culvert. The proposed project would not affect coastal resources because it not located within the coastal zone. (Santa Barbara County Comprehensive Plan Land Use Element, 2016)

Mineral Resources: The proposed project would have no impact on mineral resources because improvements would be made in an area that has been previously disturbed. In addition, the proposed project would not result in the loss of availability of a known mineral resource or mineral resource recovery site. (Project Description)

Noise: The proposed project would not result in any long-term effects on the environment from noise. The proposed culvert repair and fish weir construction would not result in a change to the existing highway alignment or increase the number of existing travel lanes. (Air Quality and Noise Technical Memo, September 2017)

Population and Housing: The proposed project consists of rehabilitation and replacement of an existing culvert. It would have no impact on population and housing. (Project Description)

Public Services: The proposed project consists of rehabilitation and replacement of an existing culvert. It would not increase demand for fire protection, police protection, schools, parks, or any other public facilities. Therefore, it would have no impact on public services. (Project Description)

Recreation: Los Padres National Forest surrounds the project site, but the proposed culvert replacement would occur within the existing footprint and would not require the conversion of any land use, including recreational trails and facilities within the forest. (Mapping and Project Description)

Transportation/Traffic: The proposed project consists of rehabilitation and replacement of an existing culvert below an existing highway. It would have no impact related to traffic and transportation or pedestrian and bicycle facilities. (Project Description)

Tribal Cultural Resources: The proposed project would have no impact on tribal cultural resources because improvements would be made to an existing culvert, land within the project footprint was previously disturbed by infrastructure, and current and previous field surveys did not identify cultural resources. (Cultural Resources Technical Memo, December 2017)

Utilities and Service Systems: There are no utilities within the footprint of the proposed project that would be affected. During construction, existing utilities within the footprint would be avoided and protected in place. Therefore, no impact on utilities and service systems is anticipated (Right-of-Way Data Sheet, May 2018).

2.1 Human Environment

2.1.1 Visual/Aesthetics

Regulatory Setting

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

Affected Environment

The Cachuma Pass and Santa Ynez Valley are known for their high visual quality, based largely on their expansive views of open space and agricultural land, which is surrounded by mountain backdrops to the north, south, and east. SR 154, which is designated as a State Scenic Highway, serves recreational areas such as Lake Cachuma and the coast via Santa Barbara. The overall topography trends down to Lake Cachuma and the Santa Ynez River north and west of the project vicinity. Little development is seen within the vicinity of the project.

In the project vicinity, SR 154 crosses an approximately 100-foot-high embankment that spans Bear Creek. Because of the elevation and viewing angle, neither Bear Creek nor its culvert can be seen from the highway itself.

Environmental Consequences

A review of the site and plans indicates that the project would not result in substantial adverse impacts on the visual environment. Because the proposed work in the existing culvert would be well below the roadway, the project would not be visible to travelers on SR 154 or other public roadways in the area.

During and following construction, the most noticeable aspects of the project would be the staging areas and possibly the reduction in native vegetation, which would be associated with access to the construction area. Although some of these actions would be considered temporary, any associated vegetation removal and/or severe pruning may be noticed for years after construction, resulting in a loss of visual quality.

Avoidance, Minimization, and/or Mitigation Measures

To minimize the potential visual impact due to vegetation removal, the following avoidance and minimization measures shall be implemented:

1. Restore all construction access roads, staging areas, and other temporary uses to their pre-construction topographic contours.
2. Preserve as much existing vegetation as possible. Use prescriptive pruning, clearing and grubbing, and grading techniques, which save the most vegetation possible.

Cumulative Impacts

With implementation of the measures listed above, over time, the visual changes resulting from the project would be unnoticed by the casual observer. As a result, there would be no reduction in visual quality or character. In addition, the project would not adversely affect views of any

"designated scenic resources," as defined by CEQA statutes and guidelines or Caltrans policy. The proposed project would not contribute to an adverse cumulative impact to aesthetics or visual resources, as all temporarily disturbed areas would be restored back to pre-construction conditions.

2.2 Biological Environment

2.2.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors, fish passage, and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Fish passages allow fish to pass between and within waterways during various life stages to reproduce, feed, and contribute to their ecosystems. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value. Habitat areas that have been designated as critical habitat under the federal Endangered Species Act (FESA) are discussed below in Section 2.2.4 (Threatened and Endangered Species). Wetlands and other waters are also discussed below in Section 2.2.2.

Affected Environment

The Natural Environment Study (NES), prepared in October 2018, is the primary source of information used in preparation of this section.

The biological study area (BSA) is defined as the area that may be directly, indirectly, temporarily, or permanently affected by construction and construction-related activities. The BSA is approximately 4.3 acres and includes areas for proposed culvert repair, access roads, sediment and erosion controls, and staging areas. The BSA is within the central California foothills and coastal mountains ecoregion of southern California. Bear Creek is a perennial stream that flows into the Santa Ynez River. The following natural communities are located within the BSA.

California Sycamore Woodlands

California sycamore woodlands make up the riparian zone above the ordinary high-water mark (OHWM) and borders Bear Creek on both sides of the culvert. California sycamore (*Platanus racemosa*) is the dominant tree species, although white alder (*Alnus rhombifolia*) is also common in the project area. The canopy is intermittent (i.e., not continuous), the shrub layer is open to intermittent, and the herbaceous layer is intermittent to sparse. Common associated woody species include red willow (*Salix laevigata*), California bay laurel (*Umbellularia californica*), coast live oak (*Quercus agrifolia*), toyon (*Heteromeles arbutifolia*), and California blackberry (*Rubus ursinus*). Common herbaceous species includes mugwort (*Artemisia douglasiana*), smilo grass (*Stipa milacea* var. *milacea*), and common horsetail (*Equisetum arvense*).

Chamise - Black Sage Chaparral

This upland community is common in the region, particularly south-facing slopes. In the project area, it is found on the dry, upper slopes bordering the canyon. Chamise (*Adenostoma*

fasciculatum) and black sage (*Salvia mellifera*) are co-dominant species in the shrub layer. Associates include coyote bush (*Baccharis pilularis*), toyon, California buckwheat (*Eriogonum fasciculatum*), deerweed (*Acmispon glaber*), and chaparral yucca (*Hesperoyucca whipplei*). The shrub canopy is continuous to intermittent, and the herbaceous layer is sparse.

Coast Live Oak Woodland

This upland community is found on the steep canyon slopes, merging into the California sycamore woodlands in the riparian zone and chaparral communities on the upper slopes. The tree canopy is open to continuous, the shrub layer is sparse to intermittent, and the herbaceous layer is sparse or grassy. Coast live oak is the only dominant species in the tree canopy. Poison oak (*Toxicodendron diversilobum*) is the most common understory species. Non-native annual grasses are common in the understory, including slender wild oats (*Avena barbata*), red brome (*Bromus madritensis* ssp. *rubens*) and ripgut brome (*Bromus diandrus*).

Fountain Grass Swards

This upland community is found in the ruderal zone. A ruderal zone is an area of land that has been disturbed, such as along the road shoulder and the top of the fill slopes that are regularly disturbed by human activities. Fountain grass (*Pennisetum setaceum*) is the dominant species in the herbaceous layer and associated with yellow star thistle (*Centaurea melitensis*) and the annual grass species found in the coast live oak woodland community. Emergent shrubs and trees are also present as low cover, including coast live oak, coyote bush, California sage (*Artemisia californica*), California buckwheat, and chamise.

Scrub Oak Chaparral

This upland shrub-dominated chaparral habitat on the steep upper slopes of the project area has a diversity of native shrubs. The predominant species in the area is scrub oak (*Quercus berberidifolia*). Common associated shrubs include greenbark ceanothus (*Ceanothus spinosus*), evergreen buckthorn (*Rhamnus ilicifolia*), toyon, chemise, Eastwood's manzanita (*Arctostaphylos glandulosa*), and sugar bush (*Rhus ovata*). The shrub canopy is continuous, and the herbaceous layer is sparse. Coast live oak trees are interspersed in the community.

Habitat Connectivity

The project area is not within an essential habitat connectivity area, natural landscape block, or an area that was included in the least-cost corridor analysis, as mapped by the California Essential Habitat Connectivity Project. Although the highway creates resistance to animal movement, the surrounding landscape in the project vicinity is conducive to animal movement due to the broad landscape of relatively undeveloped public lands. The project culvert is currently accessible to most sizes of wildlife that might attempt to move through a 340-foot-long culvert. This could include relatively large animals, such as cougar, coyote, and black bear, as well as amphibians. Deer, small mammals, reptiles, and prey species are unlikely to regularly use the culvert for passage because of its length and the challenging footing.

Fish Passage

The BSA has suitable habitat for fish. However, the culvert has been determined to be a complete barrier to fish passage because it has become perched over time due to stream scour. The project is designed to restore passage for fish. The federally listed southern California

distinct population segment of steelhead trout (*Onchorhynchus mykiss*) are not present within the upper reaches of the Santa Ynez drainage basin, which includes Bear Creek. This is because the Lake Cachuma/Bradbury Dam (approximately nine miles downstream of the SR 154 culvert) poses a complete barrier to fish passage. However, due to the presence of steelhead trout in the system, CDFW is interested in Caltrans improving fish passage at the SR 154 Bear Creek culvert.

Environmental Consequences

Estimated areas of potential temporary impacts on protected habitats and jurisdictional areas as a result of the proposed project were estimated by overlaying the area of potential impact (API) within the project area with habitat mapping. The maximum amount of disturbance/impact associated with construction of culvert invert repair, fish passage weirs, and temporary access roads was assumed. Based on this mapping, the proposed project will result in no impacts to the fountain grass swards and scrub oak chaparral plant communities and are not further discussed in this document. Estimated areas of potential temporary impacts on protected habitats and jurisdictional areas are shown on Table 2-1 and Figure 2-1.

Table 2-1. Estimated Impacts on Protected Habitats and Jurisdictional Areas

Natural Community/Habitat	Temporary Impacts		
	Area (ft^2)	Area (acres)	Linear Feet (parallel to stream channel)
Perennial Stream (below OHWM)	4,556	0.10	246
Culverted Stream Channel (invert repair and fish passage weirs)	2,537	0.06	360
Riparian Zone (above OHWM)	5,118	0.12	450
USACE Jurisdiction[a]	4,556	0.10	246
CDFW Jurisdiction[b]	12,211	0.28	1,056
RWQCB Jurisdiction[b]	12,211	0.28	1,056
California Sycamore Woodlands	5,118	0.12	450
Coast Live Oak Woodland	5,037	0.12	N/A
Chemise-Black Sage Chaparral	1,131	0.03	N/A
California Red-legged Frog Critical Habitat[c]	15,842	0.36	N/A

[a] Comprised of USACE jurisdictional "other waters" (perennial stream) that lack one or more of the three wetland indicators (i.e., wetland vegetation, hydric soils, and/or wetland hydrology) and extend from the thalweg (lowest point of channel) up to the ordinary high-water mark (OHWM).
[b] Includes U.S. Army Corps of Engineers (USACE) jurisdictional other waters, culverted stream channel, and riparian zone.
[c] California red-legged frog critical habitat is comprised of perennial stream, California sycamore woodland, coast live oak woodland, and chemise-black sage chaparral natural communities.
CDFW = California Department of Fish and Wildlife

California Sycamore Woodlands

Impacts to California sycamore woodlands may result from the need to extend access from the existing access road to the creek (Figure 2-1). Building the temporary access road may result in a total of 20 cubic yards of temporary fill in the riparian zone to create a level driving surface. Two coast live oak trees and eight white alder trees (5 to 12 inches in diameter at breast height) may need to be removed from within this community to accommodate the temporary access road. Approximately 0.12 acres of temporary impacts to California sycamore woodlands may occur.

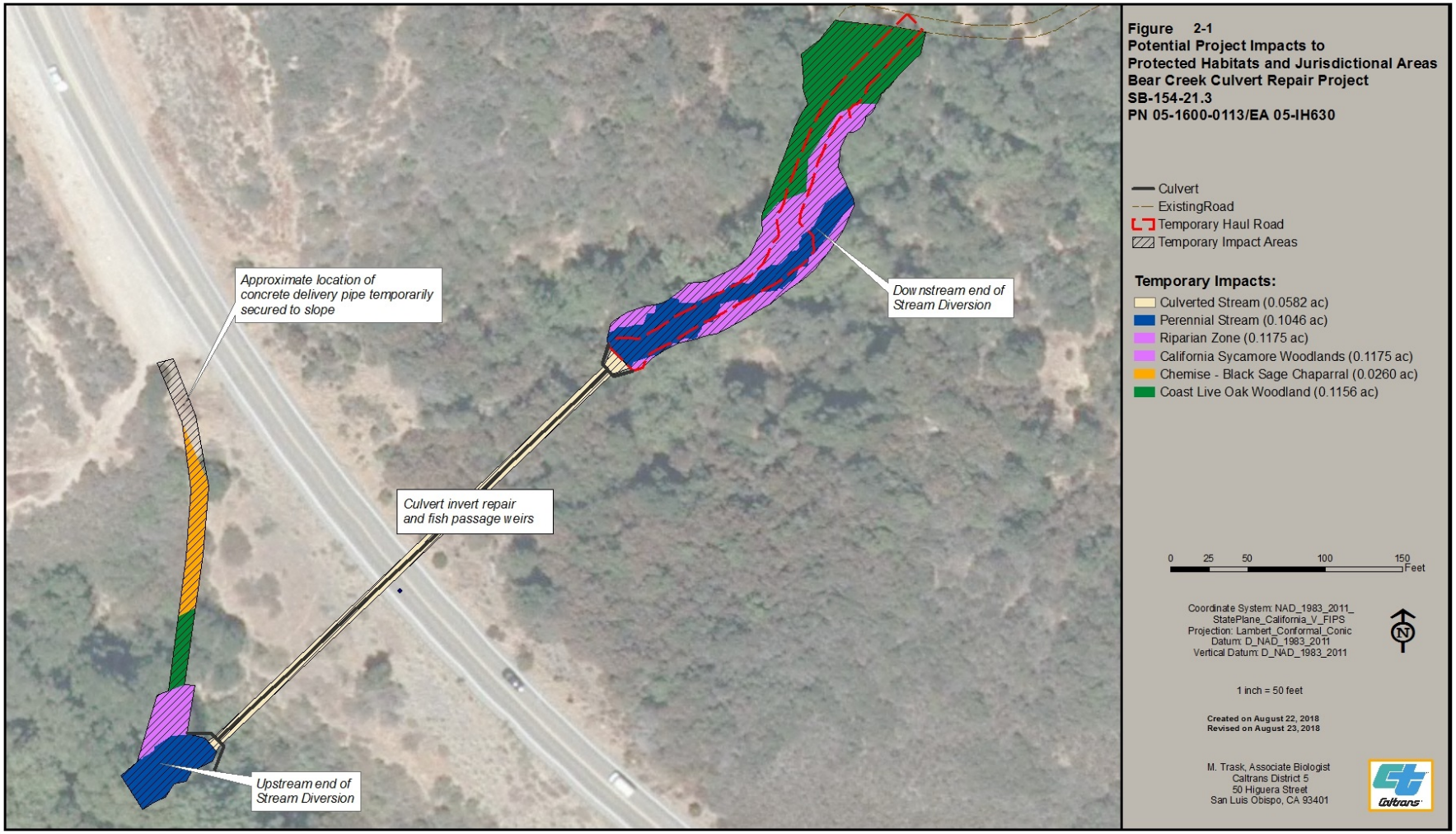

Figure 2-1 Potential Impacts on Protected Habitats and Jurisdictional Areas

Chamise - Black Sage Chaparral

Impacts to the chamise – black sage chaparral plant community may result from construction activities related to staging and storage, placement of the concrete delivery pipe down the slope to the culvert, and placement of stream diversion materials (Figure 2-1). Approximately 0.03 acres of chamise – black sage chaparral plant community may be temporarily disturbed by construction activities.

Coast Live Oak Woodland

Impacts to the coast live oak woodland plant community may result from the need to extend access from the existing access road to the creek at the culvert outlet (Figure 2-1). The proposed construction of the temporary access road will require the removal of one coast live oak and two California sycamore trees from this community (4 to 6 inches in diameter at breast height). Impacts to the coast live oak woodland plant community may also result from temporarily securing the concrete delivery pipe to the slope on the inlet side of the culvert, as shown in Figure 2-1. Approximately 0.12 acres may be impacted by construction activities.

A summary of the total number and species of trees that will be removed from each plant community to allow construction access is shown in Table 2-2 below.

Table 2-2. Summary of Tree Species to be Removed

Plant Community	Tree Species	Number of trees to be Removed
California Sycamore Woodlands	Coast live oak	2
	White alder	8
Coast Live Oak Woodland	Coast live oak	1
	California sycamore	2
Total number of trees to be removed		**13**

The proposed location of the temporary access road is shown in Figure 2-1 and a photograph of the creek bed where the temporary access road may be constructed is shown in Figure 2-2.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are proposed to avoid or minimize impacts on natural communities:

1. High-visibility fencing will be installed to minimize disturbance in natural areas and habitats of concern (i.e., environmentally sensitive areas [ESAs]). Special provisions for the installation of high-visibility fencing and silt fencing shall be included in the construction contract, and fencing will be identified on the project plans. Prior to the start of construction, ESAs will be delineated in the field and approved by Caltrans' environmental division.
2. Minimization and avoidance measures listed under Section 2.2.2 (Wetlands and Other Waters) will also protect the natural communities discussed in this section.

3. In addition, Mitigation Measure 1 described in Section 2.2.2 (all removed trees will be replaced in kind at a ratio of at least 3:1), also applies to California sycamore woodlands.

Figure 2-2 Site of Possible Temporary Construction Access Road
View approximately 75 ft downstream, looking upstream towards culvert outlet

Cumulative Impacts

Caltrans guidance for cumulative impacts assessments includes defining a resource study area (RSA), which is the geographic area within which impacts on a particular resource are analyzed. The boundaries of RSAs for cumulative impact analyses are often broader than the boundaries used for project-specific analysis (such as the BSA). The RSA identified for all cumulative

impact analyses for the proposed project is the Bear Creek watershed, which includes 2.5 square miles (1,620 acres) upstream of the culvert and 0.1 square mile downstream of the culvert.

According to the Schedule of Proposed Actions for the Los Padres National Forest, no Forest Service activities or permits are specifically identified that may adversely impact the natural communities discussed above. A search of Santa Barbara County Planning permits resulted in no recent or current permits that may affect aquatic or riparian resources in the RSA.

Caltrans recently completed a pavement overlay project in the project area and replaced the guardrail in the roadway section above the culvert. Due to the depth of fill above the culvert and narrow project footprint, that project had no impacts to California sycamore woodlands, chamise – black sage chaparral, or coast live oak woodland communities within the RSA. The proposed Bear Creek culvert rehabilitation project will not contribute to a significant adverse cumulative impact to natural plant communities, wildlife corridors or fish passage.

2.2.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 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 OHWM, in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

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

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

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to

approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230) and whether permit approval is in the public interest. The Guidelines, which were developed by the U.S. EPA in conjunction with the USACE, allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is an 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.

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 an agency, such as the Federal Highway Administration (FHWA) and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds that (1) 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 Regional Water Quality Control Boards (RWQCBs) and the CDFW. In certain circumstances, the California Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake and Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the top of bank of the stream or lake or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Lake and Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements Permits 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 certification 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.

Affected Environment

The NES, prepared in October 2018, is the primary source of information used in preparation of this section.

Bear Creek is a perennial stream that conveys runoff from the 2.6 square mile watershed to the Santa Ynez River. No wetlands were identified within the BSA. Jurisdictional features are limited to the perennial stream (waters of the U.S. and State) and adjacent non-wetland riparian habitat (waters of the State).

Perennial Stream

Bear Creek has perennial streamflow. The perennial stream in the project area covers approximately 5,364 square feet (0.12 acre) of waters of the U. S. and State, under the jurisdiction of the USACE, CDFW, and RWQCB. The perennial stream channel of Bear Creek was delineated as "other waters" at either end of the culvert. The stream is unvegetated, except for scattered patches of emergent vegetation (unknown perennial grasses and common horsetail) and moss. The relatively clear and cool streamflow, abundance of large boulders, and scattered emergent vegetation provides suitable breeding habitat for locally common amphibians such as Pacific chorus frog (*Pseudacris regilla*), coast range newt (*Taricha torosa*), black-bellied salamander (*Batrachoseps nigriventris*), and western toad (*Bufo boreas*) as well as the federally listed California red-legged frog (*Rana draytonii*).

Non-Wetland Riparian Habitat

Approximately 18,837 square feet (0.43 acre) of waters of the state, potentially under the jurisdiction of the CDFW and RWQCB, were delineated in the stream channel, existing culvert, and adjacent non-wetland riparian habitat bordering the stream channel. The California sycamore woodlands plant community lies within the riparian habitat. The affected environment for the California sycamore woodlands plant community is also discussed in Section 2.2.1 (Natural Communities). Due to the long and steep slopes in the Bear Creek canyon, the upland/riparian boundary was determined primarily based on a change in dominant tree species (California sycamore and white alder in the riparian zone, and coast live oak in the adjacent uplands).

Environmental Consequences

Temporary impacts to jurisdictional areas in the stream channel and adjacent riparian zone are anticipated. Environmental consequences for the California sycamore woodlands plant community, which is the non-wetland riparian habitat in the project area, is also discussed in Section 2.2.1 (Natural Communities). Temporary impacts will result from stream dewatering and diversion at either end of the culvert in order to conduct work in a dry streambed, pouring concrete to repair the culvert invert, and forming concrete sections for the fish passage weirs. Temporary impacts may also result from the temporary access road that will provide construction access to the location where the culvert work will take place. Approximately 60 cubic yards of fill may be required to construct the temporary access road (20 cubic yards within the California sycamore woodlands/riparian plant community and 40 cubic yards within the stream channel), and a total of 10 live trees may be removed from jurisdictional areas (described in Section 2.2.1, Natural Communities). Caltrans will require that the contractor use clean gravel as temporary fill within the stream channel to create the access. Following completion of the work, the contractor will be required to remove all fill material placed within the stream and the riparian corridor and recontour the site to pre-construction conditions.

Approximately 4,556 square feet (0.10 acre) of "other waters," regulated by the USACE and RWQCB, and approximately 12,211 square feet (0.28 acre) of stream channel and riparian habitat, regulated by the CDFW and RWQCB, may be temporarily affected. Repairing the culvert invert and installing the fish passage weirs may result in a total of 310 cubic yards of concrete fill in the existing pipe and outlet apron.

Permanent adverse impacts to jurisdictional areas in the stream channel are not anticipated because the concrete for the invert repair and fish passage weirs will be in an existing culvert. As such, there will be no net loss to other waters. Replacing the concrete apron with a series of concrete weirs for a transition between the culvert and the natural streambed will result in a net benefit to other waters.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and Minimization Measures

The following avoidance and minimization measures will be implemented to reduce potential impacts to jurisdictional areas from the proposed project:

1. Prior to construction, Caltrans will prepare a Mitigation and Monitoring Plan (MMP) as a requirement of the CDFW 1602 Permit. The MMP will outline action measures to be implemented during construction to reduce impacts to jurisdictional waters. The MMP will also outline monitoring requirements to ensure that the re-vegetation efforts are successful and that the fish weirs are functioning properly. The MMP will be consistent with federal and state regulatory requirements and amended with any regulatory permit conditions, as required. Caltrans will implement the MMP as necessary during construction and immediately following project completion.
2. The temporary stream diversion will be timed to occur between June 1 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to be dry or at seasonal minimum. Deviations from this work window will be made only with permission from the relevant regulatory agencies.
3. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.
4. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional waters and riparian habitat.
5. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area. This area will be a minimum of 100 feet from aquatic areas; if the area is less than 100 feet from aquatic areas, the area must be surrounded by barriers (e.g., fiber rolls or equivalent). The staging areas will conform to Caltrans Construction Site Best Management Practices (BMPs; Caltrans 2017) to attain zero discharge of stormwater runoff.
6. Caltrans will use only clean gravel and/or cellular confinement system blocks for the temporary access road on the streambed and banks.
7. After construction, materials used to build the temporary access road on the streambed and banks (some clean gravel may remain, as approved by regulatory agencies) will be removed, and stream contours, substrate, and habitat elements will be restored as close as possible to their original condition.
8. Installation of the high-visibility ESA fence described above in Section 2.2.1 (Natural Communities) will also minimize impacts to Other Waters.

Compensatory Mitigation Measure

1. If needed to create access for construction equipment, the proposed action may remove approximately eight white alder trees, three coast live oak trees and two California sycamores. To mitigate for this impact, all trees removed will be replaced in-kind at a ratio of at least 3:1.

   Caltrans anticipates that all compensatory mitigation will occur on-site. Replacement plantings will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan, which will be included in the final MMP prepared by Caltrans' biologist. The MMP will include planting specifications and grading plans to ensure survival of planted vegetation and re-establishment of functions and values. The final MMP will be consistent with standards and mitigation requirements from the applicable regulatory agencies.

   To ensure success, monitoring and a one-year contractor's plant establishment period will be required, which will include semi-annual (twice a year) inspections, weeding, and replacement planting. Irrigation is not proposed. Additional monitoring is likely to be required by the regulatory authorities after the construction contract has closed.

Cumulative Impacts

Caltrans guidance for cumulative impacts assessments includes defining an RSA, which is the geographic area within which impacts on a particular resource are analyzed. The boundaries of RSAs for cumulative impact analyses are often broader than the boundaries used for project-specific analysis (such as the BSA). The RSA identified for all cumulative impact analyses for the proposed project is the Bear Creek watershed, which includes 2.5 square miles (1,620 acres) upstream of the culvert and 0.1 square mile downstream of the culvert..

According to the Schedule of Proposed Actions for the Los Padres National Forest, no Forest Service activities or permits are specifically identified that may adversely impact Other Waters. A search of Santa Barbara County Planning permits resulted in no recent or current permits that may affect Other Waters.

Caltrans recently completed a pavement overlay project in the project area and replaced the guardrail in the roadway section above the culvert. This project had no impact to Other Waters. The proposed Bear Creek Culvert rehabilitation project will not contribute to a significant adverse cumulative impact to Other Waters.

2.2.3 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and the CDFW are responsible for implementing the majority of these laws in the state of California. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Acts. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.2.4 (Threatened and Endangered Species). All other

special-status animal species are discussed here, including CDFW fully protected species and species of special concern and USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

1. National Environmental Policy Act
2. Migratory Bird Treaty Act (MBTA)
3. Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

4. California Environmental Quality Act
5. Sections 1600–1603 of the California Fish and Game Code
6. Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

The NES, prepared in October 2018, is the primary source of information used in preparation of this section. A list of special-status animal species that have the potential to occur within the project area was obtained by conducting a search of the California Natural Diversity Database (CNDDB) and obtaining a copy of the most recent USFWS and the NOAA Fisheries Service species lists.

Based on the searches conducted, there are no CDFW fully protected species within the BSA. A total of five special-status animal species were identified as having the potential to occur within the BSA (species that are federally and/or state listed as endangered or threatened are discussed in Section 2.2.4). The five special status animal species having the potential to occur within the BSA are shown in Table 2-3. Two of these species, coast range newt (*Taricha torosa*) and yellow warbler (*Setophaga petechia*), were found to be present during field surveys. Although the creek was not surveyed for arroyo chub and the project reach may not have ideal conditions for the species, presence of this fish species within Bear Creek is assumed because they have been found in somewhat similar habitats in the region. Neither the Southern California rufous-crowned sparrow nor the California spotted owl were observed during field surveys within the BSA, although there is suitable habitat for either species in or near the BSA. Other birds were observed within the BSA during the March and April 2017 site visits. No active nests were observed, but potential nesting habitat for bird species occurs throughout the trees and shrubs in the BSA.

Table 2-3. Animal Species of Concern

Common/ Scientific Name	Federal/ State/Other Status	General Habitat Description	Habitat Present/ Absent	Rationale
Fish				
Arroyo chub *Gilia orcuttia*	-- / SSC / FSS	A small freshwater fish that occurs in coastal waters of Southern California; typically occurs on the sandy and muddy bottoms of flowing pools, creeks, and streams but has also been found in pool habitats with gravel, cobble, and boulder substrates.	HP	Suitable habitat found in biological study area (BSA). Not observed during surveys. Reported to historically or currently occur downstream in Kelly Creek (University of California, Davis 2014). Avoidance and minimization measures recommended.
Amphibians				
Coast range newt *Taricha torosa*	-- / SSC / --	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats such as oak woodlands and migrates to breed in ponds, reservoirs, and slow-moving streams.	P	Suitable breeding habitat found in BSA. Observed in BSA (March 2017). Nearest record 1.5 miles southeast in Los Padres National Forest. Avoidance and minimization measures recommended.
Birds				
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	MBTA / WL / --	Coastal sage scrub (preferred), burned scrub, and sparse, mixed chaparral; steep, rocky hillsides with grass and forb patches.	HP	Suitable habitat found in BSA. Not observed during surveys. Nearest record is 5 miles southeast. Avoidance and minimization measures recommended.
Yellow warbler *Setophaga petechia*	-- /SSC/--	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; may also use oaks, conifers, and urban areas near stream courses	P	Suitable habitat found in BSA. Observed during surveys. Avoidance and minimization measures recommended
California spotted owl *Strix occidentalis*	-- / SSC / FSS	Nests in mature forests, including coast live oak and riparian woodlands at lower elevations. Occupies predominantly platform nests in Southern California.	HP	Suitable habitat found in BSA. Not observed during surveys. Avoidance and minimization measures recommended.

Status Codes:
Federal:
MBTA = Protected by Federal Migratory Bird Treaty Act
State: California Department of Fish and Wildlife:
SSC = California Species of Special Concern
WL = CDFW Watch List Species

Other:
FSS = Forest Service Sensitive
Habitat Present/Absent
Habitat Present [HP]: Habitat is, or may be, present.
Present [P]: The species is present.

Environmental Consequences

The impacts of the proposed project on each special-status animal species are detailed below.

Arroyo Chub

Because it is assumed the arroyo chub may be present within the BSA, the proposed project may result in temporary impacts on 0.10 acre of suitable aquatic habitat for this species. Dewatering required for construction may result in the injury or mortality of arroyo chub. In addition, the potential need to capture and relocate arroyo chub could subject these animals to stresses that could result in adverse effects. However, because the habitat conditions may not be suitable for this species, the potential for these effects are low.

Coast Range Newt

The proposed project may result in temporary impacts on 0.10 acre of potential breeding habitat and 0.26 acre of dispersal habitat for the coast range newt during construction of the temporary access road and dewatering required for construction. In addition, erosion and sedimentation may occur, which could cause direct and/or indirect temporary effects to the quality of water inhabited by coast range newts. These components of construction have the potential to result in injury or mortality of coast range newts throughout the BSA. If present during construction, it may be necessary to capture and relocate coast range newts, which could subject these animals to stresses that could result in adverse effects.

Operation of the proposed project will result in some beneficial impacts on the species. The fish passage and wildlife passage modifications to the culvert are considered a beneficial impact because they will improve conditions for species passage through the culvert.

Southern California Rufous-crowned Sparrow, Yellow Warbler, California Spotted Owl, and Other Nesting Birds

Nesting bird species are addressed here as a group because their habitat requirements and the project-related impacts are similar to the animal species discussed above. The avoidance and minimization measures listed below will also reduce impacts to nesting birds. During construction, impacts on nesting habitat may occur. Impacts are primarily due to the need to develop a temporary access road. Construction within approximately 11,286 square feet (0.26 acre) of potential nesting habitat, the removal of 13 live, native trees, the removal of 8 snags (dead trees), and the removal of vegetation may affect active bird nests. Noise and disturbance associated with construction could also result in indirect impacts on perching, foraging, and/or nesting behaviors.

Avoidance, Minimization, and/or Mitigation Measures

Arroyo Chub

1. The avoidance and minimization measures listed in Section 2.2.1 (Natural Communities) and the avoidance and minimization measures and compensatory mitigation listed in Section 2.2.2 (Wetlands and Other Waters) will also serve to avoid and minimize potential impacts to arroyo chub.

Coast Range Newt

1. Implementation of minimization and avoidance measures outlined in Section 2.2.4 (Threatened and Endangered Species) for the protection of California red-legged frog will also avoid minimize potential impacts to coast range newt.

Southern California Rufous-crowned Sparrow, Yellow Warbler, California Spotted Owl, and Other Nesting Birds

1. The impact avoidance and minimization measures in Section 2.2.2 (Wetlands and Other Waters) are also applicable to nesting bird habitat. In addition, the avoidance and minimization measures below will be implemented.
2. The typical nesting season for birds is February 15 through August 31. If feasible and regulatory approvals allow, all vegetation removal for this project will be scheduled to occur outside of the typical nesting bird season (i.e., a work window of September 1 to February 14) to avoid potential impacts on nesting birds.
3. If vegetation removal or other construction activities are proposed to occur during the nesting season (February 15 to August 31) and within 100 feet of potential nesting habitat, a nesting bird survey will be conducted by a biologist determined qualified by Caltrans no more than three days prior to construction.
4. During construction, active bird nests shall not be disturbed and eggs or young of native migratory birds shall not be killed, destroyed, injured, or harassed at any time. Readily visible exclusion zones where nests must be avoided will be established by a qualified biologist using high-visibility fencing. Work in exclusion zones shall be avoided until young birds have fledged (permanently left the nest) or the qualified biologist has determined that nesting activity has otherwise ceased.
5. Trees to be removed will be noted on design plans. Prior to any ground-disturbing activities, high-visibility fencing will be installed around the dripline of trees to be protected within project limits.
6. All clearing/grubbing and vegetation removal will be monitored and documented by a biological monitor, regardless of time of year.
7. If an active nest for California spotted owl or another special-status bird is observed within 100 feet of the API, all project activities shall immediately cease while Caltrans coordinates with applicable regulatory agencies and determines if additional measures are necessary.

Cumulative Impacts

Caltrans guidance for cumulative impacts assessments includes defining an RSA, which is the geographic area within which impacts on a particular resource are analyzed. The boundaries of RSAs for cumulative impact analyses are often broader than the boundaries used for project-specific analysis (such as the BSA). The RSA identified for all cumulative impact analyses for the proposed project is the Bear Creek watershed, which includes 2.5 square miles (1,620 acres) upstream of the culvert and 0.1 square mile downstream of the culvert.

According to the Schedule of Proposed Actions for the Los Padres National Forest, no Forest Service activities or permits are specifically identified that may adversely affect arroyo chub,

California coast range newt or nesting birds within the RSA. A search of Santa Barbara County planning permits resulted in no recent or current permits within the RSA that could affect these species.

Caltrans recently completed a pavement overlay project in the area, replacing the guard rail along the roadway section above the culvert. Work areas were limited to the existing disturbed road shoulder; therefore, no impacts on habitat for arroyo chub, coast range newt or nesting birds occurred. No other Caltrans projects have been identified in the RSA.

Arroyo Chub

No other past or future projects are anticipated to result in adverse impacts on arroyo chub in the RSA; therefore, the proposed project will not result in an adverse cumulative impact on arroyo chub.

Coast Range Newt

No other past or future projects are anticipated to result in adverse impacts on Coast Range newt in the RSA; therefore, the proposed project will not result in an adverse cumulative impact on coast range newt.

Southern California Rufous-crowned Sparrow, Yellow Warbler, California Spotted Owl, and Other Nesting Birds

No other past or future projects are anticipated to result in adverse impacts on the southern California rufous-crowned sparrow, yellow warbler, California spotted owl, and other nesting birds in the RSA; therefore, the proposed project will not result in an adverse cumulative impact on nesting bird species.

2.2.4 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the FESA (16 USC Section 1531, etc.; see also 50 CFR Part 402). This act, and later amendments, provide for the conservation of endangered and threatened species as well as the ecosystems upon which they depend. Under Section 7 of this act, agencies such as the FHWA and Caltrans, as assigned, are required to consult with the USFWS and the NOAA Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions that are likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a biological opinion with an incidental take statement or a letter of concurrence. Under Section 3 of the FESA, the term *take* means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" or attempt such conduct.

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. The CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and develop appropriate planning to offset project-caused losses of listed species and their essential habitats.

The CDFW is the agency responsible for implementing the CESA. Section 2080 of the California Fish and Game Code prohibits *take* of any species determined to be an endangered species or a threatened species. Under Section 86 of the California Fish and Game Code, the term *take* means 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 the CDFW. For species listed under both the FESA and the CESA requiring a biological opinion under Section 7 of the FESA, the CDFW may also authorize impacts on CESA species by issuing a consistency determination under Section 2080.1 of the California Fish and Game Code.

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 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 exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, continental shelf fishery resources, and fishery resources in special areas.

Affected Environment

The NES, prepared in October 2018, was the primary source of information used in preparation of this section. The BSA includes habitat for one threatened and endangered animal species, the California red-legged frog.

California red-legged frogs use a variety of areas, including aquatic, riparian, and upland habitats. They prefer aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 2.3 feet, and the presence of sturdy underwater supports, such as cattails (*Typha* spp.). The species was not observed during reconnaissance surveys in 2017, but a single individual (most likely an adult male) was observed in the outlet pool during the August 2018 tree survey. The nearest CNDDB record of California red-legged frog in the CNDDB is found 1.6 mile east in Cold Springs Canyon where an adult frog was observed in 2007. Suitable breeding habitat is found throughout perennial stream habitat, and suitable dispersal habitat is found in adjacent natural habitats (California sycamore woodlands, coast live oak woodland, and chamise – black sage chaparral).

Federally designated critical habitat for California red-legged frog also occurs in the BSA. The proposed project is in the Central Coast Recovery Area and Santa Maria River – Santa Ynez River Core Area #24. The primary constituent elements for California red-legged frog may be found in the BSA, as described below.

1. Aquatic Breeding Habitat. Bear Creek is a perennial stream that appears to be somewhat flashy, with fast-moving flows during winter rain events and slower flows with shallow pools after the high flows recede. Many of these pools are most likely filled for a minimum of 20 weeks in all but the driest of years, meeting the criteria for aquatic breeding habitat.

2. Aquatic Non-breeding Habitat. Most of the stream habitat in Bear Creek has suitable conditions for shelter, foraging, predator avoidance, and aquatic dispersal of juvenile and adult frogs.
3. Upland Habitat. Upland areas within and adjacent to the BSA have suitable habitat for shelter, foraging, and predator avoidance, including structural features such as boulders, rocks, and organic debris (e.g., downed trees, logs); small mammal burrows; or moist leaf litter.
4. Dispersal Habitat. Except for small areas of rural agricultural and residential development, most of the lands adjacent to the BSA are suitable for dispersal habitat. Although the culverts at SR 154 and downstream at Stagecoach Road may not be considered total barriers to frog passage, California red-legged frogs may not regularly move through the SR 154 culvert because of its length, combined with hydrologic conditions (swift currents during storm events and low flows at other times).

Environmental Consequences

Given the disturbance footprint, estimated permanent and temporary impacts to federally designated critical habitat are shown in Figure 2-1. Approximately 0.10 acre of aquatic breeding and non-breeding habitat (perennial stream channel) and 0.26 acre of upland and dispersal habitat (California sycamore woodland, coast live oak woodland, chamise – black sage chaparral) may be temporarily affected. A total of 13 native trees, between 4 and 12 inches in diameter at breast height, may be removed from these habitats to construct the temporary access road. The concrete fill in the culvert for fish passage improvements is not considered a permanent impact on California red-legged frog critical habitat because it is not expected to hinder frog passage and may actually improve passage conditions for frogs during most flow conditions. Of the 145,121 acres of California red-legged frog critical habitat in Unit STB-7, total impacts associated with the proposed project will affect less than 0.001 percent of this unit. Each of the primary constituent elements of the critical habitat may be affected but in even smaller areas than the area of overall project impacts on California red-legged frog critical habitat. Considered in this context, the potential impacts on the primary constituent elements for California red-legged frog will be insignificant because of the small area of effect.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures to be implemented for the protection of the California red-legged frog include the following (Measures 2-20 are taken from the Caltrans' Programmatic Biological Opinion for California red-legged frog):

1. Impact avoidance, minimization, and mitigation measures in Section 2.2.2 (Wetlands and Other Waters) are also applicable to federally designated critical habitat for California red-legged frog.
2. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of species.
3. Ground disturbance shall not begin until written approval is received from the USFWS that the biologist is qualified to conduct the work.
4. A USFWS-approved biologist shall survey the project area no more than 48 hours before the onset of work activities. If any life stage of the species is found and these individuals

are likely to be killed or injured by work activities, the approved biologist shall be allowed sufficient time to move them from the site before work begins. The USFWS-approved biologist shall relocate the species the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the project. The relocation site shall be in the same drainage to the extent practicable. Caltrans shall coordinate with USFWS on the relocation site prior to the capture of any species.

5. Before any activities begin on a project, a USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the species and its habitat, the specific measures that are being implemented to conserve the species for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
6. A USFWS-approved biologist shall be present at the work site until all species have been removed, workers have been instructed, and disturbance of the habitat has been completed. After this time, Caltrans shall designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist shall ensure that this monitor receives the training outlined in measure 5, above, and training related to identification of species. If the monitor or the USFWS-approved biologist recommends that work be stopped because the species would be affected in a manner not anticipated by Caltrans and USFWS during review of the proposed action, the resident engineer shall be notified immediately. The resident engineer shall resolve the situation by requiring all actions that are causing these effects to be halted. When work is stopped, the USFWS shall be notified as soon as possible.
7. During project activities, all trash that may attract predators or scavengers shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.
8. Without the express permission of the USFWS, all refueling, maintenance, and staging of equipment and vehicles shall occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat. The monitor shall ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans shall ensure that a plan is in place for prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.
9. Habitat contours shall be returned to a natural configuration at the end of the project activities. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible, or modification of original contours would benefit the species.
10. The number of access routes, the size of staging areas, and the total area of activity shall be limited to the minimum necessary to achieve the project. ESAs shall be established to confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact on species' habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

11. Caltrans shall attempt to schedule work for times of the year when impacts on the species would be minimal. For example, work that would affect large pools that may support breeding would be avoided to the maximum degree practicable during the breeding season (November through May). Isolated pools that are important to maintain species through the driest portions of the year would be avoided to the maximum degree practicable during the late summer and early fall. Habitat assessments, surveys, and technical assistance between Caltrans and the USFWS during project planning shall be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.
12. To control sedimentation during and after project completion, Caltrans shall implement the BMPs outlined in any authorizations or permits issued under the authorities of the CWA received for the project. If BMPs are ineffective, Caltrans shall attempt to remedy the situation immediately, in coordination with the USFWS.
13. If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 0.2 inch to prevent species from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed shall be minimized to the maximum extent possible; any imported material shall be removed from the streambed upon completion of the project.
14. Unless approved by the USFWS, water shall not be impounded in a manner that may attract species.
15. A USFWS-approved biologist shall permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkia*), and centrarchid fishes, from the project area to the maximum extent possible. The USFWS-approved biologist shall be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.
16. If Caltrans demonstrates that disturbed areas have been restored to conditions that allow them to function as habitat for the species, these areas will not be included in the amount of total habitat permanently disturbed.
17. To ensure that diseases are not conveyed between work sites by the USFWS-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Task Force shall be followed at all times.
18. Project sites shall be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials shall be used to the extent practicable. Invasive exotic plants shall be controlled to the maximum extent practicable. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible or practical.
19. Caltrans shall not use herbicides as the primary method to control invasive exotic plants. However, if it is determined that the use of herbicides is the only feasible method for

controlling invasive plants at a specific project site, the following additional protective measures for the species shall be implemented:

a. Caltrans shall not use herbicides during the breeding season for the species;

b. Caltrans shall conduct surveys for the species immediately prior to the start of herbicide use. If found, species shall be relocated to suitable habitat far enough from the project area that no direct contact with herbicide would occur;

c. Giant reed and other invasive plants shall be cut and hauled out by hand and painted with glyphosate-based products, such as Aquamaster® or Rodeo®;

d. Licensed and experienced Caltrans personnel or a licensed and experienced contractor shall use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site;

e. All precautions shall be taken to ensure that no herbicide is applied to native vegetation;

f. Herbicides shall not be applied on or near open water surfaces (no closer than 60 feet from open water);

g. Foliar applications of herbicide shall not occur when wind speeds are in excess of 3 miles per hour;

h. No herbicides shall be applied within 24 hours of forecast rain;

i. Application of all herbicides shall be done by qualified Caltrans personnel or contractors to ensure that overspray is minimized, applications are made in accordance with label recommendations, and all required and reasonable safety measures are implemented. A safe dye shall be added to the mixture to visually denote treated sites. Application of herbicides shall be consistent with the U.S. EPA's Office of Pesticide Programs, Endangered Species Protection Program, county bulletins;

j. All herbicides, fuels, lubricants, and equipment shall be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. Prior to the onset of work, Caltrans shall ensure that a plan is in place for a prompt and effective response to accidental spills. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

20. Upon completion of the project, Caltrans shall ensure that a Project Completion Report is completed and provided to the USFWS, following the template provided with the PBO. Caltrans shall include recommended modifications of the protective measures if alternative measures would facilitate compliance with the provisions of this consultation.

21. Habitat elements that need to be removed during construction, such as boulders, rocks, downed trees, or logs, will be salvaged and replaced on-site.

22. Installation of the high-visibility ESA fence described in Section 2.2.1 (Natural Communities) will also minimize impacts to California red-legged frog.

Caltrans anticipates the proposed project will qualify for FESA incidental take coverage under the *Programmatic Biological Opinion for Projects Funded or Approved under the FHWA's Federal Aid Program* (USFWS 2011).

Cumulative Impacts

Caltrans guidance for cumulative impacts assessments includes defining an RSA, which is the geographic area within which impacts on a particular resource are analyzed. The boundaries of RSAs for cumulative impact analyses are often broader than the boundaries used for project-specific analysis (such as the BSA). The RSA identified for all cumulative impact analyses for the proposed project is the Bear Creek watershed, which includes 2.5 square miles (1,620 acres) upstream of the culvert and 0.1 square mile downstream of the culvert.

According to the Schedule of Proposed Actions for the Los Padres National Forest, no Forest Service activities or permits are specifically identified that may adversely affect California red-legged frog within the RSA. A search of Santa Barbara County planning permits resulted in no recent or current permits within the RSA that could affect this species.

Caltrans recently completed a pavement overlay project in the area, replacing the guard rail along the roadway section above the culvert. Work areas were limited to the existing disturbed road shoulder; therefore, no impacts on habitat for California red-legged frog occurred. No other Caltrans projects have been identified in the RSA. The proposed project is not expected to contribute to an adverse cumulative impact to California red-legged frog.

2.2.5 Invasive Species

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 and whose introduction does or is likely to cause economic or environmental harm or harm to human health." The 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 National Environmental Policy Act (NEPA) analysis for a proposed project.

Affected Environment

The NES, prepared in October 2018, was the primary source of information used in preparation of this section. A total of 11 invasive plant species were observed within the BSA. Most of the invasive species have low or sparse relative density. Two invasive species have an invasiveness rating of "high." Although invasive species were observed in each plant community in the BSA, most invasive species found in the BSA are adjacent to the road shoulders and in the fountain grass swards community.

Environmental Consequences

Construction of the proposed project, including ground disturbance, erosion control, and landscaping, could spread or introduce invasive species within the BSA.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented for the proposed project to prevent the spread of invasive plant species:

1. An Invasive Plant Management Plan will be implemented at the beginning of construction and will run through the end of the 1-year plant establishment contract. The Invasive Plant Management Plan will identify a list of invasive species found within the project area, specify appropriate methods for removal and disposal of invasive species, and outline documentation requirements.
2. Fill material that will be used to construct the access road will be clean and free of invasive plant material and seeds.
3. Caltrans will not use any erosion control seed mix containing invasive species for revegetation.
4. All construction equipment will be clean and free of soil containing seeds and and/or invasive plant material prior to entering the construction site to avoid/minimize the spread of invasive plants and/or seed within the construction area.
5. If soil from areas with weedy species must be removed, the top six inches containing the seed layer will be removed and disposed of off-site.

Cumulative Impacts

As described in earlier cumulative impact discussions, the RSA is the Bear Creek watershed. Caltrans recently completed a pavement overlay project in the area, replacing the guard rail along the roadway section above the culvert. Controlling the spread of invasive species is standard procedure for Caltrans projects. No other Caltrans projects have been identified in the RSA. In addition, according to the Schedule of Proposed Actions for the Los Padres National Forest, the Forest-wide Noxious Weed Program and a special use authorization and issuance for existing communications uses are ongoing actions in all units of the Los Padres National Forest. An environmental assessment was prepared for their noxious weed program, which involves controlling targeted invasive and non-native plant species using an integrated treatment approach. The Forest Service is re-issuing authorizations for existing communication facilities that support AM/FM radio, television, cellular service; specific information is not publicly available. No additional projects have been identified within the RSA.

With implementation of the Los Padres National Forest's integrated weed management approach and Caltrans' standard procedures for invasive species control, including the above-listed avoidance and minimization measures, this project does not have the potential to contribute to a significant adverse cumulative impact involving invasive species.

2.3 Construction Impacts

Construction activities associated with the proposed project will result in temporary impacts to natural communities. The space required for equipment staging and storage, an access road, placement of the concrete delivery pipe down the slope above the culvert and stream diversion materials will result in temporary impacts. Construction equipment used on this project may include trucks, bulldozers, backhoes, compactors, clamshells, excavators, compressors, and water trucks.

The proposed project would result in temporary construction impacts to the visual environment. Sources of temporary impacts would result from the presence of staging and storage areas for construction equipment and materials, and associated worker foot-traffic. Construction impacts on the visual environment would also consist of the construction and presence of the temporary access road, areas for securing the concrete delivery pipe, and areas for stream diversion materials and equipment. Trucks, bulldozers, backhoes, compactors, clamshells, excavators, compressors, scrapers, water trucks, and any other equipment necessary during construction may be used. Equipment would be temporarily staged at an existing gravel turnout on SR 154, near the outlet side of the culvert. Impacts to the visual environment would last approximately two to three months, the anticipated duration for construction.

The proposed project may result in temporary impacts to biological resources. Construction of the temporary access road and dewatering for construction have the potential to result in the injury or mortality of California red-legged frogs and/or coast range newts (if present during construction) throughout the BSA. Injury or mortality could occur via accidental crushing by worker foot-traffic or construction equipment. However, construction of the fish passage and wildlife passage modifications to the culvert would have a long-term beneficial effect, improving conditions for amphibian passage through the culvert. Breeding habitat may either be improved or at least not degraded from existing conditions.

Temporary impacts to federally designated critical habitat for the red-legged frog would occur. Approximately 0.10 acres of aquatic breeding and non-breeding habitat primary constituent elements (perennial stream channel) and 0.26 acres of upland and dispersal habitat primary constituent elements (California sycamore woodlands, coast live oak woodland, chamise – black sage chaparral habitats) will be temporarily impacted. However, since the proposed project would result in impacts to less than 0.001% of this critical habitat unit, the construction impacts would be insignificant due to the small area of effect.

Dewatering for construction has the potential to result in the injury or mortality of arroyo chub (if present). The potential need to capture and relocate arroyo chub would subject these animals to stresses that could result in adverse effects. However, the potential for these effects are low because habitat conditions in the project reach of Bear Creek may not be suitable for this species.

Temporary impacts to potential bird nesting habitat will occur primarily due to temporary construction access. Approximately 11,286 ft^2 (0.26 acres) of potential nesting habitat (California sycamore woodlands, coast live oak woodland, chamise-black sage chaparral), will be temporarily impacted. The removal of vegetation could directly impact active bird nests and any eggs or young residing in nests. Indirect impacts could also result from noise and disturbance

associated with construction, which could alter perching, foraging, and/or nesting behaviors. Removal of 13 native trees and snags between 4 and 12 inches in diameter at breast height and understory vegetation may also indirectly impact nesting birds through the reduction of nesting and roosting habitat. The avoidance, minimization and mitigation measures outlined in this will effectively reduce temporary impacts to biological resources.

Chapter 3 CEQA Checklist

3.1 Determining Significance under CEQA

The proposed project is a Caltrans project and subject to state environmental review requirements. Project documentation, therefore, has been prepared in compliance with CEQA. Caltrans is the lead agency under CEQA. CEQA requires Caltrans to identify each "significant effect on the environment" resulting from the project as well as 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.

This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

The checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with projects will indicate that there are no impacts to a particular resource. A "no impact" answer in the last column reflects this determination. 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; they do not represent thresholds of significance.

Project features, which can include both the design elements of the project and standardized measures that are applied to all or most Caltrans projects, such as BMPs, as well as measures included in the Standard Plans and Specifications or were Standard Special Provisions, are considered to be integral parts of the project and are considered prior to any of the significance determinations documented below (see Chapters 1 and 2 for a detailed discussion of these features). The annotations to this checklist are summaries of information contained in Chapter 2 that provide 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.

AESTHETICS

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒

AGRICULTURE AND FOREST RESOURCES

In determining whether impacts on 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on 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 forestland, 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:	**Significant and Unavoidable Impact**	**Less than Significant with Mitigation Incorporated**	**Less-than-Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forestland (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))?	☐	☐	☐	☒
d) Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment that, because of their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☒

AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the determinations below.				
Would the project:	**Significant and Unavoidable Impact**	**Less than Significant with Mitigation Incorporated**	**Less-than-Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors that would affect a substantial number of people?	☐	☐	☐	☒

BIOLOGICAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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 Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
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?	☐	☐	☐	☒

CULTURAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

GEOLOGY AND SOILS

Would the project:	**Significant and Unavoidable Impact**	**Less than Significant with Mitigation Incorporated**	**Less-than-Significant Impact**	**No Impact**
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismically related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils that would be incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

GREENHOUSE GAS EMISSIONS

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Caltrans has used the best available information, based to the extent possible on scientific and factual information, to describe, calculate, or estimate the amount of greenhouse gas emissions that may occur related to this project. The analysis included in the climate change section of this document provides the public and decision-makers as much information about the project as possible. It is Caltrans' determination that, in the absence of statewide-adopted thresholds or GHG emissions limits, it is too speculative to make a significance determination regarding an individual project's direct and indirect impacts with respect to global climate change. Caltrans remains committed to implementing measures to reduce the potential effects of the project. These measures are outlined in the climate change section that follows the CEQA checklist and related discussions.			
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				

HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?	☐	☐	☐	☒
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, result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

HYDROLOGY AND WATER QUALITY

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

LAND USE AND PLANNING

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

MINERAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

NOISE

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?	☐	☐	☐	☒
b) Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☐	☒
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity, above levels existing without the project?	☐	☐	☐	☒
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity, above levels existing without the project?	☐	☐	☐	☒
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, expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

POPULATION AND HOUSING

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

PUBLIC SERVICES

Would the project?	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

RECREATION

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

TRANSPORTATION/TRAFFIC

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit and bicycle or pedestrian facilities or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

TRIBAL CULTURAL RESOURCES

Would the project?	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as 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 either:				
a) Listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☒
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

UTILITIES AND SERVICE SYSTEMS

Would the project:	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that 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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

MANDATORY FINDINGS OF SIGNIFICANCE

Would the project?	Significant and Unavoidable Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒
b) Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☐	☒
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

3.3 Climate Change

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

Although climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are concerned mostly with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation.[1] In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest contributors of GHG emissions.[2] The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: "GHG mitigation" and "adaptation." "GHG mitigation" covers activities and policies aimed at reducing GHG emissions to reduce 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).

Regulatory Setting

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

Federal

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

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

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach

[1] U.S. Environmental Protection Agency. 2016. *U.S. Greenhouse Gas Inventory Report: 1990-2014.* April. Available: https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014.
[2] California Air Resources Board. 2018. *California Greenhouse Gas Emission Inventory.* Available: https://www.arb.ca.gov/cc/inventory/data/data.htm.

that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.[3] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability."[4] Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

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

Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) 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.

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

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

[3] https://www.fhwa.dot.gov/environment/sustainability/resilience/
[4] https://www.sustainablehighways.dot.gov/overview.aspx

Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

U.S. EPA, in conjunction with the National Highway Traffic Safety Administration (NHTSA), issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010[5] and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target.[6]

NHTSA and EPA issued a Final Rule for "Phase 2" for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO_2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

State

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

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

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

AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals as outlined in EO S-3-05 while further mandating that CARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in

[5] https://one.nhtsa.gov/Laws-&-Regulations/CAFE-%E2%80%93-Fuel-Economy
[6] https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhouse

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.

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

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

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill required CARB to set regional emissions reduction targets for passenger vehicles. The metropolitan planning organization for each region must then develop a sustainable communities strategy that integrates transportation, land use, and housing policies to plan how it will achieve the emissions target for its region.

SB 391, Chapter 585, 2009, California Transportation Plan: This bill required the state's long-range transportation plan to meet California's climate change goals under AB 32.

EO B-16-12 (March 2012): This order required 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.

EO B-30-15 (April 2015): This order established an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$). Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every 3 years, and ensure that its provisions are fully implemented.

SB 32 Chapter 249, 2016: This bill codified the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

Environmental Setting

In 2006, the legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB

32 required 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. The scoping plan was first approved by CARB in 2008 and must be updated every five years. 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. As part of its supporting documentation for the updated scoping plan, CARB released the GHG inventory for California.[7] CARB is responsible for maintaining and updating California's GHG inventory per Health and Safety Code Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in 2020 if none of the foreseeable measures included in the scoping plan are implemented.

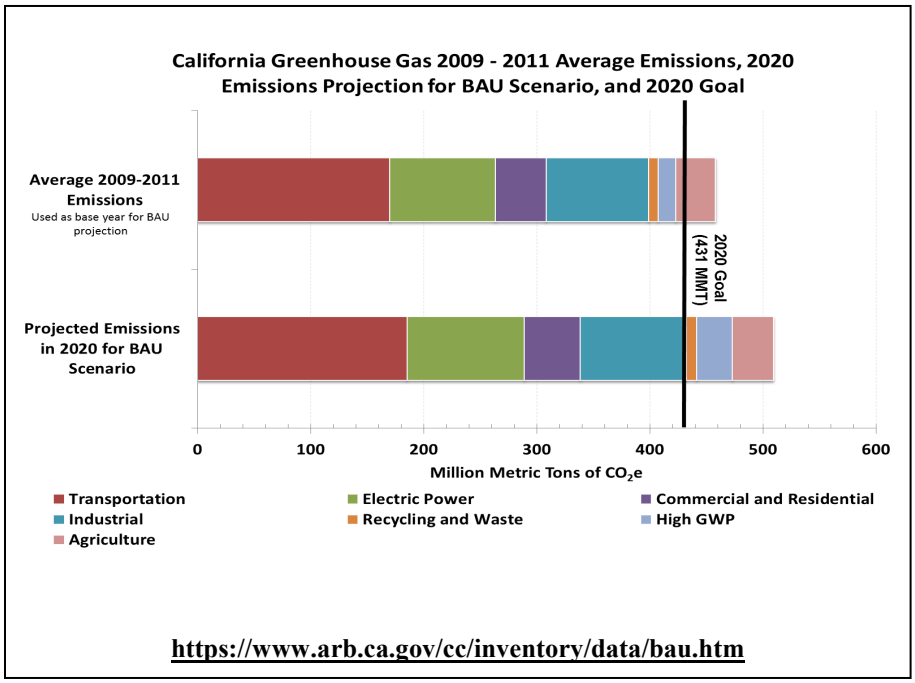

Figure 3-1 2020 Business as Usual Emissions Projection, 2014 Edition

An emissions projection estimates future emissions, based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 3-1 represent a business-as-usual (BAU) scenario, assuming none of the scoping plan measures are implemented. The 2020 BAU emissions estimate assists CARB in demonstrating progress toward meeting the 2020 goal of 431 $MMTCO_2e$.[8] The 2018 edition of the GHG emissions inventory found total California emissions of 429 $MMTCO_2e$ for 2016.

[7] California Air Resources Board. 2018. *California Greenhouse Gas Emission Inventory.* Available: https://www.arb.ca.gov/cc/inventory/data/data.htm.

[8] The revised target using global warming potential (GWP) from the IPCC Fourth Assessment Report (AR4).

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 $MMTCO_2e$ total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 $MMTCO_2e$.

Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHGs.[9] 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, you must compare the incremental impacts of the project with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

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

Operational Emissions

The proposed project would not increase the capacity of the highway or increase vehicle miles traveled, and therefore does not have the potential to result in an increase in operational GHG emissions. Additionally, the proposed project would not result in traffic delays or traffic congestions because the repair of the culvert and construction of the fish passage structure would be conducted off the highway in the Bear Creek drainage.

Construction Emissions

Construction GHG emissions would result from material processing and on-site construction equipment. 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.

Carbon dioxide (CO_2) emissions generated from construction equipment were estimated using the Caltrans Construction Emissions Tool. The estimated work period will be two to three months. The estimated CO_2 construction emissions are 87 -131 US tons generated over a two to three-month work period.

[9] This approach is supported by the Association of Environmental Professionals in *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents*, March 5, 2007; the South Coast Air Quality Management District in *The CEQA Guide*, April 2011, Chapter 6; and the U.S. Forest Service in *Climate Change Considerations in Project-Level NEPA Analysis*, July 13, 2009.

The project proposes to revegetate all disturbed soil areas following completion of construction. Landscaping reduces surface warming and, through photosynthesis, removes CO_2 from the atmosphere. In addition, all construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7 1.02C, Emissions Reduction, and Section 14-9.02, Air Pollution Control. These specifications require contractors to certify they are aware of and will comply with all ARB emission reduction regulations; and to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

CEQA Conclusion

While the project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. While it is Caltrans' determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Statewide Efforts

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

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

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove CO_2 from the atmosphere through biological processes and then sequester the carbon in above- and below-ground matter.

Figure 3-2 Governor's Climate Change Pillars: 2030 Greenhouse Gas Reduction Goals

Caltrans Activities

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

California Transportation Plan (CTP 2040)

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

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. Although metropolitan planning organizations 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 the following:

1. Increasing the percentage of non-auto mode share

2. Reducing vehicle miles traveled per capita
3. Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

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

Caltrans' *Director's Policy 30*, Climate Change (June 22, 2012), is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into departmental decisions and activities. In addition, Caltrans' *Activities to Address Climate Change* (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce GHG emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

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

1. To reduce and control emissions during construction, Section 14-09.02, Air Pollution Control will be implemented. This specification requires the contractor to comply with all state and local air pollution control district rules, ordinances, and regulations in regard to air quality. Regulations such as idling restrictions can help reduce GHG emissions from idling construction equipment.

2. The project will revegetate and replace any vegetation that is removed from the project at a ratio of at least 3:1. Vegetation reduces surface warming and, through photosynthesis, removes CO_2 from the atmosphere.

Adaptation Strategies

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

Federal Efforts

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality, the Office of Science and Technology Policy (OSTP), and NOAA

Fisheries Service, released its interagency task force progress report on October 28, 2011,[10] outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provided an update on actions in key areas of federal adaptation, including building resilience in local communities, safeguarding critical natural resources such as fresh water, and providing accessible climate information and tools to help decision-makers manage climate risks.

The U.S. Department of Transportation (DOT) issued a policy statement on climate adaptation in June 2011, committing to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely and that transportation infrastructure, services and operations remain effective in current and future climate conditions."[11]

To further the DOT policy statement, on December 15, 2014, FHWA issued Order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events).[12] This directive established a FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA will work to integrate consideration of these risks into its planning, operations, policies, and programs in order to promote preparedness and resilience, safeguard federal investments, and ensure the safety, reliability, and sustainability of the nation's transportation systems. FHWA has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, state, and local levels.[13]

State Efforts

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California's vulnerability to sea-level rise (SLR) caused by climate change. This order set in motion several agencies and actions to address the concern of SLR and directed all state agencies planning to construct projects in areas vulnerable to future SLR to consider a range of SLR scenarios for 2050 and 2100, assess project vulnerability, and, to the extent feasible, reduce expected risks and increase resiliency to SLR. SLR estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high-water levels, and storm surge and storm wave data.

Governor Schwarzenegger also requested the National Academy of Sciences to prepare an assessment report to recommend how California should plan for future SLR. The final report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (Sea-Level Rise

[10] The White House. 2013. *Climate Change Resilience*. Available: https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience.
[11] Federal Highway Administration. 2018. *Resilience*. Available: https://www.fhwa.dot.gov/environment/sustainability/resilience/.
[12] Federal Highway Administration. 2014. *FHWA Order 5520.* Available: https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm.
[13] Federal Highway Administration. 2018. *Resilience*. Available: https://www.fhwa.dot.gov/environment/sustainability/resilience/.

Assessment Report),[14] was released in June 2012 and included relative SLR projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, land subsidence rates, and the range of uncertainty in selected SLR projections. It provided a synthesis of existing information on projected SLR impacts on state infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems and a discussion of future research needs regarding sea-level-rise.

In response to EO S-13-08, the Natural Resources Agency, in coordination with local, regional, state, federal, and public and private entities, developed The California Climate Adaptation Strategy (December 2009),[15] which summarized the best available science on climate change impacts on California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across state agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk (Safeguarding California Plan).*

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

EO S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided "guidance for incorporating SLR projections into planning and decision making for projects in California," specifically, "information and recommendations to enhance consistency across agencies in their development of approaches to SLR."[16].

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding, the increased frequency and intensity of storms and wildfires, rising temperatures, and rising sea levels. Caltrans is actively engaged in working toward identifying these risks throughout the state and will work to incorporate this information into all planning and investment decisions, as directed in EO B-30-15.

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

[14] National Academy of Sciences. 2012. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future.* Available: http://www.nap.edu/catalog.php?record_id=13389.
[15] State of California. 2018. *California Climate Adaptation Strategy*. Available: http://www.climatechange.ca.gov/adaptation/strategy/index.html.
[16] California Ocean Protection Council. 2018. *State of California Sea-Level Rise Guidance Document.* Available: http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document.

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Chapter 4 Comments and Coordination

Early and continuing coordination with public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis required, potential impacts and avoidance, minimization and/or mitigation measures and related environmental requirements. Agency consultation for this project has been accomplished through a variety of formal and informal methods, including Project Development Team meetings, interagency coordination meetings, etc. Public participation will be sought through the release and review of this Draft Initial Study/Proposed Mitigated Negative Declaration. This chapter summarizes the results of the Department's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

February 27, 2017: Email communications between Jennifer Moonjian (Caltrans Biologist) and Jay Ogawa (NMFS Biologist) about steelhead presence in the project stream.

November 6, 2017: Caltrans submitted an online request through the USFWS IPaC website for an official USFWS species list for the project area. The official USFWS species list was received that day.

November 6, 2017: Caltrans generated and submitted an official NMFS species list for the San Marcos Pass 7.5-minute quadrangle.

November 8, 2017: Email communications between Mindy Trask (Caltrans Biologist) and Rick Farris (USFWS Biologist) to discuss regulatory coordination since the project has a more than one federal nexus. Rick indicated the lead for ESA consultation tends to be whomever is the NEPA lead, but that it may be appropriate for Las Padres National Forest to take the lead if most of the work in on National Forest land. Caltrans can only use our California red-legged frog programmatic if Caltrans takes the lead.

November 8, 2017: Email communications between Mindy Trask and Theresa Stevens (USACE Environmental Specialist) to discuss options for regulatory coordination.

December 11, 2017: Telephone communication between Mindy Trask and Chris Dellith (USFWS Biologist) to discuss USFWS species that may be present in the project area.

December 18, 2017: Email communication between Mindy Trask and Chris Dellith. Chris reviewed the project map and confirmed that he did not expect southwestern willow flycatcher or least Bell's vireo to be present, but that the area has foraging and dispersal habitat for California red-legged frog, possibly also breeding habitat.

January 8-9, 2018: Telephone and email communications between Mindy Trask and Jonathan Mann (CDFW Senior Hydraulic Engineer) to discuss CDFW's fish passage design goals and design limitations.

January 17 – May 1, 2018: Email communications among Mindy Trask, Jonathan Mann, and Jim Mills (Caltrans Hydraulics Engineer) to discuss fish passage design details.

March 13, 2018: Conference call meeting with Mindy Trask, Jim Mills, Joe Erwin (Caltrans Project Manager), Aaron Wolfram (Caltrans Designer Engineer), David Beard (Caltrans Senior Design Engineer), Jonathan Mann, Rick Macala (CDFW Senior Hydraulics Engineer), and Mary Larson (CDFW Wildlife Biologist) to discuss the fish passage design and other design considerations.

May 18, 2018: Email communications between Jim Mills and Jonathan Mann to refine the fish passage and wildlife passage design. Jonathan Mann approved the final design details.

July 27, 2018: Caltrans submitted an online request through the USFWS IPaC website for an official USFWS species list for the project area. The official USFWS species list was received that day.

July 30, 2018: Caltrans generated and submitted an official NMFS species list for the San Marcos Pass 7.5-minute quadrangle.

Chapter 5 List of Preparers

This chapter lists Caltrans personnel and consultant staff members who were responsible for preparation and/or review of this document and/or supporting technical studies.

Caltrans

Alhabaly, Allam. Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 16 years of experience in environmental technical studies, with emphasis on noise studies. Contribution: Noise Study Report

Beard, David. Senior Transportation Engineer. B.S. Civil Engineering, California Polytechnic State University, San Luis Obispo; 27 years of experience in design and project management. Contribution: Coordinated the design process; Initial Study review.

Boudreau, Cecilia. Associate Environmental Planner. B.S. Forestry and Natural Resource Management, California Polytechnic State University, San Luis Obispo; 12 years' experience in environmental analysis. Contribution: Coordinated environmental process, prepared Initial Study.

Brown, Katherine. Landscape Architect. B.A., Landscape Architecture; 28 years of landscape architecture experience. Contribution: Landscape Architect.

Carr, Robert. Associate Landscape Architect. B.S., Landscape Architecture, California Polytechnic State University, San Luis Obispo; 30 years of experience preparing Visual Impact Assessments. Contribution: Visual Impact Study.

Dallas, Mitch. Senior Environmental Planner, Coastal Resources Specialist. B.S. in Natural Resources Management; 20 years of Biology and Environmental Analysis experience. Contribution: Wildlife surveys.

Joslin, Terry L. Associate Environmental Planner (Archaeology). PhD, M.A., Anthropology, University of California, Santa Barbara; B.S., Anthropology/Geography, California Polytechnic State University, San Luis Obispo; more than 25 years of archaeology compliance experience and research. Contribution: Archaeology Study.

Kloth, Joel. Engineering Geologist. B.S., Geology, California Lutheran University; more than 30 years of experience in petroleum geology, geotechnical geology, and environmental engineering/geology-hazardous waste. Contribution: Hazardous Waste Studies.

Leyva, Isaac. Engineering Geologist. B.S., Geology; 28 years of experience in petroleum geology, environmental geology, geotechnical engineering. Contribution: Paleontology technical report and Water Quality Assessment.

Mills, James, P.E., Hydraulics Engineer, B.S. Civil Engineering, California State Polytechnic University, Pomona. 22 years of experience in Hydraulics and Hydrology. Contribution: Design of fish passage.

McBride, Sunny. Associate Environmental Planner. B.S. Biological Sciences; 10 years of environmental analysis experience. Contribution: Preparation of Initial Study.

Moonjian, Jennifer. Associate Environmental Planner (Natural Sciences). B.S. and M.S., Biological Sciences; 11 years of environmental impact assessment and biological resources experience. Contribution: Site surveys.

Moule, John. Consultant Associate Biologist/Environmental Planner. B.S., Biology, Humboldt State University; 23 years of natural resource and biology experience. Contribution: Botanical Surveys.

Riegelhuth, Pete. National Pollutant Discharge Elimination System/Stormwater Coordinator, Landscape Associate. Bachelor of Landscape Architecture, California Polytechnic State University, San Luis Obispo; 5 years of experience as District Construction Stormwater Coordinator and 13 years as National Pollutant Discharge Elimination System/Stormwater Coordinator. Certified Professional in Erosion and Sediment Control, CPESC #5336. Contribution: Water quality review.

Robertson, Morgan. Associate Environmental Planner (Natural Sciences). M.S., Wildlife Biology, University of Alaska, Fairbanks; B.S., Biology, University of California, Davis; more than 20 years of biology experience. Contribution: Natural Environment Study Review.

Trask, Mindy. Associate Environmental Planner (Natural Sciences). M.R.P., Environmental and Regional Planning, Washington State University, Pullman; M.S., Rangeland Resources, Oregon State University, Corvallis; B.S., Ecology and Systematic Biology, California Polytechnic State University, San Luis Obispo; 20 years of environmental planning and biological sciences experience. Contribution: Field studies, documentation, regulatory permitting, monitoring, and reporting.

Walth, Jim. Associate Environmental Planner (Natural Sciences). M.S., Biological Sciences, California Polytechnic State University, San Luis Obispo; B.S., Biology, California State University, Bakersfield; 12 years of environmental impact assessment and biological resources experience. Contribution: Permit Coordinator.

Wilkinson, Jason. Senior Environmental Planner. B.S., Natural Resource Management, Minor in Geographical Information System (GIS), California Polytechnic State University, San Luis Obispo; 11 years of environmental planning experience. Contribution: Initial Study review.

Wolfram, Aaron. Transportation Engineer. B.S. Civil Engineering, University of Akron, Akron, OH; 11 years of experience in transportation design and construction management. Contribution: Developed Project Report and applicable attachments.

ICF

Andersen, Jennifer, Senior Associate. BA, international relations, University of Southern California; 7 years of experience in environmental planning. Contribution: preparation and review of the Initial Study.

Anaya, Mario, Senior Environmental Planner. MPA, urban planning, California State University, Northridge; BA, global studies, University of California, Los Angeles; 10 years of experience in environmental planning. Contribution: preparation of the Initial Study.

Herron, Will, Environmental Planner. BA, international relations, University of Southern California; 2 years of experience in environmental planning. Contribution: preparation of the Initial Study.

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Chapter 6 Distribution List

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William Meller, MD 2926 Kenmore Place Santa Barbara, CA 93105-2224	Kyle Kinports 3505 Paradise Road Santa Barbara, CA 93105

The distribution list is not a full list of those who will receive a copy of this Draft Initial Study/Proposed Mitigated Negative Declaration. A Notice of Completion and copies of this Draft Initial Study/Proposed Mitigated Negative Declaration have been sent to the State Clearing House for distribution to various public agencies who may have an interest in the proposed project.

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Appendix A Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

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Making Conservation a California Way of Life.

April 2018

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."*

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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, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone (916) 324-8379, TTY 711, email Title.VI@dot.ca.gov, or visit the website www.dot.ca.gov.

LAURIE BERMAN
Director

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Appendix B Avoidance, Minimization and/or Mitigation Summary

To be sure that all environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as described in the proposed Environmental Commitments Record) would be implemented. During project design, the avoidance, minimization, and/or mitigation measures would be incorporated into the project's final plans, specifications, and cost estimates, as appropriate. All permits would be obtained prior to implementation of the project. During construction, environmental and construction/engineering personnel would ensure that the commitments contained in the Environmental Commitments Record are fulfilled. Following construction and the appropriate phases of project delivery, long-term mitigation maintenance and monitoring would take place, as applicable. Because the following Environmental Commitments Record is a draft, some fields have not been completed but will be filled in as each measure is implemented.

Note: Some measures may apply to more than one resource area. Duplicated or redundant measures have not been included in this Environmental Commitments Record.

Visual/Aesthetics (Section 2.1.1)

1. Restore all construction access roads, staging areas, and other temporary uses to their pre-construction topographic contours.
2. Preserve as much existing vegetation as possible. Use prescriptive pruning, clearing and grubbing, and grading techniques, which save the most vegetation possible.

Natural Communities (Section 2.2.1)

1. High-visibility fencing will be installed to minimize disturbance in natural areas and habitats of concern (i.e., environmentally sensitive areas [ESAs]). Special provisions for the installation of high-visibility fencing and silt fencing shall be included in the construction contract, and fencing will be identified on the project plans. Prior to the start of construction, ESAs will be delineated in the field and approved by Caltrans' environmental division.
2. Minimization and avoidance measures listed under Section 2.2.2 (Wetlands and Other Waters) will also protect the natural communities discussed in this section.
3. In addition, Mitigation Measure 1 described in Section 2.2.2 (all removed trees will be replaced in kind at a ratio of at least 3:1), will also apply to California sycamore woodlands.

Wetlands and Other Waters (Section 2.2.2)

Avoidance and Minimization Measures

1. Prior to construction, Caltrans will prepare an MMP as a requirement of the CDFW 1602 Permit. The MMP will outline action measures to be implemented during construction to reduce impacts to jurisdictional waters. The MMP will also outline monitoring requirements to ensure that the re-vegetation efforts are successful and that the fish weirs are functioning properly. The MMP will be consistent with federal and state regulatory

requirements and amended with any regulatory permit conditions, as required. Caltrans will implement the MMP as necessary during construction and immediately following project completion.

2. The temporary stream diversion will be timed to occur between June 1 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to be dry or at seasonal minimum. Deviations from this work window will be made only with permission from the relevant regulatory agencies.
3. During construction, all project-related hazardous materials spills within the project site will be cleaned up immediately. Readily accessible spill prevention and cleanup materials will be kept by the contractor on-site at all times during construction.
4. During construction, erosion control measures will be implemented. Silt fencing, fiber rolls, and barriers will be installed as needed between the project site and jurisdictional waters and riparian habitat.
5. During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area. This area will be a minimum of 100 feet from aquatic areas; if the area is less than 100 feet from aquatic areas, the area must be surrounded by barriers (e.g., fiber rolls or equivalent). The staging areas will conform to Caltrans Construction Site BMPs (Caltrans 2017) to attain zero discharge of stormwater runoff.
6. Caltrans will use only clean gravel and/or cellular confinement system blocks for the temporary access road on the streambed and banks.
7. After construction, materials used to build the temporary access road on the streambed and banks (some clean gravel may remain, as approved by regulatory agencies) will be removed, and stream contours, substrate, and habitat elements will be restored as close as possible to their original condition.
8. Installation of the high-visibility ESA fence described above in Section 2.2.1 (Natural Communities) will also minimize impacts to Other Waters.

Compensatory Mitigation Measure

1. If needed to create access for construction equipment, the proposed action may remove approximately eight white alder trees, three coast live oak trees and two California sycamores. To mitigate for this impact, all trees removed will be replaced in-kind at a ratio of at least 3:1.

   Caltrans anticipates that all compensatory mitigation will occur on-site. Replacement plantings will be detailed in Caltrans' Landscape Architecture Landscape Planting Plan, which will be included in the final MMP prepared by Caltrans' biologist. The MMP will include planting specifications and grading plans to ensure survival of planted vegetation and re-establishment of functions and values. The final MMP will be consistent with standards and mitigation requirements from the applicable regulatory agencies.

   To ensure success, monitoring and a one-year contractor's plant establishment period will be required, which will include semi-annual (twice a year) inspections, weeding, and replacement planting. Irrigation is not proposed. Additional monitoring is likely to be required by the regulatory authorities after the construction contract has closed.

Animal Species (Section 2.2.3)

Arroyo Chub

1. The avoidance and minimization measures listed in Section 2.2.1 (Natural Communities) and the avoidance and minimization measures and compensatory mitigation listed in Section 2.2.2 (Wetlands and Other Waters) will also serve to avoid and minimize potential impacts to arroyo chub.

Coast Range Newt

1. Implementation of minimization and avoidance measures outlined in Section 2.2.4 (Threatened and Endangered species) for the protection of California red-legged frog will also avoid minimize potential impacts to coast range newt.

Southern California Rufous-crowned Sparrow, Yellow Warbler, California Spotted Owl, and Other Nesting Birds

1. The impact avoidance and minimization measures in Section 2.2.2 (Wetlands and Other Waters) are also applicable to nesting bird habitat. In addition, the avoidance and minimization measures below will be implemented.

2. The typical nesting season for birds is February 15 through August 31. If feasible and regulatory approvals allow, all vegetation removal for this project will be scheduled to occur outside of the typical nesting bird season (i.e., a work window of September 1 to February 14) to avoid potential impacts on nesting birds.
3. If vegetation removal or other construction activities are proposed to occur during the nesting season (February 15 to August 31) and within 100 feet of potential nesting habitat, a nesting bird survey will be conducted by a biologist determined qualified by Caltrans no more than three days prior to construction.
4. During construction, active bird nests shall not be disturbed and eggs or young of native migratory birds shall not be killed, destroyed, injured, or harassed at any time. Readily visible exclusion zones where nests must be avoided will be established by a qualified biologist using high-visibility fencing. Work in exclusion zones shall be avoided until young birds have fledged (permanently left the nest) or the qualified biologist has determined that nesting activity has otherwise ceased.
5. Trees to be removed will be noted on design plans. Prior to any ground-disturbing activities, high-visibility fencing will be installed around the dripline of trees to be protected within project limits.
6. All clearing/grubbing and vegetation removal will be monitored and documented by a biological monitor, regardless of time of year.
7. If an active nest for California spotted owl or another special-status bird is observed within 100 feet of the area of potential impact (API), all project activities shall immediately cease while Caltrans coordinates with applicable regulatory agencies and determines if additional measures are necessary.

Threatened and Endangered Species (Section 2.2.4)

1. Impact avoidance, minimization, and mitigation measures in Section 2.2.2 (Wetlands and Other Waters) are also applicable to federally designated critical habitat for California red-legged frog.
2. Only USFWS-approved biologists shall participate in activities associated with the capture, handling, and monitoring of species.
3. Ground disturbance shall not begin until written approval is received from the USFWS that the biologist is qualified to conduct the work.
4. A USFWS-approved biologist shall survey the project area no more than 48 hours before the onset of work activities. If any life stage of the species is found and these individuals are likely to be killed or injured by work activities, the approved biologist shall be allowed sufficient time to move them from the site before work begins. The USFWS-approved biologist shall relocate the species the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the project. The relocation site shall be in the same drainage to the extent practicable. Caltrans shall coordinate with USFWS on the relocation site prior to the capture of any species.
5. Before any activities begin on a project, a USFWS-approved biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of the species and its habitat, the specific measures that are being implemented to conserve the species for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
6. A USFWS-approved biologist shall be present at the work site until all species have been removed, workers have been instructed, and disturbance of the habitat has been completed. After this time, Caltrans shall designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist shall ensure that this monitor receives the training outlined in measure 5, above, and training related to identification of species. If the monitor or the USFWS-approved biologist recommends that work be stopped because the species would be affected in a manner not anticipated by Caltrans and USFWS during review of the proposed action, the resident engineer shall be notified immediately. The resident engineer shall resolve the situation by requiring all actions that are causing these effects to be halted. When work is stopped, the USFWS shall be notified as soon as possible.
7. During project activities, all trash that may attract predators or scavengers shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.
8. Without the express permission of the USFWS, all refueling, maintenance, and staging of equipment and vehicles shall occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat. The monitor shall ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans shall ensure that a plan is in place for prompt and

effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

9. Habitat contours shall be returned to a natural configuration at the end of the project activities. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible or modification of original contours would benefit the species.
10. The number of access routes, the size of staging areas, and the total area of activity shall be limited to the minimum necessary to achieve the project. ESAs shall be established to confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact on species' habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.
11. Caltrans shall attempt to schedule work for times of the year when impacts on the species would be minimal. For example, work that would affect large pools that may support breeding would be avoided to the maximum degree practicable during the breeding season (November through May). Isolated pools that are important to maintain species through the driest portions of the year would be avoided to the maximum degree practicable during the late summer and early fall. Habitat assessments, surveys, and technical assistance between Caltrans and the USFWS during project planning shall be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.
12. To control sedimentation during and after project completion, Caltrans shall implement the BMPs outlined in any authorizations or permits issued under the authorities of the CWA received for the project. If BMPs are ineffective, Caltrans shall attempt to remedy the situation immediately, in coordination with the USFWS.
13. If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than 0.2 inch to prevent species from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed shall be minimized to the maximum extent possible; any imported material shall be removed from the streambed upon completion of the project.
14. Unless approved by the USFWS, water shall not be impounded in a manner that may attract species.
15. A USFWS-approved biologist shall permanently remove any individuals of exotic species, such as bullfrogs (*Rana catesbeiana*), signal and red swamp crayfish (*Pacifasticus leniusculus*; *Procambarus clarkia*), and centrarchid fishes, from the project area to the maximum extent possible. The USFWS-approved biologist shall be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

16. If Caltrans demonstrates that disturbed areas have been restored to conditions that allow them to function as habitat for the species, these areas will not be included in the amount of total habitat permanently disturbed.
17. To ensure that diseases are not conveyed between work sites by the USFWS-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Task Force shall be followed at all times.
18. Project sites shall be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials shall be used to the extent practicable. Invasive exotic plants shall be controlled to the maximum extent practicable. This measure shall be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible or practical.
19. Caltrans shall not use herbicides as the primary method to control invasive exotic plants. However, if it is determined that the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, the following additional protective measures for the species shall be implemented:
    k. Caltrans shall not use herbicides during the breeding season for the species;
    l. Caltrans shall conduct surveys for the species immediately prior to the start of herbicide use. If found, species shall be relocated to suitable habitat far enough from the project area that no direct contact with herbicide would occur;
    m. Giant reed and other invasive plants shall be cut and hauled out by hand and painted with glyphosate-based products, such as Aquamaster® or Rodeo®;
    n. Licensed and experienced Caltrans personnel or a licensed and experienced contractor shall use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site;
    o. All precautions shall be taken to ensure that no herbicide is applied to native vegetation;
    p. Herbicides shall not be applied on or near open water surfaces (no closer than 60 feet from open water);
    q. Foliar applications of herbicide shall not occur when wind speeds are in excess of 3 miles per hour;
    r. No herbicides shall be applied within 24 hours of forecast rain;
    s. Application of all herbicides shall be done by qualified Caltrans personnel or contractors to ensure that overspray is minimized, applications are made in accordance with label recommendations, and all required and reasonable safety measures are implemented. A safe dye shall be added to the mixture to visually denote treated sites. Application of herbicides shall be consistent with the U.S. EPA's Office of Pesticide Programs, Endangered Species Protection Program, county bulletins;
    t. All herbicides, fuels, lubricants, and equipment shall be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would

not drain directly toward aquatic habitat. Prior to the onset of work, Caltrans shall ensure that a plan is in place for a prompt and effective response to accidental spills. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

20. Upon completion of the project, Caltrans shall ensure that a Project Completion Report is completed and provided to the USFWS, following the template provided with the Programmatic Biological Opinion. Caltrans shall include recommended modifications of the protective measures if alternative measures would facilitate compliance with the provisions of this consultation.
21. Habitat elements that need to be removed during construction, such as boulders, rocks, downed trees, or logs, will be salvaged and replaced on-site.
22. Installation of the high-visibility ESA fence described in Section 2.2.1 (Natural Communities) will also minimize impacts to California red-legged frog.

Invasive Species (Section 2.2.5)

1. An Invasive Plant Management Plan will be implemented at the beginning of construction and will run through the end of the 1-year plant establishment contract. The Invasive Plant Management Plan will identify a list of invasive species found within the project area, specify appropriate methods for removal and disposal of invasive species, and outline documentation requirements.
2. Fill material that will be used to construct the access road will be clean and free of invasive plant material and seeds.
3. Caltrans will not use any erosion control seed mix containing invasive species for revegetation.
4. All construction equipment will be clean and free of soil containing seeds and and/or invasive plant material prior to entering the construction site to avoid/minimize the spread of invasive plants and/or seed within the construction area.
5. If soil from areas with weedy species must be removed, the top six inches containing the seed layer will be removed and disposed of off-site.

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Appendix C List of Acronyms and Abbreviations

AB	Assembly Bill
API	area of potential impact
BAU	business as usual
BMPs	best management practices
BSA	biological study area
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
CNDDB	California Natural Diversity Database
CO-CAT	Coastal and Ocean Working Group of the California Climate Action Team
CO_2	carbon dioxide
CTP	California Transportation Plan
CWA	Clean Water Act
DOT	U.S. Department of Transportation
EIR	environment impact report
EO	Executive Order
ESA	environmentally sensitive area
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
LCFS	low-carbon fuel standard
MBTA	Migratory Bird Treaty Act
MMP	Mitigation and Monitoring Plan
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
N_2O	nitrous oxide
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NMFS	National Marine Fisheries Service

NOAA Fisheries Service	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
OHWM	ordinary high-water mark
OPR	Office of Planning and Research
OSTP	Office of Science and Technology Policy
PRC	Public Resources Code
RSA	Resource Study Area
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SF_6	sulfur hexafluoride
SLR	sea-level rise
SLR Guidance	State of California Sea-Level Rise Interim Guidance Document
SR	State Route
U.S.	United States
U.S. EPA	U.S. Environmental Protection Agency
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service

Appendix D List of Technical Studies

Air and Noise Compliance Memorandum

Water Quality Assessment Memorandum

Natural Environment Study

Location Hydraulic Study

Cultural Resources Review Memorandum

Hazardous Waste Initial Site Assessment Memorandum

Scenic Resource Evaluation/Visual Assessment Memorandum

Initial Paleontology Review Memorandum