

Cottonwood Creek Bridge Replacement

State Route 99 south of the City of Madera
near the Avenue 12/Road 29 Interchange

06-MAD-99-R7.0/R7.5

EA 06-0V120/ID 0616000207

Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation

October 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 Madera County in California. The Department is the lead agency under the California Environmental Quality Act (CEQA). 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 the document. Additional copies of the document and the related technical studies are available for review at the following locations:
 - Caltrans District Office at 1352 West Olive Avenue, Fresno, CA 93728
 - Open Monday-Friday 8:00 a.m. to 5:00 p.m.
 - Madera Library at 121 North G Street Madera, CA 93637
 - Open Monday-Thursday 1:00 p.m. to 7:00 p.m., Friday 1:00 p.m. to 5:00 p.m., and Saturday 11:00 a.m. to 3:00 p.m.
 - Madera Ranchos Library at 37167 Avenue 12, Suite 4C, Madera, CA 93636
 - Open Tuesday 11:00 a.m. to 6:00 p.m., Wednesday-Thursday 11:00 a.m. to 5:00 p.m., and Friday-Saturday 11:00 a.m. to 3:00 p.m.
- The document can also be downloaded at the following website:
<https://dot.ca.gov/caltrans-near-me/district-6/district-6-projects>
- Tell us what you think. If you have any comments regarding the proposed project, please send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to: Som Phongsavanh, Senior Environmental Planner, California Department of Transportation, 855 M Street, Suite 200, Fresno, CA 93721.
- Submit comments via email to: Som.Phongsavanh@dot.ca.gov.
- Submit comments by the deadline: February 7, 2020.

What happens next:

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

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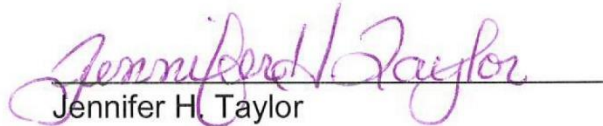
For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Som Phongsavanh, Central Region Environmental, 855 M Street, Suite 200, Fresno, CA 93721; phone number (559) 445-6369 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

Replace three bridges on State Route 99 over Cottonwood Creek
south of the Avenue 12/Road 29 Interchange in Madera County

INITIAL STUDY with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation



Jennifer H. Taylor
Office Chief, Central Region
Environmental Southern San Joaquin Valley
California Department of Transportation
CEQA Lead Agency

11/1/19
Date

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

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DRAFT

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to replace three bridges on State Route 99 in Madera County one mile south of the City of Madera.

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 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 would not have a significant effect on the environment for the following reasons.

The project would have no effect on aesthetics, agriculture and forest resources, air quality, coastal zone, wild and scenic rivers, parks and recreation facilities, cultural resources, energy, geology and soils, greenhouse gas emissions, land use and planning, mineral resources, noise, paleontology, population and housing, recreation, tribal cultural resources, utilities and service systems, and wildfire.

The project would have no significant effect on hydrology and water quality, transportation, hazards and hazardous materials, and public services.

The project would have no significantly adverse effect on biological resources because the following mitigation measures would reduce potential effects to insignificance:

- Bridge construction may have impacts to the channel or the riparian habitat. Only temporary impacts to the channel and riparian habitat are anticipated. Mitigation will be required for these temporary impacts; mitigation would involve replanting any riparian trees impacted by the project at a ratio of 1:1.

Jennifer H. Taylor
Office Chief, Central Region
Environmental Southern San Joaquin Valley
California Department of Transportation
CEQA Lead Agency

Date

Table of Contents

Proposed Mitigated Negative Declaration.....	iii
Table of Contents	v
List of Figures	viii
List of Tables	viii
Chapter 1 Proposed Project	1
1.1 Introduction.....	1
1.2 Purpose and Need.....	3
1.2.1 Purpose.....	3
1.2.2 Need	3
1.2.3 Project Description	4
1.2.3.1 Construction Type Option 1 - Bridge Replacement in Cast-In-Place/Prestressed Concrete Box Girder Bridge	4
1.2.3.2 Construction Type Option 2 - Bridge Replacement in Precast/Prestressed (PC/PS) Wide Flange Girder Bridge	5
1.3 Project Alternatives.....	5
1.3.1 Build Alternative	5
1.3.1.1 Alternative 1 (Build Alternative)	5
1.3.2 No-Build (No-Action) Alternative	7
1.4 Permits and Approvals Needed	7
Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures	9
2.1 Human Environment.....	10
2.1.1 Utilities/Emergency Services.....	10
2.1.2 Traffic and Transportation/Pedestrian and Bicycle Facilities	11
2.2 Physical Environment.....	18
2.2.1 Water Quality and Storm Water Runoff.....	18
2.2.2 Hazardous Waste/Materials	23
2.3 Biological Environment	26
2.3.1 Natural Communities.....	26
2.3.2 Wetlands and Other Waters.....	27
2.3.3 Animal Species	30
2.3.4 Threatened and Endangered Species.....	34
2.3.5 Invasive Species	37
Chapter 3 CEQA Evaluation.....	39
3.1 Determining Significance under CEQA.....	39
3.2 CEQA Environmental Checklist	40
3.2.1 Aesthetics	40
3.2.1.1 CEQA Significance Determinations for Aesthetics	40
3.2.2 Agriculture and Forest Resources.....	41
3.2.2.1 CEQA Significance Determinations for Agriculture and Forest Resources.....	41
3.2.3 Air Quality	42
3.2.3.1 CEQA Significance Determinations for Air Quality	42
3.2.4 Biological Resources.....	43
3.2.4.1 CEQA Significance Determinations for Biological Resources....	43

3.2.5	Cultural Resources.....	44
3.2.5.1	CEQA Significance Determinations for Cultural Resources	44
3.2.6	Energy.....	45
3.2.6.1	CEQA Significance Determinations for Energy.....	45
3.2.7	Geology and Soils	45
3.2.7.1	CEQA Significance Determinations for Geology and Soils	45
3.2.8	Greenhouse Gas Emissions	47
3.2.8.1	CEQA Significance Determinations for Greenhouse Gas Emissions.....	47
3.2.9	Hazards and Hazardous Materials	47
3.2.9.1	CEQA Significance Determinations for Hazards and Hazardous Materials	47
3.2.10	Hydrology and Water Quality	49
3.2.10.1	CEQA Significance Determinations for Hydrology and Water Quality	49
3.2.11	Land Use and Planning.....	50
3.2.11.1	CEQA Significance Determinations for Land Use and Planning	50
3.2.12	Mineral Resources	51
3.2.12.1	CEQA Significance Determinations for Mineral Resources	51
3.2.13	Noise.....	51
3.2.13.1	CEQA Significance Determinations for Noise.....	51
3.2.14	Population and Housing.....	52
3.2.14.1	CEQA Significance Determinations for Population and Housing.....	52
3.2.15	Public Services	52
3.2.15.1	CEQA Significance Determinations for Public Services	52
3.2.16	Recreation	53
3.2.16.1	CEQA Significance Determinations for Recreation.....	53
3.2.17	Transportation.....	53
3.2.17.1	CEQA Significance Determinations for Transportation	53
3.2.18	Tribal Cultural Resources	54
3.2.18.1	CEQA Significance Determinations for Tribal Cultural Resources	54
3.2.19	Utilities and Service Systems.....	55
3.2.19.1	CEQA Significance Determinations for Utilities and Service Systems	55
3.2.20	Wildfire.....	56
3.2.20.1	CEQA Significance Determinations for Wildfire	56
3.2.21	Mandatory Findings of Significance	57
3.2.21.1	CEQA Significance Determinations for Mandatory Findings of Significance.....	57
3.3	Climate Change.....	58
Chapter 4	Comments and Coordination	77
Chapter 5	List of Preparers	79
Chapter 6	Distribution List	81
Appendix A	Title VI Policy Statement.....	83
Appendix B	Avoidance, Minimization and/or Mitigation Summary	85
Appendix C	FEMA Flood Hazard Map	89

Appendix D	U.S. Fish and Wildlife Service Species List, CNPS Species List and CNDDB Query	90
Appendix E	Project Plans	100
	List of Technical Studies	105

List of Figures

Figure 1-1 Project Vicinity Map.....	1
Figure 1-2 Project Location Map.....	2
Figure 1-3 Mainline Exposed Bridge Piles.....	3
Figure 1-4 Bridge Soffit Distress, with Exposed Rebar, Cracks, and Salt Residue on the Mainline Bridge.....	4
Figure 2-1 State Route 99 Mainline Current Location.....	15
Figure 2-2 Southbound Detour	16
Figure 2-3 Northbound Detour.....	17
Figure 3-1 U.S. 2016 Greenhouse Gas Emissions.....	63
Figure 3-2 California 2016 Greenhouse Gas Emissions.....	64
Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions Since 2000	65
Figure 3-4 California Climate Strategy.....	68

List of Tables

Table 2.1 Emergency Services Near the Project Area	10
Table 2.2 Species With Potential to Occur in the Project Area	32
Table 2.3 Species Federal Endangered Species Act Determinations	36
Table 2.4 State Threatened Species List.....	37

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to replace three existing bridges on State Route 99 in Madera County approximately one mile south of the city limit of Madera at Cottonwood Creek. See Figures 1-1 and 1-2. Cottonwood Creek flows just south of the Avenue 12 Overcrossing within the State Route 99 Interchange to Avenue 12/Road 29. This project would replace the two State Route 99 mainline bridges (northbound and southbound) over Cottonwood Creek with one bridge with a decked median. In addition, the project would replace the northbound off-ramp bridge to Avenue 12/Road 29, which crosses over Cottonwood Creek.

Figure 1-1 Project Vicinity Map

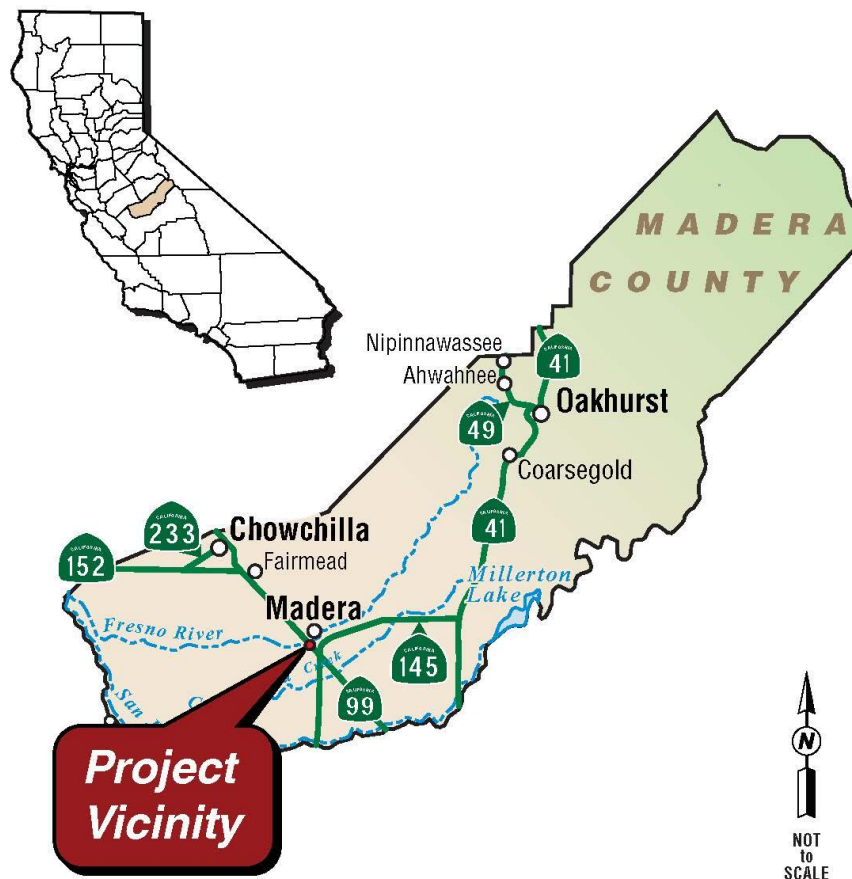
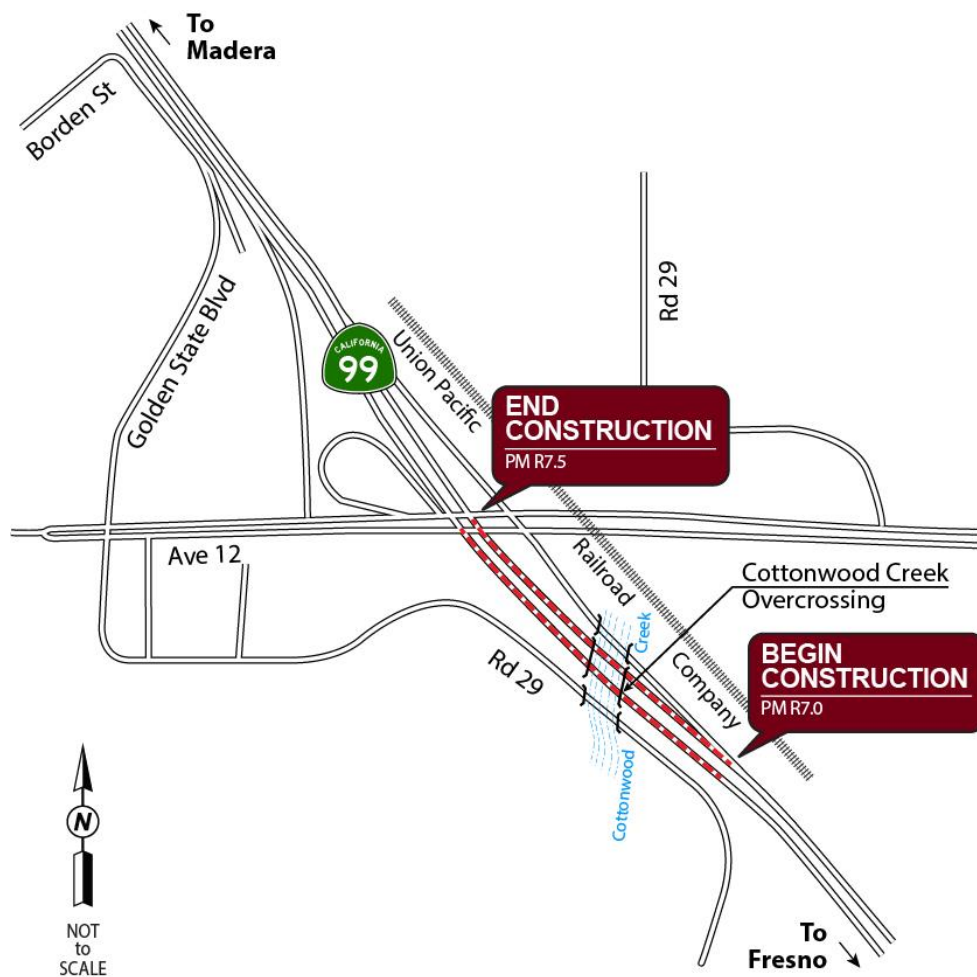


Figure 1-2 Project Location Map

In the project area, State Route 99 is a four-lane freeway. North of the project area is a project now in construction that is widening State Route 99 from a four-lane freeway to a six-lane freeway from the Avenue 12 Overcrossing, located 800 feet north of the bridges, through the City of Madera to Avenue 17. The proposed project would construct a six-lane bridge to accommodate the future six-lane facility.

Cottonwood Creek flows from just south of Hensley Lake on the Fresno River until it ends at the Eastside Bypass, a bypass built to prevent flooding on the San Joaquin River. Cottonwood Creek is not used for flood control but instead is used to carry any additional water that is produced from runoff from the City of Madera and surrounding areas. The creek has low flows most of the year and rarely reaches its banks in the project area.

The project sits in an unincorporated area known as Borden, an area that consists of industrial and agricultural land uses. Because this project would

not require any expansion of right-of-way, no surrounding land would be impacted.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to replace three aging bridges on State Route 99 over Cottonwood Creek in Madera County.

1.2.2 Need

A Structure Maintenance and Investigations Bridge Maintenance Strategy Meeting held on September 1, 2015 recommended the replacement of the concrete bridges due to steel corrosion, localized failures in the decks, and superstructure and substructure distress related to chloride intrusion.

The bridges have a long history of deck and soffit deterioration. According to a 2011 test on the bridge, water and salt have reached levels that corrode the steel in the reinforced concrete of the bridge. The mainline bridge piles on the northbound and southbound State Route 99 bridges are exposed, as shown in Figures 1-3 and 1-4.

Figure 1-3 Mainline Exposed Bridge Piles



Figure 1-4 Bridge Soffit Distress, with Exposed Rebar, Cracks, and Salt Residue on the Mainline Bridge



In addition, the asphalt overlay on the State Route 99 bridges is continually deteriorating, resulting in numerous emergency repair projects. The northbound and southbound State Route 99 bridges have experienced localized failures in the decks that have required patching. The project would repair the decks and the pavement on the decks of the bridges, which would eliminate costly ongoing maintenance projects. The soffits (areas between the support beams of the bridge) of the two structures show cracking across, salt residue, spots of distressed concrete and evidence of full-depth repairs.

The Structure Replacement and Improvement Needs Report also identified the need to upgrade the non-standard bridge rails.

1.2.3 Project Description

The project would replace the two existing mainline bridges on State Route 99 and one on the northbound off-ramp to Avenue 12/Road 29 from State Route 99. The Build Alternative offers two bridge construction type options.

1.2.3.1 Construction Type Option 1 - Bridge Replacement in Cast-In-Place/Prestressed Concrete Box Girder Bridge

Option 1 would replace the two existing mainline bridges (Bridge No. 410065L and 410065R at post mile R7.28) with a single four-span Cast-In-Place/Prestressed Concrete Box Girder Bridge, supported on 30-inch Cast-In-Steel-

Shell piling extending into the bent caps. Construction of this structure along with the removal of the existing left and right structures would occur in multiple stages to allow for the least inconvenience possible to State Route 99 traffic. This construction option would reduce the cost of the project, but increase time because extra time is needed to allow the concrete to cure.

1.2.3.2 Construction Type Option 2 - Bridge Replacement in Precast/Prestressed (PC/PS) Wide Flange Girder Bridge

Option 2 would replace the two existing mainline bridges (Bridge No. 410065L and 410065R at post mile R7.28) with a single four-span Precast/Prestressed I-Girder Bridge, supported on 30-inch Cast-In-Steel-Shell piling extending into the bent caps. Construction of this structure along with the removal of the existing left and right structures would take place in multiple stages to allow for the least inconvenience possible to State Route 99 traffic. This construction option would save time because no curing is required, but would cost more because the bridge pieces would be created off-site and transported to the project area.

1.3 Project Alternatives

Two alternatives are being considered: a Build Alternative with two Design Options and a No-Build Alternative.

1.3.1 Build Alternative

1.3.1.1 Alternative 1 (Build Alternative)

Alternative 1 offers two bridge construction type options:

Construction Type Option 1 - Bridge Replacement in Cast-In-Place/Prestressed Concrete Box Girder Bridge

Option 1 would replace the two existing mainline bridges (Bridge No. 410065L and 410065R at post mile R7.28) with a single four-span Cast-In-Place/Prestressed Concrete Box Girder Bridge, supported on 36-inch Cast-In-Steel-Shell piling extending into the bent caps. Construction of this structure along with the removal of the existing left and right structures would occur in multiple stages to allow for the least inconvenience possible to State Route 99 traffic.

The northbound off-ramp bridge from State Route 99 to Avenue 12/Road 29 would be replaced with a three-span Cast-In-Place/Prestressed Concrete Box Girder Bridge, supported on Class 200 driven piling. A complete lane closure of the off-ramp is planned for this alternative to allow for the quickest construction time frame possible to remove the existing off-ramp structure and construct a new structure.

Total project cost, including structures and roadway work, is estimated to be \$25,300,000 with 290 working days for Option 1.

Construction Type Option 2 - Bridge Replacement in Precast/Prestressed (PC/PS) Wide Flange Girder Bridge

Option 2 would replace the two existing mainline bridges (Bridge No. 410065L and 410065R at post mile R7.28) with a single four-span Precast/Prestressed I-Girder Bridge, supported on 36-inch Cast-In-Steel-Shell piling extending into the bent caps. Construction of this structure along with the removal of the existing left and right structures would occur in multiple stages to allow for the least inconvenience possible to State Route 99 traffic.

The northbound off-ramp bridge from State Route 99 to Avenue 12/Road 29 also would be replaced with a three-span Precast/Prestressed Wide Flange Girder, supported on Class 200 driven piling. A complete lane closure is planned for this option to allow for the quickest construction time possible to remove the existing off-ramp structure and construct a new structure.

The total project cost, including structures and roadway work, is estimated to be \$26,900,000 with 240 working days for Option 2.

Common Design Features of the Construction Type Options

Both Construction Type Options would place the same style of bridge in the same location and take a similar amount of time to construct. In addition to bridge replacement work, other major work, which is included in both construction options, includes the following:

- Constructing the realigned northbound off-ramp along the new raised profile south of the bridge and reconstructing the roadway north of the bridge to conform to the Avenue 12 intersection. This includes reconstructing the maintenance vehicle pullout that is located north of the bridge.
- Reconstructing a portion of the existing 355-foot retaining wall on the west side of the northbound off-ramp.
- Constructing a new 295-foot retaining wall on the edge of the pavement of northbound State Route 99.
- Updating the existing Type 50 median concrete barrier with Type 60M or Type 60MC median concrete barrier.
- Replacing the existing guardrail to meet the current standard Midwest Guardrail System Type 12B layout.
- Reconstructing the number two lane, a gore area, and the shoulder of the northbound roadway segment to match the new realigned ramp south of the mainline Cottonwood Creek bridge.

- Smoothing the northbound and southbound mainline State Route 99 pavement approaching the new bridge to create a smooth transition to the new bridge.
- Providing guardrail at the new approaches and departures of the bridge structure per current design standards.
- Improving any drainage facilities impacted within the project limits due to the project work.

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

Unique Features of the Construction type Options

The difference between the construction type options is that Option 1 would be made by pouring concrete on-site and take 300 working days, while Option 2 would be assembled on-site using premade concrete pieces and take 250 working days.

1.3.2 No-Build (No-Action) Alternative

The No-Build Alternative would not make any changes to the existing facility, and therefore would not address the purpose and need of the project. The No-Build Alternative will leave the bridge as it is, in poor condition.

1.4 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications (PLACs) are required for project construction.

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	California Fish and Wildlife Code 1601 Lake and Streambed Alteration Agreement	Application to be submitted during the project's final design phase
U.S. Army Corps of Engineers	Clean Water Act Section 404 Nationwide Permit	Application to be submitted during the project's final design phase

Agency	Permit/Approval	Status
Regional Water Quality Board	Clean Water Act Section 401 Water Quality Certification	Application to be submitted during the project's final design phase

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

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

- Coastal Zone—The project is not within or near the Coastal Zone. The project is set within an inland valley of California, more than 100 miles from the coast. (Field Review)
- Land Use and Growth—This project will not increase the capacity of the freeway, or take additional right-of-way. It will replace existing bridge structures, so the project will have no impact to Land Use or Growth. (Madera County General Plan)
- Wild and Scenic Rivers—There are no wild and scenic rivers within the project limits. (Field Review)
- Parks and Recreation—There are no parks or recreational facilities within the project limits. (Field Review)
- Community Character and Cohesion—The project will not change community character and cohesion. (Field Review)
- Environmental Justice—No minority or low-income populations that would be adversely affected by the proposed project were identified. Therefore, this project is not subject to the provisions of Executive Order 12898. (United States Census Fact Finder)
- Visual/Aesthetics—A visual study done for the project site found that the project would not impact the existing environment because the project is replacing existing bridges and slightly altering the slope of an existing freeway. (Visual Impact Assessment, February 2019)
- Farmland—No farmland is impacted by this project because no additional right-of-way is needed for this project. (Field Review)
- Timberland—No timberland will be impacted by this project because the project area is not in a forested area. (Field Review)
- Relocations and Real Property Acquisition—No relocations will be necessary because no new right-of-way is required for this project. The project is replacing existing bridges in the project area. (Field Review)

- **Air Quality**—The project would not adversely affect air quality. The project would not increase capacity and is exempt from air quality conformity under Code of Federal Regulations 93.127, Table 2, Widening Narrow Pavements or Reconstructing Bridges. (Air Quality Study, March 2019)
- **Noise**—The project is not considered a Type 1 project under the National Environmental Policy Act, and no further noise analysis is necessary. Under CEQA the project will not increase ambient noise levels and thus will not have an impact under sound. Any temporary impacts will be addressed by Caltrans Standard Specifications. (Noise Study, January 2019)
- **Paleontology**—The project would not impact paleontological resources. State Route 99 is built on top of fill, and therefore original soil is not likely to be disturbed. (Paleontological Study, August 2018)

2.1 Human Environment

2.1.1 Utilities/Emergency Services

Affected Environment

The closest fire station to the project is Madera County Fire Station #1, about 4 miles north of the project near the community of Parksdale. The closest police station to the project is the City of Madera Police Department, about 3.5 miles north of the project in Madera. The closest medical facility to the project is Madera Community Hospital, about 3 miles north of the project in Madera. Table 2.1 states the locations and distances from the project of all emergency services in the area.

Table 2.1 Emergency Services Near the Project Area

Name	Facility Type	Address	Distance (in miles)
Madera Community Hospital	Hospital	1250 East Almond Avenue, Madera, CA 93637	2.7
City of Madera Police Department	Police Station	330 South C Street, Madera, CA 93638	3
Madera County Sheriff's Headquarters	Sheriff Office	2725 Falcon Drive, Madera, CA 93637	7
Madera County Fire Department Station #1	Fire Station	14225 Road 28, Madera, CA 93638	3.6

No utilities relocations are anticipated at this time.

Environmental Consequences

Due to the closure of the northbound off-ramp from State Route 99 to Avenue 12/Road 29 and the closure of the southbound ramp from Avenue 12 eastbound to State Route 99, emergency services may be impacted by the project. There are no anticipated utility relocations at this time.

Avoidance, Minimization, and/or Mitigation Measures

Detours are available (see section 2.1.2 Traffic and Transportation/Pedestrian and Bicycle Facilities for more information on detours) to lessen any impacts to emergency services, though no official detour will be provided for the closure of the northbound off-ramp from State Route 99 to Avenue 12/Road 29. Off-ramps at Avenue 9/Road 31½ and at Gateway Drive would be available for emergency services using northbound State Route 99. In addition, the Avenue 12 Overcrossing would remain open, and would not be impacted by the project. This would allow emergency services to cross over State Route 99 as they normally would. There are no utility relocations anticipated at this time.

2.1.2 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

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

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. Department of Transportation regulations (49 Code of Federal Regulations 27) implementing Section 504 of the Rehabilitation Act (29 U.S. Code 794). The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

State Route 99 is one of the main thoroughfares in the Central Valley and takes traffic from its start point south of Bakersfield to its end point east of the City of Red Bluff. State Route 99 has a high percentage of truck traffic and is used by farmers and industry throughout the valley to transport goods to markets. State Route 99 is the most used north-south highway in Madera County and is used by commuters to get to and from the City of Madera in the project area along with interstate and intrastate commuters.

Because of this heavy use, two projects to widen State Route 99 from a four-lane freeway to a six-lane freeway are planned near this project's site. A project to the north—from Avenue 12 to Avenue 17—is now in construction. Another widening project to south—the proposed South Madera 6-Lane project—which would widen State Route 99 from four to six lanes from Avenue 7 to Avenue 12, is currently being studied.

State Route 99 in the project area is currently a divided four-lane freeway. When this project, if approved, goes into construction, State Route 99 will be a six-lane divided freeway to the north of the bridge and will remain a four-lane state freeway to the south of the bridge. The posted speed limit in the project area is 70 miles per hour. Pedestrians and bicyclists are prohibited from using State Route 99 and the northbound off-ramp to Avenue 12/Road 29, so they would not be impacted by this project. The nearest interchange to the Avenue 12/Road 29 interchange is at Almond Avenue in the southbound direction and Gateway Drive in the northbound direction. Both are about 2 miles north of the Avenue 12 interchange.

Residential communities closest to the project are Parkwood, Parksdale, Madera, and Bonadelle/Madera Ranchos. Parkwood is the closest community, about half a mile west of the project. Parkwood is an unincorporated census-designated site in Madera County. Its population was 2,268 in the 2010 Census, up from 2,119 in 2000.

Parksdale is about half a mile north of the project. Parksdale is also an unincorporated census-designated site in Madera County. The population of Parksdale was 2,621 in the 2010 Census, down from 2,668 in 2000.

Madera is the closest incorporated city to the project and the county seat of Madera County. The city limit of Madera is about 1 mile north of the project. Madera had an estimated population of 65,508 in 2017, up from 61,416 in the 2010 Census.

Avenue 12 is also used to access the Bonadelle/Madera Ranchos, a community about 7 miles east from the interchange of Avenue 12/Road 29 and State Route 99. Bonadelle/Madera Ranchos had an estimated population of 9,850 in 2018. Avenue 12 bisects the community, separating Madera Ranchos from Bonadelle Ranchos.

Environmental Consequences

This project would have no permanent impacts to traffic, transportation, pedestrian, or bicycle facilities as the highway will be returned to its existing condition, with new bridges. Temporary ramp closures are anticipated on the ramps from Avenue 12/Road 29. The ramp closure on the southbound on-ramp to State Route 99 from eastbound Avenue 12 will be closed for most of the project. The off-ramp from northbound State Route 99 to Avenue 12/Road 29 will be closed while the northbound bridge is demolished and reconstructed. In addition, the two mainline bridges will need to be demolished and replaced.

This will result in temporary impacts to the surrounding communities of Madera Ranchos and Parkwood, and motorists who use the northbound off-ramp from State Route 99 to Avenue 12/Road 29.

Avoidance, Minimization, and/or Mitigation Measures

Because the bridges on the mainline of State Route 99 would be demolished to construct the new bridges, a temporary detour would be created to minimize inconvenience to motorists to ensure that no lanes on State Route 99 would be closed for an extended period.

The detour would function as described below in the following proposed construction schedule:

Stage 1

Stage 1 – Phase 1

- New temporary pavement will be constructed to divert southbound State Route 99 mainline traffic onto the existing southbound State Route 99 on-ramp. (Original alignment shown in Figure 2-1)
- Southbound State Route 99 will be moved onto the southbound on-ramp from Avenue 12 eastbound. Northbound State Route 99 will continue on the existing alignment. (Shown in Figure 2-2)
- Southbound on-ramp to State Route 99 from eastbound Avenue 12 will be closed. The southbound on-ramp from the westbound direction of Avenue 12 will remain open.
- The northbound off-ramp to Avenue 12/Road 29 will be open.

Stage 1 – Phase 2

- The existing southbound State Route 99 mainline structure will be demolished, and new southbound and median structure will be built.
- Southbound mainline will be diverted back toward its original alignment with a temporarily shifted alignment over the new bridge that was

constructed in Phase 1 of Stage 1 to accommodate the northbound traffic on the same bridge.

Stage 2

Stage 2 – Phase 1

- The southbound State Route 99 mainline will be completely restored to its original alignment over the new bridge. Northbound State Route 99 will be detoured to the median of the new bridge. (Shown in Figure 2-3)
- The southbound State Route 99 on-ramp from Avenue 12 eastbound will continue to be detoured as stated above. The northbound off-ramp would be closed. No official detour will be provided, though alternate routes are available using surrounding interchanges (Avenue 9/Road 31½ and Gateway Drive).

Stage 2 – Phase 2

- The existing northbound State Route 99 mainline and northbound State Route 99 off-ramp structure will be demolished, and new structures will be built in their place.
- Southbound and northbound State Route 99 will remain on the alignments stated in Stage 2 Phase 1.

Stage 2 – Phase 3

- Northbound and southbound State Route 99 will be returned to their original alignments over the new bridge structure.

Figure 2-1 State Route 99 Mainline Current Location

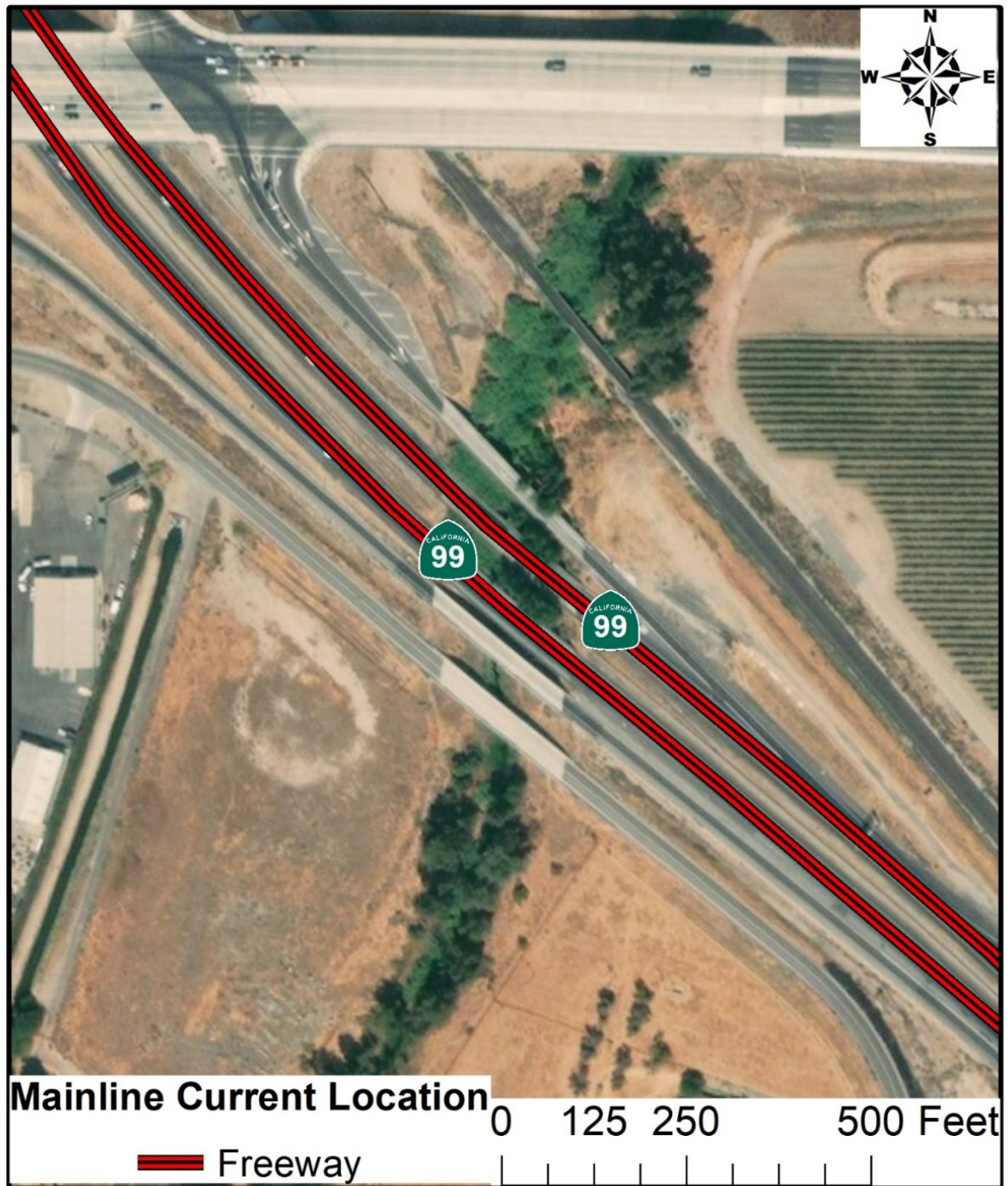


Figure 2-2 Southbound Detour

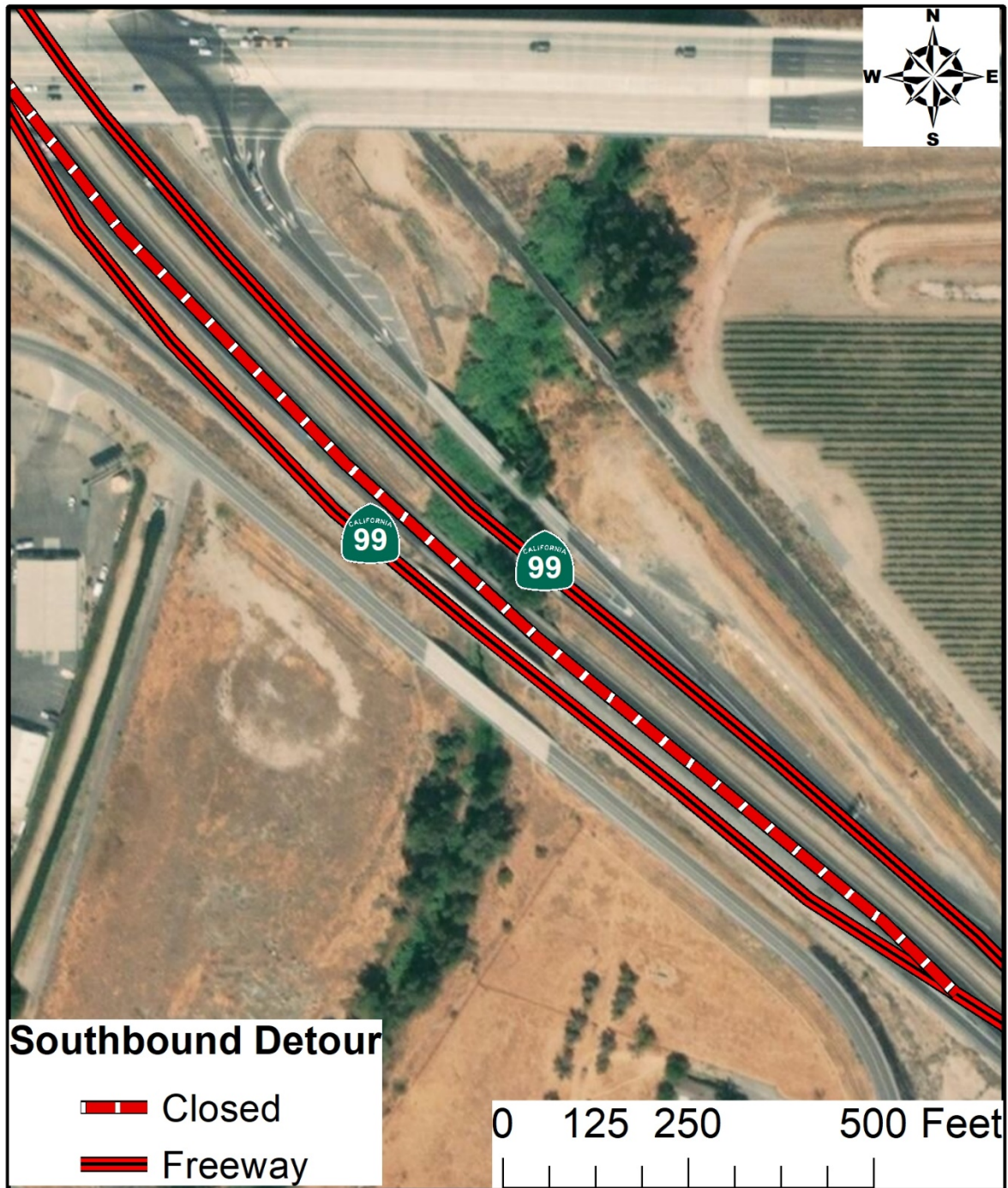
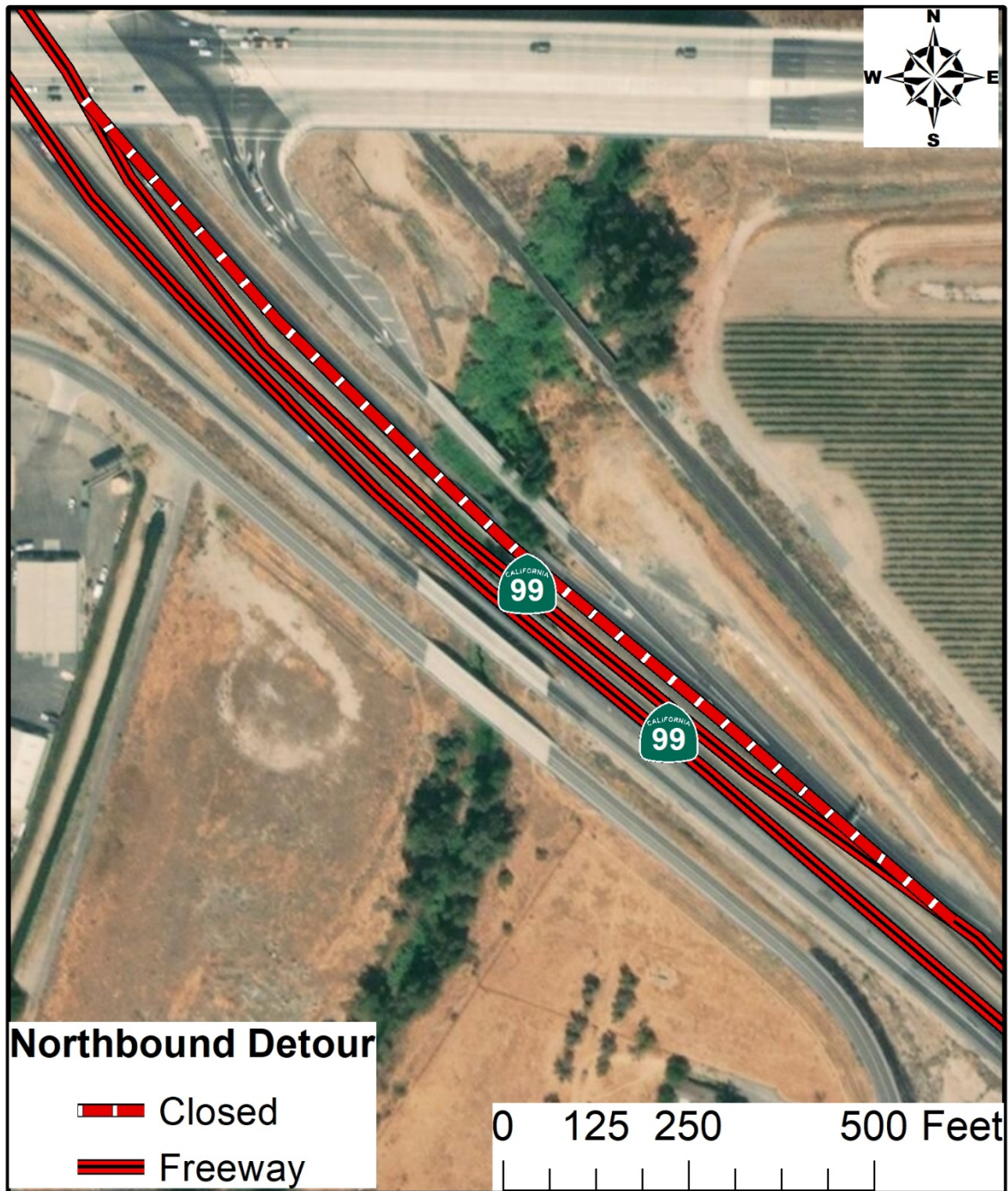


Figure 2-3 Northbound Detour



The State Route 99 on-ramp structure was used to reduce the time needed for construction, thus minimizing inconvenience to motorists and reducing project costs. Because of this strategy, the northbound off-ramp from State Route 99 to Avenue 12/Road 29 will be closed for a shorter time than if this project had not used the southbound on-ramp, saving up to a year of construction time.

The southbound mainline will be able to use the southbound on-ramp structure because the structure is 26 feet wide, which will accommodate either two 12-foot lanes with 1-foot shoulders or two 11-foot lanes with 2-foot shoulders. The size of the lanes will be decided in the design phase once a detailed study is completed to determine which will create the least disruption to motorists.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

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

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

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers.

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

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

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers’ Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the U.S. Army Corps of Engineers’ decision to approve is based on compliance with U.S. Environmental Protection Agency’s (U.S. EPA) Section 404 (b)(1) Guidelines (40 Code of Federal Regulations Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with the U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences.

According to the guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the U.S. In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California’s Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a “Report of Waste Discharge” for any discharge of waste (liquid, solid, or gaseous) to land or

surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the Clean Water Act and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Also, it prohibits discharges of “waste” as defined, and this definition is broader than the Clean Water Act definition of “pollutant.” Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable Regional Water Quality Control Board Basin Plan.

In California, Regional Water Quality Control Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the State Water Resources Control Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with Clean Water Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (National Pollutant Discharge Elimination System permits or Waste Discharge Requirements), the Clean Water Act requires the establishment of Total Maximum Daily Loads (TMDLs). Total Maximum Daily Loads specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, Total Maximum Daily Loads, and National Pollutant Discharge Elimination System permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4): Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.” The State Water Resources Control Board has identified Caltrans as an owner/operator of an MS4 under federal regulations. The Caltrans MS4 permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

The Caltrans MS4 Permit, Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014) and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015) has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the maximum extent practicable, and other measures as the State Water Resources Control Board determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The plan assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Statewide Storm Water Management Plan describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices.

The proposed project will be programmed to follow the guidelines and procedures outlined in the latest Statewide Storm Water Management Plan to address storm water runoff.

Construction General Permit

Construction General Permit, Order No. 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012): The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the Construction General Permit.

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

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by the U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before the U.S. Army Corps of Engineers issues a 404 permit.

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

Affected Environment

A Water Quality Report was prepared for the project in January 2019.

The project would replace two bridges on State Route 99 and the State Route 99 off-ramp to Avenue 12/Road 29 over Cottonwood Creek in Madera County. The creek is a relatively permanent waterway and a tributary to navigable Waters of the U.S. making it a U.S. Army Corps of Engineers jurisdictional waterway.

Environmental Consequences

This project is not anticipated to have a permanent impact to water quality. Any temporary impacts will be minor in nature. Water in Cottonwood Creek would be diverted during construction to allow the creek to flow during construction of the new bridges. This water diversion would be left in place during the winter to minimize the cost to the project and reduce the impact to the channel. If this were not done, the diversion would need to be removed and replaced every rainy season.

Avoidance, Minimization, and/or Mitigation Measures

Any temporary impacts to water quality would be addressed by Caltrans Standard Specifications. Any temporary impacts to water quality would be reduced by diverting water flow away from the area of construction during construction in the creek. Since the channel is used for excess runoff from the City of Madera that does not make it into the main channel, and not for flood control, it is anticipated that the channel diversion will be able to handle flows even during the wet season. Because of this, the diversion would be left in place during winter, eliminating the need to remove and replace the water diversion after each season. This would reduce the impacts to the channel.

2.2.2 Hazardous Waste/Materials

Regulatory Setting

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

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

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

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

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement Resource Conservation and Recovery Act in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality.

California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

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

Affected Environment

An Initial Site Assessment was completed on January 16, 2019. The project area consists of agricultural, industrial, and commercial land uses. Several sites listed on the above databases are near the proposed project area. The sites pose a low risk to the proposed project; additional right-of-way or easements are not required.

- Family Mart's underground storage tanks were removed in 2013, and the subsequent petroleum release case was closed by the County of Madera in 2014.
- The Britz Madera site is currently inactive, and a preliminary site investigation performed in 2012 indicated that there was no evidence of a chemical release.
- Madera Pump is a closed petroleum release case.

The lead levels for the northbound outside shoulder and the median of State Route 99 are considered hazardous waste by the State of California. The southbound outside shoulder is not considered to be hazardous waste because the level of lead found in the soil is below the state level.

Bridge surveys were done in 2016 and found that the bridges' shims contained non-friable asbestos packing used as rail shims on all three bridges.

Environmental Consequences

Aerially deposited lead (ADL) from the historical use of leaded gasoline exists along roadways throughout California. There is the likely presence of soils with elevated concentrations of lead as a result of aerially deposited lead on the state highway system right-of-way within the limits of the project.

Aerially deposited lead levels on northbound State Route 99 are considered California hazardous waste from 0 to 2.5 feet in depth (95% UCL 105.9 mg/kg total lead and 8.3 mg/l WET lead). The southbound shoulder is non-hazardous from 0 to 2.5 feet in depth (95% UCL 45.4 mg/kg for total lead and 3.6 mg/l WET lead). Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under the July 1, 2016 ADL Agreement between Caltrans and the California Department of Toxic Substances Control. The ADL Agreement allows such soils to be safely reused within the project limits assuming that all requirements of the ADL Agreement are met. Non-standard Special Provisions for hazardous and non-hazardous lead levels will need to be edited and approved by Caltrans Environmental staff.

Lead paint was also surveyed at the three bridges. Paints identified during the survey would not be classified as California or federal hazardous waste based on lead content. All paints on the project should be treated as lead-containing,

for the purpose of determining the applicability of the California Division of Occupational Safety and Health (Cal/OSHA) lead standard during maintenance, renovations, and demolition activities.

National Emissions Standards for Hazardous Air Pollutants regulations do not require that the Category I non-friable/nonhazardous asbestos-containing sheet packing that was identified during the bridge survey be removed prior to demolition/renovation or be treated as a hazardous waste. The sheet packing may be reused or stored. Any activity that would disturb the material (such as cutting, sanding, or grinding) would require compliance with the California Division of Occupational Safety and Health (Cal/OSHA) asbestos standards. Written notification to the San Joaquin Valley Unified Air Pollution Control District is required 10 working days prior to the start of any demolition activity whether asbestos is present or not.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans Standard Special Provisions and Non-standard Special Provisions will be followed as necessary for work with hazardous materials.

2.3 Biological Environment

2.3.1 Natural Communities

Regulatory Setting

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

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species section (2.3.4). Wetlands and other waters are also discussed in section 2.3.2.

Affected Environment

A Natural Environment Study (Minimal Impacts) was completed in February 2019.

Cottonwood Creek flows from the Fresno River, which originates from Hensley Lake about 13 miles northeast of the project area. Hensley Lake is part of the San Joaquin River watershed. Cottonwood Creek flows into

Gravelly Ford Canal, which drains into the San Joaquin River about 12 miles southwest of the project area.

Cottonwood Creek is a waterway owned and operated by the Madera Irrigation District, which controls flow levels within the creek. Water release into the creek typically begins March 1 and continues until mid- to late September.

The impact area studied in the Natural Environment Study (Minimal Impacts) includes Cottonwood Creek bridge and the highway surrounded by disturbed grasses and the riparian habitat of Cottonwood Creek. The riparian habitat occurs along the edge of Cottonwood Creek. The habitat occurring within the project impact area has been altered from its native state due to human activities and the introduction of non-native invasive species that have taken over portions of Cottonwood Creek.

Environmental Consequences

Work would be done in the channel of Cottonwood Creek. This would include removal of vegetation. Work may take up to two years in the creek, and water would be diverted using three temporary culverts during construction.

Avoidance, Minimization, and/or Mitigation Measures

The portion of Cottonwood Creek within the project impact area is highly degraded and does not contain suitable habitat for listed species. Much of the native habitat has been degraded by human activities, the presence of invasive species, and lack of natural flow levels. To the maximum extent feasible, native riparian trees would be avoided and protection measures would be implemented to protect riparian trees from project-related activities.

Before construction, Caltrans would assess the impact area and establish an Environmentally Sensitive Area (ESA), consisting of orange mesh fencing, for riparian trees that would be avoided by construction. The Environmentally Sensitive Areas would constitute a dripline protection area for each tree, which would consist of a radius measurement from the trunk of the tree to the tip of its longest limb, where feasible. In addition, the limits of the construction area would be flagged, and all activity would be confined within the marked area. All trees removed because of construction activity in the creek will be replanted once construction activity is completed.

2.3.2 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 (33 U.S. Code 1344), is the main law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of

the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark, in the absence of adjacent wetlands. When adjacent wetlands are present, Clean Water Act jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

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

The U.S. Army Corps of Engineers 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 U.S. Army Corps of Engineers' Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with the U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, Executive Order 11990 states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot

undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated mostly by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved.

Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Wildlife before beginning construction. If the California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities that may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. See the Water Quality section for more details.

Affected Environment

A Natural Environment Study (Minimal Impacts) was completed in February 2019. Cottonwood Creek is identified on the National Wetland Inventory Map as containing freshwater emergent and freshwater forested/shrub within the project area. Existing Caltrans stormwater drainage features are identified on the National Wetland Inventory Map as freshwater emergent within the project impact area. The creek is a relatively permanent waterway, and a tributary to navigable Waters of the U.S. making it a U.S. Army Corps of Engineers jurisdictional waterway. No wetlands were identified within the project limits.

Environmental Consequences

There would be no permanent impacts to the waterway. Because of the highly disturbed nature of the waterway, only temporary impacts are anticipated. No permanent impacts are expected because the project would replace existing bridges with new bridges.

Avoidance, Minimization, and/or Mitigation Measures

To the maximum extent feasible, native riparian trees would be avoided and protection measures would be implemented to protect riparian trees from project-related activities. Before construction, Caltrans would assess the impact area and establish an Environmentally Sensitive Area consisting of orange mesh fencing for riparian trees that would be avoided by construction. The Environmentally Sensitive Areas would constitute a dripline protection area for each tree, which would consist of a radius measurement from the trunk of the tree to the tip of its longest limb, where feasible.

In addition, the limits of the construction area would be flagged, and all activity would be confined within the marked area. Any trees that are removed because of construction activity will be replaced after construction is completed. If temporary impacts disturb any riparian habitat, or waters of the U.S., then the purchase of credits for impacts to waters of the U.S. would be needed. Total impacts are not anticipated to exceed 0.25 acre. This will be determined in the design phase once a final bridge design is selected.

2.3.3 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in the Threatened and Endangered Species Section 2.3.4. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

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

Affected Environment

A Natural Environment Study (Minimal Impacts) was completed for this project in February 2019.

Migratory and State Protected Birds

Bird species protected by the Migratory Bird Treaty Act of 1918 and California Department of Fish and Game Code Section 3511 use the study area for roosting, nesting, and foraging year-round. Birds covered by the Migratory Bird Treaty Act are protected from hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any bird, or any part, nest or egg. State fully protected species (including their parts) may not be taken or possessed at any time. Birds within California have an approximate breeding and nesting season from February 1 to September 30.

Foraging and nesting habitat for various migratory birds is present throughout the project study area. Migratory birds not already discussed include the mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), and northern mockingbird (*Mimus polyglottos*). Migratory birds could use habitat within the impact area for roosting and foraging.

Bat Species

California has 24 indigenous bat species throughout the state. At least 17 of these bat species are known to use human-made structures, including buildings and bridges. Fifteen California bat species are ranked as having a rare status with state or federal agencies; ten are listed as California Species of Special Concern by California Department of Fish and Wildlife.

All California bats have interactions with the transportation system, which can be positive, such as roosting opportunities, or negative, such as physical injury from moving vehicles. Widespread losses of bat roosts and colonies have been occurring through direct and indirect causes. Direct causes include pest control activities, building renovations, poorly conceived and executed mitigation plans, and legal eviction of bats from structures. Indirect causes include fear of exposure to rabies, dislike for bats in general, and a lack of knowledge of bat roosting ecology.

Most of California's bats species that use building and bridge roosts do so on a seasonal basis: moving either to hibernacula (a cave or warmer space to spend the winter) or regions of warmer climate during the winter. The uses of structures vary by time of day by using the interior of structures as day roosts,

and exposed locations for resting between foraging during the night. Use of structures is also varied by sex, with males and females with offspring selecting different cavities, crevices, or structures.

Environmental Consequences

Signs of bats, including guano, staining on the bridge underdeck, or potential entry points, were found under the northbound mainline bridge, but not at either of the other two bridges proposed in this project. Focused surveys identifying species and population size were not conducted. Table 2.2 shows the species that could occur in the project area.

Table 2.2 Species With Potential to Occur in the Project Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present /Absent	Rationale
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	Federally Endangered, State Endangered	Sparsely vegetated alkali and desert scrub habitat. Seeks cover in mammal burrows, under shrubs or structures.	Absent	The project impact area is not within the species' range. Habitat is not present within the impact area.
California red-legged frog	<i>Rana draytonii</i>	Federally Threatened	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation.	Absent	The project impact area is not within the species' range.
California tiger salamander	<i>Ambystoma californiense</i>	Federally Threatened, State Threatened	Needs underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water source for breeding.	Absent	Suitable habitat, such as burrows, is not present within the project impact area.
Delta Smelt	<i>Hypomesus transpacificus</i>	Federally Threatened	Endemic to the upper San Francisco Estuary, principally the Delta and Suisun Bay.	Absent	Aquatic habitat is not present within the impact area.
Fresno kangaroo rat	<i>Dipodomys nitratoide exilis</i>	Federally Endangered	Arid, alkaline, plains and shrub land with sparse vegetative cover and well-drained soils.	Absent	Habitat is not present within the impact area.
Giant Garter snake	<i>Thamnophis gigas</i>	Federally Threatened	Usually found in areas of freshwater marsh and low	Absent	The project area is not within the species' range. Habitat is not

			gradient streams with mud bottoms.		present within the impact area.
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Federally Endangered	Open, level areas with loose-textured soils supporting annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub.	Absent	Suitable habitat is not present within the impact area.
Steelhead	<i>Oncorhynchus</i>	Federally Threatened	Anadromous species requiring clean rivers and tributaries with gravelly substrates for spawning within the Central Valley and having access to the Pacific Ocean for the adult phase of life cycle.	Absent	Rivers or tributaries are not present within the impact area to sustain anadromous species.
Swainson's hawk	<i>Buteo swainsoni</i>	State Threatened	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savanna; forages in adjacent alfalfa fields, pastures, or grasslands.	Habitat Present	Suitable nesting and foraging habitat were found within project study area.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Federally Threatened	Inhabits small, clear-water sandstone-depression pools and grassed swale, or basalt flow depression pools.	Absent	No vernal pools were present within the impact area. No suitable clay soils were found within the impact area.

Avoidance, Minimization, and/or Mitigation Measures

Migratory and State Protected Birds

If removal of nests is deemed necessary, the removal would occur during the time of year when the nests are not used (approximately October 1 to January 30).

A preconstruction survey for migratory birds within the study area would be conducted before the start of construction. If an active nest were detected, an Environmentally Sensitive Area around the nest site may be established to prevent nesting disturbance. Work may be temporarily suspended if nesting activity cannot be prevented. Standard specifications would be included in the construction bid package to avoid impacts to migratory birds.

Bat Species

Before construction, the project impact area will be surveyed to ensure the bridge remains free of roosting bats. If roosts are identified within the project area, construction activities that would disturb a maternity roost or seasonal roost for bats, whether or not the bats are special-status species, would be prohibited by Caltrans.

Swallows

Swallows nests have been seen at this location in the past, most recently during a field review on April 22, 2019. Surveys done later in the same year were not able to identify any swallow nests under any of the three bridges. There is the potential for swallows to nest on the bridges. Because of this, before nesting season, swallow/bat exclusionary netting may be placed under any bridge that has evidence of swallows or bats during preconstruction surveys.

With implementation of avoidance and minimization measures, impacts to migratory birds are not expected to occur as a result of the proposed project.

2.3.4 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend.

Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species.

The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. The California Endangered Species Act emphasizes early

consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats.

The California Department of Fish and Wildlife is the agency responsible for implementing the California Endangered Species Act. Section 2080 of the California Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by California Department of Fish and Wildlife.

For species listed under both the Federal Endangered Species Act and the California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

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

Affected Environment

A Natural Environment Study (Minimal Impacts) was completed in February 2019.

Swainson's Hawk

The Swainson's hawk (*buteo swainsoni*), listed by the State of California as a threatened species and protected by the Migratory Bird Treaty Act of 1918, has the potential to occur in the project area. The Migratory Bird Treaty Act states that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. The Migratory Bird Treaty Act is the domestic law that affirms, or implements, the United States' commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each of the conventions protects selected species of birds that are common to both countries (i.e., they occur in both countries at some point during their annual life cycle).

The Swainson's hawk is a summer migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. The hawk breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah in the Central Valley. It forages in adjacent grasslands or suitable grain or alfalfa fields or livestock pastures.

The Swainson's hawk was historically regarded as one of the most numerous raptors in the state. The dramatic decline in the population of the Swainson's hawk has been attributed to the loss of native nesting and foraging habitat, and more recently to the loss of suitable nesting trees. This loss of nesting habitat within riparian areas has been accelerated by flood control practices and bank stabilization programs.

Environmental Consequences

Though no active Swainson's hawk nests were identified during surveys, a pair of Swainson's hawks has been historically documented along Cottonwood Creek and downstream of the impact area.

Caltrans has determined that, in accordance with Section 7 of the Endangered Species Act, the proposed project will have "no effect" on any federally listed or candidate species. Table 2.3 identifies the federal species that were evaluated, along with their Federal Endangered Species Act determination. Table 2.4 identifies the state listed species.

Table 2.3 Species Federal Endangered Species Act Determinations

Common Name	Scientific Name	Status	FESA Determination
Fresno kangaroo rat	<i>Dipodomys nitratooides exilis</i>	Federally Endangered	No effect
San Joaquin kit fox	<i>Vulpes Omacrotis mutica</i>	Federally Endangered	No effect
Blunt-nosed leopard lizard	<i>Gambelia silus</i>	Federally Endangered	No effect
Giant garter snake	<i>Thamnophis gigas</i>	Federally Threatened	No effect
California red-legged frog	<i>Rana draytonii</i>	Federally Threatened	No effect
California tiger salamander	<i>Ambystoma californiense</i>	Federally Threatened	No effect
Delta smelt	<i>Hypomesus transpacificus</i>	Federally Threatened	No effect
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Federally Threatened	No effect
Hairy orcutt grass	<i>Orcuttia pilosa</i>	Federally Endangered	No effect
CCV steelhead DPS	<i>Oncorhynchus</i>	Federally Threatened	No effect

Table 2.4 State Threatened Species List

Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Swainson's hawk (<i>Buteo swainsoni</i>)	State Threatened	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savanna; forages in adjacent alfalfa fields, pastures, or grasslands.	Habitat Present	Suitable nesting and foraging habitat is found within the project study area.

California Special-Status Species

The project is not anticipated to impact any state listed species. The project will cause “no take” of the endangered blunt-nosed leopard lizard, hairy Orcutt grass or the threatened California tiger salamander. The project will not cause species of special concern to trend toward warranting a listed status.

Therefore, no coordination with California Department of Fish and Wildlife regarding the California Endangered Species Act will be required.

Swainson's Hawk

No direct impacts to the Swainson's hawk are anticipated to occur as a result of the project. However, prior to construction, there is potential that a Swainson hawk could build a nest adjacent to the impact area.

Avoidance, Minimization, and/or Mitigation Measures

Preconstruction surveys for the Swainson's hawk would be conducted according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee, 2000). The surveys would be conducted during the nesting season prior to the start of construction. If an active Swainson's hawk nest is found, minimization efforts would be coordinated with the California Department of Fish and Wildlife. These may include a no-work buffer zone around an active nest and/or a qualified biologist would monitor an active nest during construction activities within the established buffer.

2.3.5 Invasive Species

Regulatory Settings

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem

whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs the use of the state’s invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

Affected Environment

A Natural Environment Study (Minimal Impacts) was completed in February 2019.

Invasive plant species such as *Arundo donax*, yellow star thistle (*Centaurea solstitialis*), Russian thistle sunflower (*Helianthus annuus*), and Bermuda grass (*Cynodon dactylon*) were observed in the project area.

Environmental Consequences

By remaining on paved and already disturbed areas, the project would not encourage the spread of invasive species.

Avoidance, Minimization, and/or Mitigation Measures

The implementation of plant-related avoidance and minimization measures would prevent the introduction of other invasive species into the study area. Therefore, the project would not contribute to the spread of invasive plant species.

Chapter 3 **CEQA Evaluation**

3.1 Determining Significance under CEQA

The proposed project is a joint project by Caltrans and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Federal Highway Administration's responsibility for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016 and executed by the Federal Highway Administration and Caltrans. Caltrans is the lead agency under CEQA and NEPA.

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

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

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant With Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project will indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

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

3.2.1 Aesthetics

3.2.1.1 CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact—The project would not cause a substantial adverse effect on a scenic vista because there are no scenic vistas within the project area.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact—The project would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway because the portion of State Route 99 in the project area is not a state scenic highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

No Impact—This project will not substantially degrade existing visual character or quality of public views of the site and its surroundings. The site was assessed in a Scenic Resource Evaluation/Visual Assessment (February 2019), and the project was found to not have a substantial visual impact because it would replace existing bridges with new bridges on the same alignment.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact—This project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area because the project would not direct any additional lighting away from the roadway. The roadway already has lighting.

3.2.2 Agriculture and Forest Resources

3.2.2.1 CEQA Significance Determinations for Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact—The project does not require additional right-of-way, so there would be no impact to any farmland.

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

No Impact—The project does not require additional right-of-way, so there would be no impact to any farmland.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact—The project does not require additional right-of-way, so there would be no impact to any land zoned for timberland production.

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

No Impact—The project does not require additional right-of-way, so there would be no impact to any land zoned for timberland production.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact—No changes to farmland or forest land would be caused by this project. This project would replace existing bridges on an existing state highway within the existing state right-of-way, so it would not change the built environment.

3.2.3 Air Quality

3.2.3.1 CEQA Significance Determinations for Air Quality

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

Would the project:

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

No Impact—The project would not conflict with or obstruct implementation of the applicable air quality plan for the San Joaquin Unified Air Pollution Control District because it would not change the state route alignment, only replace the bridges.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

No Impact—The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. There would be some temporary particulate matter emissions during construction, but no permanent impacts.

c) Expose sensitive receptors to substantial pollutant concentrations?

No Impact—The project would not expose sensitive receptors to substantial pollutant concentrations. During construction, the contractor will be required to comply with the Caltrans Standard Specifications for Dust Control that require the contractor to comply with local air district pollution requirements.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact—Temporary construction activities could generate fugitive dust from the operation of construction equipment. The project would comply with construction standards adopted by the San Joaquin Air Pollution Control District as well as Caltrans' standardized procedures for minimizing air pollutants during construction.

3.2.4 Biological Resources

3.2.4.1 CEQA Significance Determinations for Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact—The project would not have a substantial adverse effect on any candidate, sensitive, or special-status species. See Chapter 2 Section 2.3.4 for more information.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact—The project would not have a substantial adverse effect on riparian or other sensitive natural community. Any trees removed during construction will be replaced after construction is completed. See Chapter 2 Section 2.3.1 for more information.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant With Mitigation Incorporated—The project would have no permanent impacts to Waters of the U.S. Temporary impacts may occur depending on the bridge design that is finalized in the design phase. Any temporary impacts will be mitigated with the purchase of credits for impacts to waters of the U.S. It is anticipated that temporary impacts will be no larger than 0.25 acre. See Chapter 2 Section 2.3.2 for more information.

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?

No Impact—The project would have no impact on migratory fish or wildlife because there are no migratory wildlife corridors in the project area. Wildlife could still cross under the bridge, as it does now.

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

No Impact—The project would not impact any local policies or ordinances protecting biological resources because there are no local policies or ordinances in the area of the project. The Madera General Plan does not discuss tree removal, and the voluntary guidelines are not for this area and do not discuss cottonwood trees, the predominant tree in Cottonwood Creek.

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?

No Impact—The project would not conflict with the provisions of a conservation plan.

3.2.5 Cultural Resources

3.2.5.1 CEQA Significance Determinations for Cultural Resources

Would the project:

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

No Impact—The project would not create a substantial adverse change in the significance of a historical resource as defined by §15064.5 because there are no known archaeological or historic-era resources present in the project's area of potential effects.

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

No Impact—The project would not create a substantial adverse change in the significance of a historical resource as defined by §15064.5 because no known archaeological or historic-era resources are present in the project's area of potential effects. If previously unidentified cultural materials are unearthed during construction, it is Caltrans policy that work be halted in that area until a qualified archaeologist can assess the significance of the find.

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

No Impact—The project would not disturb any human remains, including those interred outside of dedicated cemeteries. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities must stop in any area or nearby area suspected to overlie the remains, and the local coroner be contacted. Pursuant to California Public Resources Section 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission, which would then notify the most likely descendent.

3.2.6 Energy

3.2.6.1 CEQA Significance Determinations for Energy

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No Impact—The project would replace existing bridges on an existing state highway, so it would not result in any waste of an energy resource.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact—The project would not conflict with a state or local plan for renewable energy or energy efficiency.

3.2.7 Geology and Soils

3.2.7.1 CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for

the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

No Impact—The project would replace existing bridges on an existing state highway, so it would not cause potential for loss, injury, or death from any of the listed causes. No faults are located within 50 miles of the project.

b) Result in substantial soil erosion or the loss of topsoil?

No Impact—The project would not result in substantial soil erosion or the loss of topsoil. State Route 99 is on top of fill, which means that little original topsoil would be impacted by the project. Landscape planting and best management practices will be used to reduce any soil erosion that may occur.

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?

No Impact—The project is not located on a geologic unit or soil that is unstable or that would become unstable because of the project work.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact—The project would not be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994).

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact—The project would not create waste water and thus would not affect soils incapable of adequately supporting the use of septic tanks.

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

No Impact—A Paleontological Study was completed in August 2018. Because State Route 99 was built on top of fill, it is not anticipated that large portions of original soil will be disturbed. Because of this, it is not anticipated

that any paleontological resource site or geologic feature will be found or disturbed.

3.2.8 Greenhouse Gas Emissions

3.2.8.1 CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

and

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact— While the proposed project will result in greenhouse gas emissions during construction, it is anticipated that the project will not result in any increase in operational greenhouse gas emissions. The project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction greenhouse gas-reduction measures, the impact would be less than significant.

3.2.9 Hazards and Hazardous Materials

3.2.9.1 CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less than Significant Impact—The dirt on the northbound outside shoulder of State Route 99 is considered hazardous waste from 0 feet to a depth of 2.5 feet due to elevated aerially deposited lead levels. The southbound side is non-hazardous. The median is considered hazardous waste from a depth of 0 feet to a depth of 2.5 feet. This will be addressed through standard Caltrans procedures for handling such material. See Chapter 2 Section 2.2.2 for more information.

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?

No Impact—The project is a bridge replacement, so it would not create a significant hazard to the public or the environment through release of

hazardous materials. Caltrans' standard practices for handling hazardous waste will be implemented.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact—The project would not emit hazardous emissions or handle acutely hazardous materials, substances or wastes within a quarter mile of a school. The nearest school is Madera Community College, about 1.5 miles away.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact—No hazardous materials sites compiled pursuant to Government Code Section 65962.5 have been identified within the project area, so no impact would occur to the public or the environment. There are no Cortese List locations in the project area.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact—The project would not affect any airport land use plan or result in an airport-related safety hazard for people residing or working in the project area. The closest airport is Madera Municipal Airport, about 8 miles to the northwest.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact—The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. During the construction phase, Caltrans would adopt a Traffic Management Plan to handle traffic emergencies and control any lane closures with traffic control devices. State Route 99, which is listed as a major highway in the Madera County Emergency Plan, would not have any prolonged lane closures on either the northbound or southbound sides of the highway due to the use of median detours. The northbound off-ramp to Avenue 12/Road 29 would be closed while the bridge on the off-ramp is being replaced. Alternate routes will be available for traffic.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact—The project would not 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 because the project would replace an existing bridge on an existing highway. There are no wildlands near the project area. The surrounding land use is either industrial or agricultural.

3.2.10 Hydrology and Water Quality

3.2.10.1 CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

No Impact—The project would not violate any water quality standards or waste discharge standards. The contractor would exercise every reasonable precaution as stated in the Caltrans Standard Specifications 13-1.01 to eliminate any potential influences on water quality during construction.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact—The project would have no impact to groundwater supplies because it would not use any groundwater and would not involve dewatering.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site;

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv) Impede or redirect flood flows?

No Impact—The project would not result in substantial erosion or siltation because flow in the channel would be returned to its original state after construction. During construction, the project would implement a water diversion plan that meets the Regional Water Quality Control Board Section 401 permit requirements to avoid impacts to the waterway. Under the water

diversion plan, water will flow through three temporary pipes from one edge of the work site to the other. This would ensure that water will be able to flow through the channel during construction at its normal flow rate. The project would not increase the rate or amount of surface runoff, and it would not permanently impede or redirect flood flows because the new bridges would not change the drainage pattern of the area. Through hydraulic modeling of the Cottonwood Creek floodplain, it was determined that the proposed work would have no objectional effects to the floodplain or its ability to pass the design-year flood event. See Chapter 2 Section 2.2.1 for more details.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact—The project would not risk the release of pollutants due to project inundation. The channel of Cottonwood Creek is identified as a flood hazard zone AE, according the Federal Emergency Management Agency (FEMA) flood map. The remaining project area is in zone X, meaning that it is not in a flood hazard area. The project would not impact the area in flood hazard zone AE. See Appendix C for a copy of the FEMA flood map of the project area.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact—The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan because it will not use, create, or make it harder to use groundwater.

3.2.11 Land Use and Planning

3.2.11.1 CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—The project would replace existing bridges on an existing state highway, so it would not divide an established community. The public will be given advanced notice of ramp closures. There would be no impact to the Avenue 12 Overcrossing. Avenue 12 would remain open throughout construction.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact—The project would not cause an environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The project does not require

any additional right-of-way, so it would not impact any land use plan, policy, or regulation.

3.2.12 Mineral Resources

3.2.12.1 CEQA Significance Determinations for Mineral Resources

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact—The project would not 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. No mineral resources would be impacted by this project because the work would replace existing bridges on an existing freeway within existing right-of-way.

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?

No Impact—The project would not 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. No locally important mineral resource has been identified within the project area.

3.2.13 Noise

3.2.13.1 CEQA Significance Determinations for Noise

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

No Impact—The project would not result in a substantial permanent or temporary impact in noise levels. Temporary noise impacts during construction would be addressed by Caltrans Standard Specifications Section 14-8.02 Noise Control.

b) Generation of excessive groundborne vibration or groundborne noise levels?

No Impact—The project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact—The project is not within the vicinity of a private airstrip and would not expose people residing or working in the project area to excessive noise levels. The closest private airstrip is El Peco Airport, about 9 miles away. The project is not located within an airport land use plan. The nearest airport is Madera Municipal Airport, about 8 miles away.

3.2.14 Population and Housing

3.2.14.1 CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact—The project would not induce unplanned population growth in an area, either directly or indirectly. The project would replace existing bridges on an existing state highway and would not increase capacity.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact—The project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere. The project would not acquire additional right-of-way and would have no relocations of residents.

3.2.15 Public Services

3.2.15.1 CEQA Significance Determinations for Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

Police protection?

Schools?

Parks?

Other public facilities?

Less than Significant—The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services. No prolonged lane closures are expected because a median detour or other temporary detour will be used to keep two lanes of State Route 99 open in both directions as often as possible. This will be formally addressed in the Traffic Management Plan, which will be prepared prior to construction. In addition, there are no parks in the project area. The nearest school to the project is Madera Community College, 1.5 miles east of the project. Because of the location and nature of the project, there would be no impact to fire, police, schools, parks, or other public facilities.

3.2.16 Recreation

3.2.16.1 CEQA Significance Determinations for Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact—The project would not increase the use of existing neighborhoods and regional parks or other recreational facilities so that substantial physical deterioration of the facility would occur or be accelerated. The project would replace existing bridges on an existing freeway and would not impact neighborhoods or parks. There are no parks in the project area.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact—The project would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

3.2.17 Transportation

3.2.17.1 CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact—The project would not conflict with any program plan, ordinance, or policy addressing the circulation system. The project would replace existing bridges on an existing state highway, so it would not change the existing traffic flow. Any temporary impacts would be lessened by alerting the public in advance to planned closures, which would allow motorists to find an alternate route.

b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No Impact—The project would replace existing bridges on an existing highway, so it would not increase vehicle miles traveled or conflict with CEQA Guidelines section 15064.3, subdivision (b).

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

No Impact—The project would have no increase in hazards due to a geometric design feature or incompatible use.

d) Result in inadequate emergency access?

Less Than Significant Impact—State Route 99 would not be closed at any point, and no prolonged lane closures are anticipated because a median and shoulder detour would be used to ensure that two lanes are open in both directions at all times. The northbound off-ramp to Avenue 12/Road 29 would be closed during construction of the new off-ramp bridge. Caltrans would work closely with emergency services providers to provide information on any planned closures. The project will not impact the Avenue 12 Overcrossing or traffic on Avenue 12. See Chapter 2 Section 2.1.1 for more information.

3.2.18 Tribal Cultural Resources

3.2.18.1 CEQA Significance Determinations for Tribal Cultural Resources

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

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

No Impact—The project would not cause a substantial adverse change in the significance of a tribal resource 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)

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.

No Impact—Consultation with parties that may possess knowledge of tribal cultural resources located near or within the project limits was initiated on February 1, 2018. No tribal resources were identified during consultation.

3.2.19 Utilities and Service Systems

3.2.19.1 CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

No Impact—The project would replace existing bridges on an existing freeway, therefore it would not require or result in the construction of new water or wastewater treatment facilities or storm water or expansion of existing facilities, which could cause significant environmental effects.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact—The project would not require new water supplies because the work would replace existing bridges on an existing highway.

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

No Impact—The project would not result in an increase in wastewater because it will replace existing bridges on an existing highway.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

No Impact—The project would not result in a permanent increase in solid waste. For any construction-generated solid waste, the project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and would comply with federal, state, and local statutes and regulations related to solid waste.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact—The project would not result in a permanent increase in solid waste. For any construction-generated solid waste, the project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and would comply with federal, state, and local statutes and regulations related to solid waste.

3.2.20 Wildfire

3.2.20.1 CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact—The project would not substantially impair an adopted emergency response plan or emergency evacuation plan. The project is not located within a fire hazard zone and would not permanently impact any transportation flow because it would only replace existing bridges on an existing state highway. No prolonged lane closures are anticipated; all efforts would be made to maintain two lanes open in both directions on State Route 99. State Route 99 would remain open during construction. The project is not in a fire hazard area and would not impact Madera County's evacuation plans.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact—The project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. The project would replace existing bridges along an existing state highway, so it would not change any characteristics of the land. In addition, the project is not in a high fire hazard area according to CalFire's Fire Hazard Severity Zone Map.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities)

that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact—The project would replace existing bridges on an existing state highway and therefore would not require any additional infrastructure. In addition, the project is not located in a high fire hazard area.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact—The project sits on flat land in a low fire hazard area, so it would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

3.2.21 Mandatory Findings of Significance

3.2.21.1 CEQA Significance Determinations for Mandatory Findings of Significance

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

No Impact—The project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory because this project would remove and replace existing bridges on an existing state highway.

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.)

No Impact—The project does not have any impacts that would cause a cumulative impact because it would replace existing bridges on an existing state highway.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

No Impact—The project does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly because it would replace existing bridges on an existing state highway.

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 (also known as GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of greenhouse gases generated by human activity, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), and various hydrofluorocarbons (HFCs). CO₂ is the most abundant greenhouse gas; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO₂.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing greenhouse gas emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

Regulatory Setting

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

Federal

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

The National Environmental Policy Act (known as NEPA) (42 U.S. Code 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 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. The Federal Highway Administration therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.¹ This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability.”² Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been made at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 U.S. Code Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy program on the basis of each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

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

The U.S. Environmental Protection Agency (EPA)³ in conjunction with the National Highway Traffic Safety Administration (NHTSA) is responsible for

¹ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

² <https://www.sustainablehighways.dot.gov/overview.aspx>

³ U.S. EPA’s authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that greenhouse gases 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, the U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six greenhouse gases constitute

setting greenhouse gas emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The current standards require vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. The EPA and National Highway Traffic Safety Administration are currently considering appropriate mileage and greenhouse gas emissions standards for 2022–2025 light-duty vehicles for future rulemaking.

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

State

California has been innovative and proactive in addressing greenhouse gas emissions and climate change by passing multiple Senate and Assembly bills and executive orders including, but not limited to, the following:

Executive Order S-3-05 (June 1, 2005): The goal of this order is to reduce California’s greenhouse gas emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill (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 greenhouse gas emissions reduction goals outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” The Legislature also intended that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires the Air Resources Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-01-07 (January 18, 2007): This order sets 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 the year 2020. The Air Resources Board re-adopted the low carbon fuel standard regulation in September 2015, and the changes went

a threat to public health and welfare. Thus, it is the Supreme Court’s interpretation of the existing act and the EPA’s assessment of the scientific evidence that form the basis for EPA’s regulatory actions.

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 greenhouse gas reduction goals.

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

SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

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

Executive Order B-30-15 (April 2015) establishes an interim statewide greenhouse gas emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs the Air Resources Board to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMT CO_2e).⁴ Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016, codifies the greenhouse gas reduction targets established in Executive Order B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

SB 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands ... is an important

⁴ Greenhouse gases differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO_2 is the most important greenhouse gas, so amounts of other gases are expressed relative to CO_2 , using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of CO_2 .

strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

AB 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 743, Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles traveled, to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

Senate Bill 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires the Air Resources Board to prepare a report that assesses progress made by each metropolitan planning organization in meeting its established regional greenhouse gas emission reduction targets.

Executive Order B-55-18 (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing greenhouse gas emissions.

Environmental Setting

The project is on State Route 99 in an unincorporated area of Madera County known as Borden, an area that contains industrial and agricultural land uses. State Route 99 is the most used north-south highway in Madera County, traveled by commuters, intrastate and interstate trucks, farming vehicles, and industry. The closest residential communities are about half a mile from the project area; the Madera city limit is about 1 mile north of the project.

Just north of the project area, State Route 99 is undergoing widening from four lanes to six lanes from the Avenue 12 Overcrossing through the city of Madera to Avenue 17. Another four-to-six-lane widening project south of the proposed project, from Avenue 7 to Avenue 12, is undergoing project approval and environmental review. The Madera County Transportation Commission's (MCTC's) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) guides transportation development in the project area.

A greenhouse gas emissions inventory estimates the amount of greenhouse gases discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual greenhouse gas emissions

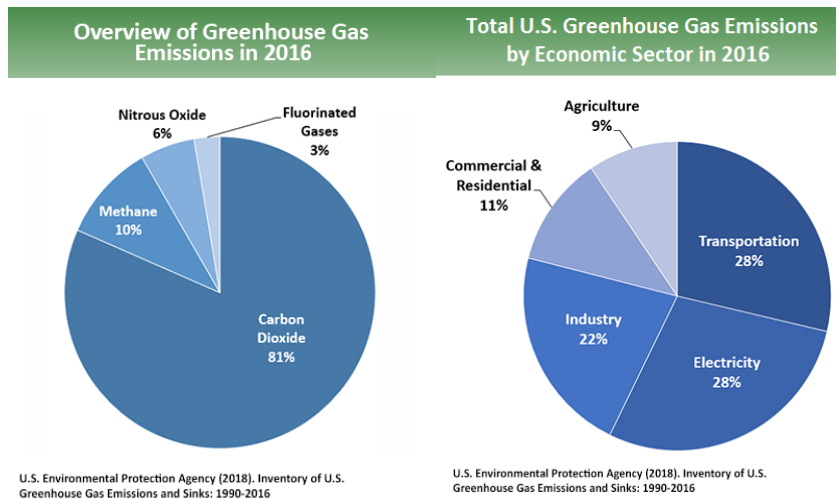
allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. The U.S. EPA is responsible for documenting greenhouse gas emissions nationwide, and the Air Resources Board does so for the state, as required by H&SC Section 39607.

National Greenhouse Gas Inventory

The U.S. EPA prepares a national greenhouse gas inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of greenhouse gases in the United States, reporting emissions of CO₂, CH₄, N₂O, HFCs, perfluorocarbons, SF₆, and nitrogen trifluoride. It also accounts for emissions of CO₂ that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store CO₂ (carbon sequestration).

The 1990–2016 inventory found that of 6,511 MMTCO₂e greenhouse gas emissions in 2016, 81% consist of CO₂, 10% are CH₄, and 6% are N₂O; the balance consists of fluorinated gases (EPA 2018a).⁵ In 2016, greenhouse gas emissions from the transportation sector accounted for nearly 28.5% of U.S. greenhouse gas emissions. See Figure 3-1.

Figure 3-1 U.S. 2016 Greenhouse Gas Emissions



⁵ U.S. Environmental Protection Agency. 2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks. <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

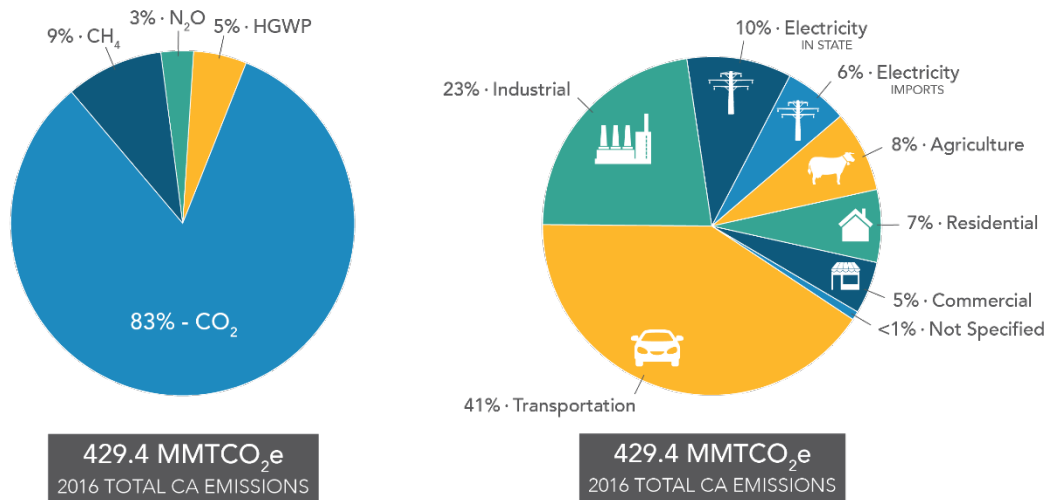
State Greenhouse Gas Inventory

The Air Resources Board collects greenhouse gas emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its greenhouse gas reduction goals.

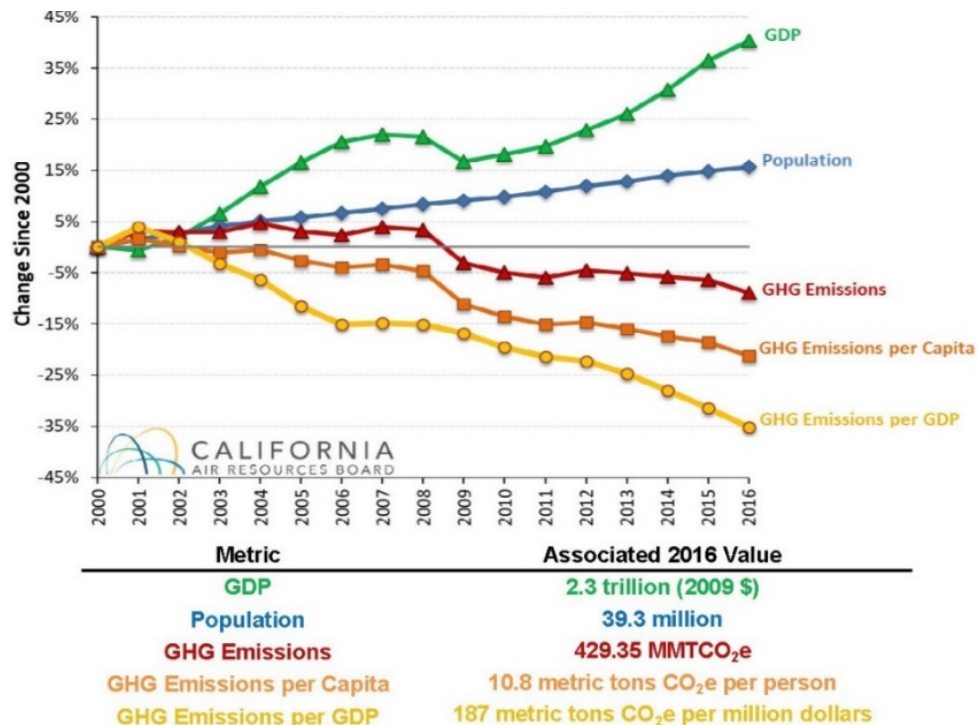
The 2018 edition of the greenhouse gas emissions inventory found total California emissions of 429 MMTCO₂e for 2016, with the transportation sector responsible for 41% of total greenhouse gases. It also found that overall statewide greenhouse gas emissions have declined from 2000 to 2016 despite growth in population and state economic output.⁶

See Figures 3-2 and 3-3.

Figure 3-2 California 2016 Greenhouse Gas Emissions



⁶ 2018 Edition of the Greenhouse Gas Emission Inventory (July 2018).
<https://www.arb.ca.gov/cc/inventory/data/data.htm>

Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions Since 2000

AB 32 required the Air Resources Board to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every 5 years. The Air Resources Board adopted the first scoping plan in 2008. The second updated plan, California's 2017 Climate Change Scoping Plan, adopted on December 14, 2017, reflects the 2030 target established in Executive Order B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions.

Regional Plans

The Air Resources Board sets regional targets for California's 18 Metropolitan Planning Organizations to use in their Regional Transportation Plan/Sustainable Communities Strategies to plan future projects that will cumulatively achieve greenhouse gas reduction goals. Targets are set at a percent reduction of passenger vehicle greenhouse gas emissions per person from 2005 levels. As of October 1, 2018, the regional reduction target for the Madera County Transportation Commission is 10% by 2020 and 16% by 2035 (ARB 2019c).

In addition to its Regional Transportation Plan/Sustainable Communities Strategy, Madera County is involved in the San Joaquin Valley Blueprint, an eight-county effort to integrate land use decisionmaking for smart growth and

regional sustainability, including reducing greenhouse gas emissions. The Madera County General Plan Air Quality element (Madera County 2010) contains goals, objectives, and policies related to reducing greenhouse gas emissions and climate change. The San Joaquin Valley Air Pollution Control District has adopted guidance and policies for addressing greenhouse gas emissions in its district, though these pertain mostly to development projects and stationary sources of emissions.

Project Analysis

Greenhouse gas emissions from transportation projects can be divided into those produced during operation of the state highway system and those produced during construction. The main greenhouse gases produced by the transportation sector are CO₂, CH₄, N₂O, and HFCs. CO₂ emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH₄ and N₂O are emitted during fuel combustion. In addition, a small amount of HFC emissions is included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 21083(b)(2)). As the California Supreme Court explained, “because of the global scale of climate change, any one project’s contribution is unlikely to be significant by itself” (Cleveland National Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.). In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The purpose of the proposed project is to ensure the safety and reliability of the deteriorating mainline and northbound off-ramp bridges by replacing them with structurally sound facilities. While the width of the new mainline bridges would accommodate future restriping to six lanes to conform to State Route 99 widening north and south of this project, the current project would retain four lanes and therefore would not increase the vehicle capacity of the roadway. (The future restriping project would require its own greenhouse gas analysis.) Because the current project would not increase the number of travel lanes on State Route 99 at this time, no increase in vehicle miles traveled (VMT) would occur as result of project implementation. Maintaining existing county roads and state highways helps to avoid closures that would

force traffic to longer alternate routes and increase vehicle miles traveled. While some greenhouse gas emissions during the construction period would be unavoidable, no increase in operational greenhouse gas emissions is expected.

Construction Emissions

Construction greenhouse gas emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence would, where possible, be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction would be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Carbon dioxide (CO₂) emissions generated from construction equipment were estimated using the Caltrans Construction Emissions Tool (CAL-CET). CO₂ emissions generated from construction equipment were estimated using the Caltrans Construction Emissions Tool. The estimated CO₂ construction emissions are 1,649 US tons, generated over an approximately 1-year time frame.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all Air Resources Board emission reduction regulations. All projects also include Caltrans Standard Specification 14-9.02, Air Pollution Control, which requires contractors to comply with all air-pollution control rules, regulations, ordinances, and statutes, including those of the **San Joaquin Valley** Air Quality Control District.

The project will also implement Caltrans standardized measures (such as construction best management practice) that apply to most or all Caltrans projects. Certain common regulations, such as equipment idling restrictions and development and implementation of a traffic control plan that reduce construction vehicle emissions also help reduce greenhouse gas emissions.

CEQA Conclusion

While the proposed project will result in greenhouse gas emissions during construction, it is anticipated that the project will not result in any increase in operational greenhouse gas emissions. The project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction

greenhouse gas-reduction measures, the impact would be less than significant.

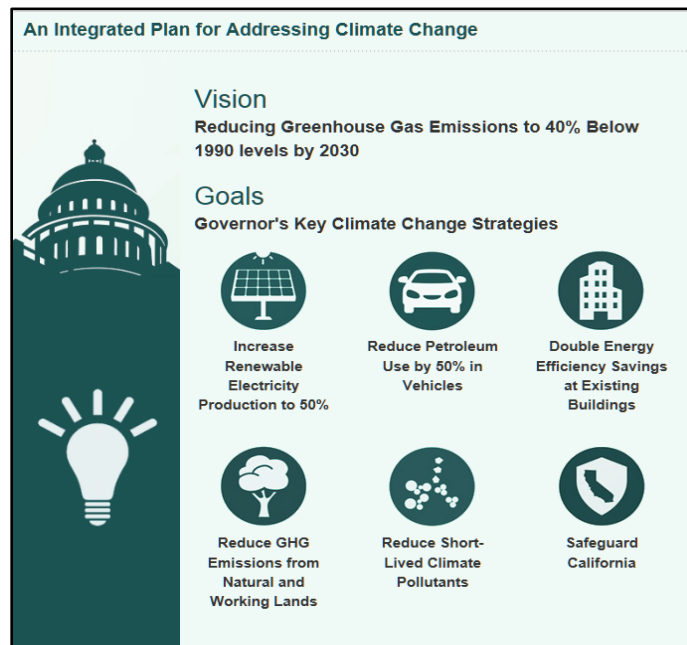
Caltrans is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets. Former Governor Edmund G. Brown Jr. promoted greenhouse gas reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*. See Figure 3-4.

Figure 3-4 California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve greenhouse gas emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from

transportation and goods movement. Greenhouse gas emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. A key state goal for reducing greenhouse gas emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030.

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forest lands, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Executive Order B-30-15, issued in April 2015, and SB 32 (2016) set an interim target to cut greenhouse gas emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with CO₂ reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (Liu 2009) requires the California Transportation Plan to meet California's climate change goals under AB 32. Accordingly, the California Transportation Plan 2040 identifies the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs. While Metropolitan Planning Organizations have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, the California Transportation Plan 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 greenhouse gas emissions, among other goals. Specific performance targets in the plan that will help to reduce greenhouse gas emissions include:

- Increasing percentage of non-auto mode share
- Reducing vehicle miles traveled
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) greenhouse gas emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategy; contribute to the State's greenhouse gas reduction targets and advance transportation-related greenhouse gas emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

Caltrans Policy Directives and Other Initiatives

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

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce greenhouse gas emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

The following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project. Caltrans staff would enhance the environmental training provided for contractor staff by adding a module on greenhouse gas reduction strategies, including limiting equipment idling time as much as possible.

The contractor will be required to:

- Caltrans Standard Specification 14-9.02 requires contractors to comply with all state, local, Air Resources Board, and air district rules, regulations, ordinances, and statutes. Measures that reduce construction vehicle emissions, such as idling restrictions and ensuring engines are properly tuned and maintained, may also help reduce greenhouse gas emissions.

- Caltrans standard specs for recycling construction debris and use of recycled materials, especially recycling or reusing demolition debris on-site for project construction or fill.
- Caltrans will prepare a traffic management plan to most efficiently manage traffic during construction.
- Any trees that are removed due to construction activity will be replaced after construction is completed. Trees absorb CO₂ from the atmosphere.

Adaptation

Reducing greenhouse gas emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage.

Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and variability in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under National Environmental Policy Act assignment, Caltrans is obligated to comply with all applicable federal environmental laws and Federal Highway Administration National Environmental Policy Act regulations, policies, and guidance.

The U.S. Global Change Research Program delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 U.S. Code Ch. 56A § 2921 et seq). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the “human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways.” Chapter 12, “Transportation,” presents a key discussion of vulnerability assessments. It notes that “asset owners and operators have increasingly conducted more focused studies of particular assets that

consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime.”

The U.S. Department of Transportation Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of Department of Transportation 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.”⁷

Federal Highway Administration Order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*, December 15, 2014)⁸ established Federal Highway Administration policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems.

The Federal Highway Administration has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels.⁹

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California’s Fourth Climate Change Assessment* (2018) is the state’s latest effort to “translate the state of climate science into useful information for action” in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the “combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities.”
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.

⁷

https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm

⁸ <https://www.fhwa.dot.gov/legisregs/directives/orders/5520.cfm>

⁹ <https://www.fhwa.dot.gov/environment/sustainability/resilience/>

- Resilience is the “capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience.” Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the “susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.” Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

Executive Order S-13-08, issued by then-Governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

Executive Order S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate “sea-level rise (SLR) projections into planning and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017, and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.¹⁰

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This order recognizes that effects of climate change other than sea-level rise also threaten California’s infrastructure. At the direction of Executive Order B-30-

¹⁰ <http://www.opc.ca.gov/updating-californias-sea-level-rise-guidance/>

15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the state highway system vulnerable to climate change effects, including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency and involves the following concepts and actions:

- *Exposure*—Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence*—Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization*—Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the state highway system, allowing Caltrans to both reduce the costs of storm damage and provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

Sea Level Rise

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.

Floodplains Analysis

The project is located in the floodplain of Cottonwood Creek. The creek has low flows during most of the year, with flows rarely reaching its banks in the project area. The creek is owned and operated by the Madera Irrigation District to carry excess runoff from the city of Madera and surrounding areas and is not used for flood control. Hydraulic modeling of the Cottonwood Creek floodplain determined that the proposed work would not affect the ability of the floodplain to pass the design-year flood event. Given the generally low flows and management by the irrigation district, future changes in storm precipitation depth anticipated under climate change are unlikely to affect the project facilities.

Wildfire

The proposed project is not in a very high fire hazard severity zone (California Department of Forestry and Fire Protection, 2007).

Chapter 4 **Comments and Coordination**

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, public notices, and Project Development Team meetings. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

Coordination with Native American Groups

Caltrans policies and procedures ensure that Native American groups are involved in all aspects of identifying, evaluating and treating Native American historic properties or historical resources. Caltrans consults with Native American Tribes early on and continues throughout the life of the project. Native Americans groups' recommendations on the treatment of Native American human remains, associated grave pieces and ritual objects that may be unearthed by Caltrans activities are given maximum consideration.

Native American consultation was initiated through written correspondence with the Native American Heritage Commission (NAHC) on September 5, 2018. The Native American Heritage Commission responded to Caltrans' request on September 11, 2018 stating that its files found no sacred sites in the project area. The commission also provided a list of Native American contacts in the geographic region who may have additional information regarding cultural and archaeological resources.

The following Native American Tribes were contacted:

- Katherine Erolinda Perez, Chairperson; North Valley Yokuts Tribe
- Bill Leonard, Chairperson; Southern Sierra Miwuk Nation
- Robert Ledger Sr., Chairperson; Dumna Wo-Wah Tribal Government
- Gary Walker, Chairperson; North Fork Rancheria of Mono Indians
- Silvia Burley, Chairperson; California Valley Miwok Tribe

- Ron Goode, Chairperson; North Fork Mono Tribe
- Kenneth Woodrow, Chairperson; Wuksache Indian Tribe/Eshom Valley Band

In addition, the following tribal representatives (not listed by the Native American Heritage Commission) who may have interest in the project area were contacted:

- Robert Pennell, Cultural Resources Manager; Table Mountain Rancheria
- Jennifer Ruiz, Chairwoman; Picayune Rancheria of Chukchansi Indians
- Jerry Brown, Tribal Chair; Chaushilha Yokuts

Consultation was initiated on February 1, 2018 with 10 tribal representatives from an existing Native American contact list. The correspondence included an invitation to consult under Section 106 of the National Historic Preservation Act, Public Resources Code 21080.3.1 and Chapter 532 of Statutes 2014 (i.e., AB 52).

On March 2, 2018, Katherine Erolinda Perez, Chairperson of the Northern Valley Yokuts, left a phone message for project archaeologist David Lanner. Ms. Perez stated an interest in tribal monitoring during construction due to the presence of a waterway (Cottonwood Creek). On October 2, 2018, Mr. Lanner emailed Ms. Perez informing her that, based on previous negative findings from pedestrian surveys and the presence of disturbed, sandy soil to a depth of 69 feet as evidenced by geotechnical studies, it was determined that monitoring during construction would not be necessary. The email was followed-up with a phone call to discuss the project the following day. Ms. Perez stated she had no further concerns with the project.

On May 29, 2018, Robert Pennell, Tribal Cultural Resources Director of the Table Mountain Rancheria, expressed an interest in the project because it lies within the tribe's cultural area of influence. Mr. Pennell requested copies of the record searches and the final cultural resources documentation once reports become available.

On October 31, 2018, all tribal contacts were mailed a draft Archaeological Survey Report for the project and invited to comment on content or express concerns about the undertaking. To date, no comments have been returned to Caltrans concerning the draft report.

Chapter 5 List of Preparers

This document was prepared by the following Caltrans Central Region staff:

Jon L. Brady, Associate Environmental Planner/Architectural Historian. M.A., History, California State University, Fresno; B.A., Political Science and Anthropology; more than 30 years of experience as a consulting archaeologist and historian. Contribution: Archaeological Survey Report (ASR)/Historical Property Survey Report (HPSR).

Susan Greenwood, Engineering Geologist. B.S., Environmental Health Science, California State University, Fresno; more than 20 years of environmental health, hazardous waste, and hazardous material management experience. Contribution: Hazardous Waste Study.

Maya Hildebrand, Associate Environmental Planner (Air Quality Coordinator). B.S., Geology, Utah State University; 5 years of air quality analysis and 4 years of combined geological/environmental hazards experience. Contribution: Air Quality Report.

David Lanner, Associate Environmental Planner (Arch). B.F.A., Art, Utah State University; 26 years of cultural resources experience. Contribution: Archaeological Survey Report (ASR)/Historical Property Survey Report (HPSR).

Mandy Macias, Associate Environmental Planner (Archaeology). B.A., Anthropology, California State University, Fresno; more than 20 years of California and Great Basin archaeology and cultural resources management experience. Contribution: Prehistoric Archaeology, Native American Consultation.

Michael Mills, Professional Landscape Architect CA #4770. B.A., Landscape Architecture and Environmental Planning, Utah State University; 20 years of landscape architecture experience. Contribution: Visual Impact Assessment.

G. William "Trais" Norris, III, Senior Environmental Planner. B.S., Urban Regional Planning, California State Polytechnic University, Pomona; 18 years of land use, housing, redevelopment, and environmental planning experience. Contribution: Oversight review of the environmental document.

- Jonathan Oshalim, Environmental Planner. B.A., Geography, Minor in Mass Communication and Journalism, California State University, Fresno; 1.5 years of GIS, urban planning and environmental planning experience. Contribution: Environmental Generalist and prepared the Initial Study.
- Som Phongsavanh, Senior Environmental Planner. B.S., Biology/Physiology, California State University, Fresno; 17 years of environmental planning experience. Contribution: Oversight Review of the Initial Study.
- Denesse Segura, Associate Environmental Planner (Natural Sciences). M.S., California State University, Dominguez Hills; B.S., Biology, University of California, Los Angeles; 10 years of experience in California biology. Contribution: Natural Environment Study—Minimal Impacts (NESMI).
- Jane Sellers, Associate Environmental Planner. B.A., Journalism, California State University, Fresno; 18 years of environmental compliance experience, focusing on QA/QC and reviewing and editing NEPA and CEQA environmental documents. Contribution: Quality Assurance/Quality Control Technical Editor.
- Jeff Sorensen, Senior Environmental Planner. B.A., Business Administration, California State University, Fresno; more than 35 years of land use, transportation and environmental planning experience. Contribution: Oversight review of the Initial Study.
- Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; more than 30 years of hazardous waste and water quality experience; 17 years of paleontology/geology experience. Contribution: Paleontological Study.
- Jennifer H. Taylor, Environmental Office Chief. Double Bachelor of Arts in Political Studies and Organizational Sciences, Pitzer College; more than 30 years of experience in environmental and land use planning. Contribution: Oversight review of the environmental document.
- Vladimir Timofei, Transportation Engineer. M.S., Civil Engineering, California State University, Fullerton; 18 years of environmental technical studies experience. Contribution: Water Quality Report/Noise Quality Report.
- Juergen Vespermann, Senior Environmental Planner. Civil Engineering Degree, Fachhochschule Muenster, Germany; more than 20 years of experience in transportation planning/environmental planning. Contribution: Oversight review of the Initial Study.

Chapter 6 Distribution List

- Kamala Harris, U.S. Senate, 2500 Tulare Street, Suite 5290, Fresno, CA 93721
- Dianne Feinstein, U.S. Senate, 2500 Tulare Street, Suite 4290, Fresno, CA 93721
- Frank Bigelow, State 5th Assembly District Representative, 730 North I Street, Suite #102, Madera, CA 93637
- Anna Caballero, 12th Senate District Senator, 1640 N Street, Suite 210, Merced, CA 95340
- Max Rodriguez, Madera County Board of Supervisors Member, 200 West 4th Street, Madera, CA 93637
- Jay Varney, Madera County Sheriff, 2725 Falcon Drive, Madera, CA 93637
- Todd Lile, Madera Unified School District Superintendent, 1902 Howard Road, Madera, CA 93637

Appendix A Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION

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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."*

Related federal statutes and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, please visit the following web page:
http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

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.

A handwritten signature in blue ink, appearing to read "Laurie Berman".

LAURIE BERMAN
Director

*"Provide a safe, sustainable, integrated and efficient transportation system
to enhance California's economy and livability."*

Appendix B Avoidance, Minimization and/or Mitigation Summary

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

Utilities/Emergency Services

Detours are available (see Chapter 2 Section 2.1.2 Traffic and Transportation/Pedestrian and Bicycle Facilities for more information on detours) to lessen any impacts to emergency services, though no official detour will be provided for the closure of the northbound off-ramp from State Route 99 to Avenue 12/Road 29. Off-ramps at Avenue 9/Road 31½ and Gateway Drive will be available for emergency services using northbound State Route 99. The Avenue 12 Overcrossing will remain open and will not be impacted by the project. This will allow for emergency services to cross over State Route 99 as they normally would. No utility relocations are anticipated at this time.

Traffic and Transportation/Pedestrian and Bicycle Facilities

Because the bridges on mainline State Route 99 would be demolished to construct the new bridges, a temporary detour through the median will be created to minimize inconvenience to motorists by ensuring that no lanes on State Route 99 will be closed for an extended period.

Hazardous Waste/Materials

The following consideration and provisions are required:

- An Asbestos Compliance Plan and a Lead Compliance Plan are required for this project. Appropriate special standard provisions would be included in the construction package to address proper handling and safety.

Biology

Swainson's Hawk

Preconstruction surveys will be conducted for the Swainson's hawk according to the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (May 2000). The surveys would be conducted during the nesting season prior to construction. If an active Swainson's hawk nest is detected, minimization efforts would be coordinated with the California Department of Fish and Wildlife and may include a no-work buffer zone around an active nest and/or a qualified biologist would monitor an active nest during construction activities within the established buffer.

Nesting Birds

If removal of nests is necessary, the removal would occur during the time of year when the nests are not used (approximately October 1 to January 30).

A preconstruction survey for migratory birds within the study area would be conducted before the start of construction. If active nests were detected, an Environmentally Sensitive Area around the nest site may be established to prevent nesting disturbance. Work may be temporarily suspended if nesting activity cannot be prevented. Standard specifications would be included in the construction bid package to avoid impacts to migratory birds.

Standard Special Provisions (SSPs) typically used include:

- SSP 14-1.01 Environmental Stewardship, including Environmentally Sensitive Areas (ESAs)
- SSP 14-6.02 Species Protection (buffers, work stoppage areas)
- SSP 14-6.03 Bird Protection (nest protection buffers)

Bats

Before construction starts, the project impact area will be surveyed to ensure the bridge remains free of roosting bats. If roosts are identified within the project area, construction activities that would disturb a maternity roost or seasonal roost for bats, whether or not the bats are a special-status species, are prohibited by Caltrans.

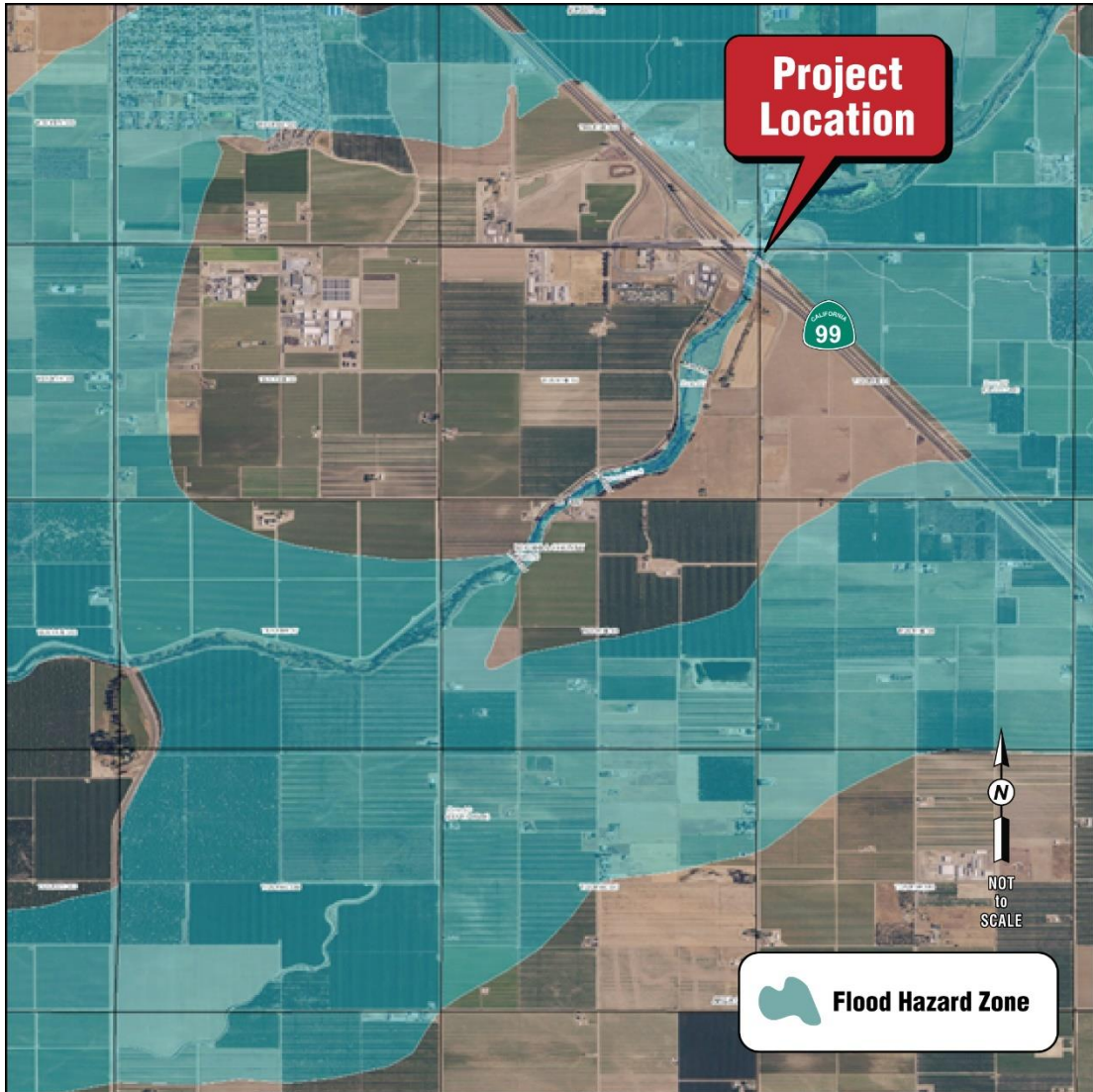
Riparian Habitat

To the maximum extent feasible, native riparian trees would be avoided and protection measures would be implemented to protect riparian trees from project-related activities.

Before construction, Caltrans would assess the impact area and establish an Environmentally Sensitive Area (ESA) consisting of orange mesh fencing, for riparian trees that will be avoided by construction. The Environmentally Sensitive Areas would constitute a dripline protection area for each tree,

which would consist of a radius measurement from the trunk of the tree to the tip of its longest limb, where feasible. In addition, the limits of the construction area would be flagged, and all activity would be confined within the marked area. Any trees that are removed due to construction activity will be replaced after construction is completed. No direct mitigation to the waterway is anticipated.

Appendix C FEMA Flood Hazard Map



Appendix D U.S. Fish and Wildlife Service Species List, CNPS Species List and CNDDDB Query



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:
Consultation Code: 08ESMF00-2019-SLI-3071
Event Code: 08ESMF00-2019-E-09817
Project Name: Cottonwood Creek Bridge Replacement

September 18, 2019

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

To Whom It May Concern:

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

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

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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

*Appendix D • U.S. Fish and Wildlife Service
Species List, CNPS Species List and CNDDB Query*

09/18/2019

Event Code: 08ESMF00-2019-E-09817

2

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

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

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

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

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

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

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

*Appendix D • U.S. Fish and Wildlife Service
Species List, CNPS Species List and CNDDB Query*

09/18/2019

Event Code: 08ESMF00-2019-E-09817

3

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

09/18/2019

Event Code: 08ESMF00-2019-E-09817

2

Project Summary

Consultation Code: 08ESMF00-2019-SLI-3071

Event Code: 08ESMF00-2019-E-09817

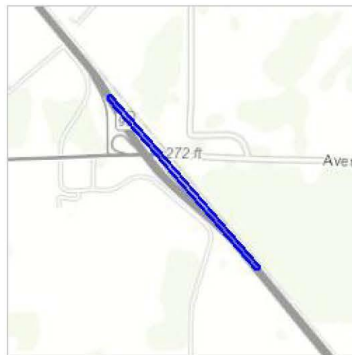
Project Name: Cottonwood Creek Bridge Replacement

Project Type: TRANSPORTATION

Project Description: The project proposes to replace the existing Cottonwood Creek Bridges, BR No. 41-00651L, R and S. The project is in Madera County south of the Avenue 12 and State Route 99 Interchange. The project would replace two existing mainline bridges, the northbound and southbound lane of SR 99 (BR No. 41-0065L & R), with a single bridge to accommodate six lanes of traffic as well as replace the Northbound off-ramp bridge (BR No. 41-0065S).

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/36.92261262498727N120.01978516958448W>



Counties: Madera, CA

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Fresno Kangaroo Rat <i>Dipodomys nigratoides exilis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5150 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/37/office/11420.pdf	Endangered
San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard <i>Gambelia silus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Appendix D • U.S. Fish and Wildlife Service
Species List, CNPS Species List and CNDDB Query

09/18/2019

Event Code: 08ESMF00-2019-E-09817

4

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Hairy Orcutt Grass <i>Orcuttia pilosa</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2262	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix D • U.S. Fish and Wildlife Service
Species List, CNPS Species List and CNDDDB Query



Summary Table Report
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Quad IS (Madera (3612081))

				Elev.		Element Occ. Ranks					Population Status		Presence			
Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Range (ft.)	Total EO's	A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extrip.	Extirp.
Ambystoma californiense California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	270 292	1205 S:2	0	0	0	1	1	0	1	1	1	0	1
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	255 255	1987 S:1	0	0	0	0	1	0	0	1	0	1	0
Branchinecta lynchi vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	292 294	769 S:2	0	0	1	1	0	0	0	2	2	0	0
Branchinecta mesoatlensis midvalley fairy shrimp	G2 S2S3	None None		294 294	128 S:1	0	0	1	0	0	0	0	1	1	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	250 273	2510 S:2	0	0	1	0	0	1	0	2	2	0	0
Gambelia sika blunt-nosed leopard lizard	G1 S1	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	232 232	325 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasius cinereus hoary bat	G5 S4	None None	IUCN_LC-Least Concern VIBWG_M-Medium Priority	270 270	238 S:1	0	0	0	0	0	1	1	0	1	0	0
Leptosiphon serrulatus Madera leptosiphon	G3 S3	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	270 270	27 S:1	0	0	0	0	0	1	1	0	1	0	0
Lytta molesta molestan blister beetle	G2 S2	None None		270 270	17 S:1	0	0	0	0	0	1	1	0	0	1	0
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	G3 S3.1	None None		290 290	126 S:1	0	0	1	0	0	0	1	0	1	0	0
Orcuttia pilosa hairy Orcutt grass	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1	290 360	35 S:3	0	1	0	0	2	0	2	1	1	1	1

Government Version -- Dated September, 1 2019 -- Biogeographic Data Branch
Report Printed on Wednesday, September 18, 2019

Page 1 of 1
Information Expires 3/1/2020

Appendix D • U.S. Fish and Wildlife Service Species List, CNPS Species List and CNDDDB Query

9/18/2019

CNPS Inventory Results



Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)




Plant List

3 matches found. [Click on scientific name for details](#)

Search Criteria

Found in Quad 3612081

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Remove Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank	State Listing Status	Federal Listing Status	Habitats	Lowest Elevation	Highest Elevation	CA Endemic	Photo
Atriplex perstans	vernal pool smallscale	Chenopodiaceae	annual herb	Jun, Aug, Sep, Oct	1B.2	S2	G2			• Vernal pools (alkaline)	10 m	115 m	yes	 2000 Robert E. Preston, PI
Leptosiphon serrulatus	Madera leptosiphon	Polemoniaceae	annual herb	Apr-May	1B.2	S3	G3			• Cismontane woodland • Lower montane coniferous forest	300 m	1300 m	yes	 2008 Chris Winchell
Orcuttia plicata	hairy Orcutt grass	Poaceae	annual herb	May-Sep	1B.1	S1	G1	CE	FE	• Vernal pools	46 m	200 m	yes	 2003 George W. Hartwell

Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v6-03 0.39). Website: <http://www.rareplants.cnps.org> [accessed 18 September 2019].

Search the Inventory

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Contributors

[The California Database](#)
[The California Lichen Society](#)
[California Natural Diversity Database](#)
[The Jepson Flora Project](#)
[The Consortium of California Herbaria](#)
[CalPhotos](#)

Questions and Comments

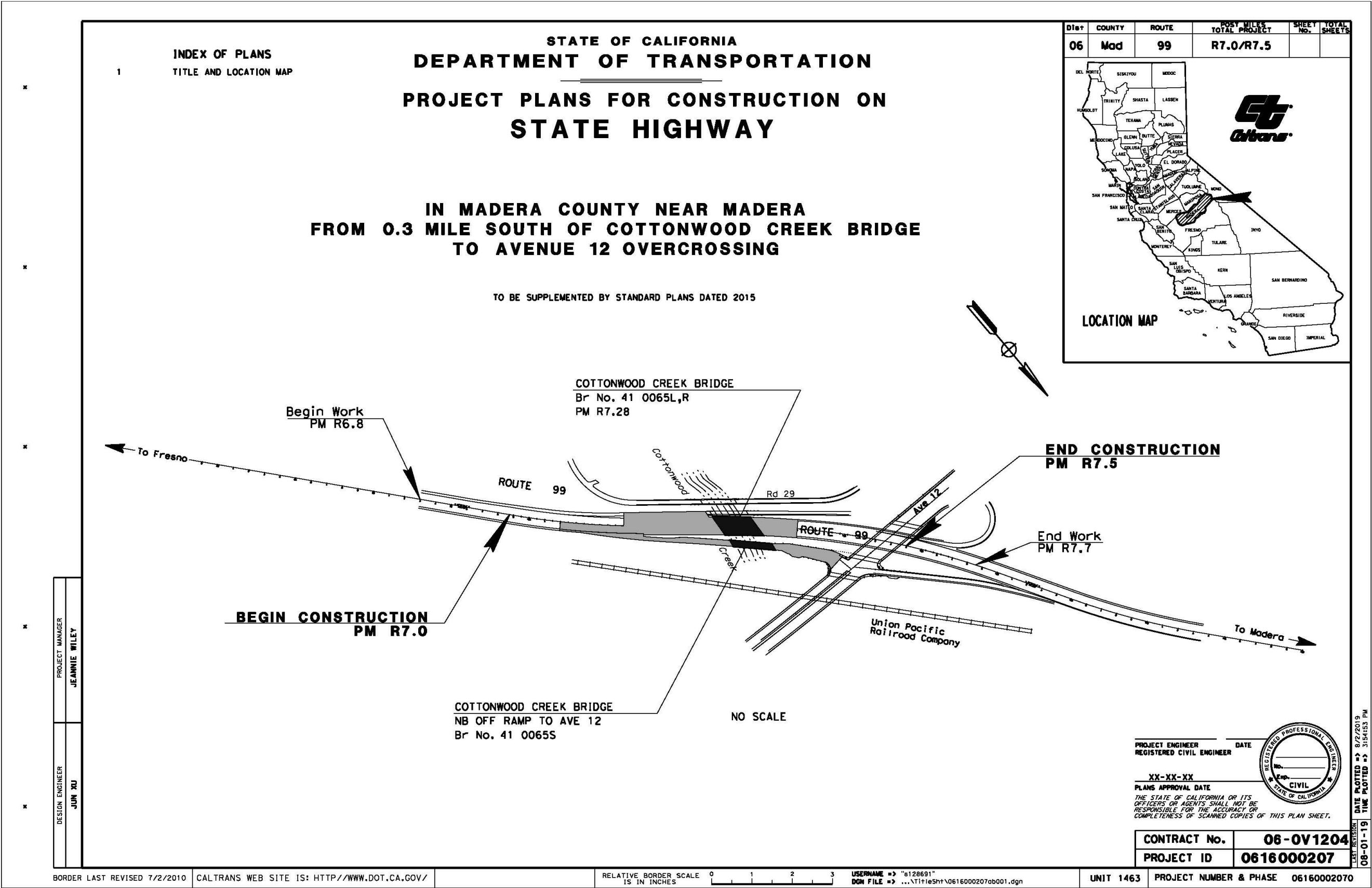
rareplants@cnps.org

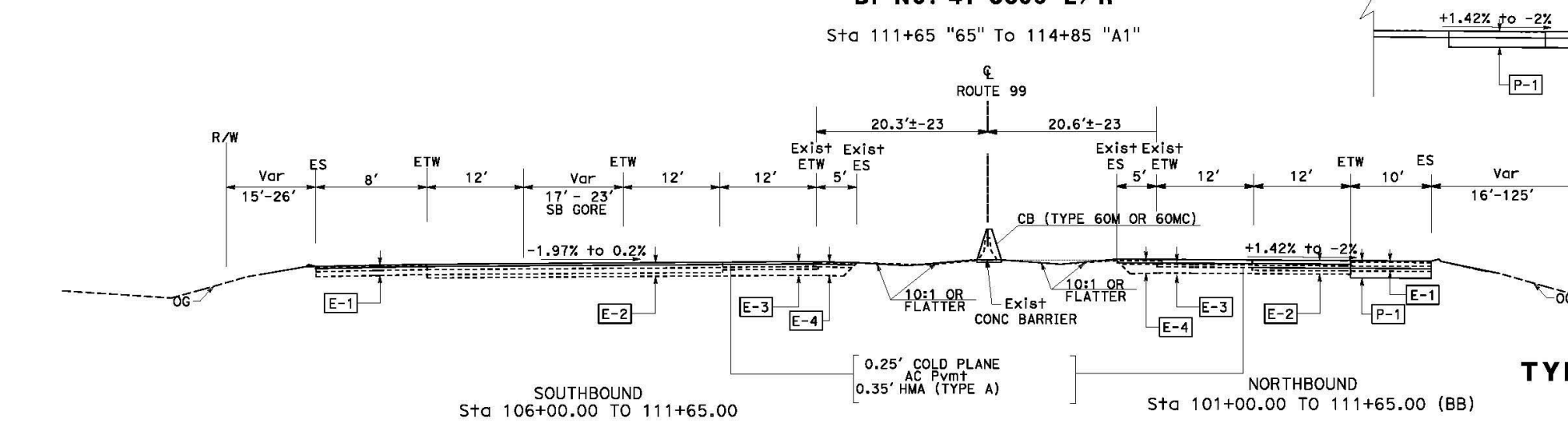
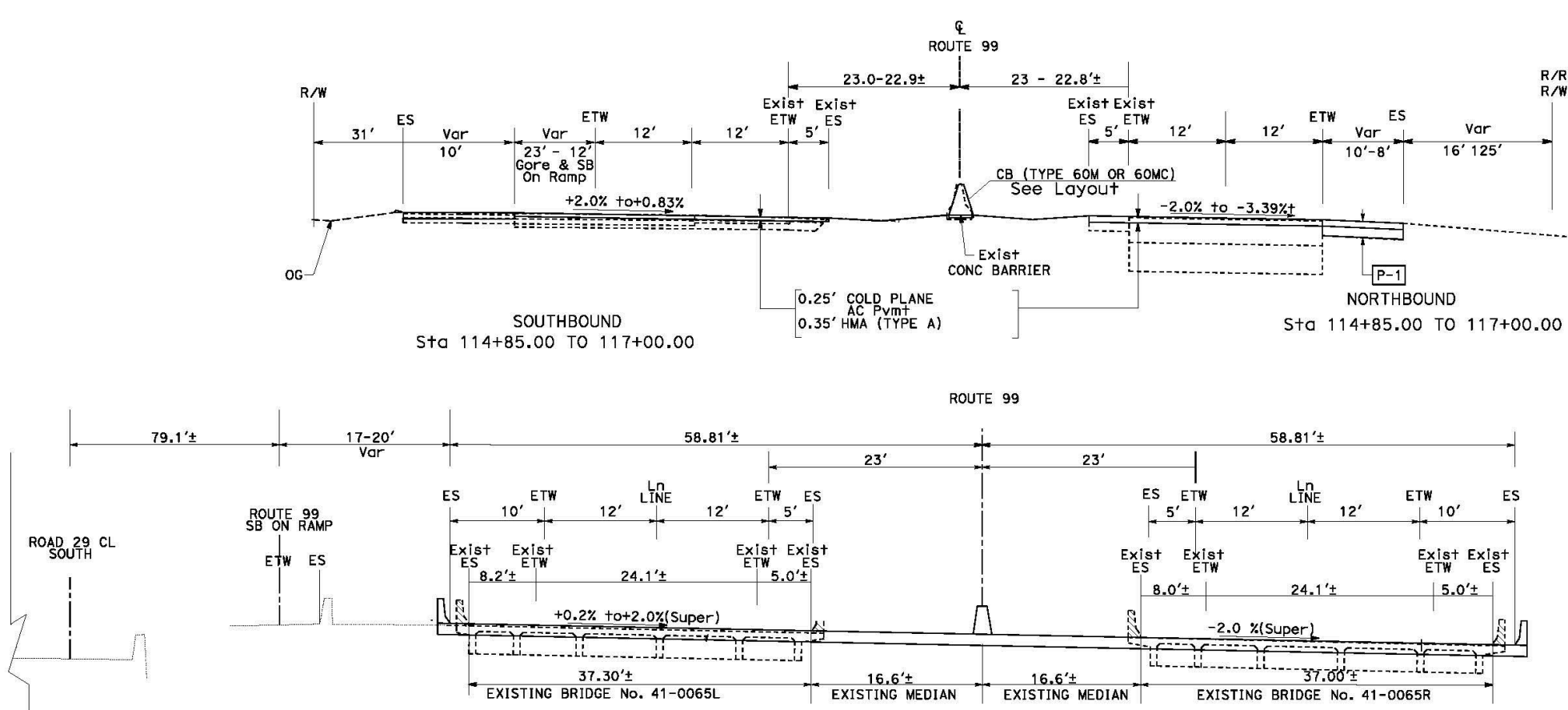
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<http://rareplants.cnps.org/result.html?adv=t&quad=3612081#cdisp=1,2,3,4,5,6,7,8,9,10,11,13,12,14,15>

1/1

Appendix E Project Plans



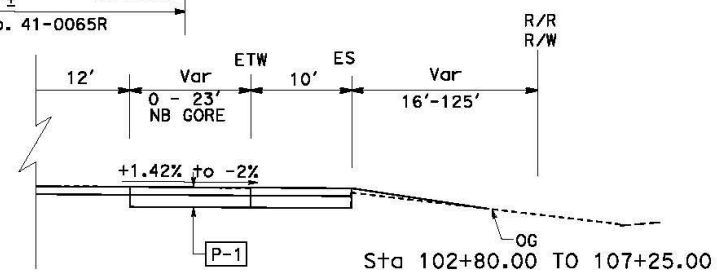


Exist STRUCTURAL SECTIONS

E-1	Exist 0.21' AC 0.51' AB Var AS
E-2	Exist Var (0.71' TO 0.76') AC 0.34' CTB 0.51' AS LANES 2
E-3	Exist Var (0.66' TO 0.68') AC 0.34' CTB 0.25' AS LANE 1
E-4	Exist 0.21' AC 0.47' AB 0.25' AS

STRUCTURAL SECTIONS

P-1	1.10' HMA (TYPE A) 0.90' AB
P-2	0.60' HMA (TYPE A) 1.00' AB
P-3	0.85' JPCP 0.25' HMA



TYPICAL CROSS SECTIONS X-1

NO SCALE

UNIT 1463

PROJECT NUMBER & PHASE

06160002070

DATE PLOTTED => 07-OCT-2019
TIME PLOTTED => 12:09

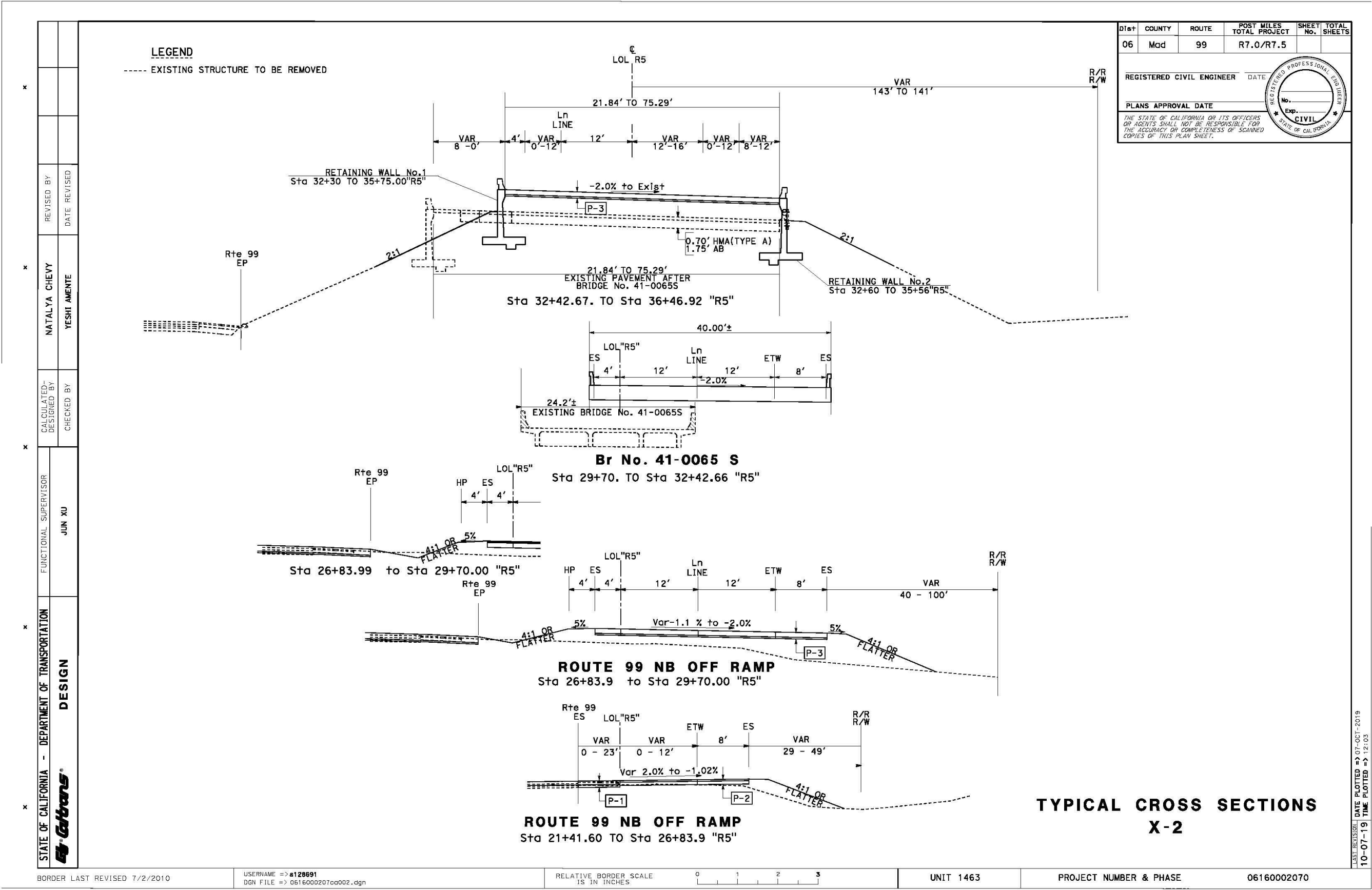
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RELATIVE BORDER SCALE
IS IN INCHES

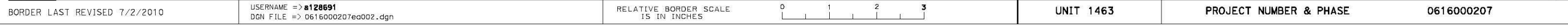






LAYOUT
L-1

[illegible]



List of Technical Studies

Air Quality Report (June 2018)

Noise Study Report (January 2019)

Water Quality Report (January 2019)

Natural Environment Study (Minimal Impacts) (January 2019)

Location Hydraulic Study (February 2019)

Historical Property Survey Report (December 2018)

- Historic Resource Evaluation Report
- Historic Architectural Survey Report
- Archaeological Survey Report

Hazardous Waste Compliance Study (January 2019)

Scenic Resource Evaluation/Visual Assessment (February 2019)

Paleontology Study (August 2018)

To obtain a copy of one or more of these technical studies/reports or the Initial Study, please send your request to the following email address:
d6.public.info@dot.ca.gov.

Please indicate the project name and project identifying code (under the project name on the cover of this document) and specify the technical report or document you would like a copy of. Provide your name and email address or U.S. postal service mailing address (street address, city, state and zip code).